One Region One Vision

Advancing dentistry together

30th BaSS Congress
Thessaloniki 7–9 May 2026
Met Hotel

Balkan Stomatological Society

BOOK OF ABSTRACTS

Under the aegis of the

Hellenic Dental Association

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Ministry of the Interior
(Macedonia and Thrace Division)

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Message from the President of the Balkan Stomatological Society (BaSS)

Dear colleagues,

It is great news for the members of Balkan Stomatological Society that we reached our 30th anniversary, so let's celebrate on 7-10 May, in the Thessaloniki meeting.

It is a great honour to address this distinguished gathering under the auspices of the Balkan Stomatological Society. The Balkans, a region where history, culture, and diversity intertwine, has always been a bridge connecting nations, ideas, and people. Dentistry, as both a science and a healing art, offers us yet another bridge one built not of politics or borders, but of knowledge, compassion, and collaboration.

In recent years, the exchange of expertise and research among Balkan universities has enriched our understanding of digital dentistry, biomaterials, and preventive care. These collaborations remind us that innovation grows not in isolation, but through shared experience and collective wisdom.
The challenges we face ranging from education disparities to public oral health are not unique to one nation; they are shared responsibilities that call for shared solutions.

Dear colleagues, dentistry unites us through the universal language of care. Let us honour that unity by building a future where the Balkan dental community continues to inspire, innovate, and support one another. Together, we can ensure that our shared legacy will be one of science, friendship, and humanity.

Please join us in the celebration photograph for the 30th anniversary of BASS; we are waiting for you.

Prof. Dr. Ender Kazazoglu
President of BASS

Message from the President of the 30th BaSS Congress

Dear Colleagues,

It is an honor and a great pleasure to invite you to the 30th anniversary Congress of the Balkan Stomatological Society (BaSS), which will take place on May 7–9, 2026, at the Met Hotel in Thessaloniki.

Under the inspiring motto "One Region—One Vision: Advancing Dentistry Together," our Congress aspires to unite colleagues from across the Balkans and beyond, foster collaboration, share scientific knowledge, and shape the future of Dentistry in our region.

Dentistry today is experiencing rapid evolution through innovative technologies, advanced materials, and new treatment approaches. Yet, at its core, it remains a science centered on humans, closely linked with overall health and quality of life. The BaSS Congress provides a unique opportunity to reflect on our achievements, exchange experiences, and envision together the next steps in our professional journey.

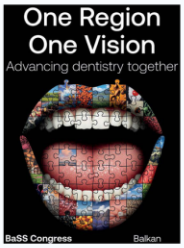
The aims of this meeting are multiple: educational for our young colleagues, scientific for researchers and clinicians, and social for all, strengthening bonds of friendship and cultural connection across our region.

We are committed to delivering a high-level Scientific Congress that will expand our horizons and reinforce the unity and cooperation that always defined the Balkan Stomatological Society.

We look forward to welcoming you all to the historic and friendly city of Thessaloniki and advancing Dentistry together!

Warm regards,

Professor Athanasios K. Poulopoulos
President of the 30th BaSS Congress



30th BaSS CONGRESS

THESSALONIKI | 7–9 MAY 2026

SCIENTIFIC PROGRAMME

AT A GLANCE

ORAL & POSTER PRESENTATIONS

THURSDAY 7 MAY 2026

MAISTROS	SIROCCO	ZEPHYROS	OSTRIA
09:00–10:30 OP 001–014	09:00–10:30 OP 015–025 14:00–16:00 OP 060–078 16:30–18:00 OP 098–110	09:00–10:30 OP 026–040 11:00–13:00 OP 041–059 14:00–16:00 OP 079–096 16:30–18:00 OP 111–123	09:00–10:30 PP 001–029 11:00–13:00 PP 031–061 14:00–16:00 PP 063–111 16:30–18:00 PP 111–125

FRIDAY 8 MAY 2026

MAISTROS	SIROCCO	ZEPHYROS	OSTRIA
NO OP / PP SESSIONS	NO OP / PP SESSIONS	09:00–11:00 OP 124–146 16:30–18:00 OP 148–176	09:00–11:00 PP 125–180 14:30–16:00 PP 181–209 16:30–18:00 PP 210–278

SATURDAY 9 MAY 2026

MAISTROS	SIROCCO	ZEPHYROS	OSTRIA
NO OP / PP SESSIONS	NO OP / PP SESSIONS	09:00–11:00 OP 176–194 11:30–13:30 OP 195–212 14:30–16:00 OP 213–227 16:30–18:00 OP 229–258	09:00–11:00 PP 279–303

OP = Oral Presentations | PP = Poster Presentations

Session ranges reproduced from the official Scientific Programme.

INDEX

ORAL PRESENTATIONS

NUMBER	TITLE
OP.001	CLINICAL OUTCOMES AND THE PROGNOSTIC VALUE OF HEMOSTASIS TIME IN TOTAL PULPOTO MY USING TWO DIFFERENT HEMOSTATIC AGENTS: A RANDOMIZED PILOT STUDY
OP.002	3D PRINTED TEMPORARY CROWN RESIN: EFFECT OF GLAZE COAT NUMBER ON COLOR STABILITY (A PILOT STUDY)
OP.003	OSTEODIFFERENTIATION OF STEM CELLS FROM APICAL PAPILLA IN THE PRESENCE OF NOVEL DENTAL CEMENTS
OP.004	INFLUENCE OF THE NOVEL DENTAL CEMENTS ON STEM CELLS FROM THE APICAL PAPILLA: CITOTOXICITY
OP.005	EFFECT OF COLD ATMOSPHERIC PLASMA ON LIQUID CONTACT ANGLE OF PRETREATED BRILIANT CRIOS
OP.006	ANTIMICROBIAL NANOPARTICLES APPLICATIONS IN ENDODONTICS A REVIEW OF CURRENT EVIDENCE
OP.007	LASER AND PHOTOBIOMODULATION THERAPIES FOR LESIONS OF THE ORAL CAVITY AND PERIORAL REGION: CLINICAL CASES, REVIEW OF INDICATIONS
OP.008	HEMATOLOGICAL AND GENETIC FACTORS IN RECURRENT APHTHOUS STOMATITIS: A CASE-CONTROL STUDY AND ASSOCIATION WITH CLINICAL SEVERITY
OP.009	CLINICAL EVALUATION OF PROSTHESIS-RELATED ORAL MUCOSAL LESIONS IN DENTURE WEARERS
OP.010	WHEN SEXUALLY TRANSMITTED INFECTIONS (STIS) COLLIDE IN THE ORAL CAVITY: A CASE REPORT AND MINI REVIEW
OP.011	UNEXPECTED THROMBUS PRESENTING AS A PERSISTENT UPPER LIP NODULE FOLLOWING HYALURONIC ACID INJECTION
OP.012	THE LINK BETWEEN ORAL LICHEN PLANUS AND AUTOIMMUNE DISEASES
OP.013	HERPERVIRUS PREVALENCE IN HEAD AND NECK MALIGNANCIES: A CASE - CONTROL STUDY
OP.014	ANTIHYPERTENSIVE DRUGS AND BONE DENSITY
OP.015	THE CORRELATION BETWEEN ORAL HEALTH AND CARDIOVASCULAR DISEASES: ASSESSMENT BASED ON RISK FACTORS AND HEALTH BEHAVIORS AT DENTAL OFFICE PATIENTS – PRESENTATION OF MASTER THESIS
OP.016	COMPARATIVE ANALYSIS OF ORAL HEALTH COMMUNICATION QUALITY AND EDUCATIONAL VALUE IN ARTIFICIAL INTELLIGENCE CHATBOTS
OP.017	KNOWLEDGE AND ATTITUDES OF DENTAL STUDENTS TOWARD MINIMALLY INVASIVE DENTISTRY IN PEDIATRIC DENTISTRY IN TÜRKIYE
OP.018	ENERGY DRINKS AND ORAL HEALTH: WHAT DO STUDENTS KNOW AND HOW DO THEY BEHAVE?
OP.019	AESTHETIC IMPROVEMENT OF MINERAL DEFICIENT AREAS OF DENTAL ENAMEL. REPORT OF TWO TYPICAL CASES
OP.020	EFFECT OF DIFFERENT WHITE SPOT LESION TREATMENTS ON CANDIDA ALBICANS BIOFILM FORMATION
OP.021	IN VIVO EVALUATION OF THE EFFECT OF OCCLUSAL FISSURE STAIN REMOVAL ON DIAGNOSTIC ACCURACY
OP.022	ACCESS TO DENTAL CARE: RIGHT OR PRIVILEGE? A COMPARISON WITH EUROPEAN DATA AND THE ROLE OF THE ORAL HEALTH CLAUSE
OP.023	ACCESSIBILITY OF DISABLED PATIENTS FOR DENTAL TREATMENT UNDER GENERAL ANAESTHESIA AT THE GENERAL HOSPITAL OF THESSALONIKI “O AGIOS DIMITRIOS”
OP.024	CLINICAL COMPLEXITY AND PREVENTIVE DENTAL MANAGEMENT OF AN ADOLESCENT PATIENT WITH APERT SYNDROME: A MULTIDISCIPLINARY CASE-ORIENTED PERSPECTIVE
OP.025	DENTAL MANAGEMENT OF ONCOLOGY PATIENTS UNDERGOING ANTIRESORPTIVE DRUG THERAPY
OP.026	MRI SAFETY AND ARTIFACT GENERATION IN MAXILLOFACIAL OSTEOSYNTHESIS: A SYSTEMATIC REVIEW
OP.027	READABILITY ANALYSIS OF APHTHAE INFORMATIONAL TEXTS ON INTERNET WEBSITES
OP.028	DEEP LEARNING–BASED DETECTION AND POSITION CLASSIFICATION OF IMPACTED CANINES ON CBCT USING THE NN-UNET ALGORITHM

NUMBER	TITLE
OP.029	COMPARISON OF NEXT-GENERATION LARGE LANGUAGE MODELS IN THE DENTISTRY SPECIALIZATION EXAM: ACCURACY RATES IN CASE-BASED QUESTIONS APPROPRIATE TO THE ORAL AND MAXILLOFACIAL RADIOLOGY COURSE CONTENT
OP.030	EVALUATION OF MRONJ AWARENESS AMONG OSTEOPOROSIS AND CANCER PATIENTS RECEIVING ANTIRESORPTIVE THERAPY: A PILOT CROSS-SECTIONAL SURVEY
OP.031	EVALUATION OF OROPHARYNGEAL AIRWAY VOLUME AND THE RELATIONSHIP WITH NASAL SEPTUM DEVIATION AND MALOCCLUSION USING CONE-BEAM COMPUTED TOMOGRAPHY
OP.032	DEEP LEARNING–BASED DETECTION AND POSITION CLASSIFICATION OF IMPACTED CANINES ON CBCT USING THE NN-UNET ALGORITHM: A PILOT STUDY
OP.033	FIRST-AUTHOR GENDER DISTRIBUTION IN HIGH IMPACT FACTOR DENTAL JOURNALS
OP.034	MOBBING (WORKPLACE BULLYING) AMONG DENTAL STUDENTS: A SURVEY STUDY
OP.035	PREVALENCE AND PATTERNS OF PATIENT PRIVACY VIOLATIONS IN DENTISTRY-RELATED SOCIAL MEDIA: A COMPARATIVE ANALYSIS OF INSTAGRAM AND YOUTUBE
OP.036	A CLOSER LOOK AT PROFESSIONAL CONCERNS RELATED TO ARTIFICIAL INTELLIGENCE IN DENTISTRY: A SURVEY-BASED CROSS-SECTIONAL STUDY
OP.037	COLORS, CAN THEY REDUCE THE DENTAL ANXIETY?
OP.038	FEAR OF ENDODONTIC TREATMENT-WHO IS BRAVER MEN OR WOMEN?
OP.039	PATIENT SATISFACTION AND EXPERIENCE WITH TELEDENTISTRY IN A REMOTE ISLAND POPULATION: A STUDY ON OINOUSSES ISLAND, GREECE
OP.040	OPERATIONAL EXCELLENCE IN DENTISTRY: A SCOPING REVIEW OF LEAN AND AGILE ORGANIZATIONAL APPLICATIONS AND OUTCOMES
OP.041	MULTIPLE AND LARGE PHLEBOLITHS ASSOCIATED WITH HEMANGIOMA: A CASE REPORT
OP.042	COMPARATIVE PERFORMANCE OF LARGE LANGUAGE MODELS ON TURKISH DENTISTRY SPECIALIZATION EXAM DIAGNOSTIC QUESTIONS
OP.043	EVALUATING THE DIAGNOSTIC PERFORMANCE OF TWO AI-BASED PROGRAMS IN THE RADIOGRAPHIC DETECTION OF DENTAL CARIES
OP.044	BEYOND TEETH AND JAWS: INCIDENTAL DETECTION OF PETRIFIED EAR ON DENTAL IMAGING
OP.045	A COMPERATIVE ANALYSIS OF PERIAPICAL RADIOGRAPHS VERSUS CONE BEAM COMPUTED TOMOGRAPHY (CBCT) IN THE ANATOMY OF THE MANDIBULAR FIRST PREMOLAR
OP.046	CLINICAL AND RADIOGRAPHIC FINDINGS ACCORDING TO BISPHOSPHONATE ADMINISTRATION ROUTE AND SYMPTOM SEVERITY IN DENTAL PATIENTS
OP.047	TEMPOROMANDIBULAR JOINT OSTEOARTHRITIC CHANGES AND NECK DISABILITY: A CLINICAL AND RADIOLOGICAL STUDY
OP.048	EVALUATION OF THE SKELETODENTAL EFFECTS OF FORSUS AND ACTIVATOR APPLIANCES IN CLASS II DIVISION 1 MALOCCLUSIONS
OP.049	ACQUIRED DEEP OCCLUSION AND ITS TREATMENT
OP.050	COMPARISON OF BONE MICRO-ARCHITECTURE IN VITAL AND ENDODONTICALLY TREATED MANDIBULAR MOLARS DURING ORTHODONTIC TREATMENT: A SPLIT-MOUTH, FRACTAL ANALYSIS STUDY
OP.051	THE EFFECTS OF LIGHT CURING UNITS AND ADHESIVE RESIN MATERIALS ON SHEAR BOND STRENGTH OF BRACKETS: AN IN-VITRO STUDY
OP.052	EFFECTS OF INTERPROXIMAL ENAMEL REDUCTION AND ATTACHMENT APPLICATION ON EFFECTIVENESS OF ROTATIONAL TOOTH MOVEMENT IN CLEAR ALIGNER THERAPY
OP.053	USE OF MINI SCREWS AND ORTHOPEDIC TRACTION IN TREATMENT OF SKELETAL OPEN BITE
OP.054	EFFICACY OF INTERDENTAL BRUSHES IN REDUCING GINGIVAL BLEEDING IN PATIENTS WITH FIXED ORTHODONTIC APPLIANCES
OP.055	CLINICAL AND RADIOGRAPHIC FEATURES OF IMPACTED MAXILLARY CANINES: A POSITIONAL AND LOCAL ENVIRONMENTAL PERSPECTIVE
OP.056	DENTAL ANOMALIES ASSOCIATED WITH IMPACTED MAXILLARY CANINES: A RETROSPECTIVE STUDY
OP.057	ORTHODONTIC MANAGEMENT OF AN IMPACTED MAXILLARY CANINE IN A PATIENT WITH KABUKI SYNDROME
OP.058	TRUE SCIENCE OF OCCLUSAL ANALYSIS COMPARED WITH SUBJECTIVE ANALYTICAL METHODS
OP.059	TOOTH PRESERVATION THROUGH ORTHODONTIC EXTRUSION IN A STRUCTURALLY COMPROMISED ANTERIOR TOOTH: A MULTIDISCIPLINARY TREATMENT APPROACH

NUMBER	TITLE
OP.060	ASSESSMENT OF DENTAL RESEARCH ASSISTANTS' KNOWLEDGE AND ATTITUDES TOWARD CADCAM TECHNOLOGY AND DIGITAL WORKFLOW IN TURKEY
OP.061	RIBBOND POLYETHYLENE FIBER REINFORCEMENT: REPORT OF FIVE CLINICAL APPLICATIONS
OP.062	EVALUATION OF DENTAL PHOTOGRAPHY VIDEOS ON YOUTUBE IN TERMS OF EDUCATIONAL QUALITY AND RELIABILITY
OP.063	A BIBLIOMETRIC ANALYSIS OF ARTIFICIAL INTELLIGENCE APPLICATIONS IN RESTORATIVE DENTISTRY
OP.064	DIGITAL DETECTION OF EARLY TOOTH WEAR: A COMPARATIVE ANALYSIS
OP.065	ACCURACY OF TRIOS 3 AND TRIOS 5 INTRAORAL SCANNERS IN SHADE DETERMINATION: INFLUENCE OF CERAMIC TRANSLUCENCY AND THICKNESS
OP.066	EVALUATION OF THE RADIOPACITY OF RESIN-BASED RESTORATIVE MATERIALS USING DIGITAL IMAGING: AN IN VITRO STUDY
OP.067	EVALUATION OF CELL RESPONSES TOWARDS DIMETHYLE SULFOXIDE- SOLVATED DENTAL ADHESIVES
OP.068	IMPACT OF MATCHA GREEN AND BLACK TEAS ON COLOR STABILITY AND SURFACE GLOSS OF DIRECT COMPOSITE RESINS
OP.069	MINIMALLY INVASIVE ESTHETIC REHABILITATION OF MAXILLARY LATERAL INCISOR AGENESIS AND PEG-SHAPED LATERAL INCISOR WITH DIRECT COMPOSITE RESTORATIONS: TWO CASE REPORTS
OP.070	TOBACCO USE HABITS AND CESSATION DESIRES AMONG DENTISTRY STUDENTS
OP.071	TREATMENT OF WHITE SPOT LESIONS WITH RESIN INFILTRATION TECHNIQUE
OP.072	INFLUENCE OF VARYING AMOUNTS OF FISH BONE–DERIVED NANO-HYDROXYAPATITE ADDITION ON THE POLYMERIZATION SHRINKAGE AND MECHANICAL PERFORMANCE OF RESIN COMPOSITES
OP.073	DO PROPHYLAXIS PASTES AFFECT SURFACE QUALITY OF NANOHYBRID RESIN COMPOSITES?
OP.074	ASSOCIATION OF PROCEDURE-RELATED STRESS WITH CLINICAL SELF-EFFICACY IN RESTORATIVE CLINICAL EDUCATION: A CROSS-SECTIONAL STUDY
OP.075	AESTHETIC APPROACHES IN THE ANTERIOR TEETH: TWO CASE REPORTS
OP.076	INVESTIGATION OF THE EFFECT OF POLYMERIZATION TEMPERATURE ON THE RELEASE OF RESIDUAL MONOMERS FROM DENTAL ADHESIVES
OP.077	IN VITRO STUDY OF THE FRACTURE RESISTANCE OF CAD/CAM CUSTOMIZED POSTS VERSUS PREFABRICATED FIBER POSTS
OP.078	MICROTENSILE BOND STRENGTH OF BIOACTIVE RESTORATIVE MATERIALS TO SOUND AND CARIES-AFFECTED PRIMARY DENTIN
OP.079	OUTCOMES OF UNDERGRADUATE TRAINING IN ORAL STOMATOLOGY: TWO-YEAR FOLLOW-UP OF ROOT CANAL TREATMENTS
OP.080	EVALUATION OF AI-DRIVEN APPROACHES TO ENDODONTIC CASES: A COMPARATIVE STUDY
OP.081	EVALUATION OF EXTRUDED ROOT CANAL FILLING MATERIALS: A RETROSPECTIVE STUDY
OP.082	EVALUATION OF YOUTUBE SHORT VIDEOS RELATED TO BARODONTALGIA
OP.083	KNOWLEDGE, ATTITUDES AND CLINICAL PRACTICES TOWARD EXTERNAL CERVICAL RESORPTION: A PERIODONTAL PERSPECTIVE
OP.084	MAXILLARY LATERAL INCISOR WITH A RARE TWO-ROOTS: CBCT-ASSISTED DIAGNOSIS AND ENDODONTIC MANAGEMENT
OP.085	DOES LANGUAGE INFLUENCE THE QUALITY OF ROOT CANAL TREATMENT VIDEOS ON YOUTUBE?
OP.086	EFFECT OF DIFFERENT IRRIGATION SOLUTIONS ON THE PUSH-OUT BOND STRENGTH OF BIOCERAMIC AND RESIN-BASED ROOT CANAL SEALERS: AN IN VITRO STUDY
OP.087	ENDODONTIC MANAGEMENT OF ANTERIOR TEETH WITH RESORPTIVE DEFECTS AND LARGE PERIAPICAL LESIONS USING BIOCERAMIC MATERIALS: A CASE SERIES
OP.088	SURGICAL ENDODONTIC TREATMENT OF A MAXILLARY PREMOLAR WITH A PERIAPICAL CYST ZUHAL KILIÇ1, DENIZ YANIK NALBANTOĞLU1
OP.089	PREVALENCE OF C-SHAPED CANALS IN MANDIBULAR SECOND MOLARS IN SOUTHEAST SERBIAN POPULATION: CBCT STUDY
OP.090	REMOVING CALCIUM HYDROXIDE USING 17% EDTA AND 70% ETHANOL WITH ACTIVATION USING ULTRASONIC AND XP-ENDO FINISHERS: A STEREOMICROSCOPIC STUDY

NUMBER	TITLE
OP.091	USE OF MINERAL TRIOXIDE AGGREGATE (MTA) IN THE MANAGEMENT OF TRAUMATIZED IMMATURE PERMANENT TEETH: TWO CASE REPORTS
OP.092	EFFECTS OF DIFFERENT CANAL TAPERS AND DIFFERENT IRRIGATION METHODS ON APICAL IRRIGANT EXTRUSION: AN IN VITRO STUDY
OP.093	EVALUATION OF DIFFERENT ARTIFICIAL INTELLIGENCE PLATFORMS PERFORMANCES ON RESPONDING TO COMMON PATIENT ENDODONTICS QUESTIONS
OP.094	EVALUATION OF ARTIFICIAL INTELLIGENCE CHATBOTS' QUALITY IN ANSWERING QUESTIONS ABOUT DENTAL AVULSION
OP.095	ANALYSIS OF YOUTUBE AS AN EDUCATION RESOURCE FOR PULP VITALITY TESTING: A CONTENT AND QUALITY EVALUATION
OP.096	FREQUENCY AND CAUSES OF COMPLİCATİONS ENCOUNTERED BY DENTAL STUDENTS DURİNG ENDODONTİC TREATMENT: A SURVEY STUDY
OP.098	THE INJECTABLE COMPOSITE TECHNIQUE WITHIN PATIENT WITH DENTAL EROSION - CASE REPORT
OP.099	EVALUATION OF SURFACE MICROHARDNESS OF RESIN CEMENTS POLYMERIZED BENEATH CERAMIC HYBRID AND NANO HYBRID COMPOSITES WITH VARYING THICKNESSES
OP.100	THE FACTORS AFFECTING THE SUCCESS OF DIRECT COMPOSITE RESTORATIONS: PRELIMINARY RESULTS OF A CROSS-SECTIONAL CLINICAL STUDY
OP.101	SURFACE ROUGHNESS AND SHORT-TERM COFFEE STAINING AFTER DIFFERENT POLISHING PROTOCOLS IN A NANOHYBRID COMPOSİTE
OP.102	EFFECT OF ER,CR:YSGG LASER AND ACIDULATED PHOSPHATE FLUORIDE GEL ON ENAMEL MICROHARDNESS AND ROUGHNESS AFTER ACID CHALLENGE
OP.103	EFFECT OF COLD-CONSUMED COFFEE SOLUTIONS ON COLOR STABILITY OF RESIN COMPOSITES
OP.104	ENDOCROWN AS A RESTORATIVE SOLUTION FOR ENDODONTICALLY TREATED TEETH - ADVANTAGES AND LIMITATIONS
OP.105	LONG TERM SURFACE ROUGHNESS AND TOPOGRAPHICAL EFFECTS OF SIMULATED BULIMIC AGING ON MILLED AND 3D PRINTED HYBRID CERAMICS
OP.106	FRACTURE RESISTANCE OF ARTIFICIALLY CRACKED MANDIBULAR MOLARS RESTORED WITH FIBER-REINFORCED COMPOSITE AND CAD-CAM FABRICATED RESTORATIONS
OP.107	ADDITIVELY MANUFACTURED RESIN-BASED ENDOCROWNS FOR REHABILITATION OF ENDODONTICALLY TREATED POSTERIOR TEETH: A CASE SERIES
OP.108	COLOR STABILITY OF THREE DIFFERENTLY MANUFACTURED DENTAL COMPOSITES: INFLUENCE OF HYDROTHERAMAL AGING AND STAINING
OP.109	EFFECT OF STAINING SOLUTIONS AND REPOLISHING ON COLOR STABILITY OF DIRECT COMPOSITES
OP.110	PREPARATION FOR CERAMIC VENEERS IN ANTERIOR REGION
OP.111	NON-SURGICAL ENDODONTIC TREATMENT OF A MANDIBULAR MOLAR WITH A LARGE PERIAPICAL LESION: CASE REPORT
OP.112	METHODOLOGICAL AND STUDY DESIGN DISTRIBUTION OF ARTICLES PUBLISHED IN A LEADING ENDODONTIC JOURNAL BETWEEN 2020 AND 2025
OP.113	PERFORMANCE EVALUATION OF LATEST LARGE LANGUAGE MODELS ON ENDODONTIC SPECIALTY QUESTIONS: IMPACT OF SOURCE ACCESSIBILITY
OP.114	EVALUATION OF DIFFERENT ARTIFICIAL INTELLIGENCE APPLICATION ON RESPONDING TO PATIENT QUESTIONS REGARDING REGENERATIVE ENDODONTICS
OP.115	A COMPARISON OF CHATGPT-5 AND HUMAN EXPERT REVIEWER EVALUATIONS OF TRANSCRIPTS OF YOUTUBE VIDEOS ON THE TOPIC 'ROOT CANAL TREATMENT OR DENTAL IMPLANT?
OP.116	EFFECT OF CHITOSAN APPLICATION ON COMPOSITE RESIN–DENTIN BOND STRENGTH AFTER INTERNAL BLEACHING
OP.117	THE MANAGEMENT OF A MANDIBULAR MOLAR WITH A STRIP PERFORATION USING HEMISECTION: A CASE REPORT
OP.118	ROOT-END SURGERY OF MAXILLARY INCISORS WITH A LARGE PERIAPICAL LESION AND INTRA-CORONAL BLEACHING OF MTA-RELATED DISCOLORATION: A CASE REPORT
OP.119	NON-SURGICAL RETREATMENT OF AN EXTRAORAL SINUS TRACT OF ENDODONTIC ORIGIN: A CASE REPORT
OP.120	NON-STEROIDAL ANTI-INFLAMMATORY DRUGS IN ENDODONTIC PRACTICE: AN EVIDENCE-BASED REVIEW
OP.121	CLINICAL MANAGEMENT OF MOLARIZED PREMOLARS WITH THREE CANALS

NUMBER	TITLE
OP.122	ROOT AND ROOT CANAL MORPHOLOGY OF MANDIBULAR SECOND PERMANENT MOLARS IN THE TURKIYE POPULATION: A CBCT STUDY
OP.123	ARTIFICIAL INTELLIGENCE IN ENDODONTIC EDUCATION: A NARRATIVE REVIEW
OP.124	MANAGEMENT OF EXPOSURE THE SUBLINGUAL VEIN CAUSED BY IATROGENIC TRAUMA. A CASE REPORT
OP.125	REMOVAL OF A TOOTH ROOT DISPLACED INTO THE MAXILLARY SINUS 18 MONTHS AGO VIA THE CALDWELL-LUC PROCEDURE
OP.126	BULLYING EXPOSURE AND EMOTIONAL DISTRESS AMONG UNDERGRADUATE DENTISTRY STUDENTS IN TÜRKIYE: A MULTICENTER CROSS-SECTIONAL STUDY
OP.127	PROSTHETIC REHABILITATION WITH OBTURATORS IN AN ANTERIOR MAXILLECTOMY PATIENT WITH MUCOSAL MALIGNANT MELANOMA: A CASE REPORT
OP.128	PIEZOSURGEY IN ORTHOGNATIC SURGERY
OP.129	APPLICATION OF BIOREGENERATIVE AUTOLOGOUS BLOOD DERIVATIVES (PRF) IN THE TREATMENT OF PERI-IMPLANTITIS
OP.130	RESTRICTION OF MOUTH OPENING: ETIOLOGY – MANAGEMENT – PRESENTATION OF CLINICAL CASES
OP.131	EFFECT OF OZONE THERAPY ON ANALGESIC CONSUMPTION AFTER THIRD MOLAR SURGERY
OP.132	ORTHOGNATHIC SURGERY COMBINED WITH CLEAR ALIGNERS: A DIGITALLY PLANNED CASE REPORT OF AN EXTREME SKELETAL ASYMMETRY
OP.133	MANAGEMENT OF AN EXTENSIVE MANDIBULAR RADICULAR CYST IN A PEDIATRIC PATIENT VIA TWO-STAGE SURGICAL APPROACH: A CASE REPORT WITH 6-MONTH FOLLOW-UP
OP.134	VAGUS NERVE PARAGANGLIOMA: A CASE REPORT
OP.135	MASTICATORY MUSCLE TENDON-APONEUROSIS HYPERPLASIA SYNDROME: A CASE REPORT
OP.136	INTRA-ARTICULAR TRISMUS DUE TO A 40-YEAR UNREDUCED MANDIBULAR CONDYLAR FRACTURE: A CASE REPORT
OP.137	LINGUAL FRENECTOMY FOR FUNCTIONAL TONGUE RESTRICTION IN A PATIENT WITH FAMILIAL MEDITERRANEAN FEVER: A CASE REPORT
OP.138	TECHNIQUES FOR THE SURGICAL EXPOSURE OF IMPACTED MAXILLARY CANINES: A LITERATURE REVIEW AND CASE REPORTS
OP.139	DIFFICULT CASE, PRECISE SOLUTIONS: PROSTHETIC RETREATMENT OF POSTERIOR MAXILLARY DEFECT AFTER SOFT PALATE AND OROPHARYNX RESECTION
OP.140	BENIGN ORAL SOFT TISSUE LESSIONS:SURGICAL MANAGEMENT, ANATOMICAL CONSIDERATIONS AND BIOPSY SELECTION
OP.141	ENHANCING POSTOPERATIVE RECOVERY IN ORAL SURGERY: THE ROLE OF PLATELET-RICH FIBRIN (PRF)
OP.142	REGENERATIVE TECHNIQUES IN MAXILLOFACIAL SURGERY: AN EVIDENCE-BASED COMPARISON OF PRF,PRP, GUIDED BONE REGENERATION AND STEM CELL THERAPIES
OP.143	THE ROLE OF PLATEREL-RICH FIBRINS AND REGENERATIVE TECHNIQUES IN IMPLANT STABILITY
OP.144	THE EVIDENCE LEVEL OF SUBSTANTIATION FOR PREVENTIVE INTERVENTIONS IN MRONJ: A LITERATURE REVIEW
OP.145	INFERIOR ALVEOLAR NERVE LATERALIZATION AND TRANSPOSITION FOR IMPLANT REHABILITATION IN ATROPHIC MANDIBLES: A LONG-TERM CASE SERIES
OP.146	UNDERSTANDING THE DIFFERENCES BETWEEN JAW OSTEONECROSIS TYPES – MEDICATION-RELATED, OSTEORADIONECROSIS AND AVASCULAR OSTEONECROSIS OF THE JAW.
OP.148	ARTIFICIAL INTELLIGENCE IN PERIODONTOLOGY: CURRENT APPLICATIONS AND FUTURE PERSPECTIVES
OP.149	SMOKING AND PERIODONTAL HEALTH
OP.150	PERSPECTIVE ON THE USE OF ARTIFICIAL INTELLIGENCE IN PERIODONTOLOGY
OP.151	PREPROSTHETIC SURGERY AROUND DENTAL IMPLANTS USING THE EDLAN–MEJCHAR TECHNIQUE: A CASE REPORT
OP.152	THE ROLE OF IL-18 AND RELATED MEDIATORS IN PERIODONTAL HEALTH AND DISEASE
OP.153	NEUTROPHIL FUNCTION MARKERS IN GINGIVALLY HEALTHY INDIVIDUALS AND PERIODONTITIS

NUMBER	TITLE
OP.154	EFFECTS OF DIFFERENT TOOTHPASTES ON CLINICAL PERIODONTAL PARAMETERS AND ORAL HEALTH–RELATED QUALITY OF LIFE IN INDIVIDUALS WITH GINGIVITIS: A RANDOMIZED CONTROLLED TRIAL
OP.155	GINGIVAL UNIT GRAFT FOR LOCALIZED MANDIBULAR INCISOR RECESSION ASSOCIATED WITH HIGH FRENULUM ATTACHMENT: A CASE REPORT
OP.156	IN VITRO EVALUATION OF THYMOQUINONE AND MELATONIN ON HUMAN ORAL FIBROBLAST CELL VIABILITY
OP.157	A COMPARATIVE EVALUATION OF THE ANSWERING PERFORMANCE OF DIFFERENT ARTIFICIAL INTELLIGENCE CHATBOTS ON PERIODONTOLOGY QUESTIONS IN THE DENTAL SPECIALTY EXAMINATION: A CROSS-SECTIONAL STUDY
OP.158	KNOWLEDGE, ATTITUDES, AND CLINICAL PRACTICES OF CARDIOVASCULAR SURGEONS AND CARDIOLOGISTS REGARDING PERIODONTAL DISEASE: A CROSS-SECTIONAL SURVEY STUDY
OP.159	IMPACT OF CONVENTIONAL AND ELECTRONIC CIGARETTE SMOKING ON PERIODONTAL HEALTH A LITERATURE REVIEW
OP.160	AGE AS A CONFOUNDER IN ALVEOLAR BONE FRACTAL DIMENSION COMPARISONS ACROSS PERIODONTITIS GRADES
OP.161	IMMUNE RESPONSE IN PERIODONTITIS: WHEN DEFENSE TURNS DESTRUCTIVE
OP.162	FROM MOUTH BREATHING TO GINGIVAL HYPERPLASIA: AN INTERDISCIPLINARY CASE REPORT
OP.163	GINGIVAL OVERGROWTH ASSOCIATED WITH AMLODIPINE USE: DIFFERENT PERIODONTAL TREATMENT APPROACHES – THREE CASE REPORTS
OP.164	GUIDED BONE REGENERATION OF BUCCAL BONE WALL DEFECTS USING ACELLULAR DERMAL MATRIX: TWO CASE REPORTS
OP.165	PLAQUE-RETENTIVE CERVICAL CAVITATION AS A CAUSATIVE FACTOR IN REACTIVE GINGIVAL ENLARGEMENT: A CASE REPORT
OP.166	THE CORRELATION OF RETENTION METHOD WITH CRITICAL AND SUBCRITICAL EMERGENCE PROFILE AND BIOLOGIGAL STABILITY OF PERI-IMPLANT TISSUE
OP.167	PAPILLA-PRESERVING REGENERATIVE TREATMENT OF A VERTICAL INTRABONY DEFECT USING A PALATAL APPROACH: A CASE REPORT
OP.168	INVESTIGATION OF PAIN PERCEPTION DURING NON-SURGICAL PERIODONTAL TREATMENT IN SMOKERS INDIVIDUALS
OP.169	A RARE CASE: LATERAL PERIODONTAL CYST
OP.170	THREE-DIMENSIONAL DEVIATION ANALYSIS OF PASSIVE FIT IN PMMA SPLINTS FABRICATED FROM FOUR INTRAORAL SCANNERS
OP.171	MANAGEMENT OF AN OROANTRAL FISTULA FOLLOWING DENTAL IMPLANT FAILURE IN A SINUS-AUGMENTED POSTERIOR MAXILLA: A CASE REPORT
OP.172	EVALUATION OF DENTAL STUDENTS' PERCEPTIONS OF MALE AND FEMALE FACULTY MEMBERS
OP.173	COMBINED APPLICATION OF MODIFIED TUNNEL TECHNIQUE AND PALATAL CONNECTIVE TISSUE GRAFT FOR THE TREATMENT OF CAIRO RT1 RECESSIONS: A CASE REPORT
OP.174	SAĞLIKLI VE PERIODONTITIS HASTALARININ DIŞ ETI ÇATLAK SIVILARINDA IL-37-KASPAZ-
OP.175	THE EFFECT OF CASE-BASED PRE-PROSTHETIC PERIODONTAL EDUCATION ON DENTAL STUDENTS' CLINICAL DECISION-MAKING
OP.176	COUNTRY-BASED DISTRIBUTION OF PUBLICATIONS IN HIGH-IMPACT PERIODONTOLOGY JOURNALS – 5-YEAR ANALYSIS
OP.177	ANTRUM LIFTING TECHNIQUES IN IMPLANTOLOGY
OP.178	PRECISION AND RELIABILITY OF THE OT EQUATOR SYSTEM IN COMPLEX IMPLANT - PROSTHETIC REHABILITATION – A CASE REPORT
OP.179	USE OF RESORBABLE MAGNESIUM MEMBRANE FOR SOCKET AUGMENTATION IN THREE DIFFERENT EXTRACTION SITES WITHIN THE SAME PATIENT: A CASE REPORT
OP.180	STAGED LATERAL SINUS AUGMENTATION AND GUIDED BONE REGENERATION FOR IMPLANT REHABILITATION IN THE POSTERIOR MAXILLA: A CASE REPORT
OP.181	GUIDED IMPLANT SURGERY, THE MOST SECURE AND ACCURATE PROCEDURE (CLINICAL CASES)
OP.182	Implant-Retained Complete Dentures – When a Fixed Solution Is Not Feasible
OP.183	Digital Maxillary Rehabilitation Using the All-on-4 Concept with FP1 Prosthetic Design: A Case Report

NUMBER	TITLE
OP.184	DIGITAL PROTOCOLS IN CONTEMPORARY IMPLANTOLOGY: THE VALUE OF OPEN-SOURCE SOFTWARE
OP.185	FULL-MOUTH REHABILITATION IN A PERIODONTALLY COMPROMISED PATIENT: MULTIDISCIPLINARY MANAGEMENT OF A CLINICAL CASE
OP.186	SIMULTANEOUS RETRIEVAL OF A ROOT DISPLACED INTO THE MAXILLARY SINUS WITH GRAFTLESS EXTERNAL SINUS ELEVATION AND IMPLANT PLACEMENT
OP.187	BIOMECHANICAL EFFECT OF PROSTHETIC SCREW ON SUBCRESTAL MORSE TAPER IMPLANT CONNECTIONS: A FINITE ELEMENT ANALYSIS
OP.188	FULL-ARCH REHABILITATION WITH MULTI-UNIT ABUTMENT-SUPPORTED IMPLANT PROSTHESES: A TWO-CASE REPORTS
OP.189	CLINICAL RELIABILITY OF IMPLANT-SUPPORTED MONOLITHIC ZIRCONIA FULL-ARCH PROSTHESES: EVIDENCE FROM A SYSTEMATIC REVIEW AND META-ANALYSIS
OP.190	FULL-MOUTH REHABILITATION IN ADVANCED PERIODONTITIS : TEETH AND IMPLANT - SUPPORTED RESTORATIONS
OP.191	DENTAL IMPLANTS VERSUS ENDODONTICALLY TREATED TEETH: A CLINICAL DILEMMA
OP.192	FACTORS INFLUENCING LONG-TERM SUCCESS OF DENTAL IMPLANTS: BONE QUALITY, PLACEMENT ACCURACY, AND STABILITY ASSESSMENT
OP.193	CURRENT PERSPECTIVES ON THE REVERSE SCAN BODY PROTOCOL FOR DIGITAL IMPRESSIONS IN IMPLANT DENTISTRY: A COMPREHENSIVE REVIEW
OP.194	EVALUATION OF THE MICROTENSILE BOND STRENGTH OF HIGHLY FILLED FLOWABLE COMPOSITES TO SOUND AND CARIES-AFFECTED DENTIN SURFACES
OP.195	INVESTIGATION OF STRESSES TRANSMITTED TO THE DENTOALVEOLAR COMPLEX BY HYBRID AND CONVENTIONAL MOUTHGUARDS IN COMBAT SPORTS–RELATED TRAUMA USING FINITE ELEMENT STRESS ANALYSIS
OP.196	DIGITAL DENTAL PROSTHETIC TREATMENT OF TEMPOROMANDIBULAR JOINT DISK DISPLACEMENT WITH REDUCTION
OP.197	EFFECT OF TWO DIFFERENT MOUTH RINSES ON THE COLOR STABILITY OF PROVISIONAL
OP.198	DIGITAL INTEREST IN ESTHETIC DENTISTRY: TIME SERIES AND FORECASTING ANALYSIS USING GOOGLE TRENDS
OP.199	EVALUATION OF SMILE ESTHETICS BY ARTIFICIAL INTELLIGENCE CHATBOTS: A COMPARATIVE STUDY WITH HUMAN EXPERT SCORES
OP.200	COMPARATIVE EVALUATION OF CHATBOT PERFORMANCE IN PROSTHODONTIC EDUCATION USING TYPE 1 AND TYPE 2 QUESTIONS
OP.201	INFLUENCE OF PRINTING ORIENTATION AND POST-CURING TIME ON FLEXURAL STRENGTH AND VICKERS HARDNESS OF A 3D-PRINTED TEMPORARY CROWN RESIN: AN IN VITRO STUDY
OP.202	VERTICAL DIMENSION INCREASE IN FULL MOUTH REHABILITATION: A CASE SERIES
OP.203	EVALUATION OF THE QUALITY OF LIFE IN PATIENTS WITH CONVENTIONAL AND IMMEDIATE DENTURES
OP.204	GLOBAL RESEARCH TRENDS OF ADDITIVELY MANUFACTURED ZIRCONIA IN PROSTHODONTICS: A BIBLIOMETRIC ANALYSIS
OP.205	IMMEDIATE LOADING IN FULL-ARCH REHABILITATION: CLINICAL AND BIOMECHANICAL EVALUATION OF AN ALL-ON-SIX CASE
OP.206	EFFECTIVE FACTORS IN DENTAL ANXIETY MANAGEMENT: CLINICAL EXPERIENCE, PROFESSIONAL STATUS, OR SELF-EFFICACY?
OP.207	REMOVABLE PARTIAL DENTURES USING PRECISION ATTACHMENTS WITH DIFFERENT RETENTION CHARACTERISTICS: A CASE SERIES
OP.208	CLINICAL EFFECTIVENESS OF TRI RAPTOR ATTACHMENT SYSTEM IN NON-SPLINTED IMPLANT-SUPPORTED OVERDENTURES WITH INTER-IMPLANT ANGULATION DISCREPANCIES: TWO CASE REPORTS
OP.209	PROSTHETIC REHABILITATION OF A PATIENT WITH TOOTH WEAR USING A MULTIDISCIPLINARY APPROACH: A CASE REPORT
OP.210	NEUTRAL ZONE IN COMPLETE DENTURES: A NARRATIVE REVIEW WITH CASE REPORT
OP.211	MANAGING DENTURE-ASSOCIATED POST-COVID-19 CANDIDIASIS AND MUCORMYCOSIS THROUGH COMBINED PROSTHODONTIC AND INFECTIOUS DISEASE CARE: A NARRATIVE REVIEW
OP.212	RECONSTRUCTION OF MALOCCLUSION AND JAW DEFORMITIES – CASE REPORT
OP.213	COMPARATIVE ANALYSIS OF INTRAORAL DIGITAL SCANS AND EXTRAORAL SCANS DERIVED FROM CONVENTIONAL IMPRESSION TECHNIQUES

NUMBER	TITLE
OP.214	MARGINAL GAP AND FRACTURE RESISTANCE OF METAL-CERAMIC AND ZIRCONIA CROWNS FABRICATED BY ADDITIVE AND SUBTRACTIVE MANUFACTURING TECHNIQUES
OP.215	COMPARISON OF OPTICAL PROPERTIES OF DENTAL ZIRCONIA WITH VARYING YTTRIA CONTENTS
OP.216	EFFECT OF DIFFERENT SURFACE TREATMENTS AND THERMAL AGING ON FLEXURAL STRENGTH OF DENTURE BASE MATERIALS FABRICATED WITH CONVENTIONAL METHOD AND 3D-PRINTER AFTER REPAIR PROCESS
OP.217	THE EFFECT OF MODEL BASE THICKNESS AND BUILD ORIENTATION ON THE DIMENSIONAL STABILITY OF 3D-PRINTED DENTAL MODELS
OP.218	SINGLE-UNIT PERMANENT RESTORATIONS FABRICATED WITH 3D TECHNOLOGY AND THE DEVELOPMENT OF 3D PERMANENT CROWNS
OP.219	SAME-DAY DUPLICATION OF A FRACTURED MAXILLARY COMPLETE DENTURE USING A FULLY DIGITAL WORKFLOW: A CASE REPORT
OP.220	IMPLANT SUPPORTED REHABILITATION OF A SINGLE MAXILLARY CENTRAL INCISOR WITH STAGED SOFT TISSUE CONDITIONING: A CASE REPORT
OP.221	MAXIMUM INTERCUSPİDATION WITH OCCLUSAL LAMINATE PROSTHESIS
OP.222	A PREDICTABLE DIGITAL WORKFLOW FOR DIASTEMA CLOSURE USING LAMINATE VENEERS: A 3-YEAR CLINICAL FOLLOW-UP KALBEN SASMAZ1, MELEK OZDEMIR1, ISIL KECİK BUYUKHATIPOGLU1
OP.223	COMPARATIVE EVALUATION OF SURFACE ROUGHNESS AND MICROHARDNESS OF VARIOUS PROSTHETIC MATERIALS FABRICATED USING MILLING AND PRINTING
OP.224	THE EFFECT OF DIFFERENT STARTING POINTS AND SIZE OF THE SCANNING AREA ON THE INTERNAL FIT OF MAXILLARY CENTRAL INCISOR CROWN RESTORATIONS: AN IN-VITRO STUDY
OP.225	EVALUATION OF CERAMIC VENEERS ON ENDODONTICALLY TREATED TEETH
OP.226	PRECISE TRANSFER OF PERI-IMPLANT SOFT TISSUE CONTOURS USING CUSTOMIZED IMPRESSION COPINGS: A CASE SERIES
OP.227	INFLUENCE OF STAINING BEVERAGES ON COLOR STABILITY OF CAD/CAM PMMA DENTURE TEETH
OP.229	CLINICAL AND RADIOGRAPHIC OUTCOMES OF FULL PULPOTOMY IN IMMATURE PERMANENT MOLARS WITH REVERSIBLE PULPITIS: A 24-MONTH CASE SERIES
OP.230	RETROSPECTIVE EVALUATION OF STAINLESS STEEL CROWNS IN PRIMARY MOLARS
OP.231	BIBLIOMETRIC ANALYSIS OF DENTAL ANXIETY IN TURKISH PEDIATRIC DENTISTRY POSTGRADUATE THESES OVER THE LAST TEN YEARS
OP.232	BIOACTIVE COMPOSITE RESIN DISCOLORATION INDUCED BY PEDIATRIC OVER THE COUNTER SUPPLEMENTS: AN IN VITRO STUDY ESRA ÖZGÖÇMEN TULA1, YAKUP DOĞRU1
OP.234	MOLAR–INCISOR HYPOMINERALIZATION (MIH) SYNDROM: EVALUATION OF KNOWLEDGE, DIAGNOSTIC AWARENESS AND CLINICAL APPROACH AMONG DENTISTS
OP.235	TRAUMATIC INJURIES OF PRIMARY TEETH: DIAGNOSTIC APPROACH AND THERAPEUTIC OPTIONS
OP.236	COMPARISON OF ORAL AND DENTAL HEALTH STATUS IN CHILDREN WITH AUTISM SPECTRUM DISORDER AND HEALTHY CONTROLS
OP.237	EVALUATION OF GUIDELINE CONSISTENCY OF AN ARTIFICIAL INTELLIGENCE MODEL IN PEDIATRIC DENTAL TRAUMA SCENARIOS
OP.238	COMPARATIVE ANALYSIS OF TRANSLUCENCY IN PEDIATRIC ANTERIOR ESTHETIC CROWNS AYBIKE BAS OZTURK1
OP.239	CLINICAL AND RADIOGRAPHIC OUTCOMES OF MINERAL TRIOXIDE AGGREGATE PULPOTOMY IN A SYMPTOMATIC IMMATURE PERMANENT MOLAR
OP.240	ENDODONTIC TREATMENT OF A PERSISTENT PRIMARY MOLAR WITH A PERIAPICAL LESION USING MTA: A CASE REPORT
OP.241	EVALUATION OF ACCURACY AND INTRA-/INTER-MODEL CONSISTENCY OF AI MODELS COMPARED TO TURKISH DENTAL PROFESSIONALS IN PEDIATRIC DENTAL QUESTIONS
OP.242	DENTAL STUDENTS' KNOWLEDGE, ATTITUDES, AND CLINICAL PRACTICE REGARDING TOOTH AVULSION MANAGEMENT: A CROSS-SECTIONAL SURVEY
OP.243	EVALUATION OF DENTAL STUDENTS' KNOWLEDGE, ATTITUDES, AND PERCEPTION LEVELS TOWARD GENERAL ANESTHESIA IN PEDIATRIC DENTISTRY
OP.244	BARRIERS, ATTITUDES, AND EDUCATIONAL NEEDS REGARDING CHILD ABUSE MANAGEMENT AMONG DENTAL STUDENTS

NUMBER	TITLE
OP.245	DEEP LEARNING–BASED AUTOMATED DENTAL AGE ESTIMATION FROM PANORAMIC RADIOGRAPHS: A PILOT STUDY
OP.246	RISK FACTORS AND INTRAORAL FINDINGS IN CHILDREN WITH MOLAR-INCISOR HYPOMINERALIZATION: AN ANALYSIS ACCORDING TO MIH SEVERITY
OP.247	EVALUATION OF THE EFFECTS OF DIFFERENT AGENTS USED IN SENSITIVITY TREATMENT ON DENTIN TISSUE
OP.248	EVALUATION OF THE CARIES DETECTION METHODS
OP.249	NATAL TEETH IN NEONATES: DIAGNOSIS, RISKS AND TREATMENT APPROACHES
OP.250	THE IMPACT OF MOLAR-INCISOR-HYPOMINERALIZATION ON CHILDREN'S ORAL HEALTH – RELATED QUALITY OF LIFE: AN ASSESSMENT USING THE PEDIATRIC ORAL HEALTH– RELATED QUALITY OF LIFE SCALE
OP.251	MILD SEDATION IN PAEDIATRIC DENTISTRY: KNOWLEDGE, ATTITUDES AND PRACTICES IN THE WESTERN BALKANS
OP.252	DIGITAL PARENTING, MEDIA USE, AND CHILDREN'S ORAL HEALTH: IMPLICATIONS FOR PEDIATRIC DENTISTRY IN THE DIGITAL ERA
OP.253	PREVALENCE AND PATTERNS OF CONGENITAL TOOTH AGENESIS IN CHILDREN: A MIXED-METHOD STUDY ON PARENTAL AWARENESS
OP.254	THE ROLE OF ANXIETY IN CHOOSING PEDIATRIC DENTISTRY AS A SPECIALTY: ACADEMIC AND PSYCHOLOGICAL DETERMINANTS AMONG FINAL - YEAR DENTAL STUDENTS - A CROSS - SECTIONAL STUDY
OP.256	ASSESSMENT OF DENTAL FEAR AND ASSOCIATED FACTORS IN CHILDREN ATTENDING A PEDIATRIC DENTISTRY CLINIC
OP.257	PRE ERUPTIVE INTRACORONAL RESORPTION IN THREE PAEDIATRIC CASES: CLINICAL AND RADIOGRAPHIC FINDINGS AND TREAMENT
OP.258	SILVER DIAMINE FLUORIDE IN PEDIATRIC DENTISTRY OVER THE LAST DECADE: A BIBLIOMETRIC ANALYSIS

POSTER PRESENTATIONS

NUMBER	TITLE
PP.004	RADIOGRAPHIC HEALING AFTER APICAL RESECTION WITH RETROGRADE MTA FILLING: A CASE REPORT
PP.005	TREATMENT OF INTERNAL AND EXTERNAL ROOT RESORPTION: TWO CASE REPORTS
PP.006	ENDODONTIC MANAGEMENT OF TRAUMATIC DENTAL INJURIES: A CASE SERIES
PP.007	ENDODONTIC TREATMENT OF 2-CANALLED CANINES: A CASE REPORT
PP.008	TREATMENT OF MID-MESIAL CANALS IN MANDIBULAR MOLARS
PP.009	THERMAL MODULATION OF SODIUM HYPOCHLORITE ALTERS TORSIONAL LOAD IN RECIPROCATING ENDODONTIC INSTRUMENTATION: A BIOMECHANICAL ANALYSIS ZEYNEP BUKET DAĞ1, EDA EZGİ ASLANTAŞ1
PP.010	CHALLENGING ENDODONTIC MANAGEMENT OF A MANDIBULAR PREMOLAR WITH COMPLEX TYPE V ROOT CANAL MORPHOLOGY UNDER MICROSCOPE AND CONE BEAM COMPUTED TOMOGRAPHY GUIDANCE
PP.011	NON-SURGICAL ENDODONTIC MANAGEMENT OF MANDIBULAR ODONTOGENIC CUTANEOUS FISTULAS MIMICKING DERMATOLOGICAL LESIONS: TWO CASE REPORTS SAADET ELPE1, ÖZNUR SARIYILMAZ1, EVREN SARIYILMAZ1
PP.012	COMPLETE CANAL OBTURATION WITH BIODENTINE IN A NECROTIC IMMATURE MAXILLARY LATERAL INCISOR: A CASE REPORT
PP.013	ORTHOGRADE ENDODONTIC MANAGEMENT OF TRAUMA-INDUCED EXTERNAL ROOT RESORPTION WITH EXTENSIVE PERIAPICAL LESION: A CASE REPORT
PP.014	MANAGEMENT OF INTERNAL ROOT RESORPTION AND CHRONIC APICAL PERIODONTITIS: A CLINICAL CASE REPORT
PP.015	ENDODONTIC AND SURGICAL MANAGEMENT OF AN EXTENSIVE PERIAPICAL LESION WITH PALATAL CORTICAL INVOLVEMENT IN A YOUNG PATIENT
PP.016	SUCCESSFUL MANAGEMENT OF AN IMMATURE PERMANENT NECROTIC TOOTH BY A REGENERATIVE ENDODONTIC APPROACH
PP.017	MANAGEMENT OF BROKEN INSTRUMENTS AND ENDODONTIC RETREATMENT USING A DENTAL OPERATING MICROSCOPE: A CASE REPORT
PP.018	COMPLETE MTA OBTURATION AS A MANAGEMENT APPROACH FOR IMMATURE TEETH WITH OPEN APEX: A CASE SERIES
PP.019	RETRIEVAL OF ROTARY ENDODONTIC FILE SEPARATED IN MAXILLAR INCISOR
PP.020	REMOVAL OF ROTARY INSTRUMENT SEPARATED IN SECOND LOWER MOLAR
PP.021	MANAGEMENT OF FOUR SEPARATED INSTRUMENTS USING A MULTIMODAL RETRIEVAL STRATEGY: A CASE REPORT
PP.022	MANAGEMENT OF AN IATROGENIC FURCATION PERFORATION: A CASE REPORT
PP.023	ANATOMICAL VARIATIONS OF MAXILLARY MOLARS AND ENDODONTIC FAILURES
PP.024	CLINICAL AND RADIOGRAPHIC OUTCOMES OF REGENERATIVE ENDODONTIC TREATMENT IN A PRIMARY MOLAR: A 24-MONTH FOLLOW-UP CASE REPORT
PP.025	MTA APEXIFICATION AND INTERIM ROCHETTE BRIDGE IN AN IMMATURE TOOTH WITH OPEN APEX: A CASE REPORT MERYEM ÇOBAN SEZER1
PP.026	ENDODONTIC MANAGEMENT OF A MANDIBULAR FIRST MOLAR WITH RADIX ANTEMOLARIS AND FIVE ROOT CANALS IN A PEDIATRIC PATIENT: A CASE REPORT
PP.027	MANAGEMENT OF MULTIPLE DENTAL TRAUMA INVOLVING AVULSION, INTRUSION, AND ALVEOLAR FRACTURE IN A ADOLESCENT PATIENT: A CASE REPORT
PP.028	USE OF ANTIMICROBIALS AS AN ADJUNCT IN THE MANAGEMENT OF ENDODONTIC INFECTIONS: A LITERATURE REVIEW.
PP.029	REMOVAL OF A FRACTURED INSTRUMENT FROM THE ROOT CANAL USING THE LOOP TECHNIQUE: A CASE REPORT
PP.031	MANAGEMENT OF A MAXILLARY CENTRAL INCISOR WITH ROOT CANAL OVERFILLING AND CERVICAL PERFORATION USING A COMBINED ENDODONTIC-SURGICAL APPROACH: A CASE REPORT
PP.032	REGENERATIVE RETREATMENT OF PREVIOUSLY ROOT CANAL–TREATED MAXILLARY INCISORS WITH OPEN APEX AND LARGE PERIAPICAL LESIONS USING T-PRF: A 1-YEAR FOLLOW-UP
PP.033	ENDODONTIC TREATMENT OF MANDIBULAR PREMOLARS WITH EXTERNAL ROOT RESORPTION: A CASE REPORT
PP.034	MULTIDISCIPLINARY APPROACH TO THE TREATMENT OF ACUTE APICAL ABSCESS: A CASE REPORT

NUMBER	TITLE
PP.035	EVALUATION OF APICAL MICROLEAKAGE OF BIOCERAMIC AND RESIN-BASED ENDODONTIC SEALERS
PP.036	DENTAL TISSUE REGENERATION: STRATEGIES, LIMITS AND PROSPECTS OF MODERN REGENERATIVE DENTISTRY. AN UMBRELLA REVIEW.
PP.037	SUCCESSFUL ENDODONTIC TREATMENT OF THE MANDIBULAR RIGHT SECOND MOLAR USING THE “BY-PASS” TECHNIQUE IN THE MESIOLINGUAL CANAL
PP.038	ENDODONTIC TREATMENT OF A C-SHAPED MANDIBULAR SECOND MOLAR
PP.039	SUCCESSFUL MANAGEMENT OF INTERNAL ROOT RESORPTION
PP.040	MANAGEMENT OF ENDODONTIC FILE SEPARATED IN UPPER PREMOLAR
PP.041	REMOVAL OF FRACTURED CAST METAL POST AND RETREATMENT OF MAXILLARY CANINE
PP.042	NONSURGICAL MANAGEMENT OF A PERIAPICAL LESION USING CALCIUM HYDROXIDE INTRACANAL MEDICATION: A CASE REPORT
PP.043	TOOTH PRESERVATION BY APICAL SURGERY IN A MANDIBULAR FIRST MOLAR WITH PERSISTENT PERIAPICAL PATHOLOGY AFTER TWO FAILED RETREATMENTS: A CASE REPORT
PP.044	CLINICAL EFFICACY OF MINERAL TRIOXIDE AGGREGATE AND PUTTY CALCIUM SILICATE MATERIALS IN PRIMARY MOLAR PULPOTOMY: A LITERATURE REVIEW
PP.045	REMOVAL OF A SEPARATED ROTARY INSTRUMENT USING THE XP-ENDO FINISHER: A CASE REPORT
PP.046	NON-SURGICAL RETREATMENT OF UPPER SECOND PREMOLAR AFTER METAL POST REMOVAL
PP.047	TOOTH DISCOLORATION ASSOCIATED WITH ENDODONTIC MATERIALS: MECHANISMS AND PREVENTION
PP.048	FULL MOUTH REHABILITATION OF A PATIENT WITH AMELOGENESIS IMPERFECTA AND DISTAL TUBULAR ACIDOSIS WITH MONOLITHIC ZIRCONIA CROWNS: A CASE REPORT
PP.049	MINIMALLY INVASIVE MANAGEMENT OF A SINGLE ANTERIOR DISCOLORED NON-VITAL TOOTH: A LITERATURE REVIEW
PP.050	USE OF CARIES DETECTION DYES: BENEFITS AND LIMITATIONS
PP.051	ESTHETIC TRANSFORMATION OF CANINES INTO LATERAL INCISORS USING CERAMIC LAMINATE VENEERS
PP.052	THE CURIOUS CASE OF COLOR-CHANGING CEMENTS: CAN A RESTORATION PREDICT ITS OWN FAILURE
PP.053	FACTORS AFFECTING BOND STRENGTH TO DENTIN
PP.054	ESTHETIC MANAGEMENT OF PEG-SHAPED MAXILLARY LATERAL INCISORS WITH PORCELAIN LAMINATE VENEERS: A 5-YEAR FOLLOW-UP
PP.055	QUALITY ASSESSMENT OF DIGITAL PLATFORMS REGARDING CONTENT ON PORCELAIN LAMINATE VENEERS
PP.056	MINIMALLY INVASIVE ANTERIOR VENEERS FOR AESTHETIC REHABILITATION
PP.057	CLINICAL PERFORMANCE OF PARTIAL AND FULL COVERAGE RESTORATIONS IN SINGLE ANTERIOR TEETH: A LITERATURE REVIEW
PP.058	ESTHETIC REHABILITATION OF DENTAL TRAUMATIC INJURY IN FRONTAL REGION WITH ZIRCONIA CROWN
PP.059	A SCOPING REVIEW OF ARTIFICIAL INTELLIGENCE VERSUS CONVENTIONAL COMPUTER-AIDED DESIGN FOR SINGLE CROWN FABRICATION
PP.060	BIOLOGICAL WIDTH AND ITS IMPORTANCE IN RESTORATIVE DENTISTRY
PP.061	MANAGING WHITE SPOT LESIONS IN THE ERA OF MINIMALLY INVASIVE DENTISTRY
PP.063	POST REMOVAL WITHIN THE PROSTHETIC RESTORATION: CLINICAL FEASIBILITY OR LACK OF EVIDENCE?
PP.064	VITAL PULP PRESERVATION IN DEEP CARIES: DECISION-MAKING AND BIOACTIVE MATERIALS
PP.065	BONDING STRATEGIES FOR INDIRECT ADHESIVE RESTORATIONS: PREHEATED COMPOSITE VERSUS FLOWABLE COMPOSITE AND RESIN LUTING CEMENTS
PP.066	ANALYSIS OF THE QUALITY OF POLYMERIZATION AND MICROHARDNESS OF BULK-FILL COMPOSITE MATERIALS
PP.067	REHABILITATION OF CERVICAL CARIES CAUSED BY EROSIVE EFFECTS AND INADEQUATE ORAL HYGIENE WITH DIRECT COMPOSITE RESIN: A CASE REPORT

NUMBER	TITLE
PP.068	DIRECT COMPOSITE RESIN RESTORATION IN THE TREATMENT OF ANTERIOR POLYDIASTEMA: A CASE REPORT
PP.069	DIRECT COMPOSITE RESIN RESTORATION OF PEG-SHAPED LATERAL INCISORS ASSOCIATED WITH DIASTEMAS: A CASE REPORT
PP.070	ENDODONTIC AND RESTORATIVE TREATMENT OF A MOLARIZED MAXILLARY FIRST PREMOLAR
PP.071	EVALUATION OF DIFFERENT ARTIFICIAL INTELLIGENCE APPLICATIONS IN ANSWERING TECHNICAL QUESTIONS RELATED OF DENTAL AVULSION
PP.072	DIASTEMA CLOSURE WITH LITHIUM DISILICATE LAMINATE VENEERS IN A YOUNG PATIENT
PP.073	DIRECT AND INDIRECT RESTORATIVE STRATEGIES FOR MODERATE TO SEVERE TOOTH WEAR: A SYSTEMATIC REVIEW
PP.074	COMPARATIVE EFFECTS OF PEROXIDE-FREE AND PEROXIDE-BASED TOOTH WHITENING AGENTS ON ENAMEL COLOR AND SURFACE CHARACTERISTICS – LITERATURE REVIEW
PP.075	THREE-DIMENSIONAL MICRO-CT EVALUATION OF ER,CR:YSGG LASER IN FIBER POST RETRIEVAL
PP.076	TREATMENT OF DEEP BROWN MIH OPACITIES ON MAXILLARY CENTRAL INCISORS USING A MODIFIED RESIN INFILTRATION APPROACH: A CASE REPORT
PP.077	CONSERVATIVE MANAGEMENT OF AN INFRA-OCCLUDED PRIMARY MOLAR USING A POSTERIOR STRIP CROWN: A CASE REPORT
PP.078	DENTIN HYPERSENSITIVITY: A CLINICAL CHALLENGE WITH EVOLVING SOLUTIONS
PP.079	INTERDISCIPLINARY MANAGEMENT OF PEG-SHAPED LATERAL MAXILLARY INCISORS: A RESTORATIVE-ORTHODONTIC APPROACH
PP.080	CARIES DENTAL MANAGEMENT OF A PATIENT WITH AMELOGENESIS IMPEFECTA - A CASE REPORT
PP.081	INTRAORAL SCANNERS USE FOR THE QUANTITATIVE ASSESSMENT OF TOOTH WEAR
PP.082	WHITE SPOT LESIONS ASSOCIATED WITH FIXED ORTHODONTIC TREATMENT: ETIOLOGY, PREVENTION AND CONTEMPORARY MANAGEMENT STRATEGIES
PP.083	THE AESTHETIC MANAGEMENT OF DIASTEMA CLOSURE TREATMENT WITH LITHIUM DISILICATE REINFORCED EMPRESS LAMINATE VENEER: CASE REPORT
PP.084	THE RELATIONSHIP BETWEEN TOOTH WHITENING-RELATED INTERNET SEARCH TRENDS AND SOCIOECONOMIC INDICATORS IN TÜRKİYE: A GOOGLE TRENDS ANALYSIS
PP.085	THE EFFECT OF LAYER THICKNESS ON MARGINAL ACCURACY OF THREE-DIMENSIONALLY PRINTED LAMINATE VENEERS DESIGNED WITH COMPUTER-AIDED DESIGN SOFTWARE
PP.086	HISTOLOGICAL ANALYSIS OF NOVEL DENTAL CEMENTS' LONG-TERM EFFECT ON RAT KIDNEY TISSUE
PP.087	LIMITATIONS OF STATIC BIOCOMPATIBILITY TESTING FOR ALLERGOLOGICAL RISK IN TEMPORARY IMPLANT-SUPPORTED POLYMER MATERIALS
PP.088	METAL-BAR REINFORCEMENT OF LONG-SPAN ZIRCONIA FRAMEWORKS
PP.089	EVALUATION OF COLOR CHANGES IN CAD/CAM FABRICATED POLYOXYMETHYLENE
PP.090	COMPARATIVE ANALYSIS OF THE WEAR RESISTANCE OF CROWNTEC AT DIFFERENT PRINTING ANGLES
PP.091	NEW SILANE CONTAINING UNIVERSAL ADHESIVES: SILOXANE FORMATION RATE, HYDROPHOBICITY AND BOND STRENGTH WITH AN ETCHED LITHIUM DISILICATE CERAMIC
PP.092	COMPARATIVE EVALUATION OF TITANIUM ALLOY SURFACE TREATMENT
PP.093	A COMPREHENSIVE FIVE-YEAR REVIEW OF MALIGNANT SALIVARY GLAND TUMORS AT A SPECIALIZED CENTER FOR THE MANAGEMENT OF ORAL CANCER AND ORAL & MAXILLOFACIAL SURGERY
PP.094	RETROSPECTIVE ANALYSIS OF INOPERABLE ORAL CAVITY SQUAMOUS CELL CARCINOMA: A FIVE-YEAR STUDY AT THE SPECIAL CANCER TREATMENT CENTER FOR ORAL AND MAXILLOFACIAL SURGERY
PP.095	SOME SPECIFICS ABOUT OROMAXILOFACIAL MANIFESTATIONS IN HIV/AIDS INFECTION IN ALBANIA
PP.091	
PP.096	COMPARATIVE CLINICAL EVALUATION OF TERMINAL PLEXUS AND INTRALIGAMENTARY ANESTHESIA APPLICATION

NUMBER	TITLE
PP.097	NON-STANDARD TECHNIQUES OF ANESTHETIZING THE ANTERIOR SEGMENT OF THE UPPER JAW
PP.098	APPLICATION OF AUTOLOGOUS PLATELET RICH FIBRIN FOR LOCAL HEMOSTASIS AND WOUND HEALING AFTER MULTIPLE ANTERIOR MAXILLARY EXTRACTIONS IN A PATIENT RECEIVING ASPIRIN
PP.099	IMMUNOHOSTOCHEMICAL ANALYSIS OF THE LYMPHOID INFILTRATE IN ODONTOGENIC INFLAMMATORY CYSTS
PP.100	DEEP BENIGN FIBROUS HISTIOCYTOMA OF LINGUAL TISSUE- A CASE REPORT
PP.101	PROPHYLACTIC AND THERAPEUTIC INDICATIONS FOR THIRD MOLAR EXTRACTIONS AS COMPARED TO OBSERVATION AND CONSERVATIVE MANAGEMENT. A SYSTEMATIC REVIEW AND META-ANALYSIS.
PP.102	MANAGEMENT OF PATIENTS WITH MEDICATION RELATED OSTEONECROSIS OF THE JAWS: A 15 YEARS COHORT STUDY FROM A TERTIARY CENTRE.
PP.103	THERAPEUTIC POTENTIAL OF TOPICAL DOXYCYCLINE IN THE MANAGEMENT OF ORAL INFECTIONS AND MRONJ: A SYSTEMATIC REVIEW
PP.104	EXTRANODAL MARGINAL ZONE LYMPHOMA ISOLATED TO EXTRAOCULAR MUSCLES: DIAGNOSTIC CHALLENGES AND THE ROLE OF IMAGE-GUIDED NAVIGATION
PP.105	DIAGNOSTIC AND THERAPEUTIC CHALLENGES IN A PATIENT WITH OSTEOPETROSIS COMPLICATED BY RECURRENT OSTEOMYELITIS: A 10-YEAR FOLLOW-UP CASE REPORT
PP.106	COMPARATIVE CLINICAL STUDY OF BONE REMODELING AFTER MARSUPIALIZATION OF JAW CYSTS USING A WATER FLOSSER VERSUS IODOFORM GAUZE: AN INTERIM ANALYSIS
PP.107	THE CONVERGENCE OF REGENERATIVE SCIENCES: A CROSS-DISCIPLINARY APPROACH TO SKELETAL RECONSTRUCTION
PP.108	FROM RISK ASSESSMENT TO RECOVERY: MODIFIABLE FACTORS INFLUENCING MORBIDITY AFTER THIRD MOLAR EXTRACTION
PP.109	ORAL SURGICAL TREATMENT AND MANAGEMENT UPDATE FOR PROSTHETIC HEART VALVES PATIENTS
PP.110	ATRAUMATIC RESTORATIVE TREATMENT (ART) : TECHNIQUE AND INDICATIONS
PP.111	MINIMALLY INVASIVE APPROACH IN ESTHETIC DENTISTRY - A CASE REPORT
PP.111	TREATMENT OF DRUG INDUCED OSTEONECROSIS IN THE UPPER JAW- CASE REPORT.
PP.112	ARTIFICIAL INTELLIGENCE IN ORAL SURGERY: CURRENT APPLICATIONS, ACCURACY, AND FUTURE DIRECTIONS
PP.113	A SINGLE-CENTER PROSPECTIVE STUDY OF CHRONIC GRAFT-VERSUS-HOST DISEASE BIOMARKERS EVALUATION IN ALLOGENEIC HEMATOPOIETIC CELL TRANSPLANTATION RECIPIENTS: PRELIMINARY RESULTS
PP.114	MANDIBULAR REHABILITATION IN TWO IRRADIATED MANDIBULECTOMIZED PATIENTS: IMPLANT-RETAINED IN FIBULA FREE FLAPS USING GUIDED SURGER
PP.115	ODONTOGENIC ABSCESS VERSUS MAXILLOFACIAL CELLULITIS: CLINICAL DIFFERENTIATION AND CRITICAL DECISION-MAKING IN ORAL SURGERY
PP.116	MANDIBULAR FRACTURES TWENTY DAYS AFTER EXTRACTION OF DEEPLY IMPACTED THIRD MOLARS: REPORT OF TWO CASES
PP.117	PREVALENCE OF ORAL SURGICAL TREATMENT MODALITIES IN RADICULAR CYSTS AND THEIR RADIOGRAPHIC DIAMETER DISTRIBUTION
PP.118	SURGICAL SITE INFECTION RISK IN ORAL SURGERY PATIENTS ON MONOCLONAL ANTIBODY TREATMENTS: CURRENT EVIDENCE AND ANTIBIOTIC CONSIDERATIONS
PP.119	MARSUPIALIZATION AND DECOMPRESSION: METHODS OF TREATMENT OF LARGE MANDIBULAR RESIDUAL CYSTS. TWO CASE REPORTS.
PP.120	THE ROLE OF MRI IN THE PREOPERATIVE ASSESSMENT OF THE FACIAL NERVE FOR PAROTID TUMORS: A SYSTEMATIC REVIEW
PP.121	IPS IMPLANTS PREPROSTHETIC FOR REHABILITATION OF ACQUIRED MAXILLARY DEFECTS: A CASE SERIES
PP.122	CONSERVATIVE AND RESTORATIVE APPROACHES IN THE MANAGEMENT OF TRAUMATIC ANTERIOR TOOTH FRACTURES: TWO CASE REPORTS
PP.123	DELAYED ERUPTION OF UPPER FIRST PERMANENT MOLARS
PP.124	DIGITAL DENTAL IMPRESSIONS IN PEDIATRIC DENTISTRY: A LITERATURE REVIEW
PP.125	DIGITAL SURGICAL GUIDES AS A TOOL FOR IMPROVING ACCURACY AND RISK CONTROL IN IMPLANT PLACEMENT

NUMBER	TITLE
PP.125	SURGICAL MANAGEMENT OF A SUBMERGED MANDIBULAR PRIMARY SECOND MOLAR WITH DEEP CARIOUS LESIONS: A RARE CASE REPORT
PP.126	CARIES EXPERIENCE OF CHILDREN WITH CHRONIC DISEASES IN UNIVERSITY HOSPITAL CENTER “MOTHER TERESA”, TIRANA, ALBANIA
PP.127	COMPLEX MANAGEMENT OF MOLAR INCISOR HYPOMINERALISATION IN A PAEDIATRIC PATIENT: A CASE REPORT
PP.128	CORRECTION OF A SINGLE-TOOTH ANTERIOR CROSSBITE USING A COMPOSITE INCLINED PLANE: A CASE REPORT
PP.129	A CLINICAL OVERVIEW OF ENAMEL RENAL SYNDROME
PP.130	A TWO-YEAR EPIDEMIOLOGICAL ANALYSIS OF PREVENTIVE, RESTORATIVE, AND ENDODONTIC TREATMENTS IN A PEDIATRIC DENTISTRY CLINIC
PP.131	INFLUENCE OF PREHEATING ON THE WATER SORPTION AND SOLUBILITY OF FISSURE SEALANTS: A COMPARATIVE EVALUATION
PP.132	EARLY INTERCEPTIVE TREATMENT OF DEVELOPING CLASS III MALOCCLUSION USING PLANAS DIRECT TRACKS: A THREE-YEAR CASE REPORT
PP.133	SOCIODEMOGRAPHIC AND BEHAVIOURAL RISK FACTORS FOR DENTAL NEGLECT IN CHILDREN
PP.134	INTENSITY OF DENTAL CARIES AND BODY MASS INDEX IN CHILDREN WITH PERMANENT DENTITION
PP.135	A RARE CASE OF DOUBLE-DILATED ODONTOMA IN THE POSTERIOR MANDIBLE OF A CHILD
PP.136	CONSERVATIVE MANAGEMENT OF A TRAUMATIZED MAXILLARY ANTERIOR TOOTH USING CVEK PULPOTOMY AND FRAGMENT REATTACHMENT: A CASE REPORT
PP.137	THE FEASIBILITY OF MULTIDISCIPLINARY APPROUCH IN DENTAL TRAUMA TREATMENT
PP.138	MULTIDISCIPLINARY TREATMENT OF A MANDIBULAR DENTIGEROUS CYST IN A PRIMARY TOOTH: A CASE REPORT
PP.139	MANAGEMENT OF COMPLICATED CROWN FRACTURES AND EXTRUSIVE LUXATION
PP.140	MANAGEMENT OF NECROTIC PRIMARY MOLARS WITH EXTENSIVE PERIAPICAL LESIONS USING LESION STERILIZATION AND TISSUE REPAIR: TWO CASE REPORTS
PP.141	MANAGEMENT OF A SEVERE PERIRADICULAR LESION IN A TRAUMATIZED IMMATURE INCISOR: COMBINED SURGICAL–ENDODONTIC APPROACH
PP.142	POST-ORTHODONTIC NON- INVASIVE RECONTOURING OF ANTERIOR TEETH-CASE REPORT
PP.144	PREVALENCE OF DENTAL CARIES AND ASSOCIATION WITH VARIOUS RISK FACTORS AMONG PRESCHOOL CHILDREN: A CROSS-SECTIONAL STUDY
PP.145	MINIMALLY INVASIVE SURGICAL TECHNIQUES IN PERIODONTOLOGY: REVIEW AND CASE PRESENTATION
PP.146	CERVICAL ENAMEL PROJECTIONS AS AN ANATOMICAL RISK FACTOR FOR FURCATION INVOLVEMENT: A NARRATIVE REVIEW AND A REGENERATIVE CLINICAL CASE
PP.147	PERIODONTAL PLASTIC SURGERY: TUNNEL TECHNIQUE FOR MULTIPLE GINGIVAL RECESSIONS IN THE MAXILLARY AESTHETIC ZONE
PP.148	AGING AND GINGIVAL TISSUES: MOLECULAR, IMMUNOLOGICAL AND CLINICAL IMPLICATIONS FOR PERIODONTAL HEALTH
PP.149	ESTHETIC AND FUNCTIONAL MANAGEMENT OF INTERDENTAL PAPILLA LOSS ASSOCIATED WITH PERIODONTITIS: A CASE REPORT
PP.150	THE ROOT OF THE MATTER: “AGEING” OF CEMENTUM AND THE ROLE OF INFLAMMAGING
PP.151	ALVEOLAR RIDGE PRESERVATION AFTER TOOTH EXTRACTION: CURRENT EVIDENCE
PP.152	STUDY OF THE IMPACT OF CHRONIC APICAL PERIODONTITIS ON CARDIOVASCULAR RISK
PP.153	LATERAL POSITIONAL FLAP COMBINED WITH CONNECTIVE TISSUE GRAFT IN A SMOKING PATIENT: A CASE REPORT
PP.154	FREE GINGIVAL GRAFT PROCEDURE IN THE MANDIBULAR ANTERIOR REGION
PP.155	ESTHETIC GINGIVAL COLOR OPTIMIZATION: DEPIGMENTATION PROCEDURE
PP.156	ROOT COVERAGE OF MULTIPLE GINGIVAL RECESSIONS VIA TUNNEL TECHNIQUE
PP.157	FREE GINGIVAL GRAFT FOR MANAGEMENT OF GINGIVAL RECESSION ASSOCIATED WITH INADEQUATE KERATINIZED TISSUE
PP.158	WHEN THE PDL AGES: IMMUNOSENESCENCE, INFLAMMAGING, AND A FRAGILE PERIODONTAL INTERFACE

NUMBER	TITLE
PP.159	THE CHALLENGES OF ULCERATIVE GINGIVITES IN ALBANIAN POPULATION: A LITERATURE REVIEW
PP.160	PREGNANCY AND PERIODONTITIS:BIOLOGICAL MECHANISMS,ADVERSE OUTCOMES AND CLINICAL MANAGEMENT
PP.161	ASSESSMENT OF GINGIVAL PHENOTYPE BY THE TRANSPARENCY METHOD USING SPECIFICALLY DESIGNED PROBES
PP.162	PERIODONTAL ABSCESS FOLLOWING IN-OFFICE VITAL BLEACHING: THE POSSIBLE ROLE OF MUCOGINGIVAL RISK FACTORS: A CLINICAL CASE
PP.163	GINGIVITIS RISK FACTORS IN ADOLESCENCE: A REVIEW
PP.164	THE SUPPLEMENTARY ROLE OF OMEGA-3 FATTY ACIDS IN TREATMENT OF PERIODONTAL DISEASES
PP.165	COMPARATIVE CLINICAL EVALUATION OF PRF AND CONNECTIVE TISSUE GRAFT IN THE TREATMENT OF MILLER CLASS I AND II GINGIVAL RECESSIONS
PP.166	TWO YEARS FOLLOW UP OF FREE GINGIVAL GRAFT: A CASE REPORT
PP.167	NON-SURGICAL PERIODONTAL THERAPY IN A MOUTH-BREATHING PATIENT WITH GINGIVAL INFLAMMATION: A CASE REPORT
PP.168	THE EFFECT OF NON-SURGICAL PERIODONTAL THERAPY ON GLYCEMIC CONTROL IN PATIENTS WITH TYPE 2 DIABETES MELLITUS: A SYSTEMATIC LITERATURE REVIEW
PP.169	SMOKING-INDUCED GINGIVAL MELANIN PIGMENTATION: A CASE REPORT
PP.170	REGENERATIVE MANAGEMENT OF A CIRCUMFERENTIAL PERIODONTAL DEFECT ASSOCIATED WITH PERIODONTAL ABSCESS: A CASE REPORT
PP.171	COMPREHENSIVE PERIODONTAL MANAGEMENT AND ONE YEAR FOLLOW UP OF A STAGE 2 GRADE A PATENT: A CASE REPORT
PP.172	IMPROVING COOPERATION AND REDUCING ANXIETY IN CHILDREN WITH AUTISM SPECTRUM DISORDER IN THE DENTAL SETTING
PP.173	DENTAL REHABILITATION UNDER GENERAL ANESTHESIA-CASE REPORT
PP.174	GENERAL ANESTHESIA IN PATIENTS WITH ANGELMAN SYNDROME: PRESENTATION OF TWO CLINICAL CASES.
PP.175	MULTIDISCIPLINARY MANAGEMENT OF A SPECIAL CARE DENTAL PATIENT REQUIRING GENERAL ANESTHESIA: A HOSPITAL-BASED CASE REPORT
PP.176	DENTAL MANAGEMENT OF A PATIENT WITH RUBINSTEIN-TAYBI SYNDROME UNDER GENERAL ANESTHESIA: A CASE REPORT
PP.177	THE BIDIRECTIONAL CLINICAL IMPACT OF PERIODONTITIS SEVERITY ON COGNITIVE PROGRESSION IN ALZHEIMER'S DISEASE
PP.178	PREVENTION AND TREATMENT MODALITIES OF PERIODONTAL DISEASES IN PHYSICALLY DISABLED PATIENTS
PP.179	ORAL HEALTH AND DENTAL ANXIETY IN CHILDREN WITH ADHD: A STATE-OF-THE-ART REVIEW OF CURRENT CHALLENGES
PP.180	ASSESSING ORAL HEALTH AND DENTAL FEAR IN ADHD PEDIATRIC PATIENTS: RESEARCH PROTOCOL AND PILOT ANALYSIS
PP.181	CLINICAL HISTOPATHOLOGICAL AND PROSTHETIC MANAGEMENT OF EROSIVE ORAL LICHEN PLANUS A FOLLOW UP CASE REPORT
PP.182	MANAGEMENT OF REFRACTORY MECHANICAL TRAUMA IN AN IRRADIATED ORAL CANCER PATIENT
PP.183	MODERN THERAPEUTIC APPROACHES WITH MONOCLONAL ANTIBODIES IN ORAL MUCOCUTANEOUS DISEASES
PP.184	CENTRAL GIANT CELL GRANULOMA: A CASE REPORT
PP.185	A DIAGNOSTIC DILEMMA BETWEEN ORAL LICHEN PLANUS AND AND LICHENOID LESIONS
PP.186	RHABDOMYOSARCOMA OF THE ORAL CAVITY IN PEDIATRIC PATIENTS: A CLINICAL AND PATHOLOGICAL ANALYSIS
PP.187	PLEOMORPHIC ADENOMA OF THE LOWER LIP: A DIAGNOSTIC DILEMMA
PP.188	ALDH1&2 EXPRESSION IN ORAL LICHEN PLANUS COMPARED TO ORAL SQUAMOUS CELL CARCINOMA. AN IMMUNOHISTOCHEMICAL STUDY.
PP.189	CD147 EXPRESSION IN ORAL LICHEN PLANUS COMPARED TO ORAL SQUAMOUS CELL CARCINOMA. AN IMMUNOHISTOCHEMICAL STUDY.
PP.190	THE DIAGNOSIS OF ORAL CANCER BY THE DEVELOPMENT OF AN AI APPLICATION.

NUMBER	TITLE
PP.191	DEVELOPMENT OF AN AI ASSISTED TOOL FOR THE PURPOSE OF DIAGNOSING ORAL LEUKOPLAKIA
PP.192	THE DIAGNOSIS OF ORAL MUCOCUTANEOUS DISORDERS THROUGH THE DEVELOPMENT OF AN AI ASSISTED APPLICATION
PP.193	ORAL AND OROFACIAL MANIFESTATIONS OF SCLERODERMA
PP.194	ORAL LICHEN PLANUS IN PAEDIATRIC PATIENTS
PP.195	THE IMPACT OF POLYPHENOLS ON SALIVARY CARCINOEMBRYONIC ANTIGEN (CEA) LEVELS IN PATIENTS WITH ORAL LICHEN PLANUS
PP.196	POOR ORAL HEALTH: THE HIDDEN ENEMY OF BODY DEFENCE AGAINST CARCINOGENESIS
PP.197	ANALYSIS OF SALIVARY COMPONENTS IN PATIENTS WITH SJOGREN'S SYNDROME
PP.198	THE IMPACT OF MENOPAUSE ON SALIVARY FLOW RATE-A SCOPING REVIEW
PP.199	ORAL MANIFESTATIONS OF MALIGNANT ACANTHOSIS NIGRICANS
PP.200	MULTI-OMICS APPROACHES IN THE EARLY DIAGNOSIS OF ORAL LEUKOPLAKIA AND ORAL SQUAMOUS CELL CARCINOMA: THE ROLE OF SALIVARY TRANSCRIPTOMICS, GENOMICS AND PROTEOMICS
PP.201	SALIVARY NON-INVASIVE SCREENING: DIAGNOSTIC POTENTIAL OF METABOLOMICS AND MICROBIOMICS IN ORAL CANCER
PP.202	DIABETES MELLITUS AND ORAL HEALTH
PP.203	PATIENTS AT RISK FOR MEDICATION-RELATED OSTEONECROSIS OF THE JAW: ENDODONTIC TREATMENT AS A PREVENTIVE APPROACH: A SINGLE-ARM SYSTEMATIC REVIEW
PP.204	ADALIMUMAB-INDUCED ORAL ERYTHEMA MULTIFORME: A RARE CASE REPORT
PP.205	ORAL ERYTHROPLAKIA IN CHILDREN: A REVIEW OF THE LITERATURE
PP.206	LANGERHANS CELL HISTIOCYTOSIS ORAL LESIONS IN PEDIATRIC PATIENTS
PP.207	ORAL ULCERATION: WHEN IS IT NOT JUST AN APHTHA – A CLINICAL COMPARISON
PP.208	ORAL MANIFESTATIONS OF GRAFT VERSUS HOST DISEASE IN PEDIATRIC PATIENTS
PP.209	RECURRENT ODONTOGENIC KERATOCYST OF THE MANDIBLE: A CASE REPORT WITH LONG TERM CLINICAL FOLLOW UP
PP.210	IMPLANT-SUPPORTED OVERDENTURES ON TELESCOPIC BARS BEARING PRECISION ATTACHMENTS, CASE REPORT
PP.211	FLEXIBLE PROSTHETIC REHABILITATION OF A 16-YEAR-OLD ADOLESCENT LEUKEMIA PATIENT WITH MULTIPLE MISSING MAXILLARY TEETH: A CASE REPORT
PP.212	FULLY DIGITAL RESTORATION OF MAXILLARY ANTERIOR TEETH WITH SEVERE CROWN DESTRUCTION USING MONOLITHIC ZIRCONIA: A CLINICAL CASE REPORT
PP.213	ARTIFICIAL INTELLIGENCE-BASED CROWN DESIGN COMPARED WITH HUMAN OR CONVENTIONAL CAD SYSTEMS: A SYSTEMATIC REVIEW
PP.214	SINGLE WING LITHIUM DISILICATE MARYLAND BRIDGE WITH A PONTIC DERIVED STAMP TECHNIQUE FOR ANTERIOR SYMMETRY
PP.215	FULL MOUTH FIXED PARTIAL DENTURES RESTORING THE MALPOSITIONED DENTAL IMPLANTS USING DIGITAL WORKFLOW: A CASE REPORT
PP.216	CONVERSION OF AN IMMEDIATE COMPLETE DENTURE INTO A PROVISIONAL IMPLANT - SUPPORTED FIXED RESTORATION IN A PATIENT REHABILITATED USING THE ALL-ON-4® CONCEPT
PP.217	CORRECTION OF UNFAVORABLE IMPLANT ANGULATION BY FABRICATION OF A SCREW - RETAINED SINGLE CROWN ON AN ANGLED ABUTMENT
PP.218	REHABILITATION OF FRACTURED AND DISCOLORED MAXILLARY CENTRAL INCISORS USING CUT-BACK TECHNIQUE
PP.219	SINGLE-STAGE REHABILITATION WITH TOOTH- AND IMPLANT-SUPPORTED METAL–CERAMIC FIXED PROSTHESES IN PATIENTS WITH OCCLUSAL VERTICAL DIMENSION LOSS WITH OUT SIGNS OF TMD: TWO CASES
PP.220	EFFECTS OF BRUXISM ON DENTAL IMPLANT – SUPPORTED PROSTHESIS A LITERATURE REVIEW
PP.221	RESTORATION OF FUNCTION AND ESTHETICS WITH IMMEDIATE IMPLANT PLACEMENT AND LOADING: A CASE REPORT
PP.222	GUIDED IMPLANT SURGERY AND IMMEDIATE LOADING WITH A 3D-PRINTED PROVISIONAL CROWN IN THE MAXILLARY LATERAL INCISOR REGION

NUMBER	TITLE
PP.223	POOR ORAL HYGIENE PATIENT'S REHABILITATION USING TORONTO BRIDGE: A CASE REPORT
PP.224	DIGITAL WORKFLOWS IN OBTURATOR PROSTHESIS FABRICATION: FROM DATA ACQUISITION TO PROSTHESIS MANUFACTURING
PP.225	CONSERVATIVE PROSTHETIC MANAGEMENT OF CONGENITAL CLEFT PALATE USING A MODIFIED COMPLETE DENTURE DESIGN: A CASE REPORT
PP.226	PROSTHETIC REHABILITATION OF AN IMPLANT WITH COMPROMISED INTERNAL HEX CONFIGURATION USING A CUSTOM CAST POST-CORE: A CASE REPORT
PP.227	INTEGRATION OF PREDICTIVE ARTIFICIAL INTELLIGENCE MODELS IN PROSTHODONTICS: ENHANCING DIAGNOSTIC ACCURACY AND CLINICAL PROGNOSIS
PP.228	AWARENESS AND MANAGEMENT OF RESPIRATORY ARREST IN DENTAL CLINICS: A PILOT STUDY
PP.229	BORDER MOLDING WITH THERMOPLASTIC BEADS IN SEVERELY RESORBED MANDIBULAR RIDGES
PP.230	FULL-MOUTH OCCLUSAL REHABILITATION AND VERTICAL DIMENSION RECONSTRUCTION USING MULTILAYER ZIRCONIA RESTORATIONS
PP.231	ADHESION PROTOCOLS FOR ZIRCONIA, LITHIUM DISILICATE, AND LEUCITE CERAMICS IN PROSTHODONTICS: LITERATURE REVIEW
PP.232	PROSTHETIC COMPLICATIONS OF MONOLITHIC AND MICRO-VENEERED ZIRCONIA RESTORATIONS ON TITANIUM BASE ABUTMENTS
PP.233	MANAGEMENT OF A NON-RETRIEVABLE PROSTHETIC SCREW IN A CEMENT-RETAINED IMPLANT RESTORATION: A CLINICAL CASE REPORT
PP.234	PROSTHETIC REHABILITATION OF AN ARAMANY CLASS I MAXILLARY DEFECT FOLLOWING HEMIMAXILLECTOMY FOR FIBROUS DYSPLASIA WITH A DEFINITIVE OBTURATOR: A CASE REPORT
PP.235	ANALOG AND DIGITAL METHODS FOR FABRICATING MULTI-PIECE POST-AND-CORE RESTORATIONS
PP.236	MAXILLARY FULL-ARCH IMPLANT-SUPPORTED ZIRCONIA RESTORATION WITH A TITANIUM BAR
PP.237	POTENTIAL APPLICATIONS OF PLATELET-RICH FIBRIN (PRF) IN PROSTHODONTICS: A SYSTEMATIC REVIEW
PP.238	EVALUATION OF SURFACE TOPOGRAPHY OF DIFFERENT DENTURE BASE MATERIALS AFTER LABORATORY AND CHAIRSIDE POLISHING: AN IN VITRO STUDY.
PP.239	ACTION OF CHLORHEXIDINE MOUTHWASH ON GINGIVAL HEALTH IN ORTHODONTIC PATIENTS WITH FIXED APPLIANCES
PP.240	EVALUATION OF ORAL HYGIENE IN CHILDREN AND ADOLESCENTS WITH ORTHODONTIC APPLIANCES: A SURVEY-BASED STUDY
PP.241	PRIMARY SCHOOL STAFF KNOWLEDGE OF DENTAL INJURIES
PP.242	GENDER DIFFERENCES IN THE PREVALENCE OF DENTAL ANOMALIES IN CHILDREN
PP.243	MANAGEMENT STRATEGIES OF HYPERSENSITIVITY IN MIH TEETH
PP.244	ASSESSMENT OF DENTAL STUDENTS' KNOWLEDGE LEVEL REGARDING THE RELATIONSHIP BETWEEN NUTRITION AND ORAL HEALTH
PP.245	BEYOND TRADITIONAL FLUORIDE: THE EXPANDING WORLD OF MODERN TOOTHPASTE TECHNOLOGIES
PP.246	THE SYNERGISTIC EFFICACY OF SELF-ASSEMBLING PEPTIDES (P11-4) AND NANO-HYDROXY APATITE IN THE MANAGEMENT OF EARLY CARIOUS LESIONS
PP.247	ICON RESIN INFILTRATION FOR THE MANAGEMENT OF WHITE SPOT LESIONS IN ANTERIOR TEETH: A CASE SERIES
PP.248	BREASTFEEDING: FRIEND OR ENEMY OF CARIES?
PP.249	TRANSIENT LINGUAL PAPILLITIS IN A YOUNG FEMALE: A BENIGN AND SELF-LIMITING ORAL LESION
PP.250	VOLUMETRIC PROGRESSION OF UNTREATED ODONTOGENIC SINUSITIS: A LONGITUDINAL CBCT SEGMENTATION STUDY
PP.251	RARE PRESENTATION OF AMELOBLASTIC FIBROMA IN THE POSTERIOR MANDIBLE: A CASE REPORT
PP.252	RADIATION-RELATED CARIES AFTER HEAD AND NECK RADIOTHERAPY: INCIDENCE, DOSE-RESPONSE FACTORS, AND PREVENTIVE STRATEGIES

NUMBER	TITLE
PP.253	DENTAL DEVELOPMENTAL ABNORMALITIES AFTER CHILDHOOD HEAD AND NECK RADIOTHERAPY: CLINICAL PATTERNS, RISK FACTORS, AND FOLLOW-UP NEEDS
PP.254	SKELETAL ANCHORAGE IN CLASS II MALOCCLUSION IN POST-PUBERTAL PATIENT
PP.255	CLASS II SUBDIVISION MALOCCLUSION: A COMPARATIVE STUDY OF TWO ORTHODONTIC TECHNIQUES
PP.256	A MULTIDISCIPLINARY APPROACH TO ORTHODONTIC–SURGICAL TREATMENT OF DENTOFACIAL DEFORMITIES IN ADULTS
PP.257	CLASS II DIVISION 1 TREATMENT BY USING MINISCREW ASSISTED ORTHOPEDIC CLASS II ELASTICS: A CASE REPORT.
PP.258	MANDIBULAR MINISCREW AND MAXILLARY OPEN COIL MECHANICS FOR MAXILLARY MOLAR DISTALIZATION: A CASE REPORT.
PP.259	CORRELATION BETWEEN MANDIBULAR GROWTH AND CERVICAL VERTEBRAL MATURATION: A LONGITUDINAL STUDY IN GIRLS
PP.260	DIAGNOSIS AND PREVALENCE OF POSTERIOR CROSSBITE IN DENTAL CLINICS IN TIRANA
PP.261	ORTHODONTIC TREATMENT IN ADULT PATIENTS WITH STABILIZED PERIODONTAL DISEASE
PP.262	ORTHODONTIC MANAGEMENT OF CONGENITALLY MISSING PERMANENT TEETH
PP.263	COMPLICATIONS ASSOCIATED WITH ORTHODONTIC PROCEDURES ON ENDODONTICALLY TREATED TEETH
PP.264	GENETIC AND MOLECULAR MECHANISMS OF PRIMARY FAILURE OF ERUPTION: A CONTEMPORARY LITERATURE REVIEW
PP.265	FORCED ORTHODONTIC EXTRUSION FOR PAPILLA AND RIDGE REGENERATION: SYSTEMATIC REVIEW AND CASE REPORT
PP.266	INFLUENCE OF MOLAR ABSENCE ON ANTEGONIAL NOTCH MORPHOLOGY IN HYPODONTIA
PP.267	ACCURACY AND EFFICIENCY OF ARTIFICIAL INTELLIGENCE IN AUTOMATED CEPHALOMETRIC ANALYSIS: A COMPREHENSIVE REVIEW OF CURRENT LITERATURE
PP.268	MULTIDISCIPLINARY MANAGEMENT OF IMPACTED MANDIBULAR SECOND MOLARS WITH ROOT RESORPTION OF FIRST MOLARS: A TOOTH-PRESERVING APPROACH
PP.269	ACCELERATING ORTHODONTIC SPACE CLOSURE: THE EFFICACY OF PRF IN EXTRACTION SOCKETS
PP.270	ORTHODONTIC MANAGEMENT OF A GROWING PATIENT WITH CLASS III MALOCCLUSION AND IMPACTED MAXILLARY CANINE: A TWO-PHASE TREATMENT APPROACH
PP.271	APPLIANCES FOR RAPID MAXILLARY EXPANSION: A LITERATURE REVIEW AND CASE REPORTS
PP.272	CAN WE PREVENT IMPACTION OF UPPER SECOND PREMOLARS? 2 CASE REPORTS
PP.273	MANAGEMENT OF CLASS II MALOCCLUSION USING FIXED NON -COMPLIANCE FUNCTIONAL APPLIANCES: A TWO-CASE REPORT
PP.274	ASSESMENT OF ACCELERATION TECHNIQUES FOR ORTHODONTIC TREATMENT
PP.275	TREATMENT OF UNILATERAL POSTERIOR CROSSBITE WITH THE INVISALIGN PALATAL EXPANDER SYSTEM: A CASE REPORT
PP.276	DENTINE AS A BIOINDICATOR IN FORENSIC TOXICOLOGY AND ITS INDICATIVE USE IN ENVIRONMENTAL POLLUTION EXPOSURE
PP.277	EVALUATION OF THE ATTITUDES AND BEHAVIORS OF PATIENTS APPLYING TO THE FACULTY OF DENTISTRY TOWARDS FOREIGN HEALTHCARE PROFESSIONALS
PP.278	COMPLICATIONS AND SURVIVAL OF IMPLANT-SUPPORTED CROWNS ON TITANIUM-BASE ABUTMENTS: A SYSTEMATIC REVIEW OF CLINICAL STUDIES
PP.256	A MULTIDISCIPLINARY APPROACH TO ORTHODONTIC–SURGICAL TREATMENT OF DENTOFACIAL DEFORMITIES IN ADULTS
PP.280	THE DUAL ROLE OF REACTIVE OXYGEN SPECIES (ROS) IN OSSEOINTEGRATION: A NARRATIVE REVIEW
PP.281	NON-SURGICAL TREATMENT OF PERI-IMPLANTITIS USING ER:YAG LASER AND PHOTOBIOMODULATION: A RANDOMIZED CONTROLLED CLINICAL TRIAL CLINICAL AND PATIENT REPORTED OUTCOMES
PP.282	OSTEODENSIFICATION AS AN ALTERNATIVE TO RIDGE AUGMENTATION IN COMPROMISED SITES: CASE SERIES
PP.283	ENHANCING PERI-IMPLANT THERAPY: THE ROLE OF ERYTHRITOL AIR- POLISHING
PP.284	TREATMENT OF PERI-IMPLANTITIS WITH THE USE OF CHITOSAN BRUSHES: CASE SERIES

NUMBER	TITLE
PP.285	COMPARATIVE EVALUATION OF GRAFTING MATERIALS FOR HARD AND SOFT TISSUE STABILITY IN IMMEDIATE IMPLANT PLACEMENT IN AESTHETIC ZONE: A SYSTEMATIC REVIEW.
PP.286	DENTIST'S PERSPECTIVES REGARDING THE INFLUENCE OF PERIODONTAL DISEASE ON THE SUCCESS OF DENTAL IMPLANT THERAPY
PP.287	ENHANCING PERI-IMPLANT THERAPY: THE ROLE AND EFFICIENCY OF LOCAL DRUG DELIVERY
PP.288	IMMEDIATE IMPLANT PLACEMENT IN THE MAXILLARY FIRST PREMOLAR FOLLOWED BY GBR: A CLINICAL CASE REPORT
PP.289	PROFESSIONAL PERSPECTIVES ON FACTORS INFLUENCING DENTAL IMPLANT SUCCESS AND FAILURE: A CROSS-SECTIONAL SURVEY STUDY
PP.290	SCREW-CEMENT-RETAINED RESTORATIONS: THE STRATEGIC BREAKTHROUGH IN MODERN IMPLANTOLOGY
PP.291	IMMEDIATE IMPLANT PLACEMENT: A CASE REPORT
PP.292	AN IMPLANT PRESERVING TREATMENT APPROACH TO INTERNAL HEXAGONAL CONFIGURATION DISTORTION
PP.293	EARLY IMPLANT PLACEMENT WITH IMMEDIATE LOADING IN THE CENTRAL INCISOR AREA USING GUIDED IMPLANT SURGERY: A CASE REPORT
PP.294	SOFT TISSUE AUGMENTATION TECHNIQUES IN IMPLANT DENTISTRY
PP.295	SPLINTED OR INDIVIDUAL? THE BONE PRESERVATION DILEMA IN IMPLANT SUPPORTED RESTORATIONS
PP.296	LASER THERAPY AS AN ADJUNCT TREATMENT FOR PERI-IMPLANT MUCOSITIS
PP.297	MAPPING THE USE OF ARTIFICIAL INTELLIGENCE IN DENTAL IMPLANTOLOGY: A BIBLIOMETRIC ANALYSIS.
PP.298	WINDOW TO SUCCESS: MEMBRANE OR PERIOSTEUM COVERAGE AFTER LATERAL WINDOW SINUS AUGMENTATION?
PP.299	DIFFERENTIAL DIAGNOSIS OF NON-ODONTOGENIC PAIN: THE ROLE OF MASTICATORY MUSCLE TRIGGER POINTS
PP.300	THE IMPACT OF MASTICATION AND OCCLUSION ON COGNITIVE FUNCTION AND SKILLS
PP.301	TMD PATIENTS TREATMENT WITH MAXILLARY STABILIZATION APPLIANCES
PP.302	TEMPOROMANDIBULAR DISORDERS IN WOMEN: EPIDEMIOLOGY AND THE ROLE OF SEX HORMONES
PP.303	CLINICAL EFFICACY OF PROLOTHERAPY FOR TEMPOROMANDIBULAR JOINT DISORDERS: A SYSTEMATIC REVIEW AND META-ANALYSIS

ORAL PRESENTATION

OP.001

CLINICAL OUTCOMES AND THE PROGNOSTIC VALUE OF HEMOSTASIS TIME IN TOTAL PULPOTO MY USING TWO DIFFERENT HEMOSTATIC AGENTS: A RANDOMIZED PILOT STUDY

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Introduction: Total pulpotomy is a reliable biological alternative to root canal treatment for mature permanent teeth with irreversible pulpitis.

Objective: This randomized pilot trial evaluated the 12-month success of total pulpotomy using Neo Putty MTA with sterile saline versus 1% sodium hypochlorite (NaOCl), and investigated the prognostic value of hemostasis time.

Materials and Methods: Fifty-two mature molars with symptomatic irreversible pulpitis were randomly assigned to saline or 1% NaOCl hemostasis groups (n=26 each). After coronal pulp amputation and hemostasis, Neo Putty MTA was placed over the radicular pulp, and teeth were permanently restored. Intraoperative hemostasis time was precisely recorded. Clinical and radiographic outcomes were assessed at 12 months.

Results: Overall success was 84.6% (saline: 80.8%; NaOCl: 88.5%), with no significant difference between agents ($p > 0.05$). Patient demographics and tooth type did not influence outcomes ($p > 0.05$). However, a significant correlation existed between hemostasis time and treatment outcome. Mean hemostasis time was significantly longer in failed (5.00 ± 1.31 min) compared to successful cases (3.23 ± 1.14 min) ($p = 0.002$).

Conclusions: Saline and 1% NaOCl demonstrate comparable, high success rates. Notably, bleeding time exceeding 5 minutes may serve as a significant intraoperative predictor of potential treatment failure.

ORAL PRESENTATION

OP.002

3D PRINTED TEMPORARY CROWN RESIN: EFFECT OF GLAZE COAT NUMBER ON COLOR STABILITY (A PILOT STUDY)

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Introduction: Three-dimensional printed temporary crown resins may exhibit clinically relevant discoloration in daily exposure to staining beverages. Surface sealants and glazing agents could reduce stain uptake by modifying surface characteristics.

Objective: To evaluate the effect of glaze coat number on the color stability of a 3D printed temporary crown resin after coffee immersion.

Materials and Methods: Disk specimens (10 mm × 2 mm) were printed from a temporary crown resin using a standardized printing and post-curing protocol (n=10/group). Specimens were finished with an identical polishing sequence and allocated to four groups: no glaze (control), one coat, two coats, and three coats of a light-cured glaze. Each coat was applied uniformly and light-polymerized according to the manufacturer's instructions. All specimens were immersed in coffee at 37°C for 7 days with daily solution renewal. Color was recorded at baseline and after immersion using standardized photographs captured in a controlled light box with a reference color card; CIELAB values were extracted by an artificial intelligence–assisted pipeline and color difference was calculated as ΔE00.

Results: Median (IQR) ΔE00 values were 6.2(1.5) (control), 4.3(1.2) (one coat), 3.1(1.0) (two coats), and 2.4(0.8) (three coats). The Kruskal-Wallis test showed a significant effect of coat number ($p < 0.001$). Post-hoc comparisons (Dunn's test) indicated progressively lower discoloration with increasing coats, with the three-coat group showing the smallest color change ($p < 0.05$).

Conclusions: Within the limitations of this pilot study, applying a light-cured glaze improved the color stability of a 3D printed temporary crown resin in coffee, and increasing the number of coats further reduced discoloration. Further studies should validate these findings with spectrophotometry and longer aging protocols.

ORAL PRESENTATION

OP.003

OSTEODIFFERENTIATION OF STEM CELLS FROM APICAL PAPILLA IN THE PRESENCE OF NOVEL DENTAL CEMENTS

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Objective: Stem cells from the apical papilla (SCAP) are a unique group of dental stem cells related to developing roots. Their potential in modern dentistry is reflected in the bone tissue regeneration. During regenerative procedures, the contact of dental cements with SCAP should ideally result in their osteodifferentiation. This research aimed to examine the level of SCAP osteodifferentiation in the presence of novel dental cements.

Materials and Methods: The study included pure calcium aluminate cement (CA), CA with the addition of zirconium dioxide (CA+ZrO2), as well as calcium silicate cements - mineral trioxide aggregate (MTA) and Biodentine (BD). The cements were individually mixed and molded, eluates were made, and a concentration of 1:10 was obtained using the osteogenic differentiation medium (ODM). The solutions were then placed in wells seeded with SCAP. Control groups included SCAPs cultured with and without ODM. After 10 days, staining with Alizarin Red S was performed to confirm osteodifferentiation, and the binding of the dye was quantified by spectrophotometry.

Results: Compared to the positive control, BD and CA showed better osteodifferentiation ($p<0.05$). BD showed the highest degree of osteodifferentiation compared to other dental cements ($p<0.05$). Inverted microscopy showed that CA+ZrO2 and CA increased mineralization compared to MTA.

Conclusions: SCAP exhibited the highest level of osteodifferentiation after 10 days when combined with BD. The novel CA dental cements demonstrated superior osteoinductive potential compared to MTA, indicating a promising future for clinical applications. Further research is needed to better understand late osteodifferentiation.

Keywords: SCAP; osteodifferentiation; calcium aluminate cement; MTA; Biodentine

ORAL PRESENTATION

OP.004

INFLUENCE OF THE NOVEL DENTAL CEMENTS ON STEM CELLS FROM THE APICAL PAPILLA: CITOTOXICITY

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Objective: The apical papilla is a soft tissue at the end of developing roots. More than 95% of this tissues cell population are stem cells (Stem Cells from the Apical Papilla - SCAP), which are interesting in terms of regenerative therapy due to their accessibility, easy isolation, and high differentiation potency. SCAP cell viability in the presence of dental cements is crucial for a successful endodontic therapy. The aim of the study was to assess the influence of different types of dental cements on cell viability using the MTT assay.

Materials and Methods: The study included pure calcium aluminate cement, calcium aluminate cement with the addition of zirconium dioxide, as well as calcium silicate cements - mineral trioxide aggregate and Biodentine. Each cement was individually mixed and molded into half-disc-shaped samples, and eluates were made according to the standard protocol. The cells were treated with different dilutions of the eluate (1:10, 1:50, 1:100), with cells in complete medium serving as the control group. The experiment was performed in triplicate. After 24 hours, the MTT assay was performed.

Results: The MTT assay indicated similar cell viability levels in the presence of dental cements compared to the control group. There were no statistically significant differences between the groups of tested materials ($p>0.05$) in all tested concentrations.

Conclusions: All cements exhibited a high level of cell viability at all tested concentrations, speaking in favour of their biocompatibility.

Keywords: SCAP; cell viability; calcium aluminate cement; MTA; Biodentine

ORAL PRESENTATION

OP.005

EFFECT OF COLD ATMOSPHERIC PLASMA ON LIQUID CONTACT ANGLE OF PRETREATED BRILIANT CRIOS

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Introduction: In industry cold atmospheric plasma is used to increase wettability of surface for a long time. There is small amount of evidence of effects of that type of treatment on dental materials.

Objective: The aim of the in vitro research is to examine the influence of cold atmospheric plasma on the wetting angle of the surface of hybrid CAD/CAM materials.

Results: Material used in the research was Brilliant Crios (Coltene/Whaledent, Altstätten, Switzerland). Samples were divided into 6 groups: etched, etched/plasma, sandblasted, sandblasted/plasma etched and sandblasted, etched, sandblasted and treated with plasma. Samples were prepared dimensions of 5*5*2mm, on a Buehler IsoMet 4000 Linear Precision saw as recommended by the manufacturer. Sandblasting, etching and plasma treatment was performed by manufacturers guides or by standards found in literature. For the surface wetting test, 5 samples were prepared for each group. The wetting test was carried out using a Krus DS25B, where a drop of distilled water was dropped onto the treated surface using a microdropper and measuring of contract angle was done after 10 secondswith an optical tensiometer.
Plasma treatmets always increased wettability of surface.

Conclusions: Application of cold atmospheric plasma reduces the wetting angle of the material surface and can have a positive effect on the adhesion strength.

ORAL PRESENTATION

OP.006

ANTIMICROBIAL NANOPARTICLES APPLICATIONS IN ENDODONTICS A REVIEW OF CURRENT EVIDENCE

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Introduction: Nanotechnology offers innovative biomedical solutions by exploiting the physicochemical properties of materials in the 1–100 nm range. In endodontics, biofilm resistance and the complex anatomy of the root canal system have driven investigation of nanoparticle-based platforms. Metal, metal oxide, polymeric, and calcium-based nanoparticles are studied across irrigation, intracanal medicaments, sealer modifications, and regenerative procedures.

Objective: This review aims to systematically evaluate the major antimicrobial nanoparticle types and their applications in endodontics based on current evidence, and to critically address biocompatibility and translational limitations.

Materials and Methods: Original research articles, systematic reviews, meta-analyses, and randomized controlled trials addressing nanoparticle applications in endodontics were reviewed. Studies on non-endodontic fields and investigations lacking biological or clinical outcomes were excluded.

Results: Silver nanoparticles (AgNPs) and metal oxide nanoparticles (ZnO, TiO_2) are the most studied groups for antibacterial efficacy. Polymeric nanoparticles such as chitosan and PLGA show promise for controlled drug delivery and biofilm modulation. Nanoparticle-modified sealers demonstrated enhanced antibacterial properties, though results were formulation-dependent. Intracanal nano-medicaments reduced postoperative pain in selected trials. However, most evidence derives from in vitro studies, and randomized clinical trials remain limited. CONCLUSIONS
Nanoparticles represent versatile antimicrobial biomaterial platforms in endodontics. Routine clinical integration requires standardized characterization, comprehensive biocompatibility assessment, and well-designed long-term randomized controlled trials.

Keywords: Nanoparticles, endodontics, antimicrobial, biofilm, root canal treatment

ORAL PRESENTATION

OP.007

LASER AND PHOTOBIOMODULATION THERAPIES FOR LESIONS OF THE ORAL CAVITY AND PERIORAL REGION: CLINICAL CASES, REVIEW OF INDICATIONS

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Objective: To present clinical cases and a focused literature review on the use of laser and photobiomodulation therapies in the management of oral and perioral dermatologic conditions, including papillomas, condylomata acuminata, herpes simplex infection, lichen-related lesions, hemangiomas, venous lakes, and perioral dermatitis, as well as to highlight laser-based lip rejuvenation techniques.

Methods: A series of representative clinical cases involving lesions of the oral mucosa, lips, and perioral skin were treated using tailored laser protocols, including ablative and non-ablative laser systems (Erbium Yag 2940nm and NDYag 1064nm), vascular-selective wavelengths, and low-level photobiomodulation. Treatment selection was based on lesion type, depth, vascular component, anatomical localization, and patient-specific factors. In inflammatory conditions such as herpes simplex infection, lichen-related dermatoses, and perioral dermatitis, photobiomodulation was used as a primary or adjunctive modality. Laser lip rejuvenation was performed using non-ablative and fractional approaches to improve texture, hydration, contour definition, and perioral rhytides.

Results: Laser treatment of papillomas and condylomas in the oral and perioral region resulted in effective lesion removal with minimal bleeding, rapid healing, and favorable aesthetic outcomes. Vascular lesions, including hemangiomas and venous lakes of the lips, showed significant regression following selective photothermolysis. In herpes simplex and lichen-related lesions, laser and PBM therapies contributed to symptom reduction, accelerated lesion resolution, and prolonged remission. Photobiomodulation in perioral dermatitis demonstrated reduction in erythema and inflammatory activity. Laser-based lip rejuvenation resulted in improved lip texture, enhanced vermilion definition, and overall perioral aesthetic improvement without significant downtime.

Conclusions: Laser and photobiomodulation therapies provide versatile, safe, and effective treatment options for a wide range of oral and perioral conditions, addressing both medical and aesthetic indications. Case-based experience supported by current literature highlights the value of individualized, multimodal laser protocols in achieving optimal functional and cosmetic outcomes in this highly sensitive region.

Keywords: Oral cavity lasers, perioral lesions, photobiomodulation, papilloma, condylomata acuminata, herpes simplex, lichen, hemangioma, venous lake, perioral dermatitis, laser lip rejuvenation

ORAL PRESENTATION

OP.008

HEMATOLOGICAL AND GENETIC FACTORS IN RECURRENT APHTHOUS STOMATITIS: A CASE-CONTROL STUDY AND ASSOCIATION WITH CLINICAL SEVERITY

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Introduction: Recurrent aphthous stomatitis (RAS) is a multifactorial oral mucosal disorder in which hematological abnormalities and folate metabolism–related genetic polymorphisms such as methylenetetrahydrofolate reductase (MTHFR) have been implicated.

Objective: To compare hematological and vitamin parameters together with MTHFR C677T genotypes between RAS patients and healthy controls and to evaluate their association with clinical severity.

Materials and Methods: This retrospective case-control study included 90 RAS patients and 87 healthy controls. Laboratory parameters categorized as low versus normal according to predefined reference ranges included hemoglobin (Hb), hematocrit (Hct), ferritin, folate, and vitamin B12. RAS severity was assessed using Ulcer Severity Score (USS), and high severity was defined as upper-quartile USS (≥11). Group comparisons were performed using chi-square or Fisher's exact tests with odds ratios (OR).

Results: MTHFR genotype distribution did not differ between groups (p=0.784). RAS patients demonstrated higher proportions of low Hb (11.1% vs 3.4%; OR 3.50; p=0.081), low Hct (12.2% vs 4.6%; OR 2.89; p=0.104), and low folate (17.8% vs 8.0%; OR 2.47; p=0.073), while ferritin and vitamin B12 levels were comparable (p>0.05). Within the RAS group, neither MTHFR genotype nor hematological deficiencies were associated with high USS (p>0.05).

Conclusions: Although MTHFR polymorphisms were not associated with RAS occurrence or severity, anemia- and folate-related abnormalities were more frequent in RAS patients, supporting the clinical relevance of hematological evaluation in RAS assessment.

ORAL PRESENTATION

OP.009

CLINICAL EVALUATION OF PROSTHESIS-RELATED ORAL MUCOSAL LESIONS IN DENTURE WEARERS

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Introduction: Prosthesis-related oral mucosal lesions (POML) are common complications among denture wearers and may be influenced by prosthesis type, systemic factors, and patient-related variables.

Objective: To evaluate the relationship between prosthesis type, demographic characteristics, systemic diseases, and the prevalence and localization of POML in denture-wearing patients.

Materials and Methods: This cross-sectional study included 250 removable denture wearers presenting to the Oral Diagnosis Clinic, Marmara University. Demographic characteristics, systemic diseases, prosthesis type, duration of use, and lesion awareness were recorded using structured questionnaires. Clinical examinations were performed by an experienced specialist. POML types were classified and prosthesis types categorized according to the Jainkittivong classification. Statistical analyses were conducted using SPSS 25.0 with significance set at $p<0$.

Results: Oral mucosal lesions were detected in 13.6% of patients, whereas 86.4% showed no lesions. Denture stomatitis was the most frequent lesion (8.0%). The mean age of patients with lesions (62.38±10.38) was significantly lower than those without lesions (66.25±8.91) ($p=0.034$). Smoking ($p=0.003$) and history of radiotherapy ($p=0.012$) were significantly associated with lesion presence. No significant association was found between lesion presence and duration of prosthesis use ($p=0.523$), systemic diseases ($p>0.05$), lesion awareness ($p>0.05$), or lesion localization and prosthesis duration ($p=0.343$).

Conclusions: POMLs were observed in a minority of denture wearers; however, significant associations with younger age, smoking, and radiotherapy history highlight the importance of individualized risk assessment and regular clinical follow-up.

ORAL PRESENTATION

OP.010

WHEN SEXUALLY TRANSMITTED INFECTIONS (STIS) COLLIDE IN THE ORAL CAVITY: A CASE REPORT AND MINI REVIEW

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Introduction: STIs can present atypical manifestations in the oral cavity, even as co-existence.

Objective: To present a case of HIV patient with simultaneous multiple condylomas, and secondary syphilis manifested in oral mucosa and relevant literature review.

Materials and Methods: Patient's clinical and diagnostic findings were evaluated as well as literature review was conducted using MeSH relevant terms in Databases (PubMed, Scopus, and Cochrane Library-2000-2026).

Results: A 27-yo male, MSM, 28 years old, HIV diagnosed since 2020 (CDC stage A1) under ART treatment (last CD4: 1006 cells/ mm3). His medical history included gonococcal urethritis (2020), syphilis (2022) and genital warts (2020). Clinically, now he was clinically presented with multiple nodular lesions of the lip and buccal oral mucosa and lingual whitish ulcerative plaque-like lesions. VDRL serologic test was positive for syphilis and biopsy of the multiple nodular lesions of the lip showed intense papillomatous epithelial hyperplasia with prominent superficial koilocytes, without epithelial dysplasia. Oral mucosa is involved in STIs, with HPV prevalence ranging from approximately 3.7% to 37%. STIs co-infections have been documented, with HPV–Chlamydia detected in 4%, C. trachomatis–HSV 1.8%, and HPV–HSV 0.3% in PCR-based studies. HIV-associated-immunosuppression and smoking significantly increases both prevalence/persistence of oral HPV (23% vs 10% in HIV-negative individuals).

Conclusions: Awareness of dentists for oral STI manifestations is critical for early detection and differentiation from other oral pathologies. Although rare, co-infection underscores the need for comprehensive clinical and laboratory evaluation in patients with atypical oral lesions.

ORAL PRESENTATION

OP.011

UNEXPECTED THROMBUS PRESENTING AS A PERSISTENT UPPER LIP NODULE FOLLOWING HYALURONIC ACID INJECTION

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Introduction: Hyaluronic acid dermal fillers are extensively used for lip augmentation and are generally safe. However, delayed complications such as persistent nodules may arise. Although oral venous thrombus has been considered rare, larger clinicopathologic series indicate that it is likely underrecognized and frequently misdiagnosed as a benign vascular or reactive lesion.

Objective: To present a case of an organized venous thrombus manifesting as a persistent upper lip nodule after hyaluronic acid injection and to emphasize the importance of histopathological confirmation in the differential diagnosis of post-filler complications.

Materials and Methods: A 28-year-old female presented with a firm, mobile submucosal nodule of the left upper lip, developing two months after hyaluronic acid injection. Two sessions of hyaluronidase administration, performed one month prior to referral, resulted in no clinical improvement. Medical history included Hashimoto’s thyroiditis without current medication. Clinical differential diagnosis included trauma, minor salivary gland sialadenitis/neoplasm, filler-related granulomatous or other reaction. Surgical excision and biopsy were performed.

Results: Microscopic examination revealed a venous vessel with intimal thickening, fibrosis, and recanalization characterized by newly formed vascular channels containing erythrocytes, findings consistent with an organized venous thrombus without evidence of granulomatous foreign body reaction or minor salivary gland implication.

Conclusions: Persistent lip nodules following hyaluronic acid injections may represent residual filler material but also vascular complications, surprisingly. Given that oral thrombi are often clinically unsuspected, histopathological evaluation is essential for accurate diagnosis and appropriate management, particularly in lesions unresponsive to hyaluronidase therapy.

ORAL PRESENTATION

OP.012

THE LINK BETWEEN ORAL LICHEN PLANUS AND AUTOIMMUNE DISEASES

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Introduction: Oral lichen planus (OLP) is a chronic inflammatory condition affecting the oral mucosa in about 1% of the population and is widely considered to have an immune-mediated pathogenesis in which T-cells are the main cause. Increasing evidence suggests a possible relationship between OLP and various autoimmune diseases.

Objective: The aim of our review is to provide findings and observations from studies that explore the correlation of OLP and autoimmune disorders with real-world data and compare them to the general population.

Materials and Methods: We conducted a review of the literature in the databases PubMed, Scopus, and Cochrane with the keywords « oral lichen planus and autoimmune diseases» and we selected articles and studies for the period 2021-2026.

Results: Most of the reviewed studies, which were12 in total, showed that the overall prevalence of any form of OLP among the patients with autoimmune disorders, such as Sjogren's syndrome, Hashimoto's thyroiditis and thymoma, was about 2% whereas others failed to report that. Additionally, patients with OLP often present increased inflammatory activity and a higher incidence of other autoimmune conditions.

Conclusions: The findings arising support the initial hypothesis so patients diagnosed with OLP may benefit from a comprehensive clinical evaluation and long-term monitoring for early detection of possible autoimmune comorbidities.

ORAL PRESENTATION

OP.013

HERPERVIRUS PREVALENCE IN HEAD AND NECK MALIGNANCIES: A CASE - CONTROL STUDY

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Introduction: Human herpesviruses are latent pathogens that persist in oral tissues and saliva and may influence carcinogenesis and the tumor microenvironment in head and neck malignancies.

Objective: Evaluate the prevalence of selected herpesviruses in patients with head and neck carcinomas and compare viral detection in saliva and tumor lesion samples using PCR diagnostic kits.

Materials and Methods: Fifty patients with histologically confirmed head and neck carcinomas were included. Paired samples from tumor lesions and saliva were analyzed using via PCR with two commercial kits: Viasure and DNA Technology. Viral detection included HSV-1, HSV-2, HSV-6, HSV-7, VZV, HSV-8 and CMV.

Results: Herpesvirus DNA was detected in 46 of the 50 analyzed patients. Using the Viasure kit, viral DNA was detected more frequently, particularly in saliva samples. HSV-7 showed the highest prevalence, detected in 45 saliva and 24 tumor lesion samples, followed by HSV-6 in 7 saliva and 5 lesion samples. HSV-1 was detected in 4 saliva and 1 lesion sample, while VZV was identified in one lesion sample, and HSV-8 was not detected.Using the DNA Technology kit, viral detection was less frequent. HSV-1 was detected in 2 saliva samples, HSV-2 in 1 saliva sample, while CMV was mainly detected in 5 tumor lesion and 1 saliva samples.

Conclusions: Herpesviruses were frequently detected in patients with head and neck carcinomas, with higher positivity in saliva compared to tumor tissue. These findings suggest that herpesviruses may influence the tumor environment and could contribute to the development and progression of head and neck carcinoma.

ORAL PRESENTATION

OP.014

ANTIHYPERTENSIVE DRUGS AND BONE DENSITY

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Introduction: Mandibular cortical bone thickness assessed through CBCT offers important information on bone morphology, while the potential influence of antihypertensive medication on bone metabolism remains unclear.

Objective: This clinic-statistical study aimed to determine whether patients receiving antihypertensive therapy exhibit differences in mandibular cortical thickness compared with individuals not taking such medication.

Materials and Methods: A total of 119 CBCT scans were analyzed, including 67 males (56.3%) and 52 females (43.7%), with a mean age of 59.2 ± 10.6 years (range 28–84). Two groups were formed: 30 patients using antihypertensive medication and 89 patients without such therapy. Cortical bone thickness was measured at three standardized points along the mandibular body. Statistical analysis included appropriate tests based on data distribution.

Results: No statistically significant differences were observed between the groups. The antihypertensive group showed a mean cortical thickness of 2.39 ± 0.6 mm, while the non-medicated group had 2.50 ± 0.6 mm. The comparison yielded $p = 0.939$, indicating no meaningful variation in cortical thickness across groups. Measurements among the three anatomical mandibular sites demonstrated similar patterns.

Conclusions: Within the limitations of this study, antihypertensive medication use does not appear to influence mandibular cortical bone thickness as assessed by CBCT. Further studies with larger samples and better control of confounding factors are recommended to validate these findings.

ORAL PRESENTATION

OP.015

THE CORRELATION BETWEEN ORAL HEALTH AND CARDIOVASCULAR DISEASES: ASSESSMENT BASED ON RISK FACTORS AND HEALTH BEHAVIORS AT DENTAL OFFICE PATIENTS – PRESENTATION OF MASTER THESIS

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Introduction: The correlation between oral health and several aspects of cardiovascular pathology is widely acknowledged. Oral and cardiovascular health share common predisposing risk factors and health behaviors, such as maintenance of oral hygiene, smoking, consumption of alcohol and regular exercise.

Objective: The aim of the study is to evaluate the correlation of oral hygiene and several health behaviors with the cardiovascular health of dental patients.

Materials and Methods: Anonymous questionnaire were distributed to 120 adults over 65 years old with at least one diagnosed cardiovascular disease. The questionnaire included several questions about their everyday oral hygiene habits, their dental and cardiovascular history, as well as risk factors and health behaviors in cardiovascular patients' lives.

Results: Statistically significant correlations were revealed between the presence of periodontal diseases and improper oral hygiene ($p=0.018$), history of endocarditis ($p<0.001$), valvular heart diseases ($p=0.031$) and smoking ($p<0.001$). Periodontal status seems to be correlated with arterial hypertension ($p<0.001$), diabetes mellitus type II ($p=0.008$) and history of cardiothoracic surgery ($p=0.009$). Also, most patients (77 out of 120) agree on the pathophysiological relationship between oral and cardiovascular health. Such information comes mainly from dentists rather than doctors taking care of cardiovascular patients.

Conclusions: This research underlines the significance of oral health as a preventive factor that enhances the total health. Meanwhile, the results emphasize that cardiovascular patients should adopt healthy habits, as well as that campaigns should be organized in order to inform the public about the contribution of oral health in the reduction of the cardiovascular risk.

ORAL PRESENTATION

OP.016

COMPARATIVE ANALYSIS OF ORAL HEALTH COMMUNICATION QUALITY AND EDUCATIONAL VALUE IN ARTIFICIAL INTELLIGENCE CHATBOTS

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Introduction: The growing use of AI chatbots for health-related inquiries underscores the need to evaluate the quality of the information they provide to patients.

Objective: This study aimed to assess the communication quality and educational value of three subscription-based AI models for common oral health issues.

Materials and Methods: Ten standardized prompts representing typical patient questions were submitted to GPT-5, Claude 4.5 Sonnet, and Gemini 2.5 Pro. Two periodontists, blinded to the AI sources, independently evaluated the responses using the Modified Global Quality Scale. Inter-rater reliability was measured using the Intraclass Correlation Coefficient (ICC), and data were analyzed using parametric and non-parametric tests.

Results: Gemini 2.5 Pro (4.65 ± 0.35) and Claude 4.5 Sonnet (4.52 ± 0.31) achieved the highest scores. A significant performance difference was observed between Gemini 2.5 Pro and GPT-5 (4.02 ± 0.42). The overall clarity and consistency of the responses suggest these tools can effectively support patient understanding of oral health.

Conclusions: AI chatbots can improve digital oral health communication by providing accessible explanations. While they should not replace professional dental advice, they serve as useful supplementary tools for patient education. However, the clinical reliability of AI-generated content must be approached with caution. Further longitudinal studies are necessary to evaluate the actual impact of these models on patient compliance and long-term oral health outcomes.

ORAL PRESENTATION

OP.017

KNOWLEDGE AND ATTITUDES OF DENTAL STUDENTS TOWARD MINIMALLY INVASIVE DENTISTRY IN PEDIATRIC DENTISTRY IN TÜRKIYE

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Evaluating dental students' knowledge and attitudes toward minimally invasive pediatric dentistry (MIDP) is important to support evidence-based clinical practice and improve educational strategies.

Aim: This study aimed to evaluate the knowledge, attitudes, and clinical preferences of dental students regarding MIDP and to assess their readiness to apply minimally invasive approaches in clinical practice.

Materials and Methods: This cross-sectional observational study was conducted using a face-to-face questionnaire with 402 participants. The survey consisted of 42 questions assessing sociodemographic characteristics, clinical experience, awareness, knowledge, attitudes, and clinical decision-making preferences toward MIDP. Data were analyzed using chi-square tests ($p<0.05$).

Results: A total of 288 dental students were included in the analysis. Most participants demonstrated positive attitudes toward MIDP, with the majority agreeing that MIDP contributes to the preservation of sound tooth structure. Significant differences between 4th- and 5th-year students were found regarding perceptions of ART effectiveness ($p<0.001$), resin infiltration ($p<0.001$), MID's role in preserving healthy tooth structure ($p<0.001$), and the belief that minimally invasive approaches are as effective as conventional restorative methods ($p<0.001$). Similarly, attitudes supporting the wider use of MID in pediatric dentistry clinics differed significantly between academic years ($p<0.001$), with 5th-year students showing more favorable responses overall.

Conclusions: Dental students generally demonstrated positive knowledge and attitudes toward minimally invasive dentistry in pediatric practice. Fifth-year students showed significantly more favorable perceptions than fourth-year students, suggesting that increased clinical training improves acceptance and understanding of minimally invasive approaches.

Keywords: Minimally Invasive Dentistry, Pediatric Dentistry, Dental Students' Knowledge and Attitude, Dental Education.

ORAL PRESENTATION

OP.018

ENERGY DRINKS AND ORAL HEALTH: WHAT DO STUDENTS KNOW AND HOW DO THEY BEHAVE?

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Introduction: Energy drinks are popular among university students for boosting concentration, but their acidic and sugary content can cause dental erosion and caries. Little is known about students' awareness of these risks or how their lifestyle habits relate to consumption.

Objective: To investigate energy drinks consumption behaviors, oral health knowledge, and preventive practices among undergraduate students in Thessaloniki, while examining differences across demographic, academic, and lifestyle characteristics.

Materials and Methods: A cross-sectional online survey was conducted to students aged 18–30. The questionnaire collected information on beverage preferences, frequency of energy drinks intake, periods of increased consumption, oral hygiene routines, dental problems, smoking, alcohol use, athletic involvement, and sleep habits.

Results: Among 1,720 respondents, 80.8% reported consuming energy drinks, with slightly higher use among males (83.3%) than females (79.3%). Fourth-year and senior students showed the highest intake (39.6%). Sugar-free options were preferred by 58.4%. Consumption increased during exam periods (37.2%). Sleep duration varied, with 40.1% sleeping 6–7 hours, 11.8% reporting poorer sleep quality and 30,8% reported at least one nocturnal awakening after consumption of energy drinks. Lifestyle behaviors included smoking (19.1%), alcohol consumption (64.2%), and athletic activity (74.4%). Although >85% recognized energy drinks-related dental risks, <20% had received professional guidance. Reported dental issues included gingivitis (16.5%) and caries (14.6%). Preventive habits were inconsistent: 58.8% brushed twice daily, 36.5% flossed, and 28.5% used fluoride toothpaste.

Conclusions: High energy drinks consumption, lifestyle factors, and suboptimal oral hygiene underscore the need for targeted educational interventions to promote students' oral health.

ORAL PRESENTATION

OP.019

AESTHETIC IMPROVEMENT OF MINERAL DEFICIENT AREAS OF DENTAL ENAMEL. REPORT OF TWO TYPICAL CASES

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Introduction: Alterations in enamel translucency of anterior teeth represent a significant aesthetic concern in children and adolescents, often associated with caries-related demineralization or developmental hypomineralization. These conditions increasingly challenge clinicians to seek conservative strategies that preserve tooth structure while addressing patients' aesthetic expectations.

Rarity and Key Details: Developmental hypomineralization affect roughly 1 in 6 children globally, whereas caries-related demineralization can affect a much larger portion of the population depending on oral hygiene. This case report presentation aims to evaluate the aesthetic improvement of a case with hypomineralized and one with demineralized enamel of anterior teeth using CPP-ACP through enhanced enamel conditioning and prolonged topical application.

Method and Effectiveness: Firstly, Essix® transparent trays up to the first permanent molars bilaterally were fabricated having an about 1mm wide 'pocket' in the entire area over the white spot lesions of the affected incisors. Defective enamel was rubbed with 15% hydrochloric acid gel, followed by etching with 35% phosphoric acid gel. CPP-ACP paste placed in the pocket area of the tray and the latter was fitted in the maxillary arch of the patient, with the instruction to wear it as many hours as possible per day and refill the paste when needed. White spot carious lesions and hypomineralized opacities were visibly reduced after sequential enamel conditioning and prolonged CPP-ACP application via custom trays. In both patients, aesthetic outcomes were considered satisfactory by clinicians, parents, and children, with no need for restorative intervention.

Conclusions: Enamel of reduced mineral content, caused either developmentally or post-eruptively, may regain part of its mineral by prolonged contact with CPP-ACP, which in turn improves aesthetic appearance.

ORAL PRESENTATION

OP.020

EFFECT OF DIFFERENT WHITE SPOT LESION TREATMENTS ON CANDIDA ALBICANS BIOFILM FORMATION

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Introduction: Associations between Candida albicans and caries in children and adolescents have been reported.

Objective: To evaluate the effect of different initial enamel caries lesion treatments on C. albicans biofilm susceptibility.

Materials and Methods: Artificial white spot lesions (WSLs) were created in the middle area (4x4 mm) of buccal surfaces of intact premolars using demineralizing solution (2.2 mmol/L calcium chloride, 2.2 mmol/L monopotassium phosphate, 0.05 mmol/L acetic acid; pH=4.4; exposure time 4 days). Enamel blocks (4x4x2 mm) were cut from these surfaces with a low-speed diamond saw (Isomet, Buehler Ltd, Lake Bluff, IL, USA) under water cooling. Samples were divided into groups: 1 - intact enamel; 2 – WSLs ; 3 – WSLs treated with fluoride varnish; 4 - WSLs treated with casein phosphopeptide - amorphous calcium phosphate (CPP-ACP); 5 – resin infiltrated WSLs. After treatment and sterility verification, monomicrobial biofilm was formed. Following pellicle formation with artificial saliva, biofilm was incubated in specific medium, at 37 °C for 48 hours in aerobic conditions. Biofilm was quantified by Colony Forming Units per ml (CFUs/ml) and Real-Time PCR. Statistical analysis was performed using SPSS.

Results: Both quantification methods showed that samples treated with fluoride varnish and CPP-ACP exhibited significantly less biofilm formation compared with resin-infiltrated enamel caries lesions ($p<0.05$). CFU counting demonstrated that fluoride varnish and CPP-ACP-treated samples were less susceptible to C. albicans biofilm formation compared with untreated WSLs ($p<0.05$).

Conclusions: Remineralizing agents such as fluoride varnish and CPP-ACP may reduce the susceptibility of treated enamel caries lesions to C. albicans biofilm formation.

Keywords: white spot lesions, Candida albicans, fluoride varnish, CPP-ACP, resin infiltration

ORAL PRESENTATION

OP.021

IN VIVO EVALUATION OF THE EFFECT OF OCCLUSAL FISSURE STAIN REMOVAL ON DIAGNOSTIC ACCURACY

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Introduction: Occlusal fissure stains and organic deposits may compromise caries detection by altering laser fluorescence readings.

Objective: To compare the effects of mechanical polishing with a fluoride-free prophylaxis paste and in-office application of 35% hydrogen peroxide on laser fluorescence measurements of stained occlusal fissures.

Materials and Methods: Twenty-five healthy volunteers were enrolled; 12 contributed four-teeth and 13 contributed six-teeth (total 126). Eligible posterior teeth had visible fissure staining without cavitation or restorations. In this randomized split-mouth design, teeth were isolated with rubber dam, and baseline DIAGNOdent Pen readings were obtained from the deepest stained fissure sites before and after drying with air syringe. Teeth were then randomly assigned to polishing with fluoride-free prophylaxis paste for 30s or hydrogen peroxide application for 15min. DIAGNOdent measurements were repeated immediately after each surface treatment. Within-group changes were analyzed with the Wilcoxon signed-rank test and between-group differences in change scores with the Mann–Whitney U test ($\alpha=0.05$).

Results: Air–water spray/drying alone did not significantly change scores (hydrogen peroxide $p=0.355$; polishing $p=0.516$). After surface treatment, scores increased significantly in both groups (hydrogen peroxide: vs baseline $p=0.023$ and vs post-spray $p=0.032$; polishing: both comparisons $p<0.001$). The post-treatment minus baseline change was greater after polishing than after hydrogen peroxide (median 10 vs 3; $p<0.001$).

Conclusions: Laser fluorescence measurements on stained fissures are sensitive to surface conditioning. Standardized surface preparation is essential, and increases in scores after cleaning should be interpreted cautiously as potential measurement effects; clinical examination and, when indicated, other adjunctive methods should guide decision-making.

ORAL PRESENTATION

OP.022

ACCESS TO DENTAL CARE: RIGHT OR PRIVILEGE? A COMPARISON WITH EUROPEAN DATA AND THE ROLE OF THE ORAL HEALTH CLAUSE

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Introduction: Oral health is a fundamental component of overall health, influencing individual and societal well-being. Oral diseases impose a significant financial burden on households, particularly in systems where dental care is predominantly financed through private expenditure.

Objective: This study examines access to dental care in Greece, evaluates its financing structure and compares it with data from the European Union.

Materials and Methods: The study is based on a literature review and analysis of data from Eurostat, ELSTAT, OECD, and WHO.

Results: Greece records one of the highest rates of unmet dental care needs in the European Union, reaching 27.1% compared with 6.3%. Socioeconomic inequalities are evident, as individuals at risk of poverty report significantly higher unmet needs, 52.8% versus 13.7% in the EU. Dental care in Greece is financed almost entirely through out-of-pocket payments, with 0% public coverage in 2023 compared with 35% in the EU. Limited access leads to delayed care, worsening oral conditions and raising catastrophic health expenditure, 9.5% in Greece versus 6.4% in the EU. A 5% oral health clause could generate over €500,000,000 annually, strengthening public funding and expanding coverage.

Conclusions: Heavy reliance on private spending and limited public coverage reduce accessibility, turning oral health into a privilege. Compared to other European countries, Greece shows significant shortcomings in prevention and in ensuring equal access to dental care services. Establishing oral health clause, integrating dental care into the public system, prioritizing prevention, and supporting vulnerable groups could reduce inequalities and ensure the universal right to oral health.

ORAL PRESENTATION

OP.023

ACCESSIBILITY OF DISABLED PATIENTS FOR DENTAL TREATMENT UNDER GENERAL ANAESTHESIA AT THE GENERAL HOSPITAL OF THESSALONIKI “O AGIOS DIMITRIOS”

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Introduction: The Greek financial crisis in 2016 had a profound impact on the accessibility of disabled patients for dental care. COVID-19 pandemic affected Greece's healthcare system since 2019, as dental services were temporarily, partially or fully suspended.

Objective: The aim of the study was to evaluate the modification of waiting time for disabled dental patients, who required treatment under general anaesthesia at “O Agios Dimitrios” General Hospital of Thessaloniki.

Materials and Methods: Access to medical records of the patients was requested. The records of all dental cases treated within the period June 2015 – June 2024 were reviewed. In total, 166 dental patients were treated. The time of first diagnosis had not been reported for 16 patients, so they were excluded. The waiting time since the first examination was calculated for each case.

Results: Most patients derived from Thessaloniki. Patients from other districts of Northern Greece were also referred to the hospital for dental care under general anaesthesia. Each case was classified on a scale of urgency from K1 (most urgent) to K5 (least urgent). The vast majority of dental patients were classified as K5 (140 out of 166). Calculations revealed a rapid increase of waiting time, as in period 2015 – 2018 a dental patient would be treated within almost 2 semesters since diagnosis, while in period 2019 – 2024 the average waiting time was almost 4.5 semesters.

Conclusions: Integrating dental care into broader public health policies is vital for ensuring comprehensive and equitable care for disabled individuals.

ORAL PRESENTATION

OP.024

CLINICAL COMPLEXITY AND PREVENTIVE DENTAL MANAGEMENT OF AN ADOLESCENT PATIENT WITH APERT SYNDROME: A MULTIDISCIPLINARY CASE-ORIENTED PERSPECTIVE

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Introduction: Apert syndrome is a rare craniofacial disorder caused by FGFR2 gene mutations, leading to premature cranial suture fusion and characteristic craniofacial dysmorphology. It is associated with midfacial deficiency, skeletal Class III discrepancy, and complex dentofacial abnormalities that complicate oral function and hygiene maintenance. The reported incidence ranges from 1:65,000 to 1:160,000 live births, highlighting the need for individualized interdisciplinary management.

Objective: This presentation aims to describe the clinical and therapeutic considerations in the dental management of an adolescent with Apert syndrome and to contextualize the selected treatment approach within contemporary evidence-based practice supported by literature.

Materials and Methods: An adolescent patient with confirmed Apert syndrome underwent comprehensive clinical and radiographic assessment. Emphasis was placed on craniofacial morphology, occlusal relationships, eruption patterns, enamel integrity, periodontal condition, and plaque control. A phased treatment protocol was developed according to individualized caries risk assessment, prioritizing preventive care and minimally invasive restorations. A focused literature review was conducted in PubMed, NIH, and Google Scholar using the keywords "Apert Syndrome oral manifestations" and "comprehensive dental care in Apert Syndrome". Selected studies were critically appraised to support clinical decision-making and define management principles.

Results: Clinical evaluation revealed severe skeletal Class III malocclusion, significant dental crowding, delayed eruption, and qualitative enamel defects. Implementation of an intensive preventive regimen, including topical fluoride application and structured oral hygiene reinforcement, improved plaque indices and stabilized caries risk.

Conclusions: Effective dental management requires early integration into a multidisciplinary craniofacial pathway. Individualized preventive strategies and staged therapeutic planning are critical to achieve long-term functional stability and improved oral health outcomes.

ORAL PRESENTATION

OP.025

DENTAL MANAGEMENT OF ONCOLOGY PATIENTS UNDERGOING ANTIRESORPTIVE DRUG THERAPY

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Introduction: Anti resorptive medication has been used in oncological patients for the prevention of skeletal associated complications and the prevention of metastatic tumors. Although the effect of this medication has been proven to be beneficial for the oncological situation, it has been directly associated with the osteonecrosis of the jaws. New guidelines do not support the withdrawal from the medication. Updated Clinical treatment protocols for the management of these patients have been proposed both in Europe and United states.

Objective: The purpose of this study is the presentation of the factors we have to evaluate, about the management of oncological patients in antiresorptive medication.

Materials and Methods: The study was performed according to the data collected during the examination, treatment and follow up of oncological patients treated in the Department of Dental Care for Oncology patients of Tzaneio General Hospital of Piraeus.

Results: With the use of a specific algorithm the patients were separated in three categories based on the severity of their situation (low, medium and high risk for osteonecrosis). Among the various factors analyzed were: antiresorptive medication dosage (high/low), smoking, comorbidity, antiangiogenic factor, targeted therapy etc. Afterwards it was decided if the patient would follow a supportive type of therapy (oral hygiene), a less interventional therapy (root canal) or a more aggressive approach (extraction/ surgery).

Conclusions: The results of this paper highlight the necessity for the correct and in time evaluation of every oncological patient as well as the need for multi-disciplinary partnership between dental and oncology professionals. Also, in every patient must be followed a personalized treatment plan according to his condition (high risk patient for osteonecrosis, comorbidities), after a thorough evaluation. The treatment plan includes special protocol of treatment with antibiotic chemoprophylaxis, primary wound closure, observation of the bone healing).

ORAL PRESENTATION

OP.026

MRI SAFETY AND ARTIFACT GENERATION IN MAXILLOFACIAL OSTEOSYNTHESIS: A SYSTEMATIC REVIEW

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Introduction: Magnetic resonance imaging (MRI) is a vital diagnostic modality; however, the presence of metallic osteosynthesis plates in the oral and maxillofacial regions raises concerns regarding patient safety and image quality. This pathology requires precise diagnostic evaluation to avoid displacement or destruction of adjacent structures.

Objective: To systematically evaluate the physical interactions between MRI fields and craniomaxillofacial fixation devices, documenting risks such as displacement and heating, alongside image-distorting artifacts.

Materials and Methods: A comprehensive systematic search was conducted across major electronic databases. The strategy utilized Boolean operators combining terms for MRI, maxillofacial anatomy, osteosynthesis, and adverse interactions including deflection, thermal changes, and artifacts. Studies assessing clinical and physical effects on implants were extracted for analysis.

Results: Synthesis of the literature indicates that while modern titanium miniplates generally exhibit safe ferromagnetic and thermodynamic profiles under standard MRI conditions, artifact generation remains a significant clinical challenge. The severity of signal voids and image distortion is heavily influenced by magnetic field strength, plate composition, and specific sequence parameters. These artifacts frequently impair the diagnostic utility of the examination in the peri-implant region, potentially complicating the assessment of bone remodeling or adjacent neurovascular elements.

Conclusions: Although severe thermal or displacement risks are rare with contemporary materials, localized artifacts significantly compromise diagnostic accuracy. Standardized imaging protocols and advanced 3D sequences are essential to mitigate distortion and optimize radiological outcomes in patients with maxillofacial hardware.

ORAL PRESENTATION

OP.027

READABILITY ANALYSIS OF APHTHAE INFORMATIONAL TEXTS ON INTERNET WEBSITES

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Introduction: Internet usage is increasing every day. It is frequently used to obtain information in the field of health. It is very important that informational texts on websites are understandable to all segments of society. Aphthae are one of the most common oral diseases.

Objective: The aim of this study is to analyze the readability of Turkish informational texts about aphthae available on the internet.

Materials and Methods: Turkish texts related to patient information were examined by typing the term " aphthae" into the Google search engine. The informational texts in the 60 included websites were evaluated according to the Ateşman Readability Index. Text sources were recorded as private university hospitals, private hospitals, private dental health clinics, doctors and dentists. Descriptive statistics were used in the evaluation of the data ($p < 0.05$).

Results: The mean Ateşman Readability Index score was found to be 65.46. When the websites were categorized, they consisted of private university hospitals (3.3%), private hospitals (21.7%), private dental health clinics (50%), doctors (8.3%), and dentists (16.7%). 65% of the texts evaluated had a moderate level of reading difficulty. The texts were identified as having a 9th to 10th-grade readability level based on the Flesch Reading Ease scale.

Conclusions: The readability of texts related to 'aphthae' on Turkish websites is generally of moderate difficulty. Readability programs can be used to improve the readability of patient information texts. The comprehensibility of texts, their appeal to all segments of society, and their suitability for all educational levels are important.

Keywords: Aphthae, Internet, Readability

ORAL PRESENTATION

OP.028

DEEP LEARNING–BASED DETECTION AND POSITION CLASSIFICATION OF IMPACTED CANINES ON CBCT USING THE NN-UNET ALGORITHM

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Introduction: Impacted maxillary canines are among the most common dental impactions and may lead to complications such as root resorption of adjacent incisors, arch length loss, and cystic changes. Accurate localization and early detection are essential for appropriate orthodontic and surgical treatment planning. Cone Beam Computed Tomography (CBCT) provides three-dimensional visualization; however, manual evaluation is time-consuming and subject to observer variability.

Objective: This study aimed to evaluate the performance of a deep learning–based nnU-Net model for automatic detection and position classification of impacted canines on CBCT images.

Materials and Methods: A retrospective dataset consisting of CBCT scans from 50 patients (80 impacted canines) was used. Images were annotated by two experienced oral and maxillofacial radiologists. The dataset was split into training (80%), validation (10%), and test (10%) sets. A 3D nnU-Net model was trained using 44 CBCT volumes and evaluated on 5 test volumes. Performance was assessed using accuracy, Dice coefficient, Jaccard index, precision, and recall metrics for three positional classes (horizontal, palatal, and vestibular).

Results: The model achieved consistently high voxel-wise accuracy (>0.99) across all classes. For the palatal impacted canine class, the model demonstrated robust segmentation performance with a Dice coefficient of 0.68, Jaccard index of 0.61, precision of 0.66, and recall of 0.74. Notably, Dice scores in individual test cases reached up to 0.94, indicating strong performance in favorable cases. In contrast, performance for horizontal and vestibular classes was limited, likely due to severe class imbalance and low sample representation. Despite this, the model showed stable negative predictive performance and maintained structural consistency in volumetric predictions.

Conclusions: The nnU-Net–based framework demonstrated promising and clinically relevant performance, particularly in detecting palatally impacted canines. These findings highlight the potential of deep learning–based CBCT analysis as a supportive tool in clinical decision-making. Further improvements with larger and more balanced datasets are expected to enhance model generalizability and enable reliable multi-class classification.

Keywords: Cone beam computed tomography, impacted canine, deep learning, nnU-Net, artificial intelligence

ORAL PRESENTATION

OP.029

COMPARISON OF NEXT-GENERATION LARGE LANGUAGE MODELS IN THE DENTISTRY SPECIALIZATION EXAM: ACCURACY RATES IN CASE-BASED QUESTIONS APPROPRIATE TO THE ORAL AND MAXILLOFACIAL RADIOLOGY COURSE CONTENT

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Introduction: Artificial intelligence (AI) has become a transformative force in health professions education, particularly through large language models (LLMs) that enable human-like communication and introduce innovative approaches to teaching and decision-making.

Objective: The aim of this study was to evaluate and compare the performance of five LLMs —ChatGPT-5.2 Mini, Google Gemini, Microsoft Copilot, DeepSeek, and ChatGPT-5.2 Go—in answering case-based questions in accordance with the Oral and Maxillofacial Radiology (OMFR) course content of the Dentistry Specialization Exam.

Materials and Methods: A total of 97 questions asked in the exam between 2012 and 2025 were categorized as “OMFR”, “other clinical sciences” and “basic medical sciences” and were posed to five LLMs. In addition, the performance of large language models has been compared across years. The data obtained were analyzed using Cochran’s Q test. $p< 0.05$ was considered statistically significant.

Results: The overall accuracy rates across all responses were measured at 98.9% for both ChatGPT-5.2 Go and Google Gemini, followed by ChatGPT-5.2 mini at 97.9%, Microsoft Copilot at 96.9%, and DeepSeek at 93.8%. All LLMs reached 100% accuracy in basic medical sciences; however, DeepSeek exhibited the lowest accuracy rate across other clinical sciences and OMFR categories. No statistically significant relationship was found between the LLMs and exam years upon analysis ($p> 0.05$).

Conclusions: LLMs have demonstrated rapid advancement in parallel with recent developments in AI. A review of previous studies indicates that these models have shown marked improvement over time. This study highlights the potential of LLMs to be utilized as supportive tools in the field of OMFR.

Keywords: artificial intelligence, dentistry specialization exam, large language model

ORAL PRESENTATION

OP.030

EVALUATION OF MRONJ AWARENESS AMONG OSTEOPOROSIS AND CANCER PATIENTS RECEIVING ANTIRESORPTIVE THERAPY: A PILOT CROSS-SECTIONAL SURVEY

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Introduction: Medication-related osteonecrosis of the jaw (MRONJ) is a serious complication associated with antiresorptive and antiangiogenic therapies. Although research on its pathophysiology and management is expanding, patient awareness of MRONJ remains insufficiently characterized.

Objective: To evaluate the level of awareness of MRONJ among patients with osteoporosis and cancer receiving antiresorptive therapy.

Materials and Methods: A questionnaire including the evaluation of demographic features, treatment indications, MRONJ awareness, and information-seeking behavior was used for a cross-sectional in-person survey to 33 osteoporosis and 18 cancer patients. Questions addressing the dental relevance, preventive strategies, and fundamental knowledge were used to assess MRONJ awareness. Responses to each question were reported as percentages and compared using the Chi-square test ($p=0.05$).

Results: Awareness of MRONJ was found in 17.6% of patients while 74.5% were unable to identify its clinical manifestations. The need for dental care was established in 25.5% of the patients while 39.2% acknowledged the necessity of dental care before therapy. However, 13.7% of patients reported being referred for dental evaluation. 78.4% expressed a further desire to receive information about dental consequences of MRONJ. A significant difference was found between gender and perceived need for dental care ($p=0.034$), and between educational level and information-seeking behavior ($p=0.0003$). However, no difference was obtained across disease groups ($p>0.05$).

Conclusions: MRONJ awareness was low among patients receiving antiresorptive therapy and did not significantly differ between osteoporosis and cancer patients. Since MRONJ is an avoidable pathology, poor patient awareness represents a modifiable risk factor, highlighting the need for structured patient education strategies.

ORAL PRESENTATION

OP.031

EVALUATION OF OROPHARYNGEAL AIRWAY VOLUME AND THE RELATIONSHIP WITH NASAL SEPTUM DEVIATION AND MALOCCLUSION USING CONE-BEAM COMPUTED TOMOGRAPHY

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Introduction: The oropharynx is a complex structure involved in respiration, swallowing, and speech. Nasal septum deviation (NSD) and malocclusion may influence the morphology of the oropharyngeal airway (OPA).

Objective: The aim of this study was to evaluate OPA volume and its relationship with NSD and malocclusion using cone-beam computed tomography (CBCT).

Materials and Methods: This retrospective study analyzed CBCT images of 112 individuals. Based on cephalometric evaluation of sagittal sections, subjects were classified as skeletal Class I, II, and III. The NSD angle was measured on coronal sections, and cases were categorized into mild, moderate, and severe NSD groups. OPA volume was assessed three-dimensionally in total, retroglossal, and retropalatal segments.

Results: Gender had a significant main effect on total and retroglossal airway volumes ($p < 0.05$). Airway volumes were significantly greater in the severe NSD group than in the mild and moderate groups across all segments ($p < 0.05$). Malocclusion showed no independent main effect on airway volumes ($p > 0.05$). Significant gender × NSD interactions were observed in all segments, whereas malocclusion × NSD interactions were detected in the total and retropalatal segments ($p < 0.05$). Age was not significantly associated with airway volumes in any segment ($p > 0.05$).

Conclusions: OPA volume differs significantly according to the severity of NSD and is influenced by gender. Although malocclusion did not show a significant independent effect, its interaction with NSD severity may be clinically relevant. These findings highlight the importance of a multifactorial approach in the evaluation of the OPA.

Keywords: Airway, Deviation, Malocclusion, Nasal Septum, Oropharyngeal

ORAL PRESENTATION

OP.032

DEEP LEARNING–BASED DETECTION AND POSITION CLASSIFICATION OF IMPACTED CANINES ON CBCT USING THE NN-UNET ALGORITHM: A PILOT STUDY

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Introduction: Impacted maxillary canines are among the most common dental impactions and may lead to complications such as root resorption of adjacent incisors, arch length loss, and cystic changes. Accurate localization and early detection are essential for appropriate orthodontic and surgical treatment planning. Cone Beam Computed Tomography (CBCT) provides three-dimensional visualization of impacted teeth; however, manual evaluation of volumetric datasets can be time-consuming and subject to observer variability. Artificial intelligence and deep learning approaches have recently shown promising results in automated medical image analysis.

Objective: This study aimed to evaluate the performance of a deep learning–based approach using the nnU-Net algorithm for automatic detection and spatial classification of impacted canines on CBCT images.

Materials and Methods: A retrospective dataset of CBCT scans from 50 patients including 80 impacted canines was analyzed. All images were anonymized and annotated by two experienced oral and maxillofacial radiologists to establish the ground truth. The dataset was divided into training (80%), validation (10%), and test (10%) subsets. An nnU-Net–based convolutional neural network was trained to automatically detect and classify the position of impacted canines within the CBCT volumes. Model performance was evaluated using confusion matrix–derived metrics including accuracy, sensitivity, precision, and F1-score.

Results: The nnU-Net model achieved an overall detection accuracy of 0.93. Sensitivity and precision values were 0.91 and 0.94, respectively, with an F1-score of 0.92. The automated system demonstrated high agreement with expert annotations in identifying impacted canine location and spatial relationship with adjacent teeth, while significantly reducing analysis time compared with manual evaluation.

Conclusions: Deep learning–based analysis using the nnU-Net framework provides highly accurate detection and localization of impacted canines on CBCT images. Such AI-assisted systems may support clinicians in early diagnosis and treatment planning while improving efficiency and reducing observer variability in dental radiology.

Keywords: cone beam computed tomography, impacted canine, deep learning, nnU-Net, artificial intelligence

ORAL PRESENTATION

OP.033

FIRST-AUTHOR GENDER DISTRIBUTION IN HIGH IMPACT FACTOR DENTAL JOURNALS

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Introduction: First authorship is an important indicator of academic productivity and scientific visibility; however, temporal trends in female first-author representation in high-impact dental journals remain insufficiently explored.

Objective: This study aimed to evaluate temporal changes in female first authorship between 2021 and 2025 in the 10 highest impact factor dental journals and to compare these rates with male authorship.

Materials and Methods: Articles published between 2021 and 2025 in the top 10 highest impact factor dental journals (Periodontology 2000, International Journal of Oral Science, International Endodontic Journal, Journal of Clinical Periodontology, Japanese Dental Science Review, Dental Materials, Journal of Dental Research, Journal of Dentistry, Clinical Oral Implants Research, and Progress in Orthodontics) were retrospectively reviewed. The gender of the first author was identified, and annual distributions were analyzed. Temporal changes were assessed using the Chi-square test, while publication trends were evaluated using a negative binomial regression model.

Results: A total of 6844 articles published between 2021 and 2025 were analyzed across 10 high–impact dental journals. Female first authorship varied across journals, ranging from approximately 30% to 47%, while male authors remained numerically predominant. Although year-to-year fluctuations were observed, no consistent directional trend was identified. Analyses accounting for publication year and journal characteristics indicated overall stable gender-related publication patterns.

Conclusions: Despite numerical male predominance in several journals, no significant temporal or impact factor–related gender differences were identified. These findings suggest a stable and relatively balanced first-author gender representation in high-impact dental journals over the studied period.

ORAL PRESENTATION

OP.034

MOBBING (WORKPLACE BULLYING) AMONG DENTAL STUDENTS: A SURVEY STUDY

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Introduction: Workplace bullying (mobbing) is a significant psychosocial stressor in dental education, particularly during the demanding preclinical and clinical restorative dentistry curriculum, where precision in operative procedures is critical.

Objective: The aim of this study was to determine the perceived levels of mobbing among dental students, comparing data from a specific state university with students from DİFFERENT DENTİSTRY faculties across Turkey, and to evaluate the impact of academic year and gender variables.

Materials and Methods: Following ethical approval from the Tokat Gaziosmanpaşa University Social and Human Sciences Research Ethics Committee (E-32319748-622.01-674937), informed consent was obtained digitally. The study included 1326 participants: 443 dental students from Gaziosmanpaşa University (Group 1) and 883 nationwide (Group 2). Data regarding experiences in restorative clinics and general education were collected using the Negative Acts Questionnaire-Revised (NAQ-R).

Results: The overall prevalence of perceived mobbing was 69.5%. Subgroup analysis revealed a perceived mobbing rate of 80.0% among GOP University students compared to 68.1% nationwide. In both cohorts, female gender and senior clinical years (4th and 5th years, characterized by heavy restorative clinical workloads) emerged as the strongest risk factors for mobbing exposure.

Conclusions: Mobbing is a prevalent issue in dental education. The higher rates in the single-center data highlight the decisive influence of institutional educational culture and intensive clinical requirements, such as direct restorative patient care, on the perception of mobbing.

ORAL PRESENTATION

OP.035

PREVALENCE AND PATTERNS OF PATIENT PRIVACY VIOLATIONS IN DENTISTRY-RELATED SOCIAL MEDIA: A COMPARATIVE ANALYSIS OF INSTAGRAM AND YOUTUBE

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Introduction: The expansion of social media has transformed professional communication in dentistry, introducing new challenges regarding digital professionalism. Public sharing of clinical content may compromise patient confidentiality; however, empirical evidence on privacy violations in dentistry-related social media remains limited.

Objective: To determine the prevalence and patterns of patient privacy violations in dentistry-related social media content and to compare violation frequencies between Instagram and YouTube.

Materials and Methods: A cross-sectional content analysis was conducted on 270 publicly accessible posts and videos from high-follower dental accounts (Instagram n=140; YouTube n=130). Content was selected using predefined inclusion criteria. A calibrated examiner evaluated each item according to predefined categories of privacy violations. Intra-examiner reliability was assessed using Cohen's kappa. Statistical comparisons were performed using chi-square tests (α=0.05).

Results: Overall, 64.4% of analyzed content contained at least one privacy violation. Violations were significantly more frequent on Instagram (74.3%) than on YouTube (53.8%) ($p<0.001$). The most common categories were lack of informed consent (69.1%) and before-and-after presentations (57.9%). Platform type was significantly associated with the presence of violations ($p<0.001$).

Conclusions: Patient privacy violations are highly prevalent in dentistry-related social media, particularly on visually oriented platforms. These findings highlight the urgent need for standardized guidelines, institutional oversight, and structured digital professionalism training to ensure ethical compliance and maintain public trust in the digital era.

ORAL PRESENTATION

OP.036

A CLOSER LOOK AT PROFESSIONAL CONCERNS RELATED TO ARTIFICIAL INTELLIGENCE IN DENTISTRY: A SURVEY-BASED CROSS-SECTIONAL STUDY

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Introduction: Although artificial intelligence (AI) is increasingly being integrated into dental practice, concerns persist regarding the boundaries of clinical responsibility, the level of trust placed in AI-assisted decision-making, and the evolving role of dentists in future clinical settings.

Aim: This study aimed to assess professional concerns regarding AI, deep learning, and robotic technologies in dentistry, and to compare these worries among dental students, dentists, and specialist dentists.

Materials and Methods: This cross-sectional observational study utilized a face-to-face questionnaire administered to 402 participants, comprising dental students, dentists, and specialist dentists. The survey comprised 22 questions evaluating sociodemographic attributes, familiarity with AI technologies, and professional concerns regarding the clinical application of artificial intelligence in dentistry. Data were analyzed using chi-square tests, and statistical significance was set at $p < 0.05$.

Results: Significant differences were observed among professional groups regarding concerns about accountability and responsibility in cases of machine errors ($p=0.026$) and lack of trust in AI diagnostic capability ($p=0.043$). Perceptions about whether AI could replace dentists also differed significantly between groups ($p=0.007$). Dentists and specialist dentists reported higher levels of professional concern compared with students. No significant differences were found between groups regarding privacy and data security concerns ($p>0.05$).

Conclusions: Dental professionals demonstrate concerns toward AI, particularly regarding professional responsibility and trust in AI-supported decision-making. Differences between students and practicing dentists suggest that clinical experience influences risk perception related to AI. The safe integration of AI into dentistry requires the development of ethical frameworks, professional guidelines, and targeted educational strategies.

Keywords: Artificial intelligence, concerns, dentists, robotic technologies

ORAL PRESENTATION

OP.037

COLORS, CAN THEY REDUCE THE DENTAL ANXIETY?

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Introduction: Dental anxiety may influence both psychological responses and physiological stress markers. This study aimed to evaluate the effects of different visual interventions on anxiety levels, hemodynamic parameters, salivary amylase, cortisol, and postoperative pain.

Materials and Methods: Eighty participants were allocated into four groups (control, red, green, blue; n=20 each). STAI, DAS, pulse rate, SpO_2, salivary amylase, and cortisol were measured at baseline and preoperatively. Postoperative pain was assessed using VAS. Within-group comparisons were performed using paired t-test or Wilcoxon signed-rank test. Between-group differences in change scores (Δ = preoperative − baseline) were analyzed using ANOVA or Kruskal–Wallis tests with appropriate post-hoc analyses. Correlations between ΔSTAI, ΔDAS, and Δamylase were evaluated using Spearman correlation.

Results: Within-group analysis showed significant reductions in STAI, DAS, amylase, and pulse rate in the green group ($p<0.05$), while no significant changes were observed in the control group. Between-group comparisons of Δ values revealed significant differences for STAI, DAS, amylase, and pulse ($p<0.05$), mainly driven by the green group. No significant differences were found for SpO_2 or cortisol. Postoperative VAS scores differed significantly among groups ($p<0.001$), with the green group showing the lowest pain levels. Correlation analysis demonstrated moderate correlations between ΔSTAI and ΔDAS ($r=0.35$, $p<0.01$) and strong correlations between psychological and biochemical changes specifically in the green group.

Conclusions: The green visual intervention significantly reduced anxiety, physiological stress markers, and postoperative pain, suggesting both psychological and biological modulation of stress responses.

ORAL PRESENTATION

OP.038

FEAR OF ENDODONTIC TREATMENT-WHO IS BRAVER MEN OR WOMEN?

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Introduction: . Fear of dental intervention is deeply rooted in human consciousness. As many as 70% of people have some degree of fear of dental intervention, while about 10% of the population suffers from odontophobia. Endodontic treatment is one of the most unpopular dental procedures. numerous expressions and sayings like "extracting a nerve" (in Serbia) or "I would rather have a root canal intervention than..." (in America) additionally contribute to the negative social image of these treatments.

Objective: . The goal of the study was to determine how expressed the fear of certain segments of endodontic treatment is in relation to gender.

Materials and Methods: . Respondents consisted of 143 persons of both genders (women and men) who voluntarily participated in the online survey through social media. Results were statistically analysed.

Results: . Significant or exceptional fear of endodontic intervention was reported by 18% of men and 45% of women. Both sexes cite pain as the main cause of fear, followed by fear of possible complications and the length of the procedure. Among respondents with no experience of endodontic therapy, women showed a greater fear of the appearance of endodontic instruments and their sound, while this ratio was uniform among patients with endodontic experience.

Conclusions: . Women report a greater degree of fear of endodontic interventions. Men more often report discomfort even after applied anesthesia, but both sexes would rather choose endodontic intervention than tooth extraction.

ORAL PRESENTATION

OP.039

PATIENT SATISFACTION AND EXPERIENCE WITH TELEDENTISTRY IN A REMOTE ISLAND POPULATION: A STUDY ON OINOUSSES ISLAND, GREECE

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Objective: Our study aimed to investigate the experience and satisfaction level of dental patients on Oinusses Island in the north-eastern Greece, during the teledentistry project organized by Tzaneio Hospital of Piraeus in 2024.

Methods: Patients were examined with intraoral camera and received remote dental consultation. Afterwards, they were asked to complete a structured questionnaire, which included demographic information, as well as questions regarding patient-dentist communication, perceived usefulness of teledentistry service, and overall patient satisfaction.

Results: Out of approximately 900 residents of the island, 50 participated and were interviewed, which resulted in 45 valid questionnaires. The overall patient satisfaction with teledentistry service was high, particularly in relation to communication with the dentist, understanding of medical information, and comfort during video consultation. Technical problems were reported by 7 patients. The majority felt that teledentistry was sufficient in reducing their need to travel to the mainland for healthcare and were willing to use the service again in the future.

Conclusions: Teledentistry was positively accepted by Oinusses' residents and showed high levels of satisfaction/usefulness, an encouraging sign to use it as an additional tool of dental care delivery for geographically remote communities. Teledentistry can enhance preventive dentistry, as well as contribute to better assessment of treatment needs and organizing visits of dentists to the island, thus reducing disparities in healthcare access.

ORAL PRESENTATION

OP.040

OPERATIONAL EXCELLENCE IN DENTISTRY: A SCOPING REVIEW OF LEAN AND AGILE ORGANIZATIONAL APPLICATIONS AND OUTCOMES

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Introduction: Dental care delivery systems are increasingly characterized by complex clinical workflows, resource constraints and growing expectations for high-quality, patient-centered care. Lean management and Agile development have been widely applied in healthcare systems to address similar challenges; however, their application in dental practice remains limited and fragmented.

Objective: To map and synthesize existing evidence on the implementation of Lean and Agile methodologies in dental practice, focusing on reported outcomes, tools, and research gaps.

Materials and Methods: A scoping review was conducted following the PRISMA-ScR guidelines. A thorough search was performed in PubMed, Scopus and Web of Science for studies published between 2010 and 2026 investigating the application of Lean and/or Agile methodologies in healthcare, with particular emphasis on dentistry. Eligible studies were selected based on predefined inclusion and exclusion criteria. Data extraction was performed using a structured framework and a thematic synthesis was undertaken to map intervention characteristics, implementation strategies and reported outcome measures.

Results: Preliminary findings suggest that Lean interventions in dental settings primarily focus on workflow optimization through tools such as Value Stream Mapping, 5S, and Kanban systems, leading to reductions in waiting times, improved process efficiency and better resource utilization. In contrast, Agile applications are comparatively scarce and primarily focus on adaptive workflow coordination, iterative problem-solving and team-based responsiveness. Importantly, the literature reveals a fragmented implementation landscape with minimal evidence of integrated Lean-Agile frameworks tailored to dental practice environments.

Conclusions: Lean methodologies demonstrate measurable benefits in optimizing dental service delivery, yet the literature reveals conceptual and methodological gaps in the adoption of Agile principles and in the systematic assessment of patient-centered outcomes. A structured synthesis of the evidence is essential to inform the development of integrated Lean-Agile models and to guide future research toward more comprehensive performance evaluation in dentistry.

ORAL PRESENTATION

OP.041

MULTIPLE AND LARGE PHLEBOLITHS ASSOCIATED WITH HEMANGIOMA: A CASE REPORT

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Objective: In hemangiomas, phlebolith formation may occur due to slowed blood flow and vascular stasis. Radiographically, phleboliths are typically observed as round or oval calcifications. This case report presents a rare complication characterized by well-defined, diffuse cortical thinning of the mandibular bone resulting from chronic pressure caused by located near the mandibular bone a phlebolith.
Case Report: 43-year-old male patient presented to our clinic with a complaint of pain in the right mandibular posterior region. Clinical examination revealed deformity in the left facial region and a scar extending toward the submandibular area. Panoramic radiography demonstrated multiple, round, bull's-eye–like calcifications superimposed over the posterior and inferior regions of the left mandible. Cone-beam computed tomography revealed a total of 14 phleboliths with varying diameters, including 1.8 cm, 1.61 cm, and 0.87 cm. A phlebolith measuring 0.95 cm in diameter, located near to the posterior segment of the left external oblique line, was found to cause diffuse thinning of the buccal cortical bone as a result of chronic pressure.

Conclusions: No treatment was applied for the patient's phleboliths, and the patient was placed under follow-up. Dentists should be able to recognize soft tissue calcifications on panoramic radiographs, and when phleboliths are detected, as in this case, patients should be referred to a medical center for evaluation of a possible underlying hemangioma.

Keywords: Phlebolith, Hemangioma, Panoramic Radiography, Cone-Beam Computed Tomography

ORAL PRESENTATION

OP.042

COMPARATIVE PERFORMANCE OF LARGE LANGUAGE MODELS ON TURKISH DENTISTRY SPECIALIZATION EXAM DIAGNOSTIC QUESTIONS

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Introduction: As artificial intelligence tools increasingly influence dental education, benchmarking large language models against standardized examinations such as the Turkish Dentistry Specialization Exam (DUS), which evaluates diagnostic competence in oral, radiologic, and systemic disease–related conditions, is essential to assess their reliability in diagnostic learning and clinical reasoning.

Objective: To compare the diagnostic accuracy of ChatGPT-5.2, Gemini 3 Pro, and Claude Sonnet 4.5 in answering DUS-based oral lesion questions.

Materials and Methods: Sixty validated DUS multiple-choice questions were categorized into oral mucosal lesions, radiologic jaw lesions, and systemic disease–related findings (20 questions each). Each model answered all questions independently. Accuracy rates were calculated, and inter-model differences were analyzed using McNemar tests and Cohen's kappa.

Results: Gemini achieved the highest overall accuracy (58/60; 96.7%), followed by Claude (56/60; 93.3%) and ChatGPT (55/60; 91.7%). ChatGPT showed perfect accuracy in oral mucosal lesions, whereas Gemini reached 100% accuracy in radiologic lesions. ChatGPT demonstrated lower accuracy in systemic disease–related questions (85%) compared with the other models (95%). No statistically significant overall differences were detected ($p>0.05$), and agreement ranged from substantial to almost perfect ($\kappa=0.63$–0.88).

Materials and Methods: Advanced LLMs demonstrated high accuracy on DUS oral-diagnostic questions, approaching expert-level performance while showing discipline-specific variability. These findings highlight the educational potential of LLMs as supplementary tools for exam preparation and clinical reasoning training. However, differences across diagnostic categories emphasize the need for cautious integration into dental education and clinical workflows, ensuring that AI supports—not replaces—critical thinking and professional judgment.

ORAL PRESENTATION

OP.043

EVALUATING THE DIAGNOSTIC PERFORMANCE OF TWO AI-BASED PROGRAMS IN THE RADIOGRAPHIC DETECTION OF DENTAL CARIES

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Introduction: Radiographic detection of dental caries can be challenging and is associated with low sensitivity, high specificity, and moderate-to-high accuracy. Artificial intelligence (AI)-based programs have been developed to assist in caries detection, using dental radiographs.

Objective: The aim of this study was to evaluate the diagnostic performance of two AI-based systems (Diagnocat and CranioCatch) in the detection of dental caries.

Panoramic and intraoral radiographs, obtained from 10 patients, were included in the present study. A total of 407 teeth were evaluated, comprising 257 teeth analyzed using panoramic radiographs and 150 teeth using intraoral radiographs. The presence or absence of dental caries was assessed separately on panoramic and intraoral radiographs by two AI-based diagnostic programs. The reference standard was established by consensus between an experienced restorative dentistry professor and a maxillofacial radiologist. Based on this reference, the diagnostic performance of the two AI programs was evaluated in terms of sensitivity, specificity and accuracy.

Both AI-based systems exhibited low sensitivity, high specificity, and moderate overall accuracy. Diagnocat achieved a sensitivity of 0.51, specificity of 0.89, and accuracy of 0.79. In comparison, CranioCatch demonstrated a higher specificity (0.95) but lower sensitivity (0.30), with an overall accuracy of 0.78. For both AI programs, diagnostic accuracy was higher when using panoramic radiographs (0.82 and 0.80) compared to intraoral radiographs (0.75 and 0.74)

The results indicate that the diagnostic performance of these AI-based programs is not yet optimal. They can be utilized primarily as adjunctive diagnostic tools, by dental practitioners who can evaluate the accuracy of their findings.

ORAL PRESENTATION

OP.044

BEYOND TEETH AND JAWS: INCIDENTAL DETECTION OF PETRIFIED EAR ON DENTAL IMAGING

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Introduction: Petrified ear is a rare condition characterized by calcification or ossification of the auricular cartilage, leading to partial or complete rigidity of the external ear. It may occur idiopathically or secondary to local factors such as frostbite, trauma, and inflammation, as well as systemic endocrine and metabolic disorders. Ossification is generally associated with a more severe clinical presentation and has been reported more frequently in certain congenital syndromes. The condition is often asymptomatic and incidentally detected during radiographic examinations.

Objective: To present a case of petrified ear incidentally identified during routine dental imaging.

Case Report: A panoramic radiograph obtained from a 48-year-old male patient presenting with dental complaints revealed bilateral, well-defined radiopaque areas posterior to the mandibular ramus near the temporomandibular joint region. Cone-beam computed tomography demonstrated hyperdense structures closely associated with the auricular soft tissues. Clinical examination confirmed marked rigidity of both auricles; the ears were firm on palpation and nearly non-foldable. Based on radiologic features, anatomical localization, bilateral symmetry, and clinical findings, a diagnosis of petrified ear was established. The patient reported a similar auricular condition in his sister, suggesting possible familial predisposition. He was referred for systemic evaluation and interdisciplinary consultation.

Conclusions: Petrified ear is an uncommon yet radiographically recognizable entity. This case emphasizes the importance of systematic assessment of extra-dental structures on dental images and highlights the role of dental radiology in identifying rare conditions with potential systemic or familial implications.

Keywords: Calcified ear, Dental radiology, Incidental finding

ORAL PRESENTATION

OP.045

A COMPERATIVE ANALYSIS OF PERIAPICAL RADIOGRAPHS VERSUS CONE BEAM COMPUTED TOMOGRAPHY (CBCT) IN THE ANATOMY OF THE MANDIBULAR FIRST PREMOLAR

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Introduction: The mandibular first premolar exhibits significant morphological variability, which is often challenging to detect radiographically. Periapical radiographs (PR) are the primary imaging modality during endodontic treatment, although complex lingual anatomy is frequently obscured. In contrast, Cone Beam Computed Tomography (CBCT) offers superior root canal anatomy visualization.

Objective: Comparison of diagnostic accuracy of PR and CBCT in identifying anatomical variations of mandibular first premolars.

Materials and Methods: A retrospective study of 30 mandibular first premolars was conducted. Each tooth had a digital PR and a CBCT scan. Three independent evaluators assessed both 2D and 3D images. Root canal anatomy was identified and classified by Vertucci types on periapical radiographs, and the results were compared with CBCT findings. The criterion for the bifurcation of the root canal in the PR, was the alteration in canal radiopacity. Findings from PR were cross-referenced with CBCT data.

Results: Analysis of periapical radiographs showed a Vertucci Type I (1) configuration in 80% of teeth and Type II (1-2) in 20%. CBCT analysis showed 70% Type I, 25% Type II (1-2), and 5% Type III (1-2-1).

ORAL PRESENTATION

OP.046

CLINICAL AND RADIOGRAPHIC FINDINGS ACCORDING TO BISPHOSPHONATE ADMINISTRATION ROUTE AND SYMPTOM SEVERITY IN DENTAL PATIENTS

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Introduction: Bisphosphonates (BP) are widely prescribed for osteoporosis and oncologic diseases and are associated with oral mucosal symptoms and medication-related osteonecrosis of the jaws (MRONJ). Administration route and patient-related factors may influence clinical presentation and risk.

Objective: To compare oral mucosal symptoms, radiographic findings, and osteonecrosis risk according to sex and bisphosphonate administration route in dental patients.

Materials and Methods: This cross-sectional study included 49 adult patients receiving bisphosphonate therapy for various systemic diseases. Demographics, systemic conditions, drug type and route (oral, intravenous, or combined), oral symptoms, and risk factors were recorded via structured questionnaires and clinical examination. Radiographic evaluation was performed to identify bone alterations and lesion localization.

Results: The cohort was predominantly female (n=45, 91.8%) with a mean age of 63.6 years. At least one oral symptom was present in 55.1% (n=27). Pain was most common (40.8%), followed by burning sensation (14.3%). Radiographic findings were observed in 32.7% (n=16). BP duration showed strong associations with symptom presence ($p<0.001$, $r=0.695$), severity ($p<0.001$, $\varepsilon^2=0.548$), pain ($p<0.001$), and numbness ($p<0.001$), and moderate associations with burning and throbbing ($p=0.012$). The oral+IV group demonstrated significantly higher rates of symptoms and longer BP exposure ($p<0.001$). No significant association was found between BP duration and gender, education, smoking/alcohol use, menopausal status, or radiographic findings ($p>0.05$).

Conclusions: BP administration route and exposure duration significantly influence oral symptoms and MRONJ risk. Combined therapy is associated with greater symptom burden and should be carefully monitored. Early multidisciplinary evaluation is essential for prevention and management in BP-treated patients.

Keywords: bisphosphonates; medication-related osteonecrosis of the jaws; MRONJ; oral mucosal lesions; radiographic findings; drug administration route

ORAL PRESENTATION

OP.047

TEMPOROMANDIBULAR JOINT OSTEOARTHRITIC CHANGES AND NECK DISABILITY: A CLINICAL AND RADIOLOGICAL STUDY

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Pain and functional limitations originating from the temporomandibular joint (TMJ) may influence the cervical region and head–neck posture. The Neck Disability Index (NDI) is a validated instrument for assessing the impact of upper cervical dysfunction on daily activities.

Objective: This study aimed to evaluate morphological changes in the TMJ using cone beam computed tomography (CBCT) and to investigate their potential effects on cervical function as assessed by the NDI.

Conclusions: According to the results of the study, higher NDI scores tended to be associated not only with radiographic evidence of degenerative changes but also with clinical TMJ symptoms, such as pain and restricted mouth opening.

ORAL PRESENTATION

OP.048

EVALUATION OF THE SKELETODENTAL EFFECTS OF FORSUS AND ACTIVATOR APPLIANCES IN CLASS II DIVISION 1 MALOCCLUSIONS

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Introduction: Class II Division 1 malocclusion is characterized by mandibular retrusion and increased overjet. Functional treatment aims to reduce skeletodental discrepancy using removable or fixed functional appliances.

Objective: The aim of this retrospective study was to comparatively evaluate the skeletal and dental effects of Forsus and Activator appliances in growing patients with Class II Division 1 malocclusion.

Materials and Methods: The inclusion criteria were as follows: patients in the pubertal growth period, Class II skeletal relationship due to a retrognathic mandible, Class II molar-canine relationships, a normodivergent growth pattern, and an overjet of 4 mm or greater. The study group consisted of 30 growing patients, with 15 treated using an Activator appliance and 15 treated with a Forsus fixed functional appliance. Angular and linear measurements were obtained from lateral cephalometric radiographs taken at the pre-treatment and post-treatment. Intragroup comparisons were conducted using the Wilcoxon Signed Rank test, while intergroup comparisons were performed using the Mann–Whitney U test. The level of statistical significance was set at $p<0.05$.

Results: Statistically significant within-group differences were observed in all measurements ($p<0.05$). A greater increase in SNB and a greater decrease in ANB were observed in the Activator group compared to the Forsus group. Dentoalveolar measurements, including incisor inclination, overjet, and overbite changes, did not show significant differences between groups ($p>0.05$).

Conclusions: Both Forsus and Activator were effective in treating Class II Division 1 malocclusion during the growth period. The skeletal effect obtained with the Activator was greater than Forsus.

ORAL PRESENTATION

OP.049

ACQUIRED DEEP OCCLUSION AND ITS TREATMENT

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Purpose of the study:

Discovering the causes of acquired deep occlusion, as well as the methods of its prosthetic treatment.

Material and methodology:

Results: We evaluated the prosthetic treatment according to the collected data: subjective, clinical and radiological. We observed that the teeth are relieved of functional overload, especially in first class defects, and in the case of bruxism.

Conclusions: The acquired deep occlusion should be treated prosthetically with fixed, removable and combined restorations.
The absence of teeth should be done as early and as quickly as possible to avoid the consequences caused by the stomatognathic apparatus.

Keywords: deep abrasion, bruxism, temporomandibular joint, fixed restorations, fixed bridge, skeletonized prosthesis,

ORAL PRESENTATION

OP.050

COMPARISON OF BONE MICRO-ARCHITECTURE IN VITAL AND ENDODONTICALLY TREATED MANDIBULAR MOLARS DURING ORTHODONTIC TREATMENT: A SPLIT-MOUTH, FRACTAL ANALYSIS STUDY

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Introduction: Orthodontic movement of endodontically treated teeth is a common clinical scenario; however, concerns remain regarding their biological response compared to vital teeth.

Objective: To compare the trabecular bone micro-architecture changes in periapical and furcation regions of vital mandibular first molars (VMM) and their contralateral endodontically treated mandibular first molars (ETMM) using fractal dimension (FD) analysis.

Materials and Methods: This retrospective split-mouth study included 20 patients (9 males, 11 females; mean age: 17.12 ± 2.29 years) who underwent non-extraction fixed orthodontic treatment (treatment duration: 3.91 ± 1.39 years). For each patient, one ETMM and its contralateral VMM were analyzed. FD values were calculated from pretreatment (T0) and posttreatment (T1) panoramic radiographs. Measurements were performed at four specific regions for both groups: mesial apex, distal apex, mid-apex, and furcation. The Wilcoxon signed-rank test was used for the statistical analysis of the data. Statistical significance was set to $p<0.05$.

Results: No statistically significant changes in FD values were observed from T0 to T1 in either VMM or ETMM groups for any region ($p>0.05$), indicating stability in bone structure. While VMM exhibited significantly higher FD values at the mid-apex region compared to ETMM at T1 ($p=0.024$), the magnitude of treatment-related change did not differ significantly between the groups in any region ($p>0.05$).

Conclusions: ETMM exhibit similar stability in trabecular bone micro-architecture to VMM under orthodontic loading. ETMM can be moved orthodontically with the same confidence as vital teeth, as no adverse effects on the surrounding bone structure were detected.

ORAL PRESENTATION

OP.051

THE EFFECTS OF LIGHT CURING UNITS AND ADHESIVE RESIN MATERIALS ON SHEAR BOND STRENGTH OF BRACKETS: AN IN-VITRO STUDY

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Introduction: Bracket failure and enamel decalcification are two major concerns in fixed orthodontic treatment. Fluoride-releasing adhesive resins have been introduced to reduce white spot lesions independently of patient compliance. However, concerns remain regarding their shear bond strength (SBS) and potential risk of bracket failure. In addition, the type of light-curing unit may influence polymerization efficiency and bond performance. This study aimed to compare the SBS values of contemporary fluoride-releasing adhesive resins with conventional composite resins when polymerized using two commonly used LED curing units.

Objective: To evaluate the shear-bond strength of brackets with different adhesive and curing unit combinations.

Materials and Methods: A total of 60 brackets were bonded to extracted human premolar teeth which were randomly divided equally into four groups (n = 15 for each group), by using two types of light-emitting diode(LED) units and adhesive resin materials Everest and Transbond XT (light-cure adhesive, 3M Unitek, CA, USA). Valo (Ortho; Ultradent Products, South Jordan, Utah) was applied 3s, Elipar(3M Unitek, Monrovia, Calif) applied 20s. Universal testing machine(Instron Corp., Canton, Mass) was used to record shear bond strength.

Results: This study showed that Valo light curing unit was less efficient when compared to the 3M Elipar S10 ($p<0.05$). Transbond XT, 3M Elipar S10 combination had significantly higher maximum pressure values (19.51876 Mpa) than the others. The lowest value (10.9147 Mpa) of the maximum pressure was observed with the combination of Everest and Valo.

Conclusions: Under the limitations of this study; the combination of Transbond XT, 3M Elipar S10 has the maximum shear-bond strength resistance to prevent bracket failure.

Keywords: Orthodontic metal brackets, Bond and shear strength, LED light curing units, adhesive resin.

ORAL PRESENTATION

OP.052

EFFECTS OF INTERPROXIMAL ENAMEL REDUCTION AND ATTACHMENT APPLICATION ON EFFECTIVENESS OF ROTATIONAL TOOTH MOVEMENT IN CLEAR ALIGNER THERAPY

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Introduction: Clear aligner therapy (CAT) offers an aesthetic alternative to fixed appliances; however, achieving predictable rotational tooth movement remains challenging. Interproximal enamel reduction (IPR) and attachment application are commonly used to enhance rotational control, yet their individual and combined effects on derotation across the dentition remain unclear.

Objective: This retrospective clinical study aimed to investigate the effectiveness of CAT in rotational tooth correction and to evaluate the effects of IPR and attachment application with the first set of aligners.

Methods: Thirty-five individuals (15 males, 20 females) treated with clear aligners were included. Rotational data were extracted from the tooth assessment table in ClinCheck at the initial planning (T0) and refinement planning stages (T1). The amount of derotation was calculated as the difference between T0 and T1. Data were categorized into four subgroups based on rotation magnitude and direction. The effects of IPR and attachment application were analyzed using the Wilcoxon signed-rank test.

Results: Rotational correction was highest for lower central incisors (80%) and lowest for upper canines (28%). Statistically significant correction was observed in all teeth except 33, 25, 17, 26, 37, and 47. IPR resulted in ≥50% rotational correction and significantly improved upper incisor derotation. Attachment application was ≥50% effective for most teeth except 15 and 42 and significantly improved canine rotations, particularly in tooth 23.

Conclusions: Correction of rotation with initial set of aligners can be achieved but may not be completed. IPR provides more effective support in the derotation of upper and lower incisors than attachments. Trial Registration The study protocol was registered on ClinicalTrials.gov under NCT number; NCT07053189 (registration date: 07/07/2025).

Keywords: rotation, interproximal enamel reduction, attachment, clear aligner therapy, effectiveness.

ORAL PRESENTATION

OP.053

USE OF MINI SCREWS AND ORTHOPEDIC TRACTION IN TREATMENT OF SKELETAL OPEN BITE

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Introduction: Skeletal anchorage devices have been commonly used in different orthodontic malocclusions. However, no statistical data has been published regarding the use of mini screws in the treatment of skeletal open bite

Objective: The aim of this study was to evaluate skeletal and dental effects of intrusive orthopedic forces, applied from maxillary mini screws inserted in the upper molar region in skeletal and dental open bite cases.

Materials and Methods: Treatment and untreated control groups were comprised of 60 cases. Both groups were consisted of 19 females, 11 males and matched according to gender, skeletal maturity and vertical classification. In the treatment group mini screws were inserted bilaterally between maxillary first molars and second premolars. A Nanda type palatal appliance was also inserted. Fixed orthodontic appliances were initiated and 400 g of intrusive force applied bilaterally between the mini screws and maxillary first molars.

Results: Mandibular plane angle (NSL/ML), anterior face height (n me), ANB and open bite were significantly decreased. These changes were mainly related to significant intrusion of the posterior maxillary teeth (ms-NL) and slightly spontaneous eruption of the upper and lower incisors (is-NL, ii-ML). Intrusion of the posterior maxillary teeth was resulted in anterior rotation of the mandible, reduction of the anterior face height and elimination of the anterior open bite in the treatment group compared to the control group ($p<0.05$ and $p<0.001$).

Conclusions: This effective treatment modality is less invasive, easily applied and well tolerated in the treatment of skeletal and dental open bite cases.

ORAL PRESENTATION

OP.054

EFFICACY OF INTERDENTAL BRUSHES IN REDUCING GINGIVAL BLEEDING IN PATIENTS WITH FIXED ORTHODONTIC APPLIANCES

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Introduction: The presence of orthodontic brackets, archwires, and other retentive elements creates favorable conditions for increased dental plaque accumulation, particularly in interdental areas. Interdental brushes have been shown to be effective adjunctive tools for plaque removal and reduction of gingival inflammation.

Objective: The aim of this study was to evaluate the efficacy of interdental brushes in reducing gingival bleeding, as assessed by the Bleeding on Brushing (BOB) index, in patients undergoing fixed orthodontic treatment.

Materials and Methods: This clinical study included 30 patients (13–50 years old) undergoing fixed orthodontic treatment at the Dental Clinical Center “St. Pantelejmon” in Skopje. Participants were instructed to use Curaprox Prime Start 06–011 interdental brushes once daily, preferably in the evening, for a minimum period of three months. Gingival bleeding was evaluated using the Bleeding on Brushing (BOB) index. To evaluate changes in BOB values over time, a repeated measures ANOVA was performed.

Results: The mean Bleeding on Brushing (BOB) percentage at baseline was 57.03 ± 22.69%. After one month of interdental brush use, the mean BOB value decreased to 28.04 ± 13.66%, while at the three-month follow-up it further declined to 10.13 ± 9.22%.

Conclusions: Curaprox interdental brushes are designed to effectively and atraumatically clean the entire critical interdental space, extending from the gingival margin through concave interdental niches up to the contact point, thereby contributing to the reduction of plaque accumulation and gingival inflammation.

ORAL PRESENTATION

OP.055

CLINICAL AND RADIOGRAPHIC FEATURES OF IMPACTED MAXILLARY CANINES: A POSITIONAL AND LOCAL ENVIRONMENTAL PERSPECTIVE

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Introduction: Maxillary canines are the most frequently impacted teeth after third molars.

Objective: To evaluate the clinical and radiographic features of impacted maxillary canines and their association with local environmental factors.

Materials and Methods: Our retrospective study was conducted at the Department of Orthodontics, Faculty of Dentistry, Selcuk University. The study included records and cone-beam computed tomography (CBCT) images of 54 impacted maxillary canines. Variables were categorized into three domains: demographic characteristics (gender), local environmental factors, and radiographic impaction characteristics. Local environmental factors comprised lateral incisor resorption, first premolar resorption, malformation, diastema, tumor, and trauma. Radiographic characteristics included jaw distribution, segment localization, number of impacted canines, and positional parameters such as bone, vertical, mesiodistal position, and angulation. Descriptive statistics were calculated; categorical variables were compared using the chi-square or Fisher's exact test, and group comparisons were performed using the Mann–Whitney U test. Statistical significance was set at $p < 0.05$.

Results: Females constituted 67.5% of the cases. Most impacted canines were located in the maxilla (95%), were unilateral (67.5%), and exhibited a predominantly palatal bone position (57.9%), most commonly 65% in vertical sector 2. Lateral incisor resorption was present in 15% and showed a significant association with primary canine retention in both patient ($p = 0.021$) and tooth-based analyses ($p < 0.001$). Diastema was also significantly associated with retention at the tooth level ($p = 0.045$).

Conclusions: Primary canine retention appears associated with positional patterns and lateral incisor resorption, underscoring the importance of early diagnosis and careful radiographic evaluation and warranting further prospective studies.

ORAL PRESENTATION

OP.056

DENTAL ANOMALIES ASSOCIATED WITH IMPACTED MAXILLARY CANINES: A RETROSPECTIVE STUDY

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Introduction: Maxillary canine impaction is a multifactorial eruption disturbance influenced by local, developmental, and genetic factors.

Objective: To evaluate dental anomalies frequently reported to be developmentally associated with impacted maxillary canines in orthodontic patients.

Materials and Methods: Our retrospective study was conducted at the Department of Orthodontics, Faculty of Dentistry, Selcuk University, and included 40 patients aged 12–23 years with impacted maxillary canines and available records, including cone-beam computed tomography (CBCT) images. Dental anomalies were categorized as tooth number, morphology, root, and developmental anomalies. Family history and skeletal pattern were also assessed. Descriptive statistics were calculated; associations between categorical variables were analyzed using the chi-square or Fisher's exact test when appropriate, and intergroup comparisons were performed using the Mann–Whitney U test. Statistical significance was set at $p < 0.05$.

Results: Lateral incisor agenesis was observed in 10% of cases, while additional tooth agenesis was detected in 20% of patients. Peg-shaped lateral incisors and lateral incisor size anomalies were each observed in 7.5% of patients. Root anomalies were most frequently detected in premolars (37.5%), followed by lateral incisors (17.5%) and impacted canines (10%). Retained primary canines were observed in 72.5% of patients. No significant association was found between retained primary canines and the evaluated variables ($p > 0.05$).

Keywords: The high prevalence of retained primary canines underscores the role of eruption guidance disturbances in the etiology of impacted maxillary canines. The coexistence of multiple developmental dental anomalies suggests a possible shared developmental background, warranting further investigation. Tooth, Impacted; Cuspid; Tooth Abnormalities; Cone-Beam Computed Tomography; Lateral incisor.

ORAL PRESENTATION

OP.057

ORTHODONTIC MANAGEMENT OF AN IMPACTED MAXILLARY CANINE IN A PATIENT WITH KABUKI SYNDROME

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Introduction: Kabuki syndrome is a rare genetic disorder characterized by distinctive craniofacial features, skeletal anomalies, and associated systemic conditions. Common oral findings include hypodontia, malocclusion, and high-arched palate. The present case represents the first report describing the orthodontic management of an impacted tooth in a patient with Kabuki syndrome.

Objective: This case report aims to present orthodontic management of an impacted maxillary canine in a patient with Kabuki syndrome and to highlight the associated clinical challenges.

Materials and Methods: A 10-year-old female patient was evaluated through clinical and radiographic examinations, which revealed an impacted maxillary canine, bilateral congenital absence of maxillary lateral incisors, Class II molar relationship, and mandibular crowding. Fixed orthodontic treatment was initiated. The clinical course was complicated by chronic thrombocytopenia, with platelet levels decreasing below 20,000/mm³ during treatment. Surgical exposure of the impacted canine was performed only after multidisciplinary consultation and appropriate medical management, including transfusion support when required. Orthodontic traction was applied using light continuous forces.

Results: After approximately 24 months, satisfactory alignment of both arches and acceptable sagittal relationships were achieved. The impacted canine was successfully guided into the dental arch. Complete interdigitation was not achieved, and treatment was discontinued earlier than planned due to systemic complications.

Conclusions: Orthodontic treatment in patients with Kabuki syndrome requires careful planning and multidisciplinary coordination. Particular attention should be paid from the initial examination due to the potential presence of systemic conditions such as thrombocytopenia, and even minimally invasive procedures should be approached with caution.

Keywords: Kabuki syndrome, orthodontics, impacted tooth

ORAL PRESENTATION

OP.058

TRUE SCIENCE OF OCCLUSAL ANALYSIS COMPARED WITH SUBJECTIVE ANALYTICAL METHODS

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Introduction: Occlusal analysis is essential and integral part in the dental clinical practice. As the demand for digital dentistry constantly increases, digital devices are gradually replacing conventional methods of recording occlusal contacts.

Materials and Methods: To compare the results for the occlusal bite force and preferded biting side scanned with the T-Scan III System with prefered biting side as subjective feeling of the patients.
30 subjects were evaluated with the T-Scan III System biting on the sensor and biting and without the sensor. Prefered biting side and subjective perception were evaluated.

Results: Results from the prefered biting side with the T-Scan showed that 23,33% of the patients had bilateral simultaneos biting side, 43,33% prefered to masticate on their right side and 33,33% prefered their left side, while results from the prefered side as a subjective feeling showed that 80% of the patients had bilateral simultaneos biting side, 10% prefered to chew on their right side and 10% prefered to chew on their left side.

Keywords: Occlusal force represents masticatory function. Using quantifiable occlusal indicators provides us a more objective occlusal force evaluation.
Occlusal analysis, biting force, T-Scan III System.

ORAL PRESENTATION

OP.059

TOOTH PRESERVATION THROUGH ORTHODONTIC EXTRUSION IN A STRUCTURALLY COMPROMISED ANTERIOR TOOTH: A MULTIDISCIPLINARY TREATMENT APPROACH

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Objective: To present a multidisciplinary treatment approach for preserving a structurally compromised anterior tooth using orthodontic extrusion to achieve adequate ferrule and enable definitive prosthetic rehabilitation.
Case Report: A 52-year-old male patient presented with a decemented crown on an endodontically treated maxillary central incisor (tooth 21) with extensive coronal tissue loss and insufficient ferrule. Clinical and radiographic evaluation revealed favorable root integrity and periodontal support, favoring tooth preservation; therefore, implant therapy was not deemed necessary. Surgical crown lengthening was avoided due to the risk of gingival asymmetry. Orthodontic extrusion was performed to increase supragingival tooth structure while preserving soft tissue architecture. A total extrusion of 3 mm was achieved over 7 months, followed by a 3-month stabilization period, resulting in a final ferrule height of 2 mm. At the end of orthodontic treatment, mobility was Miller Grade 2. After stabilization, gingivoplasty and provisional restoration were performed. Six weeks after provisionalization, mobility decreased to Miller Grade 1. The definitive restoration was then fabricated using a digital workflow and cemented. At the 6-month follow-up, the tooth demonstrated stable esthetics, function, and periodontal health, with physiological mobility.

Conclusions: The decision between extraction and preservation should be guided by biological feasibility. When conditions are favorable, a multidisciplinary approach incorporating orthodontic extrusion may support ferrule reconstruction and definitive prosthetic rehabilitation.

Keywords: tooth preservation; orthodontic extrusion; ferrule effect; prosthodontic planning; multidisciplinary treatment

ORAL PRESENTATION

OP.060

ASSESSMENT OF DENTAL RESEARCH ASSISTANTS' KNOWLEDGE AND ATTITUDES TOWARD CADCAM TECHNOLOGY AND DIGITAL WORKFLOW IN TURKEY

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Introduction: CAD/CAM dentistry has become widespread, emphasizing the need for training and digital workflow competence.

Objective: This study evaluated the knowledge, attitudes, and workflow experience regarding CAD/CAM technology among dental research assistants in Turkey to identify educational gaps and support the integration of digital dentistry into clinical practice.

Materials and Methods: A cross-sectional survey was conducted among 204 dental research assistants working in dental faculties in Turkey. The questionnaire assessed CAD/CAM training status, frequency and purpose of use, workflow experience, and tracking of current CAD/CAM technologies and scientific literature. Data were analyzed using chi-square, Mann–Whitney U, Kruskal–Wallis tests with Dunn post-hoc comparisons, and Spearman correlation analyses.

Results: Participants who had received CAD/CAM training used the technology significantly more frequently than those without training ($p<0.001$). Trained participants also demonstrated significantly higher workflow experience ($p=0.006$) and greater follow-up of current CAD/CAM technologies and scientific literature ($p<0.001$). Workflow experience differed significantly across dental specialties ($p=0.008$) and increased with higher CAD/CAM usage frequency ($p<0.001$). Significant positive correlations were found between workflow experience and block problem-solving ability ($p<0.001$) and between tracking current CAD/CAM technologies and scientific literature ($p<0.001$).

Conclusions: CAD/CAM training is strongly associated with higher technology use, greater workflow experience, and better engagement with current scientific and technological developments. These findings emphasize the importance of structured digital dentistry training during postgraduate education to support effective clinical implementation of CAD/CAM technologies and improve treatment quality.

Keywords: CAD/CAM, Digital workflow, Dental education, Research assistants

ORAL PRESENTATION

OP.061

RIBBOND POLYETHYLENE FIBER REINFORCEMENT: REPORT OF FIVE CLINICAL APPLICATIONS

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Introduction: Ribbond® ultra-high molecular weight polyethylene fibers strengthen composite restorations by distributing occlusal stresses and resisting fracture propagation in high-load areas.

Objective: To report clinical outcomes of Ribbond® reinforcement in four direct fiber-reinforced composite restorations and one endodontic post-and-core application.

Materials and Methods: Five cases utilized Ribbond® fibers bonded within nano-hybrid resin composites: (1-4) direct fiber-reinforced canine, molar and premolar restorations for extensive coronal defects in vital and endodontically treated teeth, with Ribbond® fibers (3mm) placed in a sandwich technique followed by nanohybrid composite (Clearfil Majesty ES-2), after etching (37% phosphoric acid 30s) and bonding (Kuraray Clearfil Universal Bond Quick 2); (5) endodontic post-and-core buildup in a maxillary canine using a continuous Ribbond® strand (3mm) light-cured into dual-cure composite (BeautiCem SA) , followed by build up with the nanohybrid composite (Clearfil Majesty ES-2). In all cases, Ribbond® was activated by a coating of wet resin with no fillers (Ribbond® Wetting Resin).

Results: Immediate post-operative stability and esthetics were excellent across cases; at 12 months follow-up, all four direct restorations maintained integrity without fracture, debonding, or secondary caries, while the fiber post showed no periapical pathology or core dislodgement under function.

Conclusions: Ribbond® reinforcement provides reliable enhancement of direct composite restorations and endodontic posts, supporting conservative management of compromised teeth with favorable medium-term survival and minimal complications when integrated properly.

ORAL PRESENTATION

OP.062

EVALUATION OF DENTAL PHOTOGRAPHY VIDEOS ON YOUTUBE IN TERMS OF EDUCATIONAL QUALITY AND RELIABILITY

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Introduction: With rising aesthetic expectations, aesthetic dentistry practices have become widespread. Dental photography is an essential tool in this field. The development of digital cameras and their ease of use has increased the importance of dental photography.

Objective: This study aims to evaluate the accuracy, reliability and educational quality of YouTube videos related to dental photography; and to analyse YouTube's role in the development of video-based information in the field of health.

Materials and Methods: A search was conducted on YouTube using the keywords ‘dental photography’ and ‘mobile dental photography’ in English, and the first 100 videos from each search were reviewed. View count, upload date, video duration, and like data were recorded. Videos were categorised by upload source (academic, dentist/clinician, health website). JAMA, DISCERN, and the Global Quality Score (GQS) were used for quality assessment. Data normality was assessed using the Shapiro-Wilk test, and intergroup differences were analysed using the Kruskal-Wallis test and Dunn post hoc test. The Spearman coefficient was calculated for correlation ($p<0.05$).

Results: A total of 113 videos were analysed. Sixty-seven of the videos were uploaded by dentists/clinicians, 37 by healthcare websites, and 9 by academic institutions. Overall quality was moderate (GQS: 2.18±0.91; DISCERN: 30.27±8.26; JAMA: 1.34±0.82). The median duration was 7.63 minutes, and the median number of views was 3,478. Significant differences were found between groups in GQS, DISCERN, and JAMA scores ($p\leq0.001$). Dentist/clinician videos had higher quality scores. There was no difference in terms of interaction index ($p=0.633$). A positive correlation was found between quality scores and popularity ($p<0.001$).

Conclusions: YouTube has significant potential as a source of information in dental photography; however, its content must be carefully evaluated from a scientific perspective.

Keywords: youtube, dentistry, dental photography, mobile dental photography

ORAL PRESENTATION

OP.063

A BIBLIOMETRIC ANALYSIS OF ARTIFICIAL INTELLIGENCE APPLICATIONS IN RESTORATIVE DENTISTRY

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Introduction: Artificial intelligence applications have become widely used methods in dentistry in recent years and have attracted increasing interest in the field of restorative dentistry, particularly in diagnosis, treatment planning, and clinical decision-making processes. A systematic evaluation of the scientific output in this area is important for identifying current research trends and future directions of development.

Objective: This study aimed to analyze the scientific literature on artificial intelligence applications in restorative dentistry using bibliometric methods and to evaluate its thematic distribution.

Materials and Methods: Publications indexed in the Web of Science database and covering all available years were analyzed using bibliometric methods. Publications retrieved using the keywords “artificial intelligence” and “dentistry” were classified according to dental subdisciplines, and studies related to restorative dentistry were selected for further detailed analysis. Citation and keyword analyses were performed using VOSviewer software.

Results: The analyses revealed that publications in the field of restorative dentistry were thematically clustered under the following topics: caries, whitening, diagnosis, treatment planning, color, adhesive and bonding, aesthetics, digital dentistry, restorative material evaluation, restoration quality, and three-dimensional (3D) analysis. A marked increase in the number of publications was observed in recent years.

Conclusions: The findings demonstrate that artificial intelligence applications have versatile areas of use in restorative dentistry and that research trends are predominantly concentrated on the themes of diagnosis and treatment planning.

ORAL PRESENTATION

OP.064

DIGITAL DETECTION OF EARLY TOOTH WEAR: A COMPARATIVE ANALYSIS

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Introduction: Non-carious cervical lesions are common clinical findings that accelerate with age, often resulting from attrition, erosion, or abrasion. While primarily affecting enamel, progressive tissue loss necessitates early diagnosis to prevent complications. Intraoral scanners (IOS) provide a quantitative alternative to traditional examination techniques. As clinical adoption increases among the dental practitioners, their diagnostic capabilities require further investigation.

Objective: To compare the capability of different intraoral scanners in detecting early signs of tooth wear.

Materials and Methods: Two scanners with distinct technologies were evaluated: Primescan (Dentsply Sirona), and Trios 3 (3Shape). Twelve premolars were positioned in a dental mannequin (maxillary left second-premolar) and scanned at baseline to generate quadrant digital models. Micro-tomography (micro-CT) scans were also obtained as a baseline reference. To simulate wear, teeth were immersed in 1% citric acid (pH 2.7) and the buccal surfaces were brushed. Teeth were then rescanned using IOS and micro-CT. All models were exported in stereolithography format and compared using mesh analysis software (Geomagic Control X, Hexagon AB). Statistical significance was set at $\alpha = 0.05$.

Results: Significant differences were observed between the tested IOS in the detection of tooth wear.

Conclusions: The operating technology of an intraoral scanner significantly affects its capability to detect early signs of tooth wear.

ORAL PRESENTATION

OP.065

ACCURACY OF TRIOS 3 AND TRIOS 5 INTRAORAL SCANNERS IN SHADE DETERMINATION: INFLUENCE OF CERAMIC TRANSLUCENCY AND THICKNESS

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Introduction: Accurate shade selection is essential for esthetic restorative dentistry. Intraoral scanners provide chairside color determination; however, their accuracy compared with spectrophotometric reference devices may be influenced by material properties such as translucency and thickness.

Objective: This study evaluated the color measurement accuracy of different intraoral scanners compared with a spectrophotometer and investigated the effects of ceramic translucency and thickness.

Materials and Methods: Seventy-two ceramic specimens were divided into six groups (n=12) according to translucency (HT, LT) and thickness (0.5, 0.7, 1.0 mm). Color measurements were obtained using Vita Easyshade V spectrophotometer (reference) and two intraoral scanners (TRIOS 3, TRIOS 5). Color differences were calculated using the CIEDE2000 (ΔE00) formula. Data were analyzed using repeated-measures ANOVA and post-hoc tests (α=0.05).

Results: Thickness (p=0.001), translucency (p=0.001), and device type (p=0.001) significantly affected ΔE00 values. Significant interactions were observed between device and thickness (p=0.004) and device and translucency (p=0.001). TRIOS 3 showed significantly higher ΔE00 values than TRIOS 5 (p=0.002), indicating lower agreement with the spectrophotometer. High-translucency specimens demonstrated higher ΔE00 values than low-translucency specimens for both scanners (p=0.001). Increasing thickness significantly increased ΔE00 for TRIOS 3 (p=0.012), while no significant thickness effect was observed for TRIOS 5 (p=0.262).

Conclusions: Intraoral scanner color accuracy is influenced by material translucency and thickness. TRIOS 5 demonstrated better agreement with spectrophotometric measurements than TRIOS 3. However, both scanners showed higher deviations compared with the spectrophotometric reference. Therefore, additional visual and digital verification methods should be considered to ensure accurate shade selection in clinical practice.

ORAL PRESENTATION

OP.066

EVALUATION OF THE RADIOPACITY OF RESIN-BASED RESTORATIVE MATERIALS USING DIGITAL IMAGING: AN IN VITRO STUDY

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Introduction: Radiopacity is an important property in the radiographic evaluation of restorative procedures, enabling the detection of secondary caries, assessment of restoration margins, and identification of voids. In recent years, bulk-placed materials have been developed for placement in thicker increments, reducing clinical application time while maintaining adequate polymerization.

Objective: The aim of this study was to evaluate the radiopacity of different bulk-placed restorative materials using a digital imaging system and to compare the obtained values with those of human enamel, dentin, and an aluminum step wedge.

Materials and Methods: Eight restorative materials (Beautifil Bulk-Fill, Estelite Bulk-Fill, EverX Posterior, Filtek One Bulk-Fill, Cention N, Fuji II, Filtek Z250, and Evoceram Bulk-Fill) were evaluated. Three disc-shaped specimens (8 mm × 2 mm) were prepared from each material using Teflon molds. Enamel and dentin sections, an aluminum step wedge, and the specimens were placed on a phosphor imaging plate. Mean gray values were measured with ImageJ, averaging three regions per image. Data were analyzed using one-way ANOVA ($p < 0.05$).

Results: Radiopacity values differed significantly among the tested materials ($p<0.05$). The highest radiopacity was observed in Beautifil Bulk-Fill, while the lowest value was found in Evoceram Bulk-Fill. All materials exhibited higher radiopacity than dentin, and all materials except Evoceram Bulk-Fill showed higher radiopacity than enamel.

Conclusions: Radiopacity is influenced by filler composition and radiopacifying agents. Materials with lower radiopacity may reduce radiographic detectability and should be carefully considered during clinical material selection.

ORAL PRESENTATION

OP.067

EVALUATION OF CELL RESPONSES TOWARDS DIMETHYLE SULFOXIDE- SOLVATED DENTAL ADHESIVES

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EVALUATION OF MTA USAGE: A RETROSPECTIVE STUDY

Introduction: Mineral Trioxide Aggregate (MTA) is widely used in endodontic and pedodontic clinics because of its biocompatibility and ability to promote hard tissue formation. Evaluating its clinical usage trends and indications is important for understanding current treatment approaches.

Objective: This study aimed to retrospectively evaluate the distribution and relationships of MTA usage according to year, gender, age group, tooth group, and application area in the Endodontics and Pedodontics clinics of Tokat Gaziosmanpaşa University Faculty of Dentistry, and to contribute to the literature on MTA usage trends.

Materials and Methods: In this retrospective study, 2406 teeth treated with MTA between 2014 and 2024 were analyzed. Cases were classified based on year of application, patient gender and age, tooth group, and treatment type. Radiographic evaluations were performed using SisoView software, and statistical analyses were conducted with SPSS 19 software. Statistical significance was set at $p<0.05$.

Results: A total of 2406 MTA-treated teeth were evaluated. An overall increase in MTA usage was observed over the years. No significant difference was found between male and female patients. MTA was most frequently applied in the 0–14 age group. Mandibular permanent molars showed the highest rate of MTA usage (36.2%). Vital pulp therapy was the most common treatment type, accounting for 85.8% of applications.

Conclusions: MTA usage has increased over time and is most commonly applied in vital pulp therapies of posterior permanent teeth, particularly during the pre-adolescent period.

Keywords: Mineral Trioxide Aggregate (MTA), Retrospective study, Vital pulp therapy, Endodontics, Pedodontics.

ORAL PRESENTATION

OP.068

IMPACT OF MATCHA GREEN AND BLACK TEAS ON COLOR STABILITY AND SURFACE GLOSS OF DIRECT COMPOSITE RESINS

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Introduction: Resin-based composite restorations are routinely exposed to dietary chromogens that may impair their optical properties over time. Different tea types contain distinct pigments and chemical characteristics that may differentially affect restorative materials.

Objective: To evaluate the effect of simulated six-month exposure to matcha, green, and black teas on the color stability and surface gloss of two universal resin composites.

Materials and Methods: Eighty disc-shaped specimens (5x2 mm) were fabricated from Filtek Z250 and Estelite Sigma Quick and assigned to four immersion media: artificial saliva, matcha, green tea, and black tea (n=10). After 24-hour storage in artificial saliva at 37 °C, baseline surface gloss and color were measured using a calibrated gloss meter and spectrophotometer. Specimens were then immersed in freshly prepared beverages for six consecutive days to simulate six months of clinical exposure. Post-immersion measurements were obtained, and gloss differences (ΔGU) and color changes (ΔE00) were calculated. Statistical analysis was conducted using one-way ANOVA and independent samples t-tests ($p<0.05$).

Results: Beverage type significantly affected both ΔE00 and ΔGU in both composites ($p<0.001$). Artificial saliva and matcha tea groups exhibited the lowest degree of discoloration. Gloss reduction was most pronounced in the black tea group for Estelite Sigma Quick and in the green tea group for Filtek Z250. No statistically significant inter-material differences were detected within the same beverage conditions ($p>0.05$).

Conclusions: Tea exposure may cause measurable discoloration and gloss reduction in direct resin composites, predominantly related to beverage staining potential and chemistry rather than intrinsic material differences.

Keywords: Composite Resins, Surface Properties, Tea

ORAL PRESENTATION

OP.069

MINIMALLY INVASIVE ESTHETIC REHABILITATION OF MAXILLARY LATERAL INCISOR AGENESIS AND PEG-SHAPED LATERAL INCISOR WITH DIRECT COMPOSITE RESTORATIONS: TWO CASE REPORTS

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Introduction: Hypodontia, defined as the congenital absence of one or more permanent teeth, is a common developmental anomaly. After third molars, maxillary lateral incisors are most frequently affected. Hypodontia may coexist with microdontia, such as peg-shaped lateral incisors characterized by conical morphology and reduced mesiodistal width. These conditions may compromise esthetics and function; therefore, contemporary management favors minimally invasive, tissue-preserving approaches.

Objective: To present the clinical outcomes of esthetic rehabilitation using direct composite resin restorations in two female patients with maxillary lateral incisor agenesis and peg-shaped lateral anomalies.

Materials and Methods: Two female patients (aged 24 and 26) presented with esthetic concerns and underwent clinical and radiographic evaluation. The first case exhibited unilateral agenesis with a contralateral peg-shaped lateral incisor, whereas the second case demonstrated bilateral agenesis. After discussion of treatment alternatives, a conservative restorative approach was selected. In the bilateral agenesis case, both maxillary canines were reshaped to simulate lateral incisors. In the other case, one canine was reshaped, and the peg-shaped lateral incisor was anatomically augmented using direct composite laminate restorations (Asteria, Tokuyama, Japan). Finishing and polishing procedures were subsequently performed.

Results: Favorable esthetic and functional outcomes were achieved, with stable gingival harmony, satisfactory color integration, and no postoperative complications. Both patients reported high satisfaction.

Conclusions: Direct composite resin restorations provide a predictable, conservative, and esthetically effective option for managing lateral incisor agenesis and peg-shaped anomalies when appropriate case selection is ensured.

ORAL PRESENTATION

OP.070

TOBACCO USE HABITS AND CESSATION DESIRES AMONG DENTISTRY STUDENTS

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Introduction: Dentistry students play a pivotal role in oral and dental health promotion and tobacco cessation counselling. Their awareness of tobacco risks and personal habits directly influence their future clinical attitudes.

Objective: This study aimed to determine tobacco and e-cigarette prevalence, habits, and cessation motivation among dentistry students, while assessing their e-cigarette knowledge and self-reported oral health issues.

Materials and Methods: An online questionnaire collected data from 219 students regarding sociodemographic, tobacco habits (Fagerström scale), e-cigarette knowledge, and oral symptoms.

Results: 40.2% never used tobacco, while 41.6% smoked cigarettes. Misconceptions were common; only 38.4% knew "zero nicotine" labels could be misleading, and 55.7% were unaware of heavy metals in e-liquids (Table 1). Tobacco users reported significantly higher oral cavity problems (55.7%) than non-users (37.1%) ($p=0.006$).

Conclusions: Tobacco use is linked to oral health issues, yet students lack critical awareness of e-cigarette contents. As future role models, this knowledge gap seriously compromises their ability to correctly guide society against emerging tobacco trends. Curricula must urgently address these misconceptions to ensure students can effectively fulfil their public health responsibilities.

ORAL PRESENTATION

OP.071

TREATMENT OF WHITE SPOT LESIONS WITH RESIN INFILTRATION TECHNIQUE

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Introduction: White spot lesions are early caries lesions with a milky white opaque appearance, clearly distinguishable from the surrounding intact enamel due to the difference in refractive index between the intact enamel and the demineralized area. White spot lesions are common in orthodontically treated patients, and these lesions may cause aesthetic problems even years after treatment. There are two strategies in the treatment of white spot lesions. One is based on the protection and remineralization of the lesions. Second is interventional treatments such as tooth whitening, microabrasion, and resin infiltration.

Objective: The purpose of this case presentation is to demonstrate the treatment of white spot lesions, which are common aesthetic concerns following orthodontic treatment, using the resin infiltration technique.

Materials and Methods: A 23-year-old female patient who complained about the appearance of owhite spot lesions in the upper anterior region after orthodontic treatment was seen at our clinic. Treatment of the teeth was planned using the resin infiltration technique (ICON). A 15% HCl acid gel was applied to the lesion surfaces for 2 minutes, extending 2 mm beyond the lesion margins, and then rinsed off. Ethanol was applied to the lesion area for 2 minutes to increase surface tension, and the tooth surface was then dried. TEGMA resin was applied to the lesion surface for 2 minutes, polymerized with an LED light device for 40 seconds, and polished.

Results: At the end of the treatment, a significant reduction in the appearance of white spot lesions was observed.

Keywords: The ICON resin infiltration technique was found to be effective in lesions resolution with steady results.

ORAL PRESENTATION

OP.072

INFLUENCE OF VARYING AMOUNTS OF FISH BONE–DERIVED NANO-HYDROXYAPATITE ADDITION ON THE POLYMERIZATION SHRINKAGE AND MECHANICAL PERFORMANCE OF RESIN COMPOSITES

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Introduction: Resin composites still exhibit mechanical and physical limitations. Research has focused on optimizing filler characteristics and resin matrix formulations. Recent studies suggest that fish-derived byproducts may enhance the performance of resin-based materials.

Aim: This study aimed to synthesize nano-hydroxyapatite (nHA) from rainbow trout bone and to evaluate the effect of its incorporation at different ratios into an experimental flowable dental composite on the material's mechanical properties.

Materials and Methods: Trout bones obtained from a fish processing facility were processed to produce inorganic nHA fillers. An experimental flowable resin composite was modified by incorporating nHA at four-different ratios while maintaining the inorganic matrix content at 60 %, including a control group. For each test, ten specimens per group (n=10) were prepared. Polymerization shrinkage was measured using hemispherical specimens in a volumetric shrinkage analyser (AcuVol, BISCO Inc.). Vickers microhardness was determined using a microhardness tester (HMV-2, Shimadzu Corp.). Biaxial flexural strength was evaluated using a universal testing machine (Instron 3345, Instron Corp.). Data were analyzed by one-way analysis of variance (ANOVA) followed by Tukey's HSD post hoc test ($p<0.05$).

Results: The highest Vickers micro-hardness values were observed in the group containing 10 wt% nHA, whereas the lowest polymerization shrinkage was recorded in the 60 wt% nano-hydroxyapatite group ($p<0.05$). The control group exhibited the highest biaxial flexural strength ($p<0.05$). Scanning electron microscopy (SEM) analysis revealed surface agglomeration at nHA concentrations of 10 wt% and above.

Conclusions: nHA incorporation represents a promising bio-based filler for resin composites, with concentration-dependent effects on mechanical performance.

Keywords: Waste management, hydroxyapatite, microhardness, shrinkage, flexural strength

ORAL PRESENTATION

OP.073

DO PROPHYLAXIS PASTES AFFECT SURFACE QUALITY OF NANOHYBRID RESIN COMPOSITES?

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Introduction: Surface quality of resin composite restorations influences esthetics, plaque retention, and clinical longevity. Polishing and prophylaxis paste may alter surface gloss and roughness depending on material properties.

Objective: The aim of this in vitro study is to evaluate the effects of polishing and prophylaxis pastes on surface gloss and roughness of four nanohybrid resin composites.

Materials and Methods: Four nanohybrid resin composites (EsCom100, Dolgunn Shine, Nova Compo C, Diafil) were prepared as disc specimens (10 mm × 2 mm). Eighty specimens were divided into eight groups (4 composites × 2 prophylaxis pastes; n=10). Measurements were performed at baseline (T0), after polishing with aluminum oxide polishing discs (Kerr discs) (T1), and after prophylaxis paste application (Septodont and Qartz) (T2). Surface gloss was measured using a glossmeter. Then, surface roughness was measured using a contact profilometer (cut-off 0.8 mm, evaluation length 4.0 mm). Data were analyzed using two-way ANOVA and Tukey post-hoc tests ($p<0.05$).

Results: Polishing increased gloss in all groups, whereas prophylaxis paste decreased gloss compared with T1. Baseline gloss differed among composite materials but not between prophylaxis pastes. Surface roughness depended on composite type at all time points. Polishing reduced or stabilized roughness, while prophylaxis pastes increased roughness in some groups. Prophylaxis paste type showed no consistent significant effect on final gloss or roughness.

Conclusions: Polishing improved surface quality of nanohybrid resin composites, whereas prophylaxis paste partially deteriorated it. Changes depended mainly on the composite material rather than the prophylaxis paste.

ORAL PRESENTATION

OP.074

ASSOCIATION OF PROCEDURE-RELATED STRESS WITH CLINICAL SELF-EFFICACY IN RESTORATIVE CLINICAL EDUCATION: A CROSS-SECTIONAL STUDY

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Introduction: Clinical training in restorative dentistry involves technically demanding procedures that may induce psychological stress. Evidence regarding procedure-related stress and its association with clinical self-efficacy remains limited.

Objective: This study aimed to evaluate restorative procedure-related stress and its relationship with clinical self-efficacy among dental students, and to assess differences by gender and academic year.

Materials and Methods: A cross-sectional study was conducted among 207 fourth- and fifth-year dental students at Gaziantep University. Data were collected using the Perceived Stress Scale, Clinical Self-Efficacy Scale, and a questionnaire assessing procedure-related stress. To analyze group differences and associations, independent samples t-tests, Pearson correlation, and multiple linear regression were performed using SPSS Statistics (v.25.0, IBM Corp.) ($p < 0.05$).

Results: Participants were 65.2% female and 34.8% male; 58% were fourth-year and 42% were fifth-year students. The Perceived Stress Scale and the Clinical Self-Efficacy Scale demonstrated good internal consistency ($\alpha = 0.803$, $\alpha = 0.925$, respectively). In group comparisons, female students reported higher stress levels, while fifth-year students demonstrated greater self-efficacy ($p < 0.001$). Perceived stress was positively correlated with procedure-related stress ($r = 0.289$, $p < 0.001$), whereas procedure-related stress was negatively correlated with self-efficacy ($r = -0.321$, $p < 0.001$) and remained an independent predictor in regression analysis ($\beta = -0.336$, $p < 0.001$).

Conclusions: Procedure-related stress was significantly associated with clinical self-efficacy. Targeted simulation training, graded case complexity, and guided feedback for high-stress procedures may support adaptive coping and perceived competence.

Keywords: Perceived Stress, Clinical Self-Efficacy, Restorative Dentistry

ORAL PRESENTATION

OP.075

AESTHETIC APPROACHES IN THE ANTERIOR TEETH: TWO CASE REPORTS

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2. 00

Re-establishing a patient's lost dental esthetic appearance is one of the most important topics for contemporary dentistry. Dental discoloration and extensive caries are common esthetic problems. Direct composite resin restorations are preferred for anterior teeth in order to preserve sound tooth structure while re-establishing functional and natural appearance. For discolored teeth, intracoronal whitening treatment is a more conservative, less costly, and easier-to-apply treatment method compared to other treatment methods. These case reports describe aesthetic approaches to tooth discoloration and extensive caries.

Case 1: A 15-year-old female patient was referred to our clinic with multiple carious lesions affecting both posterior and anterior teeth. The patient reported dissatisfaction with the appearance of her front teeth. The anterior teeth were restored with adhesive composite materials. Oral hygiene instructions and preventive recommendations were also provided to reduce the risk of recurrent caries.

ORAL PRESENTATION

OP.076

INVESTIGATION OF THE EFFECT OF POLYMERIZATION TEMPERATURE ON THE RELEASE OF RESIDUAL MONOMERS FROM DENTAL ADHESIVES

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Introduction: Residual monomers that don't participate in resin polymerization may diffuse toward pulp through dentin or be released into oral environment. Preheating has been reported to increase degree of conversion and improve physical properties of dental materials.

Objective: The aim of this study was to evaluate the effect of preheating dental adhesives at different temperatures before polymerization on amount of residual monomer release.

Materials and Methods: Five one-step universal adhesive systems were used: Clearfil S3 Bond Universal (Kuraray Noritake Dental Inc., Tokyo, Japan), Clearfil Universal Bond Quick (Kuraray Noritake Dental Inc., Tokyo, Japan), G-Premio Bond (GC, Tokyo, Japan), 3M Scotchbond Universal Plus (3M ESPE, St. Paul, MN, USA), and Tokuyama Bond Force II (Tokuyama Dental Co., Tokyo, Japan). Time-dependent release profiles of 10-MDP, HEMA, Bis-GMA, and TEGDMA were analyzed using HPLC. Adhesives polymerized either at 4 °C or after preheating to 25 °C and 60 °C. Residual monomer release was quantified at 24, 48, 72, and 168 hours.

Results: Polymerization temperature significantly affected residual monomer release in tested adhesive systems ($p < 0.05$). Samples polymerized at 4 °C generally exhibited higher residual monomer release compared with those preheated to 25 °C and 60 °C. However, Universal Bond Quick demonstrated a more heterogeneous response to temperature changes, with increased HEMA release observed at 60 °C.

Conclusions: Preheating dental adhesive systems before polymerization significantly affected residual monomer release. However, time dependent monomer release appears to depend not only temperature but also on the specific formulation and molecular characteristics of each adhesive system.

Keywords: Preheating, Residual monomer; Universal adhesives, Polymerization temperature, HPLC

ORAL PRESENTATION

OP.077

IN VITRO STUDY OF THE FRACTURE RESISTANCE OF CAD/CAM CUSTOMIZED POSTS VERSUS PREFABRICATED FIBER POSTS

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Introduction: With the development of digital dentistry, CAD/CAM customized posts have been introduced as an alternative to prefabricated fiber posts. However, limited data are available regarding their mechanical performance after artificial aging procedures simulating intraoral conditions.

Objective: To evaluate and compare the fracture resistance of CAD/CAM customized posts and prefabricated fiber posts before and after thermocycling.

Materials and Methods: Forty-eight extracted human single-rooted teeth were selected and endodontically treated following standardized protocols. Root canal preparation was performed using the ProTaper Gold rotary system up to F3, and the canals were obturated with gutta-percha and an epoxy resin–based sealer (Adseal). Post space preparation was subsequently performed, and the specimens were randomly allocated into four groups (n=12): CAD/CAM posts, prefabricated fiber posts, CAD/CAM posts after thermocycling, and fiber posts after thermocycling. All specimens were mounted and subjected to compressive loading at 45° using a universal testing machine until fracture occurred. Fracture load was recorded in Newtons (N). Statistical analysis was performed using independent t-tests (α=0.05).

Results: Mean fracture load before thermocycling was 330.7±102.8 N for CAD/CAM posts and 341.9±92.4 N for fiber posts (p=0.766). After thermocycling, values decreased to 242.9±92.1 N and 286.5±98.6 N, respectively (p=0.266). Thermocycling significantly reduced fracture resistance in the CAD/CAM group (p=0.033), whereas the reduction in fiber posts was not statistically significant (p=0.147).

Conclusions: Under oblique loading conditions, CAD/CAM posts demonstrated fracture resistance comparable to prefabricated fiber posts. Artificial aging significantly affected CAD/CAM posts, whereas fiber posts showed greater mechanical stability.

ORAL PRESENTATION

OP.078

MICROTENSILE BOND STRENGTH OF BIOACTIVE RESTORATIVE MATERIALS TO SOUND AND CARIES-AFFECTED PRIMARY DENTIN

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Introduction: . The structure of primary caries-affected dentin may influence adhesion and clinical outcomes of restorative materials.

Objective: . This study evaluated the microtensile bond strength (μTBS) of six bioactive restorative materials to sound (SD) and caries-affected (CAD) primary dentin.

Materials and Methods: . Occlusal cavities were prepared in 84 extracted primary molars which were randomly assigned into SD and CAD groups (n=42). Artificial CAD was created using a demineralizing solution. Each group was subdivided into six subgroups (n=7) restored with bioactive composite (Activa BioActive Restorative), self-cure composite (Stela), alkasite (Cention Forte), giomer (Beautifil Bulk), glass hybrid cement (Equia Forte HT), and nanohybrid composite (Tetric PowerFill). To simulate aging, samples underwent thermocycling for a total of 10,000 cycles. Stick-shaped specimens (~1 mm²) underwent μTBS testing at 0.5 mm/min. Failure pattern analysis was assessed under a stereomicroscope.

Results: . Significant differences among the materials were observed in both SD and CAD groups (one-way ANOVA, $p < 0.001$). Self-cure composite and alkasite did not show differences in μTBS when SD and CAD were compared. All materials showed predominantly adhesive mode of failure.

Conclusions: . μTBS of bioactive restorative materials to primary dentin is influenced both by the material type and dentin substrate.

ORAL PRESENTATION

OP.079

OUTCOMES OF UNDERGRADUATE TRAINING IN ORAL STOMATOLOGY: TWO-YEAR FOLLOW-UP OF ROOT CANAL TREATMENTS

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Objective: This study aimed to evaluate the two-year outcomes of root canal treatments performed by undergraduate students, to assess the influence of clinical experience, and to emphasize the importance of structured follow-up and longitudinal monitoring in enhancing students' self-assessment and clinical decision-making.

Conclusions: These findings indicate that the endodontic curriculum effectively prepares undergraduate students for successful root canal treatment and supports their essential role in endodontic treatment needs.

ORAL PRESENTATION

OP.080

EVALUATION OF AI-DRIVEN APPROACHES TO ENDODONTIC CASES: A COMPARATIVE STUDY

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Introduction: AI has become increasingly integral to dentistry—especially endodontics—due to its potential to replicate human reasoning for complex tasks and predictive analysis in healthcare. Therefore, evaluating the variations in the approach of different AI models to endodontic cases, as well as their clinical accuracy and sufficiency, is of critical importance.

Objective: This study aims to comparatively analyze the approaches of different artificial intelligence models to 7 endodontic cases and to provide data that will contribute to the advancement of the field of dentistry.

Materials and Methods: Seven distinct endodontic case scenarios, prepared by specialists in accordance with the ESE S3 level guidelines, were inputted into four artificial intelligence models: Gemini 3, Grok 4.1, Claude (Sonnet 4.5), and ChatGPT 5.2. The generated responses were compiled into a survey using Google Forms and distributed to dental practitioners via WhatsApp for evaluation. Participants assessed the clinical quality of the AI approaches using the Modified Global Quality Scale (MGQS). The obtained data were statistically analyzed using IBM SPSS Statistics 27.0.

Results: Statistically significant differences were observed among the models regarding both individual case evaluations and total performance ($p<.001$). Claude consistently achieved the highest mean scores (Total:4.55±0.62), demonstrating superior clinical accuracy. In contrast, Grok recorded the significantly lowest values across all scenarios (2.6±1.31), falling behind the other groups.

Conclusions: Although large language models can aid in endodontic diagnosis, expert verification remains crucial due to performance variability. Currently, Claude offers the most reliable results compared to other tested models.

ORAL PRESENTATION

OP.081

EVALUATION OF EXTRUDED ROOT CANAL FILLING MATERIALS: A RETROSPECTIVE STUDY

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Introduction: Success in endodontics relies on thorough debridement and three-dimensional obturation. Apical extrusion of filling materials or instruments is a common complication that may trigger foreign body reactions, potentially delaying healing or inducing inflammatory root resorption.

Objective: This study aimed to determine the incidence of apically extruded materials (gutta-percha, sealer, and fractured instruments) and analyze associated risk factors such as tooth type, localization, treatment type, and clinician experience. Furthermore, the periapical healing process and the biological fate of these materials were evaluated.

Materials and Methods: In total, 18,583 roots were retrospectively analyzed using periapical radiographs. Extruded materials were categorized as gutta-percha, sealer, or fractured instruments. Periapical healing was assessed using the Periapical Index in 220 roots with a minimum 6-month follow-up. Resorption status was evaluated in 306 roots. Data were analyzed using Chi-square tests ($p<0.05$) via IBM SPSS Statistics 19 software.

Results: Extruded material was detected in 17.5% (3,251 roots) of the examined roots, with sealer (12.5%) being the most frequently observed material. Apical extrusion was found to be statistically highest in anterior teeth (28.4%) ($p<0.05$). Healing analyses revealed that increased follow-up time, particularly follow-ups of 24 months and longer, significantly increased both the periapical healing rates and the resorption rates of the extruded material ($p<0.05$).

Conclusions: Apical extrusion is a common clinical occurrence significantly influenced by tooth morphology, material and experience; however, it does not necessarily preclude periapical healing, as both healing and material resorption are progressive, time-dependent processes.

Keywords: Endodontic treatment, extruded material, Periapical Index (PAI), retrospective study.

ORAL PRESENTATION

OP.082

EVALUATION OF YOUTUBE SHORT VIDEOS RELATED TO BARODONTALGIA

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Introduction: To access accurate information about barodontalgia, a pressure-related toothache common in aviation and diving, evaluating the accuracy of online content is vital.

Objective: This study aims to evaluate YouTube short videos about “barodontalgia” in terms of content quality and reliability.

Materials and Methods: A YouTube search on January 21, 2026, using "barodontalgia," analyzed the top 100 relevant short videos, of which 21 met inclusion criteria. Videos were categorized by views, upload time, duration, and likes. Video quality and reliability were assessed using the Global Quality Score (GQS) and modified DISCERN (mDISCERN) scales, with engagement analyzed via the Video Power Index (VPI). Inter-rater reliability was determined by Cohen’s kappa. Descriptive statistics, Spearman correlation analysis, and Kruskal-Wallis tests were used. Data were analyzed using the JASP software (Version 0.95.4) at a 95% confidence level.

Results: The mean GQS was 2.429±0.507, and the mean mDISCERN score was 1.595±0.490. Inter-rater reliability was excellent for GQS ($\kappa=1$, $p<0.001$) and substantial for mDISCERN ($\kappa=0.901$, $p<0.001$). Dentists/specialists provided the highest quality and most reliable content (2.778±0.441 and 1.889±0.333, respectively). Additionally, they achieved the highest VPI score (34.36). Strong positive correlations were found between view counts and both VPI score and Likes ($p<0.001$). Despite positive correlations between VPI, GQS, and mDISCERN scores, associations did not achieve statistical significance ($p>0.05$).

Conclusions: Videos about barodontalgia found on YouTube are generally low-quality and inadequate. Healthcare professionals need to provide high-quality video content to YouTube users and patients.

Keywords: Barodontalgia, internet data, YouTube

ORAL PRESENTATION

OP.083

KNOWLEDGE, ATTITUDES AND CLINICAL PRACTICES TOWARD EXTERNAL CERVICAL RESORPTION: A PERIODONTAL PERSPECTIVE

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Introduction: External cervical resorption (ECR) is a complex and frequently underdiagnosed dental condition. Delayed diagnosis and Differences in periodontal knowledge and clinical attitudes among dental disciplines may result in unfavorable clinical outcomes.

Objective: The aim of this study was to evaluate periodontal knowledge, attitudes, and clinical approaches related to ECR among different dental specialties.

Materials and Methods: This cross-sectional survey included dental specialists from various disciplines and general dental practitioners. A structured questionnaire assessing periodontal knowledge (K) and attitudes (A) regarding ECR diagnosis, pathogenesis, and treatment was administered. Responses to Likert-type questions were analyzed as ordinal data using the Kruskal–Wallis test Post-hoc pairwise comparisons were conducted using the Mann–Whitney U test with Bonferroni correction. Statistical significance was set at $p < 0.05$.

Results: Significant differences in periodontal knowledge were observed for question K1 ($p = 0.030$), K2 ($p = 0.027$), K4 ($p = 0.038$), K6 ($p = 0.017$), K7 ($p = 0.006$), K8 ($p = 0.032$), and K9 ($p = 0.046$). Periodontists demonstrated significantly higher knowledge regarding periodontal ligament involvement and gingival inflammation compared with general practitioners ($p < 0.05$). Endodontists showed greater awareness of early diagnostic signs and advanced imaging techniques ($p < 0.05$). Significant differences in attitudes were identified for items A4, A5, A6, and A8 ($p < 0.05$).

Conclusions: Perceptions of ECR differ significantly among dental disciplines, revealing critical gaps in periodontal knowledge and clinical attitudes. ECR should be considered a multidisciplinary diagnostic and therapeutic challenge requiring timely collaboration among dental specialties.

Keywords: External cervical resorption, Periodontal knowledge, Dental specialties, Interdisciplinary approach

ORAL PRESENTATION

OP.084

MAXILLARY LATERAL INCISOR WITH A RARE TWO-ROOTS: CBCT-ASSISTED DIAGNOSIS AND ENDODONTIC MANAGEMENT

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Introduction: Maxillary lateral incisors typically present with a single root and canal; however, rare anatomical variations may be overlooked on conventional radiographs and can jeopardize endodontic outcomes if unrecognized.

Objective: To report a two-rooted maxillary lateral incisor confirmed by cone-beam computed tomography (CBCT) and to highlight practical diagnostic and management considerations. Case Report: A 64-year-old male patient was referred for evaluation of a maxillary lateral incisor due to deep caries and planned root canal treatment. Clinical examination revealed no pain, swelling, sinus tract, or tenderness; electric pulp testing elicited a delayed response. Baseline periapical radiography suggested an atypical root configuration without periapical radiolucency. CBCT was obtained to clarify root morphology and support treatment planning; no periapical lesion was detected. Nonsurgical root canal treatment was performed under magnification. Working length was established using an electronic apex locator with radiographic verification. Cleaning and shaping were completed with a NiTi instrumentation system and sodium hypochlorite irrigation, followed by EDTA for smear layer removal. The canals were obturated with gutta-percha and sealer using single-cone technique.

Results: CBCT confirmed two distinct roots associated with separate canal pathways, enabling targeted negotiation, disinfection, and obturation. At 3-month follow-up, the patient remained asymptomatic and periapical radiography showed no evidence of apical pathosis.

Conclusions: Two-rooted maxillary lateral incisors are uncommon but clinically important. When conventional imaging raises suspicion, CBCT can provide decisive anatomical information even in asymptomatic teeth without periapical lesions, helping prevent missed anatomy and supporting predictable endodontic management.

ORAL PRESENTATION

OP.085

DOES LANGUAGE INFLUENCE THE QUALITY OF ROOT CANAL TREATMENT VIDEOS ON YOUTUBE?

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Introduction: YouTube has become a widely accessed platform for patients seeking information about dental treatments. In endodontics, root canal treatment is among the most frequently searched procedures; however, the quality and reliability of related video content vary considerably. Evidence regarding the influence of language on endodontic information quality on YouTube remains limited.

Objective: This study aimed to evaluate and compare the quality, reliability, and usefulness of YouTube videos related to root canal treatment according to language and to examine the association between video popularity metrics and content quality.

Materials and Methods: 50 Turkish and 50 English YouTube videos with the highest view counts were evaluated. Video characteristics and popularity-related parameters were recorded. Content quality, reliability, and usefulness were assessed using the Global Quality Score, Modified DISCERN, and usability index. Comparative and correlation analyses were performed to assess language-based differences and associations between popularity metrics and quality scores.

Results: English-language videos demonstrated higher view counts, longer duration, and more likes, whereas Turkish videos had been available online for a longer period. No significant differences were identified between language groups regarding content quality, reliability, or usability scores. Correlation analyses showed that popularity metrics were strongly associated with each other but demonstrated weak to moderate associations with quality scores.

Conclusions: Although English-language videos showed greater popularity and visibility, language was not a determining factor for informational quality or reliability. Video popularity is not a reliable indicator of content quality, emphasizing the need for professionally produced, high-quality endodontic educational content in multiple languages.

ORAL PRESENTATION

OP.086

EFFECT OF DIFFERENT IRRIGATION SOLUTIONS ON THE PUSH-OUT BOND STRENGTH OF BIOCERAMIC AND RESIN-BASED ROOT CANAL SEALERS: AN IN VITRO STUDY

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Objective: The aim of this study was to compare the effect of Dual Rinse hydroxyethylidene diphosphonate (HEDP) used as a single irrigant with 17% ethylenediaminetetraacetic acid (EDTA) and 0.2% chitosan on the push-out bond strength of AH Plus and Bio-C root canal sealers to root dentin.

Materials and Methods: One hundred twenty single-rooted mandibular premolars were standardized to 17 mm and randomly assigned to three irrigation groups and six sealer subgroups (EDTA–AH Plus/Bio-C; HEDP–AH Plus/Bio-C; chitosan–AH Plus/Bio-C). Root canals were prepared with a reciprocating NiTi system. Final irrigants were ultrasonically activated for 1 min. Obturation was performed with AH Plus or Bio-C using cold lateral compaction. After storage (37 °C, 100% humidity, 1 week), 1 ± 0.1 mm slices were obtained from apical, middle, and coronal thirds. Push-out testing was performed at 1 mm/min. Failure modes were examined under a stereomicroscope. Data were analyzed using parametric or nonparametric tests ($p < 0.05$).

Results: AH Plus demonstrated significantly higher bond strength than Bio-C ($p = 0.041$). When irrigation solutions were evaluated regardless of sealer type, no statistically significant difference was observed among the groups (p=0,086). Cohesive failure predominated (69.2%), and failure mode distribution differed significantly among groups ($p < 0.001$).

Conclusions: The use of HEDP as a single irrigant showed no significant difference compared with EDTA and chitosan, supporting its use as an alternative to traditional sequential irrigation protocols.

Keywords: Root Canal Treatment, Bond Strength, Irrigation Solution, Root Canal Sealer

ORAL PRESENTATION

OP.087

ENDODONTIC MANAGEMENT OF ANTERIOR TEETH WITH RESORPTIVE DEFECTS AND LARGE PERIAPICAL LESIONS USING BIOCERAMIC MATERIALS: A CASE SERIES

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Introduction: Resorptive defects and extensive periapical lesions in anterior teeth present significant diagnostic and treatment-planning challenges in endodontic therapy and often require advanced imaging and biomaterial-based repair strategies.

Objective: To present the management of anterior teeth with different resorptive defects and large periapical lesions using contemporary endodontic protocols and bioceramic materials.

Materials and Methods: Four anterior teeth were managed using modern chemomechanical disinfection protocols, activated irrigation, and bioceramic-based sealing or repair materials, with CBCT imaging used when indicated for diagnosis and treatment planning.

Results: Case 1: A 54-year-old female with vital pulp and internal resorption in a maxillary lateral incisor was treated with root canal therapy, bioceramic sealer obturation, and MTA defect repair, showing asymptomatic one-year follow-up. Case 2: A 19-year-old male with external cervical resorption underwent combined endodontic treatment and surgical repair after flap elevation and defect debridement, resulting in resolution. Case 3: A necrotic anterior tooth with open apex and large periapical lesion received calcium hydroxide medication and a bioceramic apical barrier followed by obturation, demonstrating favorable healing. Case 4: A previously failed regenerative case with open apex and extensive pathology was retreated using an MTA apical barrier technique with successful outcome.

Conclusions: Accurate diagnosis, effective disinfection, CBCT-supported planning, and bioceramic-based repair strategies provide predictable healing and tooth preservation in complex anterior resorptive and periapical lesions.

Keywords: Resorption; Periapical lesion; Bioceramic materials; Anterior teeth; Case series

ORAL PRESENTATION

OP.088

SURGICAL ENDODONTIC TREATMENT OF A MAXILLARY PREMOLAR WITH A PERIAPICAL CYST ZUHAL KILIÇ1, DENIZ YANIK NALBANTOĞLU1

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Introduction: Periapical lesions most commonly result from pulpal infections, and their management is root canal treatment. Periapical cyst is the most common odontogenic cyst, arising from periapical inflammation and proliferation of epithelial rests of Malassez.

Objective: This case report aimed to present the management and outcomes of a maxillary premolar with a periapical lesion that was histopathologically diagnosed as a periapical cyst using surgical endodontics.

Materials and Methods: A systemically healthy 50-year-old male referred to the endodontic clinic presented with severe pain in the left maxillary posterior region. Tooth #24 was positive to percussion/palpation. Periapical radiography showed a large periapical radiolucency. Root canal treatment was planned. An access cavity was prepared with a rubber dam, and a purulent drainage was observed. After adequate chemomechanical preparation using rotary instrumentation and irrigation with 2.5% NaOCl and 17% EDTA using irrigation activation, the patient was recalled every other day; however, drainage persisted after five visits. Surgical endodontic treatment was therefore performed. The canal was obturated orthogradely with gutta-percha, apical resection was completed, and retrograde cavity was prepared using an ultrasonic device with an ED10D tip (Woodpecker-Co., Guangxi, China). The cavity was filled with mineral trioxide aggregate (MTA), and the excised lesion was submitted for histopathology. The tooth was restored with composite filling.

Results: Histopathology confirmed a periapical cyst. At 6-month and 1-year follow-ups, symptoms resolved. Bone healing was observed.

Conclusions: Surgical endodontics may provide both definitive diagnosis and effective long-term healing of a periapical cyst when combined with ultrasonic root-end preparation and MTA.

ORAL PRESENTATION

OP.089

PREVALENCE OF C-SHAPED CANALS IN MANDIBULAR SECOND MOLARS IN SOUTHEAST SERBIAN POPULATION: CBCT STUDY

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Introduction: Due to possible instrumentation errors and potential for incomplete obturation, C-shaped canals, which are primarily observed in mandibular second molars, represent a significant endodontic challenge.

Objective: To determine prevalence of C-shaped canals in mandibular second molars in southeast Serbian population.

Materials and Methods: The study included 639 mandibular second molars on 357 CBCT scans from patients of Clinic of Dental Medicine, Niš, Serbia. Fully erupted mandibular second molars with fully developed roots and without previous endodontic treatment, periapical pathology, or severe restorations were analyzed. The presence of C-shaped canals was assessed in coronal, middle, and apical thirds according to Fan's classification: C1 shows a continuous "C"-shaped canal, C2 a semicolon-shaped morphology, C3 three or two separated canals, C4 a single, round or oval canal, while C5 indicates the absence of a visible canal lumen.

Results: C-shaped canals were identified in 25.19% of mandibular second molars. There was no significant difference between the left and right molars. In the coronal and middle thirds of the examined molars, the C-shaped canal configuration was most frequently classified as type C1. In the apical third, type C1 predominated in the left molars, whereas type C4 was most common in the right molars.

Keywords: The most common variation of the C-shaped canal was C1 according to Fan. This classification can accurately present all variations of the C-shaped canals. CBCT is a valuable non-invasive imaging modality for the accurate identification and classification of C-shaped canals.

ORAL PRESENTATION

OP.090

REMOVING CALCIUM HYDROXIDE USING 17% EDTA AND 70% ETHANOL WITH ACTIVATION USING ULTRASONIC AND XP-ENDO FINISHERS: A STEREOMICROSCOPIC STUDY

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Objective: The study aimed to evaluate the calcium hydroxide (CH) removal efficiencies of different irrigation activation methods and solutions using stereomicroscopy.

Materials and Methods: A total of 60 single-rooted mandibular teeth were decoronated, instrumented up to X3 (30/0.6).CH mixed with methylene blue dye was applied to canals, and kept for 7 days. Samples were randomly allocated into 6 groups according to solution and activation methods; Group-M: manual dynamic activation, Group-U: ultrasonic, Group-X: XP-Endo Finisher (FKG Dentaire, La-Chaux-de-Fonds, Switzerland), and these three groups of activation systems were used with 17% EDTA, 70% alcohol, and distilled water (n=10). According to the group's protocol, the CH was removed. Three sections were obtained from each root, corresponding to the apical, middle, and coronal thirds, 4 mm, 8 mm, and 12 mm from the apex, respectively. Sections were evaluated using stereomicroscope. The percentage (%) of canal cross-sectional area and clean canal wall were analyzed using ImageJ. One-way ANOVA post-hoc Tukey, Student’s t-test, and intra-class correlation coefficient (ICC) were used for statistics.

Results: A statistical difference was detected between apical, middle and coronal sections ($p<0.05$). Ethanol demonstrated better removal efficiency than EDTA in all sections ($p<0.05$). Group-U and Group-X showed similar effects ($p>0.05$), which were higher than those of Group-M ($p<0.05$) in the EDTA and ethanol groups. ICC values were good to excellent (0.762-0.936).

Conclusions: The apical region was cleaned more difficult than the middle and coronal regions. CH was removed better with 70% ethanol compared to EDTA. Ultrasonic and XP-Endo Finisher enhanced CH removal.

Keywords: EDTA, calcium hydroxide, endodontics, irrigation activation, ultrasonic

ORAL PRESENTATION

OP.091

USE OF MINERAL TRIOXIDE AGGREGATE (MTA) IN THE MANAGEMENT OF TRAUMATIZED IMMATURE PERMANENT TEETH: TWO CASE REPORTS

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Aim: Dental trauma frequently affects maxillary central incisors in children, particularly during incomplete root development. Management of immature permanent teeth is challenging due to open apices, thin dentinal walls, and the need to preserve vitality to allow continued root maturation. Mineral Trioxide Aggregate (MTA) is a bioactive and biocompatible material that promotes hard tissue formation, provides an antibacterial effect due to its high pH, and ensures reliable sealing. The aim of this report was to present two clinical applications of MTA in trauma-related complications of immature permanent teeth.

■ CASE REPORTS

Conclusions: MTA proved effective in managing traumatic complications in two treated immature permanent teeth, enabling apexogenesis and arrest of external resorption while preserving tooth function. Early diagnosis and correct application remain essential for predictable outcomes.

Keywords: MTA, dental trauma, immature teeth, apexogenesis, external resorption.

ORAL PRESENTATION

OP.092

EFFECTS OF DIFFERENT CANAL TAPERS AND DIFFERENT IRRIGATION METHODS ON APICAL IRRIGANT EXTRUSION: AN IN VITRO STUDY

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Introduction: Apical irrigant extrusion during endodontic irrigation is an undesirable event that may be associated with periapical tissue irritation and postoperative pain. Root canal shaping taper and the irrigation activation method can influence flow dynamics and thereby alter the amount of extrusion.

Objective: The aim of this study was to evaluate the effects of two different canal tapers and three different irrigation methods on apical irrigant extrusion.

Methods: Sixty acrylic mandibular premolar tooth models with standardized root canals were used and prepared to either 25/.04 or 25/.06 taper. A total of six experimental groups were formed (2×3; n=10) by combining two canal tapers with three irrigation methods (conventional needle irrigation, passive ultrasonic irrigation [PUI], and sonic-activated irrigation). During the final irrigation procedure, apically extruded fluid was collected in a floral foam model. The amount of extrusion was determined using an analytical balance based on the difference between container weights measured before and after the final irrigation. Data were analyzed using two-way ANOVA, and the level of significance was set at $p<0.05$.

Results: The main effect of canal taper was significant ($p<0.05$), and apical irrigant extrusion was lower with the 25/.06 taper than with the 25/.04 taper. The main effect of irrigation method and the canal taper × irrigation method interaction were not significant ($p>0.05$).

Conclusions: Within the limitations of this study, apical irrigant extrusion was significantly lower with the 25/.06 canal taper compared with the 25/.04 taper, indicating that canal taper may be an effective parameter influencing the amount of extrusion.

Keywords: Apical extrusion; canal taper; endodontic irrigation; analytical balance; in vitro; floral foam

ORAL PRESENTATION

OP.093

EVALUATION OF DIFFERENT ARTIFICIAL INTELLIGENCE PLATFORMS PERFORMANCES ON RESPONDING TO COMMON PATIENT ENDODONTICS QUESTIONS

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Introduction: Although patients increasingly rely on artificial intelligence chatbots as accessible sources of dental health information, the quality and cross-language consistency of artificial intelligence-generated responses remain uncertain.

Objective: This study aimed to evaluate and compare the quality, accuracy, comprehensiveness and clarity of language on responses provided by four artificial intelligence platforms to common patient endodontic questions both Turkish and English.

Materials and Methods: Thirty patient questions about endodontics were formulated based on current endodontic guidelines and relevant literature. Questions were submitted to ChatGPT-5.2, ChatGPT-4o, Gemini 3 Pro, and DeepSeek-R1 both Turkish and English. Responses were evaluated using modified DISCERN, Global Quality Score, a Misinformation Scale and CLEAR tools. As data were non-normally distributed, Kruskal-Wallis and Mann-Whitney U tests were used. Cross-language consistency was assessed using Fleiss' Kappa.

Results: Significant differences were observed among platforms for modified DISCERN ($p=0.008$), Global Quality Score ($p<0.001$), a Misinformation Scale ($p=0.033$), and CLEAR ($p=0.001$ in Turkish responses. DeepSeek-R1 and ChatGPT-4o demonstrated higher overall quality scores, whereas ChatGPT-5.2 showed lower performance. In English responses, significant differences were identified only for Global Quality Score ($p=0.031$) and DeepSeek-R1 had the highest Global Quality Score. DeepSeek-R1 showed strong cross-language consistency across all metrics ($\kappa=0.635–0.786$, $p<0.05$). No significant consistency was observed for ChatGPT-5.2 or Gemini Pro ($\kappa <10$, $p>0.05$).

Conclusions: DeepSeek-R1 was delivered superior and consistent performance both Turkish and English. ChatGPT-4o demonstrated the second highest performance in Turkish responses. Overall, DeepSeek-R1 provides the more reliable endodontic information; however, information generated by artificial intelligence should be carefully interpreted.

ORAL PRESENTATION

OP.094

EVALUATION OF ARTIFICIAL INTELLIGENCE CHATBOTS' QUALITY IN ANSWERING QUESTIONS ABOUT DENTAL AVULSION

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Introduction: Dental avulsion is a critical dental emergency, requires rapid and accurate decisions to improve prognosis. The increasing use of artificial intelligence in healthcare raises the question of how reliably artificial intelligence-based chatbots can answer technical questions on dental avulsion for possible use in clinical settings.

Objective: This study aimed to evaluate the quality and reliability of answers given by five AI chatbots (ChatGPT-5.2 Plus, Gemini-3 Pro, DeepSeek-R1, Perplexity Pro, and Yandex AI) to technical questions about dental avulsion using three validated tools: Modified DISCERN, Global Quality Score, and Misinformation Score.

Materials and Methods: Twenty-one technical questions on dental avulsion management were prepared according to the 2020 International Association of Dental Traumatology guidelines and submitted to all five platforms. Each response was evaluated using the modified DISCERN, Global Quality Score, and Misinformation Score. Statistical analysis was performed using the Kruskal–Wallis H test and the Mann–Whitney U test. The clinical significance level was determined as $p<0.05$.

Results: Significant differences were found among chatbots for all three tools ($p<0.05$). Gemini-3 Pro was achieved the highest mean score For modified DISCERN and Misinformation Score, while Perplexity Pro for Global Quality Score. Yandex AI demonstrated the lowest performance across all evaluated scales.

Conclusions: Artificial intelligence chatbots show notable variability in answering dental avulsion technical questions. While Gemini-3 Pro and Perplexity Pro were performed better overall, these tools should be considered as supplements, and checked against clinical guidelines before used in dental decision-making.

ORAL PRESENTATION

OP.095

ANALYSIS OF YOUTUBE AS AN EDUCATION RESOURCE FOR PULP VITALITY TESTING: A CONTENT AND QUALITY EVALUATION

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Introduction: YouTube is a frequently used source of information on health-related topics for dental students, clinicians and patients.

Objective: The aim of this study was to evaluate the content accuracy and educational quality of YouTube videos regarding pulp vitality testing.

Materials and Methods: The search term "pulp vitality tests" was identified using the Google Trends application. On 10 January 2026, the term "pulp vitality tests" was searched on YouTube. The first 250 videos were reviewed and the 50 videos, 1-35 minutes length, English and focused pulp testing, were evaluated. The videos were categorized according to their source as institutions, dentists or commercial. Quality and reliability were assessed using the Global Quality Scale and mDISCERN, while scientific sufficiency using Total Content Score. Data were analyzed using Kolmogorov–Smirnov, Mann–Whitney U and Spearman's correlation tests.

Results: The data revealed that a total of 27 videos (54%) were shared by academic institutions and hospitals, 19 videos (38%) by dentists, and 4 videos (8%) by commercial. Total Content Score, Global Quality Scale and mDISCERN were 6.22±1.81, 4.02±1.10, and 3.46±1.15, respectively. While 66% of videos were classified as high level, 34% as moderate. There was no significant difference in scores based on uploading sources ($p>0.05$). Strong positive correlations were found between Global Quality Scale with Total Content Score and ($p<0.001$) and mDISCERN ($p<0.001$).

Objective: YouTube contains moderate to high quality educational material on pulp vitality testing, especially produced by dentists. However, YouTube is an unregulated platform and the informations are not completely reliable.

ORAL PRESENTATION

OP.096

FREQUENCY AND CAUSES OF COMPLİCATİONS ENCOUNTERED BY DENTAL STUDENTS DURİNG ENDODONTİC TREATMENT: A SURVEY STUDY

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Introduction: Endodontic treatment is a technically demanding procedure requiring comprehensive anatomical knowledge and refined clinical skills. During undergraduate education, students may encounter various procedural complications that can negatively affect treatment outcomes and clinical confidence. Identifying the frequency and causes of these complications is essential for improving dental curricula and enhancing clinical training.

Objective: This study aims to investigate the frequency, types, and underlying causes of complications encountered by fourth- and fifth-year dental students during endodontic procedures, and to assess the relationship between these complications and the level of clinical training.
This descriptive and cross-sectional study was conducted during the 2024–2025 academic year and included a total of 184 participants. Data were collected using a 26-item structured questionnaire assessing demographic characteristics, clinical experience, and complication-related factors. Statistical analyses were performed using IBM SPSS Statistics version 25.0.

The most frequently reported complications were ledge formation (36.4%), overfilling (32.1%), and flare-up (21.7%). The main causes were patient non-compliance and tooth localization difficulties (43.5%), followed by inappropriate shaping technique selection (22.3%). Instrument separation was reported more frequently by fifth-year students. Statistically significant differences were observed between the two groups.

Endodontic complications significantly affect students' clinical performance. Strengthening theoretical knowledge and hands-on training in undergraduate curricula may help reduce complication rates.

Keywords: Dental Education, Endodontic Complications, Root Canal Treatment, Student Clinical Experience

ORAL PRESENTATION

OP.098

THE INJECTABLE COMPOSITE TECHNIQUE WITHIN PATIENT WITH DENTAL EROSION - CASE REPORT

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Introduction: Minimally invasive approach in dentistry may express great potential for achieving highly esthetic restoration while preserving tooth structure. The aim of this case report was to demonstrate application of injectable composite technique within patient with dental erosion caused by daily intake of acidic drinks.

Case Report: A 17-year-old male patient was addressed to the Clinic for Preventive and Pediatric Dentistry in Belgrade, referred by an general dentist due to multiple enamel defects on the labial surface in the esthetic area. The patient stated that on a daily basis he consumes large amounts of lemonade. After a clinical examination, the presence of different degrees of enamel defects on the labial surfaces in the upper permanent incisors and canines was diagnosed as exogenous dental erosion. The treatment plan involved intake control of acidic drinks and multiple restorations with injectable composite restorative technique with a flowable resin material. In addition, the photographic documentation was made. An impression and a digital wax-up were created on the basis of which 3D model was obtained which served as the foundation for creating transparent silicone index. A relative isolation field was achieved with the usage of lip and cheek retractor and polytetrafluoroethylene (PTFE) tape. After enamel etching, following adhesive protocols, the injectable composite was applied and polymerized through the transparent silicone index after which the polishing was conducted.

Conclusions: The injectable composite technique with good planning within a digital workflow may ensure reliable results with optimal esthetic outcomes while maintaining tooth structure.

Keywords: injectable technique; flowable composite; dental erosion; enamel defect; composite restoration

ORAL PRESENTATION

OP.099

EVALUATION OF SURFACE MICROHARDNESS OF RESIN CEMENTS POLYMERIZED BENEATH CERAMIC HYBRID AND NANO HYBRID COMPOSITES WITH VARYING THICKNESSES

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Introduction: The polymerization efficiency of resin cements may be affected by the thickness and optical properties of indirect restorative materials.

Objective: This in vitro study aimed to evaluate the surface microhardness of resin cements polymerized using different curing modes beneath indirect restorations of varying thicknesses.

Materials and Methods: Specimens (1, 2, and 3 mm) were prepared from a hybrid ceramic CAD/CAM block (Lava Ultimate; LU) and two nano-hybrid composites (IPS Empress Direct; IPS; Neo Spectra ST HV; NST). Four resin cements with light-cure and dual-cure polymerization modes (Nova Resin, Imicryl and NX3 Nexus, Kerr) were placed beneath the restorative materials using teflon molds measuring 6 mm in diameter and 0,5 mm in thickness. The resin cements were polymerized for 20 seconds using an LED lightcuring unit through the restorative materials (n=15). Control groups were cured directly through glass. After 24 h dark storage, microhardness was measured using a micro-Vickers tester (50 g, 15 s). Data were analyzed using one-way ANOVA with Tukey and Scheffé tests ($\alpha = 0.05$).

Results: The highest microhardness values were observed in Imicryl control groups. Among experimental groups, 1 mm Imicryl dual-cure showed the highest values ($p < 0.05$). NX3 groups showed lower values ($p < 0.05$). Control groups had higher microhardness than experimental groups. Increasing thickness reduced microhardness.

Conclusions: Resin cement microhardness is affected by restorative material type and thickness. Cement selection should consider thickness and light transmission.

ORAL PRESENTATION

OP.100

THE FACTORS AFFECTING THE SUCCESS OF DIRECT COMPOSITE RESTORATIONS: PRELIMINARY RESULTS OF A CROSS-SECTIONAL CLINICAL STUDY

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Introduction: Direct resin composite restorations are widely used due to their esthetic properties and acceptable clinical performance. While prospective randomized clinical trials provide strong evidence under standardized conditions, cross-sectional studies evaluating restorations placed by different operators using various materials offer valuable insights into real-life clinical scenarios.

Objective: This study aimed to evaluate the clinical performance of direct composite restorations, randomly selected from patients attending a university clinic, using FDI criteria, and to identify factors associated with their failure.

Materials and Methods: Patients attending the university clinic with at least one direct restoration placed ≥1 year prior were invited to participate and provided informed consent. Clinical and radiographic examinations were performed to evaluate restorations according to FDI criteria (scores 1–5); scores 4 and 5 were classified as failures. Restoration-related parameters were recorded, and the association between categorical variables and restoration success was analyzed using the Pearson Chi-square test.

Results: A total of 154 teeth (20 anterior, 134 posterior) were evaluated, predominantly consisting of Class I/II restorations aged at least 3 years. The overall rate of acceptable restorations was 81.2%. Majority of the failures were due to fracture and improper form/contour. Cavity depth was identified as a significant factor affecting restoration failure, with deep cavities showing a significantly higher rate of unacceptable scores (41.2%) compared to shallow (14.1%) and medium (12.5%) cavities (p=0.001). No significant associations were found for tooth type (p=0.950), restoration age (p=0.844), or cavity type (p=0.600).

Conclusions: Direct resin composite restorations was observed to have acceptable clinical performance. However, cavity depth was a critical determinant of failure. In addition, the findings of this study highlight the importance of proper anatomical reconstruction to ensure long-term success.

ORAL PRESENTATION

OP.101

SURFACE ROUGHNESS AND SHORT-TERM COFFEE STAINING AFTER DIFFERENT POLISHING PROTOCOLS IN A NANOHYBRID COMPOSİTE

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Introduction: Surface finishing procedures may influence both surface roughness and staining susceptibility of resin composites.

Objective: To compare coffee-related color change and surface roughness after different polishing protocols.

Materials and Methods: Sixty-eight Filtek Z 250 composite discs (5 mm ×2 mm) were fabricated, light-cured (Bluephase PowerCure) and stored in distilled water at 37 °C for 24 hours. Specimens were randomly assigned to four groups: Sof-Lex™ (3M; n=17), OptraGloss® (Ivoclar; n=17), Twist Dia (n=17), and Mylar strip band as a control group (n=17). Polishing procedures were performed according to manufacturer's recommendations. Surface roughness (Ra) was measured using contact profilometer (Mitutoyo SJ-410). Specimens were immersed in coffee solutions (1 spoon/100 mL boiling water; pH=5) for 7 days. Color measurements were obtained at baseline and after imemersion using a spectrophotometer (VITA Easyshade) and color differences were calculated using ΔE00. Data were analyzed using nonparametric tests and ANCOVA (α=0.05).

Results: Surface roughness differed significantly among polishing systems ($p<0.001$). The mylar strip group exhibited significantly lower Ra values compared to all other groups, whereas no differences were observed among the polishing systems. However, no significant differences were found among groups regarding color change ($p>0.05$). Baseline surface rougness did not demonstrate a statistically significant independent effect on ΔE00 values ($p=0.077$; $R2=0.10$).

Conclusions: Althogh polishing systems significanlty influences surface roughness, this variation did not translate into differences in short-term coffee-induced discoloration on Filtek Z250.

ORAL PRESENTATION

OP.102

EFFECT OF ER,CR:YSGG LASER AND ACIDULATED PHOSPHATE FLUORIDE GEL ON ENAMEL MICROHARDNESS AND ROUGHNESS AFTER ACID CHALLENGE

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Introduction: Improving enamel resistance to erosive challenges remains important; laser irradiation and topical fluoride have been proposed to modify enamel surface properties.

Objective: This study evaluated the effects of high-power Er,Cr:YSGG irradiation (3.5 and 4.5W), with or without acidulated phosphate fluoride (APF) gel, on enamel microhardness and surface roughness after an acid challenge.

Materials and Methods: Fifteen sound human third molars were sectioned into four specimens each (N=60), embedded in acrylic resin, and polished. Specimens were assigned to six groups (n=10): control; 1.23% APF gel (Sultan Topex, USA); Er,Cr:YSGG laser (Waterlase iPlus; Biolase, USA) at 3.5 or 4.5W; and the same laser settings combined with APF. Vickers microhardness (VHN) and surface roughness (Ra) were measured at baseline and after acid exposure (2.5 mmol/L HCl, pH 2.8, 5 min). Changes were calculated as Δ=acid–baseline. Within-group changes were analyzed using Wilcoxon signed-rank tests; between-group Δ values with Kruskal–Wallis and Bonferroni-adjusted pairwise comparisons (α=0.05).

Results: Acid exposure significantly decreased VHN and increased Ra within all groups ($p<0.05$). A significant difference in ΔVHN was found between groups ($p<0.001$). Pairwise comparisons showed that control and fluoride groups exhibited significantly greater hardness loss than all laser-treated groups ($p<0.05$), with no differences among laser protocols ($p>0.05$). No significant differences were observed in ΔRa between groups ($p>0.05$).

Conclusions: High-power Er,Cr:YSGG laser application, with or without APF, significantly reduced enamel microhardness loss after acid challenge compared with control and fluoride alone, while different laser settings produced similar outcomes. Surface roughness changes were comparable across groups.

ORAL PRESENTATION

OP.103

EFFECT OF COLD-CONSUMED COFFEE SOLUTIONS ON COLOR STABILITY OF RESIN COMPOSITES

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Introduction: Coffee consumption causes discoloration in restorative materials through colorant adsorption and absorption. While hot coffee's effects are known, the impact of various cold-consumed coffee solutions on resin composite stability requires further investigation.

Objective: To investigate the effects of different cold-consumed coffee varieties on the color stability of four distinct composite resins.

Materials and Methods: Seventy disc-shaped samples (2x8 mm) were prepared using four composite resins: submicron-filled (Estelite Σ Quick), nanohybrid Ormocer (Admira Fusion), nanohybrid (Charisma Classic), and nanoceramic (Zenit). After polymerization and polishing, specimens were stored in distilled water (37°C, 24h). Samples were randomly divided into seven groups (n=10): tap water (control) and six cold coffee solutions (Café Choco, Latte, Americano, Black Roast, Original, Café Vanilla). Specimens were stored at 4°C for 24 hours with hourly solution refreshes. Color measurements were performed using a spectrophotometer (Vita Easyshade) and color change (ΔE*) was calculated. Data were analyzed using ANOVA and Tukey's HSD tests.

Results: No significant differences were observed between the effects of different cold coffee solutions on the color stability of the tested resins ($p > 0.05$). All color changes were below the visually perceptible threshold ($\Delta E^* < 3.3$). Although not significant, the color stability of the Ormocer-based resin was better than that of the three methacrylate-based composites ($p > 0.05$).

Conclusions: Cold-consumed coffee solutions did not cause clinically perceptible discoloration in the tested resins. Ormocer-based materials may offer a slight advantage in color stability compared to methacrylate-based resins when exposed to cold coffee.

ORAL PRESENTATION

OP.104

ENDOCROWN AS A RESTORATIVE SOLUTION FOR ENDODONTICALLY TREATED TEETH - ADVANTAGES AND LIMITATIONS

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Introduction: Preservation of the remaining dental structures after endodontic therapy is crucial for the mechanical stability and integrity of both the tooth and the restoration. For this reason, endocrowns are increasingly used in contemporary dentistry as a restorative solution for endodontically treated teeth.

Objective: The aim of this study was to evaluate the advantages and limitations of endocrowns as a restorative solution for endodontically treated teeth, with particular emphasis on the biomechanical demands of weakened dental tissues following endodontic therapy.

Materials and Methods: This study is based on a review of relevant scientific literature addressing the biomechanical behavior, indications, preparation design, and adhesive protocols of endocrowns.

Results: Compared to conventional post-and-core restorations, endocrowns require less invasive preparation and allow more favorable stress distribution. Retention is achieved through macroretention in the pulp chamber and micromechanical adhesion using resin cements. Proper preparation design, adhesive protocol, and material selection are critical for long-term success.

Conclusions: Endocrowns represent a reliable and minimally invasive restorative option for endodontically treated teeth when proper indications are respected. Their advantages include preservation of tooth structure, improved biomechanics, and simplified clinical procedures, although their success depends on adequate case selection and adhesive bonding.

Keywords: endocrowns, endodontically treated teeth, adhesive dentistry, post-and-core, biomechanics.

ORAL PRESENTATION

OP.105

LONG TERM SURFACE ROUGHNESS AND TOPOGRAPHICAL EFFECTS OF SIMULATED BULIMIC AGING ON MILLED AND 3D PRINTED HYBRID CERAMICS

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Objective: This study aimed to evaluate the effects of simulated bulimic aging on the surface roughness and topography of milled and 3D-printed hybrid ceramic materials over 1- and 3-year periods.

Materials and Methods: Three hybrid ceramic materials were tested: a milled resin-based hybrid ceramic (Grandio, Voco) (ML), and two 3D-printed permanent crown resins—VarseoSmile Crown Plus (BEGO)(VS) and VarseoSmile Triniq (BEGO). Disc-shaped specimens (10×1.2 mm) were fabricated and polished using standardized procedures (n=15 per group). Baseline surface roughness (Sa) was measured using a 3D optical profilometer. Specimens were assigned to two aging protocols: (1) artificial saliva + brushing and (2) gastric acid + brushing, each applied for two simulated durations (1 and 3 years). Gastric acid aging was simulated by immersing specimens in a pepsin-containing HCl solution (pH 1.2) at 37°C for 3 hours daily over 10 days. Brushing was performed with a toothpaste slurry under a 2 N load using a mechanical brushing simulator. After aging Sa evaluations were repeated. Data were analyzed using 3-way ANOVA and Tukey post hoc tests (α=0.05).

Results: Sa was significantly influenced by material type, aging medium, and duration, with interaction effects ($p<0.05$). Gastric acid + brushing caused higher Sa values than artificial saliva + brushing in all materials ($p<0.05$). VS showed the greatest increase in Sa, particularly after 3 years, while ML exhibited the lowest Sa change ($p<0.001$).

Conclusions: Simulated bulimic aging led to significant surface roughness and topographical degradation in all hybrid ceramics, particularly 3D-printed materials. Acidic environment and prolonged exposure exacerbated surface damage, underscoring the role of material type and fabrication method in resisting erosive-mechanical challenges.

ORAL PRESENTATION

OP.106

FRACTURE RESISTANCE OF ARTIFICIALLY CRACKED MANDIBULAR MOLARS RESTORED WITH FIBER-REINFORCED COMPOSITE AND CAD-CAM FABRICATED RESTORATIONS

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Introduction: Cracked teeth present a significant clinical challenge, especially when crack lines extend toward the pulp chamber without root involvement. The main objective is to preserve tooth structure while preventing crack propagation and catastrophic failure. Fiber-reinforced composites offer crack-arresting properties, whereas CAD-CAM restorations provide superior mechanical strength. However, their comparative performance in cracked teeth remains unclear.

Aim: This study aimed to evaluate and compare the fracture resistance and fracture patterns of mandibular molars with standardized crack lines restored using these two approaches.

Materials and Methods: Extracted human mandibular molars (n = 28) without caries, restorations, or cracks were selected. Standardized cavities were prepared, and artificial crack lines were induced from the distal marginal ridge toward the pulpal floor without root involvement. After root canal treatment, specimens were randomly divided into two groups (n = 14). Group 1 was restored with fiber-reinforced composite (everX Posterior, GC Corporation), and Group 2 with CAD-CAM fabricated restorations adhesively luted. All samples underwent thermocycling using a steam autoclave according to ISO standards. Fracture resistance was tested using a universal testing machine at 1 mm/min. Fracture load (N) and fracture modes (restorable/non-restorable) were recorded. Data were analyzed using independent t-test and chi-square test ($\alpha = 0.05$).

Results: CAD-CAM restorations showed significantly higher fracture resistance ($p < 0.05$). However, fiber-reinforced composites demonstrated a higher incidence of restorable fractures, whereas CAD-CAM restorations resulted in more catastrophic failures.

Conclusions: Although CAD-CAM restorations provide higher fracture resistance, fiber-reinforced composites yield more favorable fracture patterns and may represent a more clinically reparable treatment option for cracked mandibular molars.

Keywords: Cracked tooth, fracture resistance, fiber-reinforced composite, CAD-CAM, posterior restorations

ORAL PRESENTATION

OP.107

ADDITIVELY MANUFACTURED RESIN-BASED ENDOCROWNS FOR REHABILITATION OF ENDODONTICALLY TREATED POSTERIOR TEETH: A CASE SERIES

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Introduction: Endocrowns have been proposed as a conservative alternative to conventional post–core-supported restorations for endodontically treated posterior teeth with extensive coronal structure loss. The integration of additive manufacturing technologies has further expanded minimally invasive restorative options through precise fabrication of resin-based restorations.

Objective: To present the clinical application and short-term outcomes of additively manufactured resin-based endocrowns in posterior teeth requiring rehabilitation.

Materials and Methods: Three posterior teeth in two systemically healthy 22-year-old female patients were restored with endocrowns. In one case, a mandibular first molar with inadequate root canal filling and periapical pathology underwent nonsurgical retreatment, after which significant coronal tissue loss indicated endocrown restoration instead of post–core placement. In another case, recurrent fractures in previously treated premolar and molar teeth were rehabilitated with endocrowns. Preparations preserved pulp chamber walls and incorporated a butt-joint margin design. Digital impressions were obtained, restorations were designed using CAD software, and fabricated via DLP-based three-dimensional printing with permanent-type photopolymer resin. Adhesive cementation was performed using dual-cure resin cement.

Results: At 6-month follow-up, restorations demonstrated satisfactory marginal adaptation, stable occlusion, acceptable esthetics, and maintained color stability. No debonding, fracture, microleakage, or secondary caries were observed.

Conclusions: Additively manufactured resin-based endocrowns may represent a reliable and minimally invasive treatment option for endodontically treated posterior teeth when appropriate case selection and adhesive protocols are applied. Long-term clinical studies are required to confirm durability and biomechanical predictability.

ORAL PRESENTATION

OP.108

COLOR STABILITY OF THREE DIFFERENTLY MANUFACTURED DENTAL COMPOSITES: INFLUENCE OF HYDROTHERAMAL AGING AND STAINING

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Introduction: Dental composites are among the most widely used materials in dentistry owing to their excellent aesthetic performance and ability to replicate lost hard tooth tissues. The emergence of novel formulations and manufacturing routes, including subtractive and additive technique, may significantly influence their optical properties.

Objective: The aim of the study was to investigate the influence of hydrothermal aging and staining on the color stability of dental composites, and to correlate it with surface topography analysis.

Materials and Methods: Three types of disc-shaped specimens (5 × 2 mm) were prepared using different manufacturing techniques: light cured (G-ænial A'CHORD) (LCC), CAD/CAM milled (BreCAM.HIPC) (MC) and printed composite (Saremco Print Crowntec) (PC), following manufacturers instructions. The specimens were subjected to hydrothermal aging: for 5000 cycles (T1), 10,000 cycles (T2) and 30,000 cycles (T3). Color change (ΔE_{00}) was recorded after aging (compared to unaged specimens T0), as well as, after immersion in staining solutions (coffee and Coca-Cola). Surface topography of unaged and aged specimens was determined using atomic force microscopy (AFM).

Results: All specimens exhibited clinically acceptable color stability. However, differences were observed depending on the manufacturing technique.

Conclusions: The interplay between material composition and manufacturing technique significantly affects both color stability and surface topography of dental composites. These findings highlight the importance of considering processing methods when selecting materials for long-term aesthetic performance.

Keywords: optical stability, dental composites, hydrothermal aging, staining.

ORAL PRESENTATION

OP.109

EFFECT OF STAINING SOLUTIONS AND REPOLISHING ON COLOR STABILITY OF DIRECT COMPOSITES

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Introduction: Composite resin color stability is crucial for restoration longevity, often compromised by dietary habits.

Objective: To assess color changes in three composite resins exposed to coffee and cola and evaluate repolishing effects on color recovery.

Materials and Methods: Fifteen specimens each of microhybrid (Esthet-X, Filtek-Z250) and high-density hybrid (SureFil) composites were fabricated. Baseline color (CIE Lab*) was measured using a spectrophotometer. Specimens were immersed for 15 days in distilled water (control), coffee, or cola. After immersion, color was remeasured, specimens were repolished with aluminum oxide discs, and a final color reading was taken. Color stability (ΔE) was calculated.

Results: No significant differences ($p>0.05$) existed between composite types. Coffee caused the highest color change for all resins, exceeding clinical acceptability. Cola and water showed minimal changes. Repolishing significantly decreased ΔE values for coffee-stained specimens to clinically acceptable levels, with Esthet-X showing the highest reduction (59%), followed by Filtek-Z250 (53%) and SureFil (35%).

Conclusions: Coffee causes significant, clinically unacceptable staining in all tested composites. Repolishing effectively restores color to acceptable levels, though effectiveness varies by material type.

ORAL PRESENTATION

OP.110

PREPARATION FOR CERAMIC VENEERS IN ANTERIOR REGION

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Introduction: Ceramic veneers in the anterior region are increasingly taking a leading role in aesthetic dentistry. The preparation for the fabrication of ceramic veneers is very important, as it determines their function, durability, stability, bio-compatibility, and aesthetics. The plan before preparation and guided preparation are essential for the minimal removal of tooth structure during the fabrication of ceramic veneers.

Objective: The aim of this presentation is to determine which type of preparation is better—whether a less invasive preparation that extends to the incisal edge of the tooth and meets the aesthetic and functional needs of patients, or an overlap preparation that wraps around the tooth and provides stability, aesthetics, and strength to the ceramic veneers.

Materials and Methods: In patients, we used the Bevel technique and the Overlap technique for veneer preparation in order to meet the aesthetic and functional needs of the patients.

Results: The Bevel technique and the Overlap technique are the most commonly used techniques for preparation and provide excellent results in the fabrication of ceramic veneers. The Bevel preparation technique is less invasive compared to the Overlap preparation technique, which provides the greatest resistance to fracture of ceramic veneers.

Conclusions: These preparation techniques are important for the aesthetics of ceramic veneers, and the choice of technique depends on the conditions in the patient's mouth and the dentist's treatment plan.

Keywords: aesthetics, preparation, ceramic veneers

ORAL PRESENTATION

OP.111

NON-SURGICAL ENDODONTIC TREATMENT OF A MANDIBULAR MOLAR WITH A LARGE PERIAPICAL LESION: CASE REPORT

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Introduction: Non-surgical root canal treatment can be a successful and conservative treatment option for the management of teeth with large periapical lesions.

Objective: This case report aims to present the successful management and follow-up of a molar with a large periapical lesion without the need for surgery.

Case Presentation: A systemically healthy 24-year-old male patient was referred to the endodontic clinic with spontaneous pain in the left mandible. Clinical examination revealed tenderness to palpation and percussion in #36. The electric pulp test demonstrated a negative response. Radiography examination revealed a large periapical radiolucency. The diagnosis was chronic apical periodontitis, and non-surgical endodontic treatment was planned. Access cavity was prepared under rubber dam isolation, and purulent drainage was detected. Mechanical instrumentation was performed with rotary instruments. İrrigation using 2.5% NaOCl and 17% EDTA was carried out. Following chemomechanical instrumentation, irrigation activation was performed using ultrasonic (Woodpecker DTE Endo 3 Guilin, China) at the 3rd speed limit for 20 seconds three times. In the next appointment, calcium hydroxide was placed as an intracanal medicament and kept 14 days. Following the removal of medicament with copious irrigation, canals were obturated using gutta-percha and epoxy resin sealer, and the composite restoration was placed.

Results: At the 4- and 11-month follow-ups, the tooth was asymptomatic, and the periapical lesion had reduced. Follow-up is ongoing.

Conclusions: This case demonstrates that non-surgical endodontic treatment with appropriate chemomechanical instrumentation and intracanal medication provides successful results for teeth with a large periapical lesion without the need for invasive surgery.

Keywords: calcium hydroxide, endodontics, irrigation activation, non-surgical endodontic treatment, periapical lesion,

ORAL PRESENTATION

OP.112

METHODOLOGICAL AND STUDY DESIGN DISTRIBUTION OF ARTICLES PUBLISHED IN A LEADING ENDODONTIC JOURNAL BETWEEN 2020 AND 2025

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Introduction: The methodological profile of published research reflects the scientific direction and hierarchy of evidence within a discipline. Evaluating study designs over time may reveal structural trends in knowledge production in endodontics.

Objective: This study aimed to classify original articles published between 2020 and 2025 in a leading peer-reviewed endodontic journal according to study design and methodological characteristics.

Materials and Methods: All original research articles published between January 2020 and December 2025 were screened. Case reports, editorials, and letters were excluded. A total of 870 articles met the inclusion criteria. Articles were categorized into three main groups: laboratory-based research, clinical studies, and systematic reviews. Laboratory studies were further classified as in vitro, ex vivo, or in vivo animal studies. Clinical studies were categorized as randomized controlled trials, prospective studies, retrospective studies, or cross-sectional studies. Descriptive analyses were performed to determine proportional distributions.

Results: Laboratory-based research constituted the majority of publications and was approximately 1.6 times more frequent than clinical studies. In vitro and ex vivo designs predominated in laboratory studies, whereas randomized controlled trials accounted for only a limited proportion of clinical research.

Conclusions: The findings demonstrate a persistent dominance of experimental laboratory research and a comparatively limited production of high-level clinical evidence. This imbalance may have implications for evidence-based clinical decision-making and highlights the need to encourage more robust prospective and randomized clinical research in endodontics.

ORAL PRESENTATION

OP.113

PERFORMANCE EVALUATION OF LATEST LARGE LANGUAGE MODELS ON ENDODONTIC SPECIALTY QUESTIONS: IMPACT OF SOURCE ACCESSIBILITY

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Introduction: The integration of large language models (LLMs) into specialized medical fields is rapidly increasing; however, it is crucial to rigorously assess how domain-specific capabilities and access to information resources affect performance.

Materials and Methods: 187 endodontic questions (127 internet-based, 60 textbook-based) from the national endodontic specıalty examination (2012–2025) were presented to Gemini 3 Pro, Gemini 3 Flash, ChatGPT 5.2, and DeepSeek V3.2 using a "zero-shot" method. Responses were evaluated by two independent experts using a 0–3 point scale. Friedman and Wilcoxon tests with Bonferroni corrections were used for inter-model and Mann-Whitney U Test for intra-model statistical analyses.

Results: Gemini 3 Pro demonstrated the highest overall accuracy (90.37%), followed by Gemini 3 Flash (88.33%), ChatGPT 5.2 (78.25%), and DeepSeek V3.2 (62.13%) ($p < 0.001$). Intra-model analysis showed that question source (Internet vs. Textbook) had no significant impact on any model's performance ($p > 0.05$).

Conclusions: Next-generation AI models, particularly the Gemini 3 series, demonstrate substantial proficiency in processing endodontic literature. While showing potential as supportive tools in dental education and clinical decision-making, their integration into professional workflows requires rigorous validation and human oversight to ensure clinical safety.

Keywords: Artificial Intelligence, Endodontics, Large Language Models, Dental Education, Gemini 3Pro, ChatGPT 5.2.

ORAL PRESENTATION

OP.114

EVALUATION OF DIFFERENT ARTIFICIAL INTELLIGENCE APPLICATION ON RESPONDING TO PATIENT QUESTIONS REGARDING REGENERATIVE ENDODONTICS

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Introduction: Regenerative endodontics is a contemporary approach aiming for biological healing, particularly in the treatment of necrotic immature teeth, and requires precise clinical decision-making. As patients increasingly use artificial intelligence-powered chatbots, evaluating the accuracy of their responses is essential to prevent misinformation.

Objective: This study aimed to evaluate the responses of various artificial intelligence-powered chatbots to questions frequently asked by patients regarding regenerative endodontics in terms of scientific accuracy, usefulness, comprehensiveness, and information quality.

Materials and Methods: Twenty-two common patient questions about regenerative endodontics were formulated based on current endodontic guidelines and literature. These questions were directed to five artificial intelligence platforms (Gemini 3, ChatGPT-5.2, Grok 3, Copilot, and DeepSeek-R1). The responses were scored using a 5-point Likert scale, a misinformation scale, the Global Quality Score, and the modified DISCERN index. As data were non-normally distributed, Kruskal-Wallis and Mann-Whitney U tests were used for statistical analyses.

Results: Significant differences were observed among the platforms across the evaluation scales ($p<0.05$). DeepSeek-R1 demonstrated the highest performance in the Global Quality Score, 5-point Likert scores, and misinformation scale. ChatGPT-5.2 showed the lowest Global Quality Score but achieved significantly higher modified DISCERN scores than the other platforms. In contrast, Copilot demonstrated the lowest performance in the modified DISCERN score.

Conclusions: Although ChatGPT-5.2 excelled in scientific accuracy, it exhibited the lowest comprehensibility. In contrast, DeepSeek-R1 was found to be superior in terms of information quality. Despite their educational potential, chatbots in regenerative endodontics demonstrate variable quality and therefore require cautious interpretation, validation against clinical guidelines.

ORAL PRESENTATION

OP.115

A COMPARISON OF CHATGPT-5 AND HUMAN EXPERT REVIEWER EVALUATIONS OF TRANSCRIPTS OF YOUTUBE VIDEOS ON THE TOPIC 'ROOT CANAL TREATMENT OR DENTAL IMPLANT?

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Introduction: The internet is frequently used by both patients and physicians to obtain information on various healthcare topics.

Objective: The purpose of this study was to compare the performance of ChatGPT-5 with that of peer review by human experts in assessing the reliability, completeness, and information quality of transcripts of YouTube videos on the topic 'Root canal treatment or dental implant?'

Materials and Methods: Twenty-three videos transcripts that met the inclusion criteria were evaluated by two independent researchers and ChatGPT-5. Global Quality Scale, modified DISCERN and content scores were used as evaluation metrics. Data were analysed with Chi-square and Mann-Whitney U tests.

Results: The average content score (8.52) for the transcripts of videos evaluated using ChatGPT-5 was significantly higher than that assigned by the human reviewers (5.74) ($p < 0.01$). The Global Quality Scale ($p < 0.01$), advantage ($p < 0.01$), and prognosis ($p < 0.01$) scores for the transcripts of videos evaluated using ChatGPT-5 were significantly higher than the corresponding human-assigned scores. No significant differences were observed between the cost, technical, disadvantage, and modified DISCERN scores of the transcripts of videos evaluated by ChatGPT-5 and the human experts ($p > 0.05$).

Conclusions: ChatGPT-5 cannot currently replace human expert reviewers in evaluating YouTube videos transcripts on the choice between root canal treatment and dental implants. However, training artificial intelligence applications in this area could enable them to evaluate healthcare dilemmas at the same level as human reviewers in the future, ensuring reliability in the use of online health content.

ORAL PRESENTATION

OP.116

EFFECT OF CHITOSAN APPLICATION ON COMPOSITE RESIN–DENTIN BOND STRENGTH AFTER INTERNAL BLEACHING

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Introduction: Residual oxygen released during internal bleaching (IB) procedures may adversely affect the bond strength of restorative materials to dentine.

Objective: To evaluate the effect of 0.2% chitosan surface treatment on the shear bond strength (SBS) of composite resin to dentine after IB, and to compare its effectiveness with that of sodium ascorbate (SA) application and a delayed-bonding protocol.

Materials and Methods: Fifty teeth were included. The crowns were sectioned perpendicular to the long axis to expose mid-coronal dentin, and standardized flat dentin surfaces were prepared. Specimens were randomly divided into five groups (n=10): G1, non-bleached control; G2, immediate restoration after bleaching; G3, bleaching + 0.2% chitosan; G4, bleaching + 10% sodium ascorbate (SA); and G5, bleaching with a 7-day delayed bonding protocol. IB was performed by applying 35% hydrogen peroxide for 60 sec. The same adhesive system and composite resin were used for all groups. SBS testing was performed. The data were analyzed using one-way ANOVA and Tukey's HSD test (α=0.05).

Results: Group G2 showed the lowest SBS values (18.6±2.8 MPa) ($p<0.05$). While Group G3 (27.9±3.4 MPa) demonstrated significantly higher bond strength than G2 ($p<0.05$), it was significantly lower than G1 (32.4±3.1 MPa), G4 (30.8±3.0 MPa), and G5 (31.6±2.7 MPa) ($p<0.05$). No statistically significant differences were observed among G1, G4, and G5 ($p>0.05$).

Conclusions: Chitosan application partially reversed the reduction in bond strength caused by IB, showing similar performance to SA application and delayed bonding.

Keywords: Antioxidant; bleaching; chitosan; composite resin; dentine; shear bond strength

ORAL PRESENTATION

OP.117

THE MANAGEMENT OF A MANDIBULAR MOLAR WITH A STRIP PERFORATION USING HEMISECTION: A CASE REPORT

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Introduction: Hemisection is the surgical removal of one or more roots and the existing crown in a multi-rooted tooth. It leads to the removal of a defective dental root that is not possible to treat, while maintaining the retention of the tooth.

Objective: The purpose of this case report is to present the management and follow-up of a hemisectioned tooth.

Case Presentation: A 38-year-old male patient with hypertension was referred to the endodontic clinic with a complaint of pain in the right mandibular region. Clinical and radiographic examination revealed a fractured file in the mesial root of #46. Under rubber dam isolation, access cavity was performed, during the bypassing of the fracture file, a strip perforation occurred. Considering both socioeconomic status and patient preference, hemisection was planned. Chemomechanic instrumentation was performed using rotary instruments and 2.5% NaOCl and 17% EDTA with irrigation activation for the distal canal, followed by an obturation with gutta-percha and epoxy-resin sealer, and a coronal restoration using glass ionomer cement. Next appointment, roots were split using a fissure bur without touching the bone at the furcation, and the mesial root was extracted. After extraction, composite filling was performed.

Results: At the 8-month follow-up, the tooth was asymptomatic. The extraction socket was totally healed. The patient was referred for prosthetic restoration.

Conclusions: In the presence of a problematic root, hemisection can be performed as an alternative to an implant, especially for unfavorable socioeconomic situations. When properly indicated, hemisection may serve as an adequate alternative to restore function.

ORAL PRESENTATION

OP.118

ROOT-END SURGERY OF MAXILLARY INCISORS WITH A LARGE PERIAPICAL LESION AND INTRA-CORONAL BLEACHING OF MTA-RELATED DISCOLORATION: A CASE REPORT

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Introduction: Large periapical lesions associated with maxillary incisors may require surgical endodontic treatment when conventional root canal therapy is insufficient. Mineral trioxide aggregate (MTA) is widely used for root-end filling due to its favorable biological properties; however, tooth discoloration may occur as a complication.

Aim: This case report aimed to evaluate the clinical and radiographic outcomes of root-end surgery and MTA plug placement in a maxillary central incisor with a large periapical lesion, and to present the management of MTA-related discoloration using intra-coronal bleaching with 35% hydrogen peroxide.

Materials and Methods: A systemically healthy 56-year-old woman was referred with complaints of swelling and mobility in tooth #21. Radiographic examination revealed extensive periapical lesions associated with teeth #21 and #22. Root-end surgery was performed on both teeth and MTA plugs were placed following retrograde cavity preparation. After complete filling of the root canal of tooth #21 with MTA, the coronal restoration was completed with composite resin. Six months later, the patient presented with discoloration of tooth #21. Intra-coronal bleaching was performed using 35% hydrogen peroxide and the procedure was repeated twice at two-day intervals. Prior to bleaching, a cervical barrier was placed using glass-ionomer cement. After achieving the desired esthetic outcome, the final composite restoration was completed.

Results: Clinical and radiographic follow-up at one year demonstrated complete healing of the periapical lesion and new bone formation in the periapical area. Following intra-coronal bleaching, the tooth remained functional and exhibited satisfactory esthetic improvement.

Conclusions: Root-end surgery with MTA may provide successful clinical and radiographic outcomes in teeth with extensive periapical lesions. Discoloration associated with MTA can be effectively and safely managed with intra-coronal bleaching using 35% hydrogen peroxide when applied according to an appropriate protocol.

ORAL PRESENTATION

OP.119

NON-SURGICAL RETREATMENT OF AN EXTRAORAL SINUS TRACT OF ENDODONTIC ORIGIN: A CASE REPORT

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Introduction: Extraoral sinus tracts of odontogenic origin are an uncommon clinical condition that is often misdiagnosed as a dermatological pathology. An extraoral sinus tract, which is generally asymptomatic, is typically associated with chronic apical periodontitis. Accurate diagnosis is essential to avoid unnecessary dermatologic or surgical interventions. This report aimed to present the management of a tooth with an extraoral sinus tract.

Objective: To present the management of an extraoral sinus tract of odontogenic origin treated with non-surgical retreatment.

Case Presentation: A 20-year-old systemically healthy male patient was referred to the endodontic clinic, presenting with a persistent cutaneous lesion described as a “pimple” on the facial region. Clinical and radiographic examination revealed that a periapical radiolucency originated from a previously treated mandibular left first molar with no pain. Non-surgical retreatment was initiated under rubber dam isolation. The previous canal filling was removed using rotary instruments. Chemomechanical instrumentation was performed under copious irrigation using 2.5% NaOCl, 17% EDTA with irrigation activation. Calcium hydroxide was placed. One month later, the medicament was removed using EDTA with ultrasonic activation. Final irrigation protocol included EDTA and NaOCl. Obturation was completed using gutta-percha and epoxy-resin sealer. Composite restoration was performed.

Results: The patient remained asymptomatic. Progressive healing of both the periapical lesion and the extraoral sinus tract, including scar tissue, was observed during 3-and-6-month follow-ups.

Conclusions: Extraoral sinus tracts of odontogenic origin can be successfully managed using non-surgical retreatment with proper microbial control. Early and accurate diagnosis prevents unnecessary dermatological interventions and ensures a favorable prognosis.

ORAL PRESENTATION

OP.120

NON-STEROIDAL ANTI-INFLAMMATORY DRUGS IN ENDODONTIC PRACTICE: AN EVIDENCE-BASED REVIEW

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Introduction: The non steroids anti-inflammatory drugs (NSAIDs) are a large, heterogeneous group, mostly composed of weak organic acids. They possess analgesic, antipyretic, and, at higher doses, anti-inflammatory actions. Compared to opioids, they have lower toxicity, no sedative or respiratory depressive effects, and do not cause addiction. NSAIDs reduce pain by inhibiting cyclo-oxygenase (COX-1 and COX-2) enzymes, which in turn reduces the production of prostaglandins responsible inflammation.

Objective: The aim of this study was to investigate the role of NSAIDs in the field of endodontics and to evaluate whether are the pharmacological drugs of choice for the management of pain from endodontic origin. Methods and Materials: A literature search was conducted using PubMed and Google Scholar databases with the keywords “NSAIDs”, “Endodontics” and “pain management”.

Results: NSAIDs are the drugs of choice for the management of preoperative endodontic pain and for managing endodontic flare-ups during treatment. Strong evidence suggests that preoperative oral administration of NSAIDs increases the success rate of inferior alveolar nerve block (IANB) in patients with irreversible pulpitis. Limited evidence exists regarding the effectiveness of NSAIDs in managing post-treatment pain following root canal treatment for irreversible pulpitis or pulp necrosis.

Conclusions: A fundamental principle is that NSAIDs should be administered in endodontic practice only when deemed necessary, at the lowest possible dose, for the shortest possible duration, and by selecting the appropriate preparation on an individualized basis. When administering NSAIDs, the risk of side effects, as well as potential interactions with other medications, should always be considered.

ORAL PRESENTATION

OP.121

CLINICAL MANAGEMENT OF MOLARIZED PREMOLARS WITH THREE CANALS

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Introduction: Molarized premolars with three root canals represent a rare anatomical variation that can complicate endodontic treatment. Failure to recognize additional canals is a common cause of treatment failure.

Objective: The aim of this paper is to describe the clinical management and key considerations in the endodontic treatment of molarized premolars with three canals.

Materials and Methods: This study is based on established clinical guidelines and is complemented by the presentation of selected clinical cases. Diagnostic procedures included comprehensive clinical examination and periapical radiographic assessment. The use of magnification devices, particularly an operating microscope, was emphasized to enhance diagnostic accuracy and treatment precision. Standardized endodontic protocols were followed, including access cavity preparation and mechanical instrumentation using nickel–titanium rotary files. Chemical irrigation was performed with sodium hypochlorite and ethylenediaminetetraacetic acid to ensure effective canal disinfection. Obturation was carried out using a bioceramic sealer in combination with gutta-percha cones to achieve a hermetic seal of the root canal system.

Results: Accurate diagnosis combined with proper access cavity design improves the detection of all canals. The use of modern instruments and irrigation protocols enables effective cleaning and shaping of complex canal systems, leading to successful obturation and improved treatment outcomes.

Conclusions: Successful management of molarized premolars with three canals requires thorough knowledge of root canal anatomy, careful diagnosis, and the use of advanced endodontic techniques and technologies.

ORAL PRESENTATION

OP.122

ROOT AND ROOT CANAL MORPHOLOGY OF MANDIBULAR SECOND PERMANENT MOLARS IN THE TURKIYE POPULATION: A CBCT STUDY

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Aim: This study aimed to evaluate the root and root canal morphology of mandibular second molars in a Turkiye population using cone-beam computed tomography (CBCT) according to the Ahmed classification system. Additionally, bilateral symmetry, pulp chamber height, and their relationship with age and gender were assessed.

Materials and Methods: In this retrospective cross-sectional study, CBCT images of 527 mandibular second molars from 289 patients were analyzed. Canal configurations were classified according to the Ahmed system. Patient age and gender were recorded. Pulp chamber height was measured in millimeters. Bilateral symmetry was evaluated in patients with both mandibular second molars present.

Results: The most common configurations were M-2-1 D-1 (25.1%), M-2 D-1 (23.19%), and M-1-2-1 D-1 (15.2%). C-shaped canal morphology was observed in 12.7% of teeth (n=67). Among 237 patients with bilateral mandibular second molars, 75.9% showed symmetrical canal configurations. Mean pulp chamber height decreased with age (<25 years: 2.4 mm; 25–40 years: 1.95 mm; >40 years: 1.54 mm).

Conclusions: Mandibular second molars in the Turkiye population show considerable morphological diversity and a high degree of bilateral symmetry. The notable prevalence of C-shaped canals and age-related reduction in pulp chamber height may have important implications for endodontic access and treatment planning.

ORAL PRESENTATION

OP.123

ARTIFICIAL INTELLIGENCE IN ENDODONTIC EDUCATION: A NARRATIVE REVIEW

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Introduction: The move toward digital healthcare means that endodontic training needs to adapt. Future dentists should learn how to work with new technologies so they can handle the challenges of a technology-based clinical environment.

Objective: The aim of this literature review was to investigate the performance of dental students compared to Artificial Intelligence (AI) on endodontic tasks.

Materials and Methods: An electronic search was carried out up to February 2026 through PubMed and Scopus, using advanced search. Then, the complete set of results was subjected to screening using Rayyan platform. A manual hand search was also conducted to identify relevant sources. Results
The search identified 604 records, of which 7 met the inclusion criteria. Most studies focused on AI chatbots related to dental trauma, pulpal and periapical diseases and on AI-based platforms for pulp exposure prediction and working length determination. The majority of studies indicated that AI chatbots, particularly ChatGPT, demonstrated similar or higher accuracy rates and lower error rates compared with senior and junior students. Only two studies reported that clinically experienced 5th graders achieved higher accuracy than AI. With regard to pulp exposure prediction and working length determination, AI platforms outperform students in all groups, including both control and training groups.

Conclusions: The efficiency of AI can achieve high levels of accuracy in endodontic education. Further research is needed, through well-designed, education-centered studies, to explore the effectiveness of artificial intelligence in improving clinical decision-making and educational outcomes.

ORAL PRESENTATION

OP.124

MANAGEMENT OF EXPOSURE THE SUBLINGUAL VEIN CAUSED BY IATROGENIC TRAUMA. A CASE REPORT

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Introduction: The sublingual space is major contents are the sublingual salivary gland and its ducts, the submandibular duct, the superior portion of the submandibular salivary gland, the lingual nerve, artery and vein, and the glossopharyngeal and hypoglossal nerves. Sublingual vascular trauma and perforations in the sublingual vein that can occur during rutin dental procedures in the mandible is potentially life-threatening such as upper airway obstruction, severe bleeding and formation of a hematoma in the floor of the mouth.

■ CASE:

A 25-year-old female patient was urgently referred to our clinic by her dentist due to exposure of her sublingual vein. According to the anamnesis, the reason was the iatrogenic trauma to the mucosa on the sublingual vein caused by the aerator bur during the cleaning of the patient's tooth decay and the tearing of this mucosa.The exposure was sutured with 3.0 silk thread to prevent a possible bleeding and hematoma. When the sutures were removed 1 week later, uneventful healing was observed.

Conclusions: Better knowledge of the complex muscular, vascular, glandular, ductal, and neural anatomy of the sublingual space is important for accurate diagnosis and treatment planning by both general dentists and oral surgeons in order to avoid complications.

ORAL PRESENTATION

OP.125

REMOVAL OF A TOOTH ROOT DISPLACED INTO THE MAXILLARY SINUS 18 MONTHS AGO VIA THE CALDWELL-LUC PROCEDURE

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Introduction: Displacement of a tooth or root into anatomical spaces is a known complication of dental extractions. During the extraction of maxillary posterior teeth, the close proximity to the maxillary sinus must be carefully considered to avoid such incidents.

Objective: The aim of this case report is to present the surgical removal of a tooth root that had been displaced into the maxillary sinus approximately 1.5 years ago, using the Caldwell-Luc procedure.

Materials and Methods: A 21-year-old systemically healthy female patient presented to our clinic with pain in her third molar. Routine radiological examination revealed a root fragment belonging to the previously extracted tooth #26 within the maxillary sinus. It was learned that the extraction had been performed at an external center 18 months prior. Clinical examination showed a completely healed extraction socket without signs of infection, though the patient reported occasional pain. CBCT imaging was performed to determine the three-dimensional position of the root, showing thickening at the base of the Schneiderian membrane. Under local anesthesia, a full-thickness triangular flap was reflected between teeth 25-27. Access to the maxillary sinus was achieved via the Caldwell-Luc procedure. The root was removed, and the flap was closed primarily. Postoperative antibiotics, analgesics, and decongestants were prescribed.

Results: While immediate removal is recommended when displacement occurs, it may not always be feasible due to technical limitations or patient factors. In delayed cases, the Caldwell-Luc approach or endoscopic techniques remain effective for retrieval.

Conclusions: Precision in surgical technique and appropriate imaging are vital for managing long-term root displacements in the maxillary sinus.

ORAL PRESENTATION

OP.126

BULLYING EXPOSURE AND EMOTIONAL DISTRESS AMONG UNDERGRADUATE DENTISTRY STUDENTS IN TÜRKIYE: A MULTICENTER CROSS-SECTIONAL STUDY

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Introduction: Bullying in academic health-care settings is a growing psychosocial concern, particularly among undergraduate health professional students. Dental education involves intense academic workload, clinical pressure, and hierarchical structures that may increase vulnerability to bullying and emotional distress. However, data from Türkiye remain limited.

Objective: To assess the prevalence of bullying exposure among undergraduate dentistry students and examine its association with depression, anxiety, and stress.

Materials and Methods: This cross-sectional study included 414 fourth- and fifth-year dentistry students from two universities in Türkiye. Data were collected using a 30-item culturally adapted bullying questionnaire (0–120) and the Depression Anxiety Stress Scale-21 (DASS-21). Internal consistency was evaluated using Cronbach's alpha. Associations between bullying total score and DASS-21 subscales were analyzed using Spearman correlation. Multivariable linear regression with HC3 robust standard errors assessed independent associations, adjusting for age, gender, grade, and university.

Results: Any bullying exposure was reported by 99.3% of participants. The mean bullying total score was 38.51 ± 22.56. At least mild symptoms were observed in 70.3% for depression, 82.1% for anxiety, and 57.7% for stress. Bullying total score correlated positively with depression ($r=0.537$), anxiety ($r=0.489$), stress ($r=0.574$), and total DASS score ($r=0.604$) (all $p<0.001$). In adjusted analyses, bullying remained independently associated with higher depression, anxiety, and stress scores (all $p<0.001$). Female students reported significantly higher distress levels.

Conclusions: Bullying is highly prevalent among dentistry students and independently associated with emotional distress, underscoring the need for preventive strategies and psychosocial support in dental education.

Keywords: Anxiety, Bullying, Dentistry students, Depression

ORAL PRESENTATION

OP.127

PROSTHETIC REHABILITATION WITH OBTURATORS IN AN ANTERIOR MAXILLECTOMY PATIENT WITH MUCOSAL MALIGNANT MELANOMA: A CASE REPORT

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Methods: Rehabilitation with a treatment obturator enabled the recovery of speech and masticatory function.After functional stabilization was achieved, a definitive obturator prosthesis was delivered, leading to a marked improvement in the patient’s quality of life.

ORAL PRESENTATION

OP.128

PIEZOSURGEY IN ORTHOGNATIC SURGERY

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Objective: To evaluate the role of piezosurgery in orthognathic surgery, comparing accuracy and functional outcomes with conventional rotary instruments.
Narrative review of the literature on Le Fort I osteotomy, BSSO and genioplasty, analyzing operative time, blood loss, nerve damage, soft tissue integrity and skeletal stability.

Results: Piezosurgery, through ultrasonic microvibrations selective for mineral tissue, allows for more controlled cuts, preservation of vessels and nerves (reduction of NAI paresthesias), reduced hemorrhage, cleaner operative field and precise osteotomy contours, with lower risk of unwanted fractures (bad splits). Evidence suggests higher accuracy in segment translation/rotation and potential for more favorable bone healing, although it may increase operative time in the learning phases and requires investment in equipment and training. Complications are rare and usually manageable.

Conclusions: Piezosurgery improves neurovascular safety and osteotomy control in orthognathic surgery, with predictable and consistent results; randomized studies and standardized protocols are needed to consolidate benefits and cost-effectiveness.

Keywords: Orthognathic Surgery, Piezosurgery, Maxillofacial Surgeon

ORAL PRESENTATION

OP.129

APPLICATION OF BIOREGENERATIVE AUTOLOGOUS BLOOD DERIVATIVES (PRF) IN THE TREATMENT OF PERI-IMPLANTITIS

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Introduction: Peri-implantitis remains one of the most significant challenges in modern implant dentistry, characterized by inflammatory processes and progressive loss of supporting bone. Traditional mechanical and chemical debridement often fall short in achieving complete biological regeneration. Platelet-Rich Fibrin (PRF), a second-generation autologous blood derivative, has emerged as a promising bioregenerative adjunct due to its high concentration of growth factors and cytokines.

Objective: The aim is to evaluate the clinical efficacy and regenerative potential of PRF in the surgical treatment of peri-implantitis, focusing on its role in soft tissue healing and bone augmentation. Methodology: In this study are explane clinical protocols involving the application of A-PRF (Advanced-PRF) membranes and sticky bone around the exposed implant surface where was bone loss. Key parameters analyzed include the reduction of probing pocket depth (PPD), bleeding on probing (BOP), and radiographic evidence of marginal bone gain with Rtg panoramic and CBCT.

Results: The incorporation of PRF into the treatment of peri-implant defects significantly enhances the healing environment. By providing a sustained release of growth factors such as TGF-β, PDGF, and VEGF, PRF accelerates re-epithelialization and stabilizes the blood clot. Clinical data suggest that PRF membranes act as an effective biological barrier that promotes osteoblast proliferation and reduces postoperative discomfort and inflammation.

Conclusions: Autologous blood derivatives, specifically PRF, represent a safe, cost-effective, and biocompatible solution in the management of peri-implantitis. While they significantly improve soft and bone tissue quality and early bone healing, long-term success still depends on meticulous infection control and patient maintenance.

Keywords: Peri-implantitis, PRF, Platelet-Rich Fibrin, Autologous Blood Derivatives, Bioregeneration, Implant Dentistry.

ORAL PRESENTATION

OP.130

RESTRICTION OF MOUTH OPENING: ETIOLOGY – MANAGEMENT – PRESENTATION OF CLINICAL CASES

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Introduction: Reduced mouth opening (RMO) is a pathological condition that adversely affects mastication, speech, and oral hygiene. Its multifactorial etiology includes trauma, infection, and stomatognathic disorders. RMO may also manifest as a symptom of systemic diseases—such as autoimmune or neurological disorders—or as a complication of iatrogenic interventions, including radiotherapy.

Objective: This presentation highlights diverse etiological factors and evaluates management strategies for patients treated for RMO at a private dental practice specializing in orofacial pain.
Case Descriptions: A series of eight clinical cases are presented, illustrating RMO related to complex pathologies including scleroderma, fibrous dysplasia, and post-radiation fibrosis in head and neck cancer patients. The diagnostic methodology and specific therapeutic approaches—including pharmacological management, physical therapy, and mechanical aids—are described for each unique clinical scenario.

Conclusions: Timely and effective management of RMO requires an interdisciplinary approach. Close collaboration between the general dentist, the orofacial pain specialist, and the oral and maxillofacial surgeon is essential. Because RMO may signal serious underlying conditions, an accurate diagnosis is critical to improving patient outcomes and quality of life

ORAL PRESENTATION

OP.131

EFFECT OF OZONE THERAPY ON ANALGESIC CONSUMPTION AFTER THIRD MOLAR SURGERY

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Introduction: Various adjunctive methods, including ozone therapy, have been introduced to enhance healing and reduce post-operative complications after third molar surgery.

Objective: To investigate the effects of ozone therapy on the number of analgesic doses required after surgical removal of impacted mandibular third molar.

Materials and Methods: A split-mouth randomized controlled clinical trial was conducted in 20 patients (15 females, mean age 23.0±5.7) requiring extraction of bilaterally impacted mandibular third molars. Following surgery, gaseous ozone was applied to the experimental sites immediately after extraction and reapplied on postoperative day 3 (test group), while sham treatment was administered to the control sites according to the same protocol (control group). The number of analgesic tablets intake was recorded daily during the first 7 postoperative days. Postoperative pain was assessed using a verbal rating scale (VRS) on days 1 and 7 after surgery. Data were analyzed using the independent t-test, Mann-Whitney test, repeated-measures ANOVA, and Wilcoxon test, with the level of significance set at 0.05.

Results: No significant intergroup differences were observed on individual postoperative days; however, total number of analgesic tablets intake was significantly lower in the test group than in the control group ($p<0.05$). VRS scores were significantly lower in the test group on day 1 ($p<0.05$), with no difference between the groups on 7th day ($p > 0.05$).

Conclusions: Ozone therapy was found to be an effective adjunctive strategy for reducing the number of analgesic tablets intake at 7 days following the extraction of impacted mandibular third molar.

ORAL PRESENTATION

OP.132

ORTHOGNATHIC SURGERY COMBINED WITH CLEAR ALIGNERS: A DIGITALLY PLANNED CASE REPORT OF AN EXTREME SKELETAL ASYMMETRY

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Introduction: Conventional orthognathic workflows typically combine fixed appliances with surgery planned using 2D analysis on Virtual Treatment Objectives (VTO) and model surgery, a multi-step pathway where cumulative errors may compromise accuracy. Integrating digital orthodontic setups with clear aligners and computer-assisted surgical planning with 3D-printed splints aims to minimize inaccuracies and improve outcome predictability.

Objective: To report the interdisciplinary management of an extreme skeletal Class III malocclusion with facial asymmetry using digitally planned bimaxillary surgery guided by 3D-printed splints and clear aligners for both pre- and postoperative orthodontics.

Materials and Methods: A 22-year-old male presented with inability to incise and anterior crossbite due to maxillary anteroposterior/vertical deficiency and mandibular excess, with mild roll and pitch discrepancies. After digital analysis, presurgical orthodontics was performed with clear aligners for 10 months. Dental scans and CBCT were fused for virtual Le Fort I and bilateral sagittal split osteotomies. Multiplanar maxillomandibular repositioning (anteroposterior, vertical, roll, pitch) was planned; intermediate and final splints were digitally designed and 3D-printed following a maxilla-first protocol. Surgery was performed under general anesthesia with splint guidance and rigid fixation.

Results: Postoperative jaw repositioning matched the virtual plan, and healing was uneventful. Postsurgical orthodontic refinement continued with clear aligners for 5 months to finalize occlusion.

Conclusions: Digitally planned bimaxillary surgery combined with clear aligners and digitally fabricated splints is effective because it enables highly accurate tooth and jaw movements, particularly during multiplanar repositioning. This interdisciplinary workflow may be applied even in the correction of extreme skeletal disharmony.

ORAL PRESENTATION

OP.133

MANAGEMENT OF AN EXTENSIVE MANDIBULAR RADICULAR CYST IN A PEDIATRIC PATIENT VIA TWO-STAGE SURGICAL APPROACH: A CASE REPORT WITH 6-MONTH FOLLOW-UP

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Introduction: Radicular cysts are inflammatory odontogenic lesions rarely reaching extensive sizes in children. In large lesions, a conservative approach is crucial to preserve anatomical structures.

Objective: This report aims to evaluate the management of a large radicular cyst in a pediatric patient using a minimally invasive, staged surgical protocol to reduce morbidity.

Materials and Methods: A 15-year-old patient presented with facial asymmetry and a firm swelling in the left posterior mandible. Radiographic analysis showed a 24×44 mm radiolucency associated with tooth 36, extending to the inferior border with lingual cortical perforation. Initial treatment involved 3 months of decompression via marsupialization.

Results: Marsupialization led to significant cyst shrinkage and partial bone regeneration. Subsequently, teeth 36 and 38 were extracted, and the residual cyst was enucleated under general anesthesia. The inferior alveolar nerve was preserved. A 6-month postoperative follow-up confirmed complete bone healing and no recurrence.

Conclusions: A two-stage approach (marsupialization followed by enucleation) effectively manages extensive pediatric cysts. This protocol minimizes risks of fracture and nerve injury while utilizing the high regenerative potential of the juvenile mandible.

Keywords: Radicular cyst; Marsupialization; Enucleation; Pediatric mandible; Decompression; Cortical perforation

ORAL PRESENTATION

OP.134

VAGUS NERVE PARAGANGLIOMA: A CASE REPORT

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Introduction: Vagus nerve paragangliomas are rare and surgically demanding because of their location in the carotid space and proximity to major neurovascular structures.

Objective: To report the management of a vagus nerve paraganglioma treated in our department.

Materials and Methods: A female patient (born 1970) presented with a palpable right cervical mass. History included breast cancer surgery nine years earlier followed by hormone therapy, and thyroidectomy seven years earlier for nodules. Fine-needle aspiration was non-diagnostic. Because a paraganglioma was suspected, angiography was performed and showed tumor supply from two feeding vessels. Preoperative superselective embolization was undertaken to reduce intraoperative bleeding. The lesion was excised en bloc near the right carotid bifurcation with identification and preservation of the accessory, hypoglossal, and marginal mandibular branch of the facial nerve, as well as the common, internal, and external carotid arteries; the vagus nerve, which entered the tumor, was sacrificed.

Results: Histopathology confirmed complete excision of a paraganglioma without malignant features, consistent with vagus nerve origin. Postoperatively, the patient developed hoarseness, severe cough, right vocal cord paralysis, and mild hypoglossal paresis. Conservative treatment (swallowing exercises, corticosteroids, antitussives, and voice therapy) was instituted. At six-month follow-up, cough had resolved and hypoglossal function was fully restored; dysphonia persisted as expected.

Conclusions: Complete resection preceded by embolization can achieve favorable outcomes. Final diagnosis requires close surgeon-pathologist collaboration, and permanent vagus nerve palsy should be anticipated and discussed with patients.

ORAL PRESENTATION

OP.135

MASTICATORY MUSCLE TENDON-APONEUROSIS HYPERPLASIA SYNDROME: A CASE REPORT

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Introduction: Masticatory muscle tendon-aponeurosis hyperplasia syndrome is an extremely rare clinical entity whose predominant symptom is progressive limitation of mouth opening. Diagnostic criteria include gradual deterioration of maximal mouth opening, palpation of a cord-like induration at the anterior masseter border, and a square mandible.

Objective: To present a case managed in our department with this diagnosis.

Materials and Methods: A 37-year-old female presented to our department with trismus that had gradually worsened over five years, with a maximum mouth opening of 7 mm. Her medical history was unremarkable, and prior conservative treatments (physiotherapy, botulinum toxin injections, antidepressants) provided no improvement. Evaluation confirmed a palpable cord-like induration at the anterior masseter border and a square mandible due to a reduced gonial angle. The patient underwent bilateral coronoidectomy with concomitant surgical excision of the hyperplastic masseter aponeurosis.

Results: The postoperative course was uncomplicated with excellent healing. Immediately after surgery, mouth opening increased to 23 mm. On postoperative day 4, the patient initiated mouth-opening exercises using a Therabite device (seven times daily, seven repetitions, seven seconds each) in conjunction with physiotherapy.

Conclusions: Masticatory muscle tendon-aponeurosis hyperplasia syndrome, although rare, can be therapeutically challenging. Coronoidectomy with aponeurosis release, combined with physiotherapy and patient education on assistive devices, can yield encouraging functional improvement and enhance quality of life.

ORAL PRESENTATION

OP.136

INTRA-ARTICULAR TRISMUS DUE TO A 40-YEAR UNREDUCED MANDIBULAR CONDYLAR FRACTURE: A CASE REPORT

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Introduction: Intra-articular trismus, including temporomandibular joint ankylosis, severely limits mouth opening and impairs quality of life. Long-standing unreduced mandibular condylar fractures as an etiology are exceedingly rare and demand meticulous surgical planning.

Objective: To present a rare case treated in our department for severe intra-articular trismus secondary to a chronic, unreduced mandibular condylar fracture.

Materials and Methods: A 69-year-old male presented with intra-articular trismus and a palpable hard mass in the right condylar region. He reported an unreduced right condylar fracture persisting for 40 years, with maximal interincisal opening of 2-3 mm. CT demonstrated hypertrophy of the condylar head with fusion to the temporal bone and zygomatic arch and absence of a functional temporomandibular joint space. Comorbidities included chronic kidney disease (stage IIA) and arterial hypertension. Under general anesthesia, via preauricular and retromandibular approaches, the ankylotic condylar mass was excised under nerve monitoring and separated from adjacent bone to release the ankylosis; arthrocentesis of the left TMJ was also performed.

Results: Mouth opening improved immediately, and local healing was uneventful with a satisfactory maxillofacial outcome. Systemic recovery was complicated by agitation and oxygen desaturation, requiring prolonged hospitalization and intensive supportive care for other organ systems.

Conclusions: Excision of the ankylotic condylar mass can effectively restore mouth opening in severe chronic intra-articular trismus. In older patients with significant comorbidities, perioperative risk stratification and multidisciplinary postoperative support are essential, as systemic complications may outweigh local surgical success.

ORAL PRESENTATION

OP.137

LINGUAL FRENECTOMY FOR FUNCTIONAL TONGUE RESTRICTION IN A PATIENT WITH FAMILIAL MEDITERRANEAN FEVER: A CASE REPORT

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Introduction: Restrictive lingual frenulum may cause limited tongue mobility, speech difficulties, and impaired oral function. Management may be more challenging in patients with systemic disorders requiring careful surgical planning.

Objective: To present the management of functional tongue restriction caused by anteriorly attached Kotlow Class III ankyloglossia in a patient with familial Mediterranean fever, highlighting clinical considerations related to recent disease activity.

Materials and Methods: A 28-year-old female patient with familial Mediterranean fever presented with severe tongue mobility restriction. Clinically, she was unable to touch the palate or reach the occlusal surfaces with her tongue and reported speech difficulty. Examination revealed a short, thick, anteriorly attached lingual frenulum with marked restriction of tongue elevation. Because of recurrent febrile episodes, recent disease activity, and hospitalization history, medical consultation was obtained before surgery. Considering the patient's systemic condition, a minimally invasive conventional scalpel lingual frenectomy was performed under local anesthesia on December 12, and the surgical site was sutured with 5-0 Vicryl. Postoperative care included antiseptic mouthwash and oral antiseptic spray.

Results: Follow-up examinations on postoperative day 3, day 10, 1 month, and 3 months showed uneventful healing, improved tongue mobility, and patient satisfaction. The patient also subjectively reported improvement in speech.

Conclusions: Lingual frenectomy may be a simple and effective treatment option for functional tongue restriction associated with an anteriorly attached restrictive lingual frenulum. In patients with systemic conditions such as familial Mediterranean fever, careful evaluation, minimally invasive surgical management, and appropriate postoperative antiseptic care may support successful outcomes.

ORAL PRESENTATION

OP.138

TECHNIQUES FOR THE SURGICAL EXPOSURE OF IMPACTED MAXILLARY CANINES: A LITERATURE REVIEW AND CASE REPORTS

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Introduction: Maxillary canines are the second most frequently impacted teeth after third molars. Management options include either extraction or surgical exposure of the tooth followed by orthodontic alignment. However, given their vital functional and esthetic significance, surgical exposure is generally preferred.

Objective: The aim of this review is to describe the techniques for surgical exposure of impacted maxillary canines, to compare them in order to assess whether any method demonstrates superiority, and to present relevant clinical cases.

Materials and Methods: Thorough research of the current literature was conducted using the Pubmed/MEDLINE, Cochrane Library, and ScienceDirect databases up to 02/2026. The keywords “surgical exposure AND impacted maxillary canine” and “surgical techniques” were used. In addition, relevant clinical cases are presented.

Results: Maxillary canine impaction occurs palatally in 2/3 of cases and buccally in 1/3. With regard to palatal impaction, the surgical exposure techniques include the closed technique, the open technique or a combination of both. For buccal impaction, the techniques include gingivectomy, apically positioned flap, roll flap, and the closed technique. These techniques were compared in terms of effectiveness, potential postoperative complications, esthetic outcomes, and periodontal health.

Conclusions: Regarding palatal impaction, no technique appears to be clearly superior; however, the quality of the findings is low, primarily due to the high subjectivity of the included studies. In cases of buccal impaction, the selection of the appropriate technique is determined by the position of the impacted canine crown relative to the mucogingival junction, and by the width of the keratinized gingiva.

ORAL PRESENTATION

OP.139

DIFFICULT CASE, PRECISE SOLUTIONS: PROSTHETIC RETREATMENT OF POSTERIOR MAXILLARY DEFECT AFTER SOFT PALATE AND OROPHARYNX RESECTION

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Objective: Following intraoral resection, many patients experience impaired nutrition, difficulty speaking and aesthetic concerns. In such cases, obturators improve patient quality of life by mimicking the lost tissues. The aim of this case report is to present the prosthetic retreatment of a patient with active nasopharyngeal cancer who has challenges in chewing, phonation and aesthetics with existing removable obturator.

■ CASE REPORTS

A 35-year-old female patient presented to our clinic with a history of active nasopharyngeal and lung cancer. The patient was classified as Aramany Class V. She reported that she was unable to eat because of her existing obturator which had lost its tissue compatibility, experienced thermal sensitivity, and was unable to pronounce certain words while speaking. The intraoral examination revealed that the metal framework of the existing obturator was in traumatic contact with the palate and that the existing bulb was not compatible with tissues. First, the impression was taken.The model obtained was attached to the articulator and the necessary analyses were performed. Akers clasps and occlusal rests were planned for teeth numbers 14,16,25,26 in the obturator to be made for the patient. The chrome-cobalt lattice framework was designed to allow for a 1 mm acrylic resin thickness between the metal and the palatal tissues to ensure biocompatibility and comfort . The obturator bulb was incrementally adjusted intraorally to achieve an optimal peripheral seal and enhance phonation.

Conclusions: Periodic follow-up appointments have been scheduled for the patient.Subsequent check-ups have revealed an improvement in the patient’s masticatory efficiency as the new framework maintained a passive relationship with the palatal mucosa. Additionally, speech clarity was restored as the new bulb accurately filled the resection area

Keywords: Obturator, resection, retreatment, acrylic denture , maxillofacial prosthetics

ORAL PRESENTATION

OP.140

BENIGN ORAL SOFT TISSUE LESSIONS:SURGICAL MANAGEMENT, ANATOMICAL CONSIDERATIONS AND BIOPSY SELECTION

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Introduction: Benign oral soft tissue lesions represent a diverse group of reactive, inflammatory, and neoplastic conditions, including fibromas, pyogenic granulomas, papillomas, and mucoceles. They are commonly encountered in clinical practice and are typically managed surgically, with emphasis on preserving function and minimizing complications.

Objective: To present the anatomical structures that must be carefully considered during excision of oral soft tissue lesions, to clarify the indications for incisional versus excisional biopsy, and to review the relative frequency of the most common benign lesions, without focusing on diagnostic criteria.

Materials and Methods: A narrative literature review was conducted using PubMed and Google Scholar databases. Search terms included “benign oral soft tissue lesions,” “incisional biopsy,” “excisional biopsy,” and “laser surgery.” Studies addressing surgical management, anatomical considerations, and epidemiological data were included.

Results: Key anatomical structures—such as the mental and lingual nerves, vascular networks, minor salivary glands, and muscle attachments—must be preserved to avoid sensory deficits and functional impairment. Excisional biopsy is indicated for small (<1 cm), well-circumscribed lesions with low suspicion of malignancy, whereas incisional biopsy is preferred for larger lesions, lesions in anatomically sensitive areas, or when malignancy cannot be excluded.

Conclusions: Successful management of benign oral soft tissue lesions depends on careful surgical planning, appropriate biopsy selection, and thorough knowledge of regional anatomy. Laser techniques provide a reliable and minimally invasive alternative to conventional surgery, with favorable clinical outcomes.

ORAL PRESENTATION

OP.141

ENHANCING POSTOPERATIVE RECOVERY IN ORAL SURGERY: THE ROLE OF PLATELET- RICH FIBRIN (PRF)

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Introduction: Platelet-Rich Fibrin (PRF) is an innovative autologous biomaterial whose application is continuously gaining traction in modern dentistry. Despite its increasing popularity, its precise contribution to optimal wound healing and the postoperative trajectory of patients remains an active area of research.

Objective: The objective of this study is to evaluate the clinical efficacy of PRF application in oral surgery (e.g., dental extractions) compared to conventional healing (non-use of PRF). The primary endpoints assessed include postoperative pain, edema, and overall patient morbidity.

Materials and Methods: A comprehensive literature search was conducted by three independent investigators across major electronic databases (PubMed, Embase, and Scopus). Specialized search terms were utilized, including "PRF", "socket", "extractions", and "oral surgery". Subsequently, a qualitative analysis and synthesis of the retrieved clinical trials and systematic reviews were performed.

Results: The analysis revealed that PRF application significantly improves the clinical outcomes of patients. Specifically, following dental extractions—particularly of third molars—a drastic reduction in postoperative edema, bleeding, and pain intensity was recorded. Concurrently, a notable positive effect of PRF in the prevention of alveolar osteitis (dry socket) was observed.

Conclusions: The utilization of PRF in oral surgery is increasingly adopted due to its proven beneficial biological and clinical effects. Nevertheless, it does not constitute a panacea. Given the relatively short period of its widespread clinical application, further investigation through robust, long-term studies is deemed imperative.

ORAL PRESENTATION

OP.142

REGENERATIVE TECHNIQUES IN MAXILLOFACIAL SURGERY: AN EVIDENCE-BASED COMPARISON OF PRF,PRP, GUIDED BONE REGENERATION AND STEM CELL THERAPIES

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Introduction: Reconstruction of the maxillofacial region following tumor resection, trauma, or congenital anomalies represents a demanding surgical challenge. These defects significantly affect quality of life by impairing chewing, speech, and facial aesthetics. In recent years, regenerative approaches have been increasingly incorporated into treatment protocols, aiming to enhance tissue healing and support functional and structural restoration. The most commonly used techniques include autologous blood derivatives such as platelet-rich plasma (PRP) and platelet-rich fibrin (PRF), guided bone regeneration (GBR), and cell-based therapies.

Objective: The aim of this study is to review and comparatively evaluate the effectiveness of modern regenerative techniques, with particular emphasis on their clinical application in the management of complex maxillofacial defects.

Materials and Methods: A literature search was conducted in PubMed, Scopus, and Google Scholar (2015–2026). Randomized controlled trials and systematic reviews were included, with selected case reports used to illustrate applications in extensive defects.

Results: According to the available literature, both PRF and PRP demonstrate beneficial effects during the healing phase, primarily through the reduction of inflammation and postoperative pain. PRF appears to be superior due to the sustained release of growth factors and its greater biological stability. Although both techniques support soft tissue healing, their effect on the regeneration of large defects remains inconsistent. GBR demonstrates high predictability in bone defects, while cell-based therapies show promising regenerative potential, despite limited high-level clinical evidence.

Conclusions: Regenerative techniques serve as valuable adjuncts but do not fully replace conventional approaches, underscoring the need for further clinical studies.

ORAL PRESENTATION

OP.143

THE ROLE OF PLATEREL-RICH FIBRINS AND REGENERATIVE TECHNIQUES IN IMPLANT STABILITY

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Introduction: Dental implants are a widely used treatment for the replacement of missing teeth. Successful implantation depends largely on implant stability and adequate bone regeneration. Biological approaches such as platelet-rich fibrin (PRF) and guided bone regeneration (GBR) have been increasingly investigated to enhance healing, improve osseointegration, and support bone regeneration around implants.

Objective: The aim of this systemic review is to evaluate the role of platelet-rich fibrin and guided bone regeneration techniques in improving the stability and success of dental implants, based on real-world data and recent studies.

Materials and Methods: A systemic review of the literature was carried out in the databases Pubmed, Scopus and Cochrane and the included articles and studies that we selected were published until 2026 and were accentuating that PRFS and GBR are great tools in the implantology quiver.

Results: The reviewed studies indicate that PRF, including leukocyte- and platelet-rich fibrin (L-PRF), may positively influence implant stability by promoting early bone healing and increasing implant stability quotient (ISQ) values. PRF acts as a biological scaffold rich in growth factors that stimulate tissue regeneration and angiogenesis. Additionally, coating implants with PRF or applying it to the implant bed has been associated with improved secondary stability during the healing phase.
On the other hand, guided bone regeneration is commonly used when there is insufficient bone volume. GBR employs barrier membranes to prevent the invasion of non-osteogenic tissues and to promote bone formation around implants. Research shows that GBR can effectively enhance bone regeneration and improve the conditions necessary for implant placement and long-term stability.

Conclusions: Ultimately, both PRF and GBR appear to be valuable adjunctive techniques in implant dentistry. PRF may improve early healing and secondary implant stability, while GBR plays an important role in managing bone deficiencies and facilitating successful implant placement. Although current evidence is promising, further high-quality clinical studies are needed to confirm the long-term benefits and establish standardized clinical protocols.

ORAL PRESENTATION

OP.144

THE EVIDENCE LEVEL OF SUBSTANTIATION FOR PREVENTIVE INTERVENTIONS IN MRONJ: A LITERATURE REVIEW

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Introduction: Medication Related Osteonecrosis of the Jaw (MRONJ) remains a severe complication of antiresorptive therapy. While the pathology is well characterized, preventive protocols for at risk patients undergoing dentoalveolar surgery remain heterogeneous, often relying on empirical tradition rather than high level evidence.

Objective: This review evaluates the current level of scientific substantiation for four primary preventive interventions: antibiotic prophylaxis, primary wound closure, platelet rich fibrin (PRF), and drug holidays.

Materials and Methods: A literature review was conducted using PubMed, Embase and Scopus, focusing on systematic reviews, meta-analyses, and major international position papers (AAOMS, ECTS, SDCEP) from 2020-2025. Interventions were graded based on statistical significance and guideline consensus.

Results: Primary closure via mucoperiosteal flaps is universally recommended to isolate alveolar bone, though multivariate analysis suggests wound management technique alone is less statistically significant than underlying systemic disease severity. Antibiotic prophylaxis is supported by moderate evidence as part of a preventive bundle for high risk patients but lacks significant benefit in low risk osteoporosis patients. PRF demonstrates emerging high level evidence, significantly reducing MRONJ onset, although it may not significantly improve actual bone healing compared to proper surgical debridement alone. Drug holidays lack statistical support for MRONJ reduction and, particularly with denosumab, pose significant rebound fracture risks.

Conclusions: Effective prevention requires a multimodal approach. While perioperative antibiotics provide a necessary systemic defense within this bundle, primary closure remains the gold standard and PRF is strongly recommended as a biological adjunct, they cannot compensate for poor surgical technique. Drug holidays are largely unsubstantiated and should not replace meticulous surgery.

ORAL PRESENTATION

OP.145

INFERIOR ALVEOLAR NERVE LATERALIZATION AND TRANSPOSITION FOR IMPLANT REHABILITATION IN ATROPHIC MANDIBLES: A LONG-TERM CASE SERIES

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Introduction: Rehabilitation of the posterior atrophic mandible is limited by reduced bone height above the inferior alveolar nerve. Inferior alveolar nerve lateralization and transposition enable implant placement but require advanced surgical management due to the risk of neurosensory disturbances.

Objective: To present the surgical technique of inferior alveolar nerve transposition and evaluate its effectiveness through a clinical case series with long-term follow-up.

Materials and Methods: A retrospective case series was conducted including patients with severe posterior mandibular atrophy treated with implant placement following inferior alveolar nerve transposition. The technique involved lateral corticotomy, identification and mobilization of the neurovascular bundle, anterior repositioning of the mental foramen, and placement of implants prior to nerve repositioning. Cases treated up to 10 years ago and recent cases were included. Clinical evaluation included implant survival, peri-implant tissue status, and neurosensory assessment.

Results: Implant survival exceeded 90%, consistent with published data. Immediate postoperative neurosensory disturbances were common but mostly transient. Long-term follow-up demonstrated resolution or significant improvement in the majority of cases, with limited persistent hypoesthesia.

Conclusions: Inferior alveolar nerve transposition is an effective technique for implant rehabilitation in atrophic mandibles, allowing placement of standard-length implants with predictable long-term outcomes when performed with careful surgical technique.

ORAL PRESENTATION

OP.146

UNDERSTANDING THE DIFFERENCES BETWEEN JAW OSTEONECROSIS TYPES – MEDICATION-RELATED, OSTEORADIONECROSIS AND AVASCULAR OSTEONECROSIS OF THE JAW.

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Introduction: Osteonecrosis of the jaw is a multifactorial condition that includes medication-Related Osteonecrosis of the Jaw (MRONJ), osteoradionecrosis (ORN), and the emerging avascular osteonecrosis (AON) associated with corticosteroid use. Despite differing etiologies, these entities often present with overlapping clinical features, complicating diagnosis and management.

Objective: To synthesize current evidence on MRONJ, ORN, and corticosteroid-induced AON, focusing on their etiopathogenesis, clinical presentation, and key differences to aid differential diagnosis.

Materials and Methods: A literature review was conducted using PubMed and Scopus as main data resources. Search terms included “osteonecrosis of the jaw,” “mandible and corticosteroid therapy,” “medication-related osteonecrosis of the jaw,” and “osteoradionecrosis.” Eligible studies were English-language clinical studies, case series, and systematic reviews involving human subjects with confirmed MRONJ, ORN, or AON. Data on pathophysiology, clinical features, imaging, and management were extracted. Two reviewers independently screened studies, with consensus resolution.

Results: Forty-six studies were included in the review (32 clinical, 14 systematic). MRONJ, ORN, and AON share common clinical features, including exposed necrotic bone, pain, and infection. However, their distinct etiologies necessitate accurate differentiation, as management strategies vary significantly.

Conclusions: Although originating from different causes, these conditions converge on impaired vascular function leading to bone necrosis. Understanding this shared pathway highlights the importance of vascular health and supports the need for targeted diagnostic and preventive strategies to reduce morbidity.

ORAL PRESENTATION

OP.148

ARTIFICIAL INTELLIGENCE IN PERIODONTOLOGY: CURRENT APPLICATIONS AND FUTURE PERSPECTIVES

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Introduction: Artificial intelligence (AI) has made a rapid and effective entry into dental practice, offering new possibilities in data-driven diagnosis, treatment planning, and outcome prediction in periodontology.The increasing use of digital periodontal records has created large datasets that can be efficiently analyzed using AI-based systems.

Aim: This narrative review aims to summarize current applications of artificial intelligence in periodontology, with a particular focus on digital periodontal records and AI-supported periodontal risk assessment models, and to discuss their clinical potential and limitations.

Materials and Methods: A narrative review of the literature was conducted using electronic databases, including PubMed and Google Scholar. Relevant publications focusing on artificial intelligence, Digital periodontal data recording, machine learning algorithms, and periodontal risk prediction were identified and critically evaluated. No systematic selection criteria were applied, in accordance with the narrative review design.

Results: Current evidence suggests that AI-based systems can enhance the accuracy and consistency of periodontal diagnosis, particularly in radiographic bone loss assessment and automated periodontal charting. Digital periodontal records enable standardized data collection and facilitate risk stratification through machine learning models. However, limitations such as data quality, algorithm transparency, and limited clinical validation remain significant challenges.

Conclusions: Artificial intelligence has considerable potential to support clinical decision-making in periodontology by integrating digital records with predictive risk assessment tools. Despite promising developments, further clinical validation and standardized implementation protocols are required before widespread routine use can be recommended.

ORAL PRESENTATION

OP.149

SMOKING AND PERIODONTAL HEALTH

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Introduction: Smoking is globally recognized as a critical risk factor for oral and systemic health. It significantly contributes to the initiation and progression of periodontal disease and compromises the long-term success of dental implants.

Objective: To evaluate the impact of active and passive smoking on periodontal tissues, microbial flora, and the clinical outcomes of prosthetic and implant treatments

Materials and Methods: A systematic review of recent literature and clinical meta-analyses was conducted, focusing on parameters such as probing pocket depth, clinical attachment loss, and implant survival rates among smokers, non-smokers, and users of alternative nicotine products.

Results: Smokers exhibit an increased risk for periodontitis due to immunosuppression and altered microbial profiles. Clinical data show significantly higher peri-implant bone loss and lower implant success rates compared to non-smokers .Passive smoking also severely affects oral health, increasing gingival inflammation in children.Furthermore, smokeless tobacco causes localized periodontal destruction and gingival recession.

Conclusions: Smoking remains a primary cause of periodontal destruction and implant failure. Clinical success necessitates proactive smoking cessation counseling, preferably four weeks perioperatively, and intensified maintenance protocols with recalls every 3-4 months to monitor and mitigate high-risk profiles.

ORAL PRESENTATION

OP.150

PERSPECTIVE ON THE USE OF ARTIFICIAL INTELLIGENCE IN PERIODONTOLOGY

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Introduction: Artificial intelligence, increasingly used as an auxiliary tool in dentistry, has become a crucial component in improving diagnostic processes and supporting clinical decision-making mechanisms. It is extremely important for dentists, as well as dental students preparing for their careers, to be aware of these innovations.

Objective: The aim of this study is to determine the knowledge and perspectives of 4th and 5th-year dental students regarding the applications of artificial intelligence in periodontology.

Materials and Methods: Ethical approval for this study was granted by decision number 2025/468. A 10-question survey assessing the sociodemographic characteristics of dental students and their awareness of artificial intelligence in the field of periodontology was administered online. Data obtained were statistically analyzed using SPSS 21.

Results: The survey was completed by a total of 170 students, 101 from the 4th grade and 69 from the 5th grade. 62.4% of the participants were female. Awareness of artificial intelligence applications in periodontology was reported by 51,2% of the participants, while 48,8% reported no awareness. Those who were aware mostly cited "social media" and "other" as the sources of their information. Over 80% of participants gave positive responses to all questions regarding the potential future applications of artificial intelligence in periodontology.

Conclusions: The results show that students strongly believe artificial intelligence will play a significant role in periodontology in the future. Given this interest and positive attitude, incorporating training in artificial intelligence applications into the undergraduate dental curriculum appears important for preparing students for postgraduate clinical practice.

ORAL PRESENTATION

OP.151

PREPROSTHETIC SURGERY AROUND DENTAL IMPLANTS USING THE EDLAN–MEJCHAR TECHNIQUE: A CASE REPORT

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Objective: Adequate keratinized mucosa and sufficient vestibular depth are essential for achieving optimal retention, stability, and functional performance of implant-supported overdentures. To establish these conditions, various preprosthetic surgical interventions may be required. In the present case, an Edlan–Mejchar vestibuloplasty technique was performed to improve the peri-implant soft tissue before prosthetic rehabilitation.

Case Report: A 65-year-old male patient was referred to the Department of Periodontology for vestibular deepening and healing cap placement prior to implant-supported overdenture rehabilitation. Intraoral examination revealed severe mandibular ridge resorption with insufficient vestibular depth and approximately 1 mm of keratinized mucosa, with no clinical signs of inflammation. Therefore, a vestibuloplasty procedure using the Edlan–Mejchar technique was planned to increase vestibular depth and improve peri-implant soft tissue conditions.

First, healing caps were placed on the implants, and Edlan-Mejchar vestibuloplasty was initiated. Two vertical incisions were made from the mucogingival junction extending toward the lower lip using a 15C blade. These vertical incisions were joined by a horizontal incision. Subsequently, a split-thickness flap was elevated by sharp dissection using a 15C blade, resulting in a mobile labial mucosal flap. A horizontal incision was performed on the periosteum, extending between the two vertical incisions. The periosteum was carefully separated from the bone by blunt dissection. The split-thickness flap was repositioned onto the bone surface and stabilized with simple interrupted sutures using 4/0 silk. The exposed periosteal bed was also secured using simple interrupted 4/0 silk sutures. Postoperatively, dexketoprofen (25 mgX3), and chlorhexidine mouthwash were prescribed. Sutures were removed after 1 week.

Conclusions: Follow-up examinations at 1 and 3 months revealed a significant increase in the width of attached gingiva (4 mm) and vestibular depth (7 mm).

Keywords: Vestibuloplasty, Preprosthetic surgery, Edlan-Mejchar, Dental Implant

ORAL PRESENTATION

OP.152

THE ROLE OF IL-18 AND RELATED MEDIATORS IN PERIODONTAL HEALTH AND DISEASE

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Introduction: Interleukin-18 (IL-18) is a pro-inflammatory cytokine involved in immune regulation and periodontal tissue destruction through its receptor subunits and downstream mediators such as MyD88, TRAF6, and NF-κB. Alterations in this pathway may contribute to the development and progression of periodontal diseases.

Objective: This study aimed to quantitatively evaluate IL-18–related signaling mediators in gingival crevicular fluid (GCF) from periodontally healthy individuals and patients with Grade B and Grade C periodontitis, and to assess their association with disease severity.

Materials and Methods: Fifty-four individuals were divided into three groups: healthy controls, Grade B periodontitis, and Grade C periodontitis (n = 18 each). GCF samples were analyzed using ELISA to determine IL-18Rα, IL-18Rβ, TIR, MYD88, TRAF6, and NF-κB levels.

Results: IL-18Rα levels were higher in the healthy group than in Grade B ($p = 0.008$) and lower than in Grade C periodontitis ($p = 0.018$); Grade B levels were lower than Grade C ($p = 0.026$). IL-18Rβ and TIR levels showed no significant differences ($p > 0.05$). MYD88 levels were higher in healthy individuals than in Grade C ($p = 0.012$). TRAF6 levels were lower in healthy subjects compared with both periodontitis groups ($p < 0.05$) and positively correlated with clinical attachment loss ($p = 0.003$). NF-κB levels did not differ significantly.

Conclusions: IL-18–related mediators, particularly IL-18Rα, MYD88, and TRAF6, may contribute to periodontal disease progression and reflect disease severity.

Keywords: Periodontitis, Interleukin-18, Gingival crevicular fluid, Biomarkers, MYD88, TRAF6, Clinical attachment loss

ORAL PRESENTATION

OP.153

NEUTROPHIL FUNCTION MARKERS IN GINGIVALLY HEALTHY INDIVIDUALS AND PERIODONTITIS

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Objective: To evaluate and compare neutrophil function biomarkers and markers related to inflammation in periodontal health and diseases

Materials and Methods: This is a cross-sectional case-control study. Healthy, non-smoker, no drug user participants were enrolled in this study. Study was consisted of four groups: healthy individuals (n=15), patients with gingivitis (n=15), patients with periodontitis Grade B (n=15), and patients with periodontitis Grade C (n=15). Neutrophil biomarkers LFA-1, VLA-4, ICAM-1, PECAM-1, E-SELECTIN, L-SELECTIN, P-SELECTIN, and IL-17 and DEL-1 in gingival crevicular fluid samples were measured by the Enzyme Linked Immunosorbent Assay method.

Results: DEL-1, IL-17, PECAM-1, P-SELEKTİN and LFA-1 levels between the groups showed similar results with no statistically significant differences. ICAM-1 and E-SELECTIN levels; was found to be significantly higher in the peridontitis group compared to the healthy group. VLA-4 and L-SELECTIN levels were found to be significantly higher in the healthy group than in all other groups.

Conclusions: ICAM-1 and E-SELECTIN, which are involved in inflammation, were found to increase in gingivitis and periodontitis. VLA-4 and L-SELECTIN levels were higher in healthy tissues. DEL-1, IL-17, PECAM-1, P-SELECTIN and LFA-1 levels did not change in health or inflammation conditions. Not all biomarkers showed a significant alteration in regards to periodontal inflammation.

ORAL PRESENTATION

OP.154

EFFECTS OF DIFFERENT TOOTHPASTES ON CLINICAL PERIODONTAL PARAMETERS AND ORAL HEALTH–RELATED QUALITY OF LIFE IN INDIVIDUALS WITH GINGIVITIS: A RANDOMIZED CONTROLLED TRIAL

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Introduction: Gingivitis is a plaque-induced inflammatory condition that can adversely affect oral health–related quality of life (OHRQoL). In addition to conventional fluoride formulations, toothpastes containing aloe vera have been suggested to exert anti-inflammatory and soothing effects on gingival tissues, potentially contributing to improved clinical and patient-reported outcomes.

Objective: To evaluate and compare the effects of fluoride-containing and aloe vera–based toothpastes on clinical periodontal parameters and OHRQoL in individuals with plaque-induced gingivitis.

Materials and Methods: Sixty systemically healthy individuals with plaque-induced gingivitis were randomly assigned to a fluoride toothpaste group (n=30) or an aloe vera toothpaste group (n=30). Participants were followed for 8 weeks. Plaque Index (PI), Gingival Index (GI), and Bleeding on Probing (BOP) were recorded at baseline and follow-up visits. OHRQoL was assessed using the Oral Health Impact Profile-14 (OHIP-14) at baseline, 4 weeks, and 8 weeks. Statistical significance was set at $p<0.05$.

Results: Both groups showed similar reductions in PI, with no significant intergroup differences ($p>0.05$). At 8 weeks, BOP was significantly lower in the aloe vera group compared to the fluoride group ($p<0.05$). The aloe vera group demonstrated significant improvement in OHIP-14 scores at 4 weeks ($p<0.05$); however, no significant difference was observed between groups at 8 weeks ($p>0.05$). OHIP-14 scores were positively correlated with GI and BOP ($p<0.05$), but not with PI ($p>0.05$).

Conclusions: Aloe vera toothpaste may provide early improvements in OHRQoL and greater reductions in gingival bleeding, indicating potential benefits beyond plaque control in gingivitis management.

ORAL PRESENTATION

OP.155

GINGIVAL UNIT GRAFT FOR LOCALIZED MANDIBULAR INCISOR RECESSION ASSOCIATED WITH HIGH FRENULUM ATTACHMENT: A CASE REPORT

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Objective: To present the surgical management of localized gingival recession at the mandibular left central incisor associated with a high frenulum attachment and limited attached gingiva, using a gingival unit graft combined with simultaneous frenectomy to increase keratinized tissue, eliminate traction forces, and reduce patient-reported hypersensitivity.

Case Report: A 45-year-old female presented with hypersensitivity at tooth 31. Clinical examination revealed 3 mm gingival recession at tooth 31 and 1 mm recession at tooth 41. The attached gingiva at tooth 31 was approximately 1 mm, and a high muscle attachment was noted, exerting a traction effect on the marginal tissues. At the recipient site, a horizontal incision was performed encompassing tooth 31 and adjacent teeth, and two vertical releasing incisions were extended into the mucogingival junction to facilitate passive adaptation and stable positioning of the graft. The interdental papillae were de-epithelialized to prepare a vascular recipient bed. Simultaneous frenectomy was performed to eliminate traction and improve graft stability. A gingival unit graft was harvested from the palatal donor site between teeth 14 and 16 and positioned at the recipient site. The graft was stabilized with 5-0 polypropylene sutures. Postoperatively, chlorhexidine mouthrinse, ibuprofen, and amoxicillin were prescribed. Healing was uneventful, and sutures were removed after 14 days.

Conclusions: In cases of localized mandibular incisor recession associated with a high frenum attachment and minimal attached gingiva, a gingival unit graft combined with simultaneous frenectomy may be considered to enhance keratinized tissue dimensions, eliminate traction, and support periodontal soft-tissue stability.

Keywords: gingival unit graft, gingival recession, frenectomy, high frenulum

ORAL PRESENTATION

OP.156

IN VITRO EVALUATION OF THYMOQUINONE AND MELATONIN ON HUMAN ORAL FIBROBLAST CELL VIABILITY

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Introduction: Periodontal disease is a progressive inflammatory condition driven by oral microbiota dysbiosis and disrupted host–microbe interactions. Conventional periodontal treatment focuses on mechanical plaque control to decrease bacterial load; however, mechanical therapy does not completely eradicate all pathogens. Therefore, various adjunctive therapeutic approaches are employed. Due to increasing antimicrobial resistance and high costs, current strategies emphasize plant-derived agents as promising alternatives with effective therapeutic potential and minimal side effects. Among these agents, thymoquinone and melatonin have emerged.

Objective: The aim of this study was to evaluate the effects of thymoquinone and melatonin on cell viability in human gingival fibroblast cells using the MTT assay.

Materials and Methods: Human oral fibroblast cells were cultured under standard in vitro conditions and treated. Cell viability was evaluated after 24 hours using the MTT assay and statistical analysis was performed using one-way ANOVA.

Results: Melatonin and thymoquinone significantly increased cell viability in cells at various concentrations compared with the control group($p<0.05$) (Figure 1).

Conclusions: Melatonin and thymoquinone exhibited favorable effects on human oral fibroblast viability under in vitro conditions. These findings suggest that both agents may support periodontal wound healing and could serve as promising adjunctive therapeutic agents in periodontal disease management.

ORAL PRESENTATION

OP.157

A COMPARATIVE EVALUATION OF THE ANSWERING PERFORMANCE OF DIFFERENT ARTIFICIAL INTELLIGENCE CHATBOTS ON PERIODONTOLOGY QUESTIONS IN THE DENTAL SPECIALTY EXAMINATION: A CROSS-SECTIONAL STUDY

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Objective: The use of artificial intelligence (AI) chatbots is becoming increasingly common in dentistry, in areas such as diagnosis, treatment planning, and patient education. However, before this technology can be widely adopted in clinical and educational processes, it needs to achieve a reliable level of accuracy. The aim of this study is to comparatively evaluate the accuracy rate and exam performance of four different AI chatbots (ChatGPT-5.2, Gemini-3, DeepSeek-V3.2, and Perplexity AI) on Periodontology questions in the Dental Specialty Training Entrance Examination (DUS).

Materials and Methods: The study included a total of 127 periodontology questions publicly available in the DUS (2012-2021). The questions were divided into two categories: “Basic Sciences” and “Clinical Applications”. Each question was administered in its original multiple-choice format (A–E) simultaneously on four different computers using ChatGPT-5.2, Gemini-3, DeepSeek-V3.2, and Perplexity AI. Correct answers were scored as “1”, and incorrect answers as “0”.

Results: Gemini-3 (99.2%) achieved the highest overall accuracy rate, followed by ChatGPT-5.2 (91.3%), DeepSeek-V3.2 (88.2%), and Perplexity AI (86.6%). Gemini-3 showed the highest accuracy in both Basic Sciences and Clinical Applications categories (100%, 98.53%). Perplexity AI performed the lowest in Basic Sciences (86.4%), while DeepSeek-V3.2 performed the lowest in Clinical Applications (82.35%).

Conclusions: Gemini-3 demonstrated superior performance compared to other models, achieving the highest accuracy rates in all categories. The findings suggest that AI applications can be used as supportive tools in dental education, but model selection is critical, and these technologies should be used under human supervision.

Keywords: artificial intelligence, DUS

ORAL PRESENTATION

OP.158

KNOWLEDGE, ATTITUDES, AND CLINICAL PRACTICES OF CARDIOVASCULAR SURGEONS AND CARDIOLOGISTS REGARDING PERIODONTAL DISEASE: A CROSS-SECTIONAL SURVEY STUDY

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Introduction: Growing evidence supports a bidirectional relationship between periodontal disease and cardiovascular conditions. Microorganisms responsible for periodontal disease contribute to vascular plaque formation, increasing the risk of cardiovascular events, highlighting the need for coordinated care between cardiovascular physicians and periodontists.

Objective: To evaluate the knowledge, attitudes, and dental referral practices of cardiovascular surgeons and cardiologists regarding periodontal disease and its cardiovascular implications.

Materials and Methods: A 36-item structured questionnaire was administered to 59 cardiovascular physicians. The survey covered demographic data, undergraduate dental education background, periodontal knowledge, attitudes toward the periodontal–cardiovascular link, and dental referral practices.

Results: None of the participants had completed a dentistry clinical rotation during medical training, 92% had no dental examination requirement, and 49% received no oral hygiene education. Despite these gaps, 75% supported the inclusion of oral health in the medical curriculum. While 97% correctly defined periodontology, 64% incorrectly identified gingival bleeding rather than alveolar bone loss as the primary sign of periodontitis, and 69% attributed tooth decay rather than dental biofilm as the main cause of periodontal disease. Only 19% recognized periodontal disease as a cardiovascular risk factor, and only 25% identified gingival disease as the most relevant oral condition for cardiovascular health. Although 95% acknowledged scientific evidence for a periodontal–systemic link, only 31% agreed a strong periodontal–cardiovascular association exists, and 20% never referred patients for dental consultation.

Conclusions: Cardiovascular physicians demonstrate significant knowledge gaps and inconsistent referral practices regarding periodontal disease, underscoring the need for interdisciplinary curriculum integration and structured collaboration with periodontists.

Keywords: periodontal disease, cardiovascular disease, knowledge, attitudes, interdisciplinary collaboration, referral practices

ORAL PRESENTATION

OP.159

IMPACT OF CONVENTIONAL AND ELECTRONIC CIGARETTE SMOKING ON PERIODONTAL HEALTH A LITERATURE REVIEW

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ABSTRACT Introduction: Electronic cigarettes have gained increasing popularity and are particularly attractive among adolescents and young adults. While the detrimental effects of conventional cigarette smoking on periodontal health are well established, the exact impact of vaping remains under investigation.

Objective: This study aimed to review and evaluate the effects of both conventional and electronic cigarette smoking on periodontal health and to determine which method poses a greater risk for periodontal deterioration.

Materials and Methods: A literature review was conducted using the PubMed, Scopus, and Google Scholar databases, focusing on studies published within the last decade. Articles assessing the impact of electronic cigarette use on periodontal health and those providing comparative data with conventional cigarette smoking were included.

Results: The findings indicate that conventional cigarette smoking has more severe adverse effects on periodontal health compared to electronic cigarette use, and even more so when compared to non-smoking individuals. Specifically, cigarette smokers exhibited higher gingival index values, worse plaque index scores, reduced bleeding on probing, mean probing depths exceeding 3 mm, and greater clinical attachment loss.

Conclusions: Traditional smoking appears to be more harmful to periodontal health than vaping. On a risk gradient, non-smokers demonstrate the lowest risk, followed by electronic cigarette users, while conventional cigarette smokers exhibit the highest risk. Nevertheless, further research and long-term studies are required to confirm these findings and to elucidate additional effects of electronic cigarette use on periodontal and overall oral health.

ORAL PRESENTATION

OP.160

AGE AS A CONFOUNDER IN ALVEOLAR BONE FRACTAL DIMENSION COMPARISONS ACROSS PERIODONTITIS GRADES

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Introduction: Fractal dimension (FD) analysis quantifies trabecular bone microarchitecture. Although periodontitis grade may influence bone remodeling, FD is also affected by biological factors such as age.

Objective: This study compared FD values in periodontally healthy individuals and patients with Grade B - C periodontitis, emphasizing the impact of age on FD-based interpretation.

Materials and Methods: This cross-sectional study, three groups were evaluated (Healthy, Grade B, Grade C; n=30 each). FD was measured in the alveolar bone adjacent to the middle third of the root (midroot region) of the teeth exhibiting the most pronounced periodontal destruction. FD was first compared between groups without accounting for age. To address potential confounding, comparisons were repeated using an age-adjusted approach (ANCOVA/linear regression: FD ~ group + age).

Results: Age differed markedly across groups (Healthy: 24.37±5.16 years; Grade B: 53.47±6.20 years; Grade C: 33.90±6.49 years). Without age adjustment, FD was higher in the Healthy group than in the periodontitis groups, and a difference was also observed between Grade C and Grade B (Healthy: 1.2421±0.0530; Grade B: 1.1241±0.0395; Grade C: 1.1568±0.0618). After age adjustment, the Healthy group remained higher than both periodontitis groups, whereas the Grade B-C difference was no longer evident (age-adjusted FD estimates: Healthy 1.2308; Grade B 1.1383; Grade C 1.1539).

Conclusions: FD outcomes aren't solely determined by disease grade; age can meaningfully influence FD measurements and may confound unadjusted comparisons. Accordingly, age adjustment is essential to avoid attributing age-related microarchitectural changes to disease aggressiveness.

ORAL PRESENTATION

OP.161

IMMUNE RESPONSE IN PERIODONTITIS: WHEN DEFENSE TURNS DESTRUCTIVE

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Introduction: Periodontitis is the inflammation of periodontal tissues resulting in clinical attachment loss, alveolar bone loss and periodontal pocketing. Pathogenesis of periodontitis is based on the interaction between the subgingival biofilms and host's immune response. Although immune response is essential for microbial control, persistent immune activation can lead to tissue damage and alveolar bone loss.

Objective: To present how immune response mechanisms shift toward destructive pathways in periodontitis, with emphasis on B cells and RANKL (Receptor Activator of Nuclear Factor κB Ligand)-mediated osteoclastogenesis.

Materials and Methods: Review of the literature was conducted using appropriate keywords in scientific databases such as PubMed and Cochrane Library. The results were limited to studies published within the last five years.

Results: Periodontitis lesions are characterized by substantial amounts of B cells, activated T cells and plasma cells. Initially, these cells serve a protective role, but chronic stimulation leads to the production of pro-inflammatory cytokines such as TNF-a, IL-1β and IL-6. B lymphocytes express RANKL, the principal factor involved in osteoclast differentiation. Increased RANKL expression, along with reduced levels of osteoprotegrin(OPG), shift the RANKL/OPG ratio upwards, promoting bone resorption. The extent of alveolar bone loss is strongly associated with the degree of B cells infiltration and RANKL expression.

Conclusions: In periodontitis, the immune response shifts from protective to destructive. Chronic inflammation and lymphocyte derived RANKL promote osteoclastogenesis and subsequent alveolar bone loss. Restoring immune imbalance and not simply eliminating bacteria is essential to preventing periodontal tissue destruction.

ORAL PRESENTATION

OP.162

FROM MOUTH BREATHING TO GINGIVAL HYPERPLASIA: AN INTERDISCIPLINARY CASE REPORT

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Introduction: Mouth breathing is a frequent dysfunction observed in children and adolescents, commonly associated with upper airway obstructions, allergic rhinitis, or anatomic abnormalities, such as tonsillar hypertrophy. Continuous mouth breathing may disrupt salivary balance, increasing evaporation, reducing intraoral pH, and facilitating biofilm accumulation. These changes create a local microenvironment that predisposes gingival inflammation and enlargement around upper and lower front teeth.

Objective: This case report clinically describes generalized gingival enlargement in an adolescent with chronic mouth breathing and explores the pathogenic association between Mouth Breathing Syndrome (MBS) and periodontal manifestations, while outlining the treatment approach.

Materials and Methods: A 17-year-old patient presented with progressive gingival enlargement affecting maxillary and mandibular anterior regions exclusively. Comprehensive periodontal assessment, oral hygiene evaluation, and analysis of functional habits were performed. Diagnosis was established through clinical observation, and patient's history. Relevant literature from PubMed was reviewed to provide context and support interpretation of the findings.

Results: Examination revealed inflammatory gingival enlargement, increased plaque accumulation, gingivitis, halitosis, and mucosal dryness in the anterior area. Concomitant findings included atypical swallowing and orofacial dysfunction. Following supragingival debridement, combined with reinforced oral hygiene instructions, resolution of gingival inflammation was progressively observed. To prevent recurrence, the patient was referred for otorhinolaryngological assessment.

Conclusions: Mouth breathing may constitute an etiological factor in gingival enlargement among adolescents. Early recognition of abnormal respiratory patterns, coupled with interdisciplinary management and preventive periodontal interventions, is essential for stabilizing periodontal tissues, restoring oral homeostasis, and minimizing the risk of recurrence.

ORAL PRESENTATION

OP.163

GINGIVAL OVERGROWTH ASSOCIATED WITH AMLODIPINE USE: DIFFERENT PERIODONTAL TREATMENT APPROACHES – THREE CASE REPORTS

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Introduction: Gingival overgrowth may develop due to various factors such as dental plaque accumulation, trauma, genetic predisposition, systemic diseases, and medication use. The mechanism of drug-induced gingival overgrowth is not fully understood, but it appears to involve multifactorial etiological factors. This condition is most commonly associated with the use of anticonvulsants, immunosuppressants, and calcium channel blockers. Since these medications are essential for patients' systemic health, they may complicate treatment planning.

Objective: Amlodipine, a calcium channel blocker frequently used to treat cardiovascular conditions such as hypertension, angina pectoris, and cardiac arrhythmias, can induce gingival overgrowth even with short-term and low-dose use. These enlargements may lead to difficulty in plaque control, increased inflammation, and aesthetic concerns. The aim of this report is to present cases of amlodipine-induced gingival overgrowth and their periodontal management.

Materials and Methods: The study includes three patients who presented with gingival overgrowth while using amlodipine. Non-surgical periodontal therapy was initially applied, followed by surgical intervention where necessary. Clinical and periodontal parameters were evaluated before and after treatment.

Results: Non-surgical therapy improved plaque control and reduced gingival inflammation. In areas with persistent fibrotic overgrowth, surgical periodontal treatment resulted in restored gingival contours, reduced probing depths, and improved aesthetic outcomes.

Conclusions: Effective plaque control and appropriate periodontal therapy, both non-surgical and surgical, can successfully manage amlodipine-induced gingival overgrowth, demonstrating that clinical improvement is achievable with proper treatment.

ORAL PRESENTATION

OP.164

GUIDED BONE REGENERATION OF BUCCAL BONE WALL DEFECTS USING ACELLULAR DERMAL MATRIX: TWO CASE REPORTS

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Introduction: Guided bone regeneration (GBR) is a procedure used to augment deficient alveolar ridges, using bone grafts in combination with barrier membranes. These membranes act as a scaffold for the migration, proliferation, and differentiation of stem cells and at the same time promote angiogenesis in the area, resulting in the regeneration of bone tissue. At the same time, due to their acellular structure, host immune responses are prevented.

Objective: The aim is to present two cases with advanced defects of buccal bone wall and ridge augmentation with an acellular dermal matrix, followed by the placement of an implant after a few months.

Materials and Methods: The management of both cases included the NovoMatrix™ membrane which is an acellular dermal matrix derived from porcine tissue and is an alternative to connective tissue autografts. Also, xenograft and allograft were used in combination in both sites.

Results: In both cases, ridge augmentation using a xenograft and allograft in combination with NovoMatrix™ membrane was achieved with adequate buccal width. After 3-4 months, two implants were placed successfully, followed by the prosthetic restorations.

Conclusions: The use of acellular dermal matrix in GBR showed favorable outcomes for the treatment of buccal deficiencies in both cases, highlighting its effectiveness as a reliable clinical option.

ORAL PRESENTATION

OP.165

PLAQUE-RETENTIVE CERVICAL CAVITATION AS A CAUSATIVE FACTOR IN REACTIVE GINGIVAL ENLARGEMENT: A CASE REPORT

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Introduction: Reactive gingival enlargements are frequently associated with chronic inflammation and local irritative factors. Clinically, lesions such as peripheral giant cell granuloma, pyogenic granuloma and inflammatory gingival enlargement may present with similar morphological characteristics, making differential diagnosis challenging. Identification of underlying etiologic factors is essential for successful management.

Objective: To present the clinical management of a reactive gingival enlargement associated with cervical cavitation and to emphasize the role of local plaque-retentive factors in the persistence of gingival inflammation.

Materials and Methods: A 28-year-old male patient presented with a red, lobulated and exophytic gingival enlargement in the maxillary posterior region. The patient had no systemic disease and no medication history related to gingival enlargement. Initial treatment consisted of Phase I periodontal therapy to achieve plaque control. The lesion was surgically excised using gingivectomy and submitted for histopathological evaluation. Histopathological examination revealed inflammatory gingival enlargement. During follow-up, persistent inflammation was observed in the area, and flap elevation was performed for further evaluation. After flap reflection, cervical cavitation defects capable of promoting plaque accumulation were identified on teeth #14 and #15. These defects were restored under proper isolation to eliminate local irritative factors, and the surgical site was closed with 4-0 Vicryl sutures.

Results: Histopathological findings confirmed inflammatory gingival enlargement. Following elimination of the plaque-retentive cavitation areas, clinical follow-up at one month demonstrated significant reduction of inflammation and restoration of healthy gingival contour.

Conclusions: Reactive gingival enlargements may mimic other reactive lesions and lead to misdiagnosis if underlying etiologic factors are overlooked. This case demonstrates that cervical cavitation can act as a plaque-retentive factor contributing to gingival enlargement. Identification and elimination of such local factors are essential for achieving stable periodontal health.

ORAL PRESENTATION

OP.166

THE CORRELATION OF RETENTION METHOD WITH CRITICAL AND SUBCRITICAL EMERGENCE PROFILE AND BIOLOGIGAL STABILITY OF PERI-IMPLANT TISSUE

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Introduction: Marginal bone stability is a primary determinant of long-term dental implant success. While various biological and prosthetic parameters influence peri-implant bone levels, the prosthetic emergence profile—defined by the contour and angle of the restoration within the transmucosal transition—critically impacts soft-tissue health and marginal bone preservation.

Objective: This systematic review aims to analyze the current literature regarding the influence of prosthetic emergence profile design on peri-implant marginal bone stability and to evaluate its clinical implications.

Materials and Methods: A systematic literature search was conducted across PubMed, Scopus, and Cochrane databases for studies published between 2020 and 2026. The inclusion criteria targeted clinical trials and observational studies examining the interplay between the prosthetic emergence profile and the mode of retention, specifically focusing on their combined impact on peri-implant hard- and soft-tissue stability.

Results: Findings indicate that the prosthetic emergence profile significantly modulates the peri-implant biological response. Overcontoured or excessively convex profiles are strongly associated with increased plaque accumulation, restricted oral hygiene access, and an elevated risk of inflammatory marginal bone loss. In contrast, anatomically guided, gradual transitions demonstrated superior soft-tissue adaptation and reduced mechanical stress. These optimized designs were consistently correlated with enhanced biological width preservation and more predictable marginal bone stability.

Conclusions: The prosthetic emergence profile is a critical determinant of peri-implant health and stability. To mitigate marginal bone loss and ensure long-term clinical success, meticulous prosthetic planning is essential.

ORAL PRESENTATION

OP.167

PAPILLA-PRESERVING REGENERATIVE TREATMENT OF A VERTICAL INTRABONY DEFECT USING A PALATAL APPROACH: A CASE REPORT

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Introduction: Vertical intrabony defects in esthetically relevant areas present a clinical challenge regarding both regenerative success and preservation of soft tissue integrity.

Objective: To present the regenerative periodontal treatment of a vertical intrabony defect in the maxillary premolar region using a palatal approach to preserve buccal papillary integrity.

Materials and Methods: A female patient presented with a vertical intrabony defect on the distal aspect of tooth 24. Full-mouth periodontal examination revealed a mean probing depth of 1.64 mm, mean clinical attachment loss of 1.39 mm at affected sites, plaque index of 1, gingival index of 1.15, and bleeding on probing of 4.5%. No mobility was detected. The distopalatal probing depth at tooth 24 was 6 mm without bleeding on probing. Following Phase I periodontal therapy, regenerative surgery was performed via a palatal approach. After defect debridement, 0.5 cc xenograft and a 15×20 mm collagen membrane were applied. The membrane was trimmed in a T-shape, and wound closure was achieved with 4/0 vicryl sutures.

Results: The defect was successfully accessed and treated without compromising buccal soft tissue integrity. Primary wound closure was achieved, and postoperative radiographic evaluation confirmed appropriate placement of the grafting materials.

Conclusions: In selected cases, a palatal approach may allow effective regenerative treatment of vertical intrabony defects while preserving buccal papillary integrity.

Keywords: Vertical Defect, Regeneration, Papilla Preservation

ORAL PRESENTATION

OP.168

INVESTIGATION OF PAIN PERCEPTION DURING NON-SURGICAL PERIODONTAL TREATMENT IN SMOKERS INDIVIDUALS

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Introduction: Smoking not only masks clinical findings by altering vascularization and inflammatory responses in periodontal tissues but also exerts neurobiological effects on individuals' pain threshold and perception.

Objective: The aim of this study was to compare the perceived pain during non-surgical periodontal therapy (scaling and root planing) between smokers and non-smokers, and to evaluate the relationship between pain perception, smoking intensity, and individual factors such as dental anxiety.

Materials and Methods: A total of 103 patients (58 smokers, 45 non-smokers) participated. Demographic data, Corah dental anxiety scores, and VAS scores were collected. Statistical analyses were performed using non-parametric tests, including the Mann–Whitney U test and Spearman correlation analysis.

Results: Of the participants, 47 were women (45.6%), and the mean age was 37.82±12.94 years. There was no statistically significant difference in VAS scores between smokers and non-smokers ($p=0.719$). Among smokers, VAS scores showed a significant negative correlation with the number of cigarettes smoked per day ($p=0.002$). No significant association was found between age, education level, brushing habits, or income level and CORAH or VAS scores ($p>0.05$). VAS scores were significantly higher in women compared to males ($p=0.013$).

Conclusions: Smoking status did not significantly affect pain perception during non-surgical periodontal therapy. However, increased daily cigarette consumption was associated with lower pain perception. Additionally, female patients reported higher pain levels.

ORAL PRESENTATION

OP.169

A RARE CASE: LATERAL PERIODONTAL CYST

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Introduction: The lateral periodontal cyst is a rare developmental odontogenic cyst located between the roots of vital teeth, with low malignant potential. It usually occurs in individuals aged 40–70 years, though cases outside this range exist. It represents about 0.4% of odontogenic cysts and 0.7% of jawbone cysts. Few cases are reported in the literature.

OBJECTIVE

The aim of this case report is to describe the clinical, radiological, and histopathological features of the lateral periodontal cyst and to examine its effects on the dentoalveolar region and the surrounding soft tissues.

Materials and Methods: A 49-year-old female presented with gingival bleeding and one year standing swelling in the right mandible. Examination revealed a painless, localized, fluctuant swelling between the lateral and canine teeth with buccal expansion. Radiographs showed no clear bone defect, and all teeth were vital. After Phase-1 periodontal treatment, an aspiration biopsy was performed. A mucoperiosteal flap was elevated, the cyst enucleated, and the defect filled with PRF. The flap was cauterized and closed.

Results: Histopathology showed a cystic cavity lined with non-keratinized squamous epithelium and clear cells, without inflammation. Findings confirmed the diagnosis and follow-up continues.

Conclusions: Lateral periodontal cysts are rare lesions. In differential diagnosis, lesions such as adult gingival cyst, radicular cyst, and botryoid odontogenic cyst should be considered. Multidisciplinary evaluation with clinical, radiological, and histopathological assessment is essential for accurate diagnosis and management.

ORAL PRESENTATION

OP.170

THREE-DIMENSIONAL DEVIATION ANALYSIS OF PASSIVE FIT IN PMMA SPLINTS FABRICATED FROM FOUR INTRAORAL SCANNERS

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Introduction: The passive adaptation of CAD/CAM-fabricated splints may be influenced by scanner accuracy and challenging morphology.

Objective: This pilot study compared TRIOS 3, TRIOS 5, iTero Lumina, and Helios 500 for passive fit and internal adaptation of PMMA splints.

Materials and Methods: Two standardized, non-patient-specific mandibular anterior models (33-43), designated A and B, were designed in exocad. Although both represented moderate crowding according to Little's Irregularity Index, they differed in tooth positioning, gingival recession, and gingival embrasure loss. Each model was scanned with four intraoral scanners, generating eight datasets. One PMMA splint was fabricated for each scanner-model combination. Splints were seated on printed models with flowable composite under 4,5N force and light-cured for 20 seconds bilaterally and 10 seconds frontally. Assemblies were rescanned with Shining 3D DS-EX as the reference scanner, and STL datasets were superimposed in Geomagic software. Findings were evaluated descriptively.

Results: Mean deviation values across all scanners ranged from 0.4785 mm to 0.6412 mm. Helios demonstrated the highest accuracy with the lowest deflection (0.4785-0.5007 mm), followed closely by iTero (0.4963-0.5725 mm). TRIOS 3 showed moderate deflection values, while TRIOS 5 exhibited the highest deviations, reaching 0.6412 mm. Variability was observed between the two models for all scanners, indicating that model-specific morphology influences performance.

Conclusions: Within the limitations of this pilot study, Helios and iTero demonstrated superior accuracy compared to the TRIOS series. The findings suggest that scanner performance is significantly affected by model-specific surface morphology.

ORAL PRESENTATION

OP.171

MANAGEMENT OF AN OROANTRAL FISTULA FOLLOWING DENTAL IMPLANT FAILURE IN A SINUS-AUGMENTED POSTERIOR MAXILLA: A CASE REPORT

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Objective: To present the management of an oroantral fistula that developed after dental implant failure in a sinus-augmented posterior maxilla using a pedicled palatal flap.

Case Report: Oroantral fistula is a pathological communication between the oral cavity and the maxillary sinus and represents a relevant complication after surgical procedures in the posterior maxilla. Its management may become more complex following implant failure and explantation. Palatal pedicled flaps may offer advantages in posterior defects because of their tissue bulk, vascularity, and mobility. A 48-year-old male patient with a history of heavy smoking (two packs/day) was referred to our clinic with persistent intraoral discharge. His dental history revealed implant placement in the posterior maxilla combined with external sinus augmentation. During the healing period, implant failure occurred and the implant was removed. Following explantation, an oroantral fistula developed at the surgical site. After clinical evaluation, a pedicled palatal rotational flap was elevated under local anesthesia, transferred over the defect, and sutured without tension to achieve primary closure. Postoperative follow-up demonstrated uneventful healing and complete closure of the fistulous tract. The intraoral discharge resolved completely, and no recurrence, persistent discharge, or other postoperative complications were observed during follow-up.

Conclusions: Oroantral fistula should be recognized as a potential complication after implant failure in sinus-augmented posterior maxillary sites. In appropriately selected cases, a pedicled palatal flap may provide an effective and predictable closure method, particularly in posterior defects where tissue bulk and vascular support are critical.

ORAL PRESENTATION

OP.172

EVALUATION OF DENTAL STUDENTS' PERCEPTIONS OF MALE AND FEMALE FACULTY MEMBERS

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Introduction: The effect of faculty gender on students' perceptions has been investigated in medical education; however, evidence in dental education remains limited.

Objective: To evaluate dental students' perceptions of male and female faculty regarding their knowledge, clinical skills, communication, grading and feedback, and preferences in different dental specialties.

Materials and Methods: A total of 213 students (81 male, 132 female; years 1–5) from Alanya Alaaddin Keykubat University Faculty of Dentistry were included. A five-point Likert scale questionnaire was administered separately for male and female faculty. Normality was assessed using the Shapiro-Wilk test; Wilcoxon Signed-Rank, Mann-Whitney U, and Kruskal-Wallis tests were applied ($p<0.05$).

Results: Students rated female faculty significantly higher than male faculty in knowledge and clinical skills, and in encouragement of critical thinking and promotion of discussion participation ($p<0.05$). Female faculty were perceived as stricter in grading and more dominant, while male faculty were rated higher in providing procedural independence ($p<0.05$). Female faculty were preferred in restorative dentistry, pediatric dentistry, endodontics, and periodontology, whereas male faculty were preferred in oral surgery ($p<0.05$). Male students rated male faculty significantly higher in knowledge, communication, and feedback than female students ($p<0.05$), while both groups preferred working with faculty of their own gender in oral surgery (males: $p<0.001$; females: $p=0.017$). Upper-year students, particularly third-year students, evaluated faculty more positively ($p<0.05$).

Conclusions: Students' perceptions were influenced by faculty gender, student gender, and year of study, underscoring the importance of gender awareness in dental education.

ORAL PRESENTATION

OP.173

COMBINED APPLICATION OF MODIFIED TUNNEL TECHNIQUE AND PALATAL CONNECTIVE TISSUE GRAFT FOR THE TREATMENT OF CAIRO RT1 RECESSIONS: A CASE REPORT

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Objective: To evaluate the clinical effectiveness of a modified tunnel technique with a palatal connective tissue graft in the treatment of Cairo Recession Type 1 defects affecting the maxillary lateral incisors. Case Report: Gingival recession is a common clinical condition associated with aesthetic concerns and dentinal hypersensitivity. The tunnel technique combined with a connective tissue graft is considered a predictable approach for root coverage while preserving the interdental papillae and reducing postoperative morbidity. A 20-year-old systemically healthy female patient presented with aesthetic concerns and hypersensitivity related to bilateral gingival recession defects on the maxillary lateral incisors. Following Phase I periodontal therapy, surgical treatment was planned. Under local anesthesia, a vertical incision was made in the frenulum area to prepare a subperiosteal tunnel without compromising the papillae. A connective tissue graft was harvested from the palate, deepithelialized, inserted into the tunnel, and stabilized. The gingival margin was then coronally advanced and secured with 6-0 Vicryl using sling and double-cross sutures. Sutures were removed 14 days postoperatively. Clinical evaluation showed complete root coverage, increased gingival thickness, and satisfactory aesthetic integration. The patient also reported marked reduction in hypersensitivity and satisfaction with the aesthetic result.

Conclusions: The modified tunnel technique combined with a connective tissue graft and appropriate suturing methods appears to be a minimally invasive and predictable option for the treatment of localized Cairo Recession Type 1 gingival recessions, providing favorable functional and aesthetic outcomes in the anterior maxilla.

ORAL PRESENTATION

OP.174

SAĞLIKLI VE PERIODONTITIS HASTALARININ DIŞ ETI ÇATLAK SIVILARINDA IL-37-KASPAZ-

1 YOL PROTEIN SEVIYELERININ İNCELENMESI

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Investigation of IL-37–Caspase-1 Pathway Protein Levels in the Gingival Crevicular Fluid of Healthy and Periodontitis Patients

Periodontitis is a destructive and chronic inflammatory disease that results from a dysregulated host immune response to microbial dental biofilm. The aim of this study was to evaluate the relationship between IL-37–Caspase-1 pathway proteins and periodontal inflammation and to compare the levels of these proteins in gingival crevicular fluid (GCF) among healthy individuals and patients with varying degrees of periodontitis.

The study included systemically healthy individuals aged between 35 and 50 who applied to the Periodontology Department of Tokat Gaziosmanpaşa University Faculty of Dentistry. Participants were divided into three groups based on clinical measurements: a healthy group (Group S), Grade B periodontitis group (Group B), and Grade C periodontitis group (Group C). Protein levels of IL-37, Caspase-1, Smad3, PTPN1, and NF-κB were analyzed using the ELISA method in GCF samples collected from all individuals. Clinical periodontal parameters (PI, GI, PD, CAL) were also recorded and statistically analyzed.

The results showed that IL-37 levels were significantly lower in individuals with periodontitis compared to healthy individuals, and this decrease was inversely proportional to disease severity. Caspase-1 levels did not differ significantly between groups ($p>0.05$). While Smad3 levels showed a significant difference only between the Grade B and Grade C groups($p<0.05$), a positive correlation was found between PTPN1 levels and clinical attachment level ($p=0.037$). NF-κB levels showed no statistically significant difference among the groups ($p>0.05$).

Keywords: Periodontitis, IL-37, Caspase-1, Smad3, PTPN1, NF-κB, GCF, ELISA

ORAL PRESENTATION

OP.175

THE EFFECT OF CASE-BASED PRE-PROSTHETIC PERIODONTAL EDUCATION ON DENTAL STUDENTS' CLINICAL DECISION-MAKING

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Introduction: Clinical decision-making in pre-prosthetic periodontal assessment is critical for successful treatment outcomes.

Objective: This study aimed to evaluate the effect of a case-based educational intervention on dental students' decision-making regarding treatment need, procedure selection, and referral preferences.

Materials and Methods: A total of 193 fourth- and fifth-year dental students evaluated 12 clinical cases requiring pre-prosthetic periodontal assessment. For each case, treatment need, appropriate procedure, and referral preference were recorded. Following a structured case-based training using clinically similar scenarios, the initial cases were re-evaluated. Procedures were classified as simple or advanced. Data were analyzed using chi-square, McNemar, and multivariate logistic regression tests ($p < 0.05$).

Results: Significant improvements were observed in diagnostic accuracy, treatment need determination, and referral behavior after training (all $p < 0.001$). Multivariate analysis showed that diagnostic accuracy was significantly associated with training ($p < 0.001$), grade level ($p < 0.001$), and task difficulty ($p = 0.005$), but not gender ($p = 0.384$). The effect of training varied by difficulty level ($p < 0.001$). Treatment need determination improved significantly ($p = 0.004$), with variation by gender and difficulty ($p < 0.001$). Referral behavior was influenced by training, gender, and difficulty (all $p < 0.001$), but not grade level ($p = 0.923$).

Conclusions: Case-based education enhances students' awareness of periodontal considerations and supports more accurate and multidisciplinary clinical decision-making.

ORAL PRESENTATION

OP.176

COUNTRY-BASED DISTRIBUTION OF PUBLICATIONS IN HIGH-IMPACT PERIODONTOLOGY JOURNALS – 5-YEAR ANALYSIS

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Introduction: The sharing of scientific data through high-impact journals is a crucial aspect of enhancing scientific visibility. The selective publication policies of these journals can present challenges to authors seeking publication. Consequently, an analysis of the distribution of studies published in high-impact factor journals by country offers significant insights into the dynamics of global scientific production.

Objective: The aim of this study was to examine the distribution of studies published in leading periodontological journals over a five-year period by country.

Materials and Methods: The countries of affiliation of the corresponding authors of studies published in four periodontology journals (Periodontology 2000, Journal of Clinical Periodontology, Journal of Periodontology, and Journal of Periodontal Research) between 2021 and 2025 were recorded. These records were then analysed on an annual basis with a total period of five years.

Results: A total of 166 issues and 1960 studies were analysed. When the distribution by country was analysed, it was seen that publication production was concentrated in certain countries. When all journals and years were analysed together, China and USA were found to be the countries that produced the most publications. These two countries were followed by Germany, Switzerland, Brazil and Japan.

Conclusions: These findings suggest that scientific production in the field of periodontology is concentrated in certain countries and that there is an imbalance in the distribution of publications on a global scale.

ORAL PRESENTATION

OP.175

HEALING BONES WITH BIOACTIVE MOLECULES – CGF AND MELATONIN APPROACHES

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Introduction: Alveolar bone regeneration remains a significant challenge in dentistry, particularly in patients with systemic diseases or under long-term pharmacological therapy. Current clinical approaches, including autologous and allogeneic grafts, provide variable outcomes and are associated with substantial biological and economic costs. Recent research has focused on bioactive molecules, such as Concentrated Growth Factor (CGF) and melatonin, for their potential regenerative properties.

Aim: This study aims to evaluate the application of bioactive molecules—specifically CGF matrices and melatonin—in alveolar bone regenerative techniques.

Materials and Methods: A literature review was conducted to assess the regenerative potential of these biomolecules. CGF matrices and melatonin were evaluated for their well-established osteogenic, anti-inflammatory, and immunomodulatory effects in clinical practice .The evaluation also considered possible local or systemic application protocols.

Results: CGF consistently demonstrates osteoconductive and osteoinductive properties, enhancing bone density and structural stability in clinical cases, particularly in patients with impaired bone metabolism. Melatonin gel, based on literature data, shows potential osteoconductive and anti-inflammatory effects, although functional validation is still lacking.

Conclusions: Bioactive molecules, including CGF matrices and melatonin, represent promising strategies for alveolar bone regeneration. CGF has proven clinical benefits, whereas melatonin remains experimental. Further clinical and laboratory studies are necessary to validate melatonin's regenerative potential, optimize physical formulations, and establish safe application protocols.

ORAL PRESENTATION

OP.177

ANTRUM LIFTING TECHNIQUES IN IMPLANTOLOGY

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Summary

Introduction: Osseodensification (OD) is an innovative and very promising implant placement site preparation technique. It differs significantly from traditional Standard Drilling (SD). The foremost provider of specialized tools necessary for this procedure is the company Versah, with their specialized lineup of burs named Densah Burs.

Objective: The purpose of this study is to evaluate the efficacy of Osseodensification compared to typical drilling methods and to compare its use for antrum lifting with other established techniques in oral surgery.

Materials and Methods: Diligent research was conducted in modern medical literature databases such as PubMed, Cochrane Library and Research Gate.

Results: Initial search resulted in the extraction of 2715 sources. After a series of exclusion processes, and duplicate removal, 37 articles were chosen to be included in the study.

Conclusions: Osseodensification appears to offer substantial results in the surgical process of raising the Schneiderian membrane of the antrum. Simultaneously, it ensures excellent initial implant stability and notably high implant success rates.

ORAL PRESENTATION

OP.178

PRECISION AND RELIABILITY OF THE OT EQUATOR SYSTEM IN COMPLEX IMPLANT - PROSTHETIC REHABILITATION – A CASE REPORT

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Aim: The OT Bridge Equator system is increasingly applied in contemporary prosthetic rehabilitation of edentulous jaws due to its multifunctionality and adaptability. A key advantage of this system is the ability to use the same abutment for both removable and fixed restorations, manage significant implant divergence, and achieve high precision within digital workflows. The aim of this case report is to present clinical application of the OT Bridge Equator system in full-arch rehabilitation using fixed hybrid prostheses.

Case Presentation: A 48-year-old female patient was referred to the Department of Dentistry, Faculty of Medical Sciences, University of Kragujevac, for treatment of complete edentulism in the maxilla and mandible. After comprehensive CBCT evaluation, an implant-prosthetic treatment plan was developed. Four implants were placed in the maxilla (positions 11, 21, 14, and 24) and four in the mandible (positions 32, 42, 34, and 44). Four months post-surgery, successful osseointegration was confirmed, sulcus depth was measured, and OT Bridge Equator abutments were connected. Fixed implant-supported hybrid prostheses were fabricated for the maxillary arch (14–24) and mandibular arch (34–44). Primary retention was achieved using Seeger rings, while supplementary stability was provided by prosthetic screws. The final restorations met functional and esthetic requirements, demonstrating favorable biomechanical performance and patient satisfaction.

Conclusions: The OT Bridge Equator system proved to be a predictable and clinically dependable solution for fixed full-arch implant rehabilitation. Its capacity to accommodate implant divergence, provide controlled retention, and support passive fit contributes to biomechanical stability and reduces the incidence of prosthetic complications. This system facilitates efficient rehabilitation with high long-term functional and esthetic performance.

Keywords: OT Equator, dental implants, full-arch rehabilitation

ORAL PRESENTATION

OP.179

USE OF RESORBABLE MAGNESIUM MEMBRANE FOR SOCKET AUGMENTATION IN THREE DIFFERENT EXTRACTION SITES WITHIN THE SAME PATIENT: A CASE REPORT

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Introduction: Residual alveolar ridge modeling and remodeling starts immediately after tooth extraction. Creating satisfactory biological foundation of hard and soft tissues is the goal for successful further implant-prosthetic or prosthetic rehabilitation. Many types of graft materials and barrier membranes, resorbable or non-resorbable, are used for alveolar ridge augmentation techniques. Magnesium membrane is a new technology which is characterized with its rigidity, volume stability and biodegradation in situ over a longer period of time. This means there is no need of a second surgery for removing non-resorbable membranes, or lack of dimensional stability of resorbable collagen membranes.

Objective: To emphasize the benefit of using magnesium membrane in three different types of post-extraction sockets in the same patient.
Case report: A generally healthy male patient came to our clinic with irreparable teeth roots of upper incisors. On clinical examination and orthopantomography a cystic lesion was detected on the upper right lateral incisor, irreparable tooth root on the right central incisor and vertical fracture with buccal plate dehiscence on the upper left central incisor. Teeth root extraction and cystectomy in toto followed by socket augmentation with xenograft and magnesium resorbable barrier membrane was performed. Final prosthetic reconstruction was done after healing period, and control CBCT was performed six months later.

Results: Six months after the augmentation, this augmentation technique gives promising results both clinically and radiographically.

Keywords: This biomaterial may represent a good alternative in ARP in cases requiring space maintenance.
Magnesium membrane, Socket augmentation, ARP, Dimensional changes.

ORAL PRESENTATION

OP.180

STAGED LATERAL SINUS AUGMENTATION AND GUIDED BONE REGENERATION FOR IMPLANT REHABILITATION IN THE POSTERIOR MAXILLA: A CASE REPORT

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Introduction: Rehabilitation of the atrophic posterior maxilla is challenging due to sinus pneumatization and insufficient residual bone volume for implant placement.

Objective: To demonstrate the predictability of staged lateral sinus floor elevation combined with guided bone regeneration (GBR) followed by delayed implant placement and prosthetic rehabilitation.

Materials and Methods: A patient presented with partial edentulism in the right posterior maxilla. Residual bone height in the sinus region measured approximately 5 mm, insufficient for implant placement. Lateral window sinus augmentation was performed using xenograft bone substitute and a resorbable membrane. In the first premolar region, extraction of a retained root fragment was performed, revealing a residual ridge width of approximately 3 mm. Simultaneous horizontal ridge augmentation was carried out using the same GBR protocol to increase ridge width. After a 6-month healing period, cone-beam computed tomography confirmed sufficient bone volume and graft integration. Two implants were placed in the augmented posterior maxilla and allowed to heal for 3 months prior to loading.

Results: Healing was uneventful. CBCT evaluation demonstrated stable augmented bone and successful osseointegration. The implants were restored with a screw-retained fixed prosthesis, achieving satisfactory functional and esthetic outcomes.

Conclusions: Combined lateral sinus lift and GBR represent predictable and safe procedures for three-dimensional reconstruction of the atrophic posterior maxilla. CBCT verification confirmed stable bone augmentation and reliable implant integration, enabling successful prosthetic rehabilitation.

ORAL PRESENTATION

OP.181

GUIDED IMPLANT SURGERY, THE MOST SECURE AND ACCURATE PROCEDURE (CLINICAL CASES)

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Introduction: In a time when implant procedures are becoming more and more frequent in our daily routine, the simplification of the techniques and the right outcome expectation is crucial. Nowadays is not only about the surgical procedure anymore, but also the prosthetic part afterwards. That`s why the guided implant surgery is the key to success in biologically difficult cases, and often more favorable in cost-benefit ratio.

Objective: The aim of this study was to evaluate the accuracy of guided surgery planning based on actual clinical dental implant placement results, in different clinical cases.

Materials and Methods: In this article are described several clinical cases done with the traditional technique (flap surgery) and some with guided surgery. In this way, we have addressed the differences between the two techniques, addressing key factors such as: accuracy of the intervention, duration, patient experience, costs, and success rate.

Results: Even though both techniques have their credits and limits, guided implant surgery is way more accurate, has a better outcome for the patient regarding his comfort and the most important part, is more favorable and predictable for the prosthodontics.

Conclusions: In complex cases with anatomical restrictions, the guided surgery is the best choice. Regarding the costs, the guided surgery is more expensive in general, but more secure.

ORAL PRESENTATION

OP.182

Implant-Retained Complete Dentures – When a Fixed Solution Is Not Feasible

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Introduction: Complete edentulism remains a challenging condition in contemporary dentistry. Conventional complete dentures often provide limited stability, retention, and patient satisfaction. In modern implant dentistry, fixed implant-supported restorations on four or more implants are considered the gold standard for the rehabilitation of edentulous patients. However, anatomical limitations, inadequate bone volume, poor oral hygiene, and unfavorable habits such as smoking may prevent implant placement in prosthetically ideal positions or represent contraindications for fixed solutions. In such situations, implant-retained overdentures represent a predictable and clinically effective treatment alternative. The aim of this case report is to present the management of complete edentulism using implant-retained overdentures.

Case Presentation and Management: A patient presented with an indication for extraction of all remaining teeth in both the maxilla and mandible and removal of one mandibular implant due to peri-implantitis. Following extractions, the patient received an immediate maxillary complete denture as a temporary prosthetic solution.

Four months later, implant placement was performed. Four implants were inserted in the maxilla and two additional implants in the mandible, considering previously placed mandibular implants. Due to anatomical limitations, poor oral hygiene, and smoking, a fixed implant-supported restoration was not considered predictable.

The final treatment plan included maxillary and mandibular implant-retained overdentures using locator attachments.

Conclusions: Implant-retained overdentures provide reliable functional and esthetic rehabilitation when fixed implant-supported restorations are not feasible.

ORAL PRESENTATION

OP.183

Digital Maxillary Rehabilitation Using the All-on-4 Concept with FP1 Prosthetic Design: A Case Report

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Introduction: Rehabilitation of the edentulous maxilla is a demanding procedure due to anatomical limitations and the need for precise coordination between surgical and prosthetic phases. The All-on-4 concept offers a predictable treatment option by utilizing four strategically positioned implants to support a full-arch prosthesis. The integration of digital technologies has further improved treatment accuracy, efficiency, and patient comfort.

Case Presentation and Management: This case is notable for the application of a fully digital workflow in combination with immediate provisionalization, without the use of a surgical guide and without artificial gingival replacement in the definitive prosthesis. Four implants were placed free-hand in the edentulous maxilla following comprehensive preoperative diagnostics. Primary stability allowed immediate loading with a screw-retained provisional restoration, which was used to shape peri-implant soft tissues and establish optimal emergence profiles.

After the osseointegration period, a complete digital workflow was implemented. The definitive impression was obtained using an intraoral scanner, ensuring precision and patient comfort. CAD/CAM technology was applied to fabricate a screw-retained FP1 restoration consisting of an anodized titanium bar with passive fit and a zirconia superstructure.

Conclusion: The presented case demonstrates that a fully digital protocol combined with immediate provisionalization and careful soft tissue management can achieve predictable functional and esthetic outcomes in maxillary rehabilitation using the All-on-4 concept, even without guided

ORAL PRESENTATION

OP.184

DIGITAL PROTOCOLS IN CONTEMPORARY IMPLANTOLOGY: THE VALUE OF OPEN-SOURCE SOFTWARE

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Introduction: The adoption of digital technologies has significantly transformed contemporary implantology, enhancing diagnostic accuracy, treatment planning, and clinical predictability. Digital workflows integrating cone-beam computed tomography (CBCT), intraoral scanning, and computer-assisted implant planning enable prosthetically driven implant placement. While many systems rely on proprietary platforms, open-source software has emerged as a flexible, cost-efficient, and interoperable alternative.

Case Presentation: This case series demonstrates the clinical applicability of an open-source digital implantology protocol in three partially edentulous patients (ages 65, 67, and 84 years. CBCT datasets were merged with intraoral scans using open-source planning software to facilitate prosthetically driven implant positioning. Virtual planning allowed precise anatomical assessment, implant angulation optimization, and appropriate implant selection. Digitally designed surgical guides were fabricated via 3D printing and used for fully guided implant placement. In one case, partial extraction therapy was incorporated to preserve buccal hard and soft tissues. Definitive restorations were fabricated following digital impressions. All treatments were completed in three clinical appointments, with uneventful healing and satisfactory functional and esthetic outcomes.

Conclusions: Within the limitations of a case-based report, open-source digital workflows achieved predictable implant positioning and prosthetic rehabilitation comparable to proprietary systems. These protocols enhance efficiency, clinical control, and accessibility while supporting evidence-based and minimally invasive implant practice

Keywords: Digital implantology; Open-source software; Digital workflow; Computer-guided implant surgery; Implant planning.

ORAL PRESENTATION

OP.185

FULL-MOUTH REHABILITATION IN A PERIODONTALLY COMPROMISED PATIENT: MULTIDISCIPLINARY MANAGEMENT OF A CLINICAL CASE

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Introduction: Periodontally compromised patients present restorative challenges due to tooth mobility, esthetic problems, and the need for multidisciplinary treatment.

Objective: To present the multidisciplinary full-mouth rehabilitation of a periodontally compromised female patient managed with a sequenced treatment approach.

Materials and Methods: A systemically healthy 50-years-old female patient presented with tooth mobility and poor esthetics. Clinical and radiographic examination revealed periodontitis and missing teeth (11, 12, 17, 21, 22, 26, 27, 42, and 45). Because of poor prognosis and esthetic demands, teeth 11, 12, 21, and 22 were extracted. Following anterior extractions, gingival recontouring and connective tissue grafting were performed to optimize soft tissue architecture. Teeth 13, 14, 23, and 24 were prepared with a chamfer finish line and restored with PMMA provisional restorations. Teeth 44, 46, and 47 were splinted to improve stabilization and support prosthetic rehabilitation. Implants were placed in the 26 and 28 regions, followed by a 3-month healing period. Final preparations and single-step impressions of teeth and implants were completed using C-type silicone impression material. Full-mouth rehabilitation was completed with metal-supported porcelain restorations.

Results: Functional and esthetic rehabilitation was achieved successfully. Tooth stabilization and improved oral comfort were obtained. During the 4-year follow-up period, no biological or mechanical complications were observed, and the patient remained satisfied with the esthetic outcome.

Conclusions: A multidisciplinary full-mouth rehabilitation approach may provide predictable, functional, and esthetic long-term outcomes in periodontally compromised patients.

ORAL PRESENTATION

OP.186

SIMULTANEOUS RETRIEVAL OF A ROOT DISPLACED INTO THE MAXILLARY SINUS WITH GRAFTLESS EXTERNAL SINUS ELEVATION AND IMPLANT PLACEMENT

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Introduction: Displacement of a maxillary posterior root into the maxillary sinus is an uncommon extraction complication that may compromise sinus integrity and delay implant rehabilitation. Management becomes more challenging in the presence of Schneiderian membrane perforation and heavy smoking.

Aim: To present the clinical and radiographic outcome of a one-stage approach involving retrieval of a root displaced into the maxillary sinus, management of a perforated Schneiderian membrane, and simultaneous implant placement without grafting.

Materials and Methods: A 26-year-old systemically healthy male smoking two packs per day presented to our clinic 13 days after extraction of tooth 16 because the root had been displaced into the maxillary sinus. In the same surgical session, the root was retrieved through an external sinus lift approach. The perforated Schneiderian membrane was elevated and distalized; platelet-rich fibrin (PRF) and a membrane were applied, no grafting material was placed, and a 4.0 × 10 mm implant was inserted simultaneously. The lateral window was then covered with an additional membrane and closed. Healing was monitored for 9 months before prosthetic loading.

Results: Postoperative healing was uneventful. At 9 months, clinical and radiographic evaluation demonstrated successful osseointegration and approximately 7 mm of vertical bone gain.

Conclusions: In selected cases with achievable primary stability, graftless external sinus elevation with simultaneous implant placement may represent a viable treatment option. In the present case, PRF-assisted management of Schneiderian membrane perforation allowed completion of the procedure and successful implant integration.

ORAL PRESENTATION

OP.187

BIOMECHANICAL EFFECT OF PROSTHETIC SCREW ON SUBCRESTAL MORSE TAPER IMPLANT CONNECTIONS: A FINITE ELEMENT ANALYSIS

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Introduction: Subcrestal implant placement has been proposed to improve crestal bone stability and peri-implant tissue support; however, the biomechanical behavior of implant–abutment connections may be influenced by prosthetic screw presence.

Objective: To evaluate the effect of prosthetic screw presence on stress distribution in subcrestally placed Morse taper implant–abutment systems using three-dimensional finite element analysis.

Materials and Methods: A three-dimensional finite element model including mandibular bone, implant, abutment, prosthetic screw, and single crown restoration was created. The implant was positioned 1.5 mm subcrestally in D2 bone. Two configurations were analyzed: screw-retained and friction-retained (screwless). Materials were assumed homogeneous, isotropic, and linearly elastic. A 200 N axial load was applied. Von Mises stress values were evaluated in implant, abutment, and peri-implant bone.

Results: Both models showed similar overall stress distribution patterns. The screw-retained model demonstrated higher stress concentration around the prosthetic screw and implant neck, whereas the screwless model showed more uniform stress distribution along the implant–abutment interface with slightly increased stress within the abutment. Peri-implant bone stresses remained within physiological limits in both models.

Conclusions: Prosthetic screw presence mainly affects stress concentration within the implant–abutment complex, with minimal influence on peri-implant bone. Screwless Morse taper configurations may provide comparable biomechanical performance under axial loading.

ORAL PRESENTATION

OP.188

FULL-ARCH REHABILITATION WITH MULTI-UNIT ABUTMENT-SUPPORTED IMPLANT PROSTHESES: A TWO-CASE REPORTS

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Introduction: Full-arch implant-supported rehabilitation is a predictable and widely accepted treatment modality for edentulous and terminal dentition patients. Multi-unit abutments are commonly used to compensate for implant angulation, improve prosthetic alignment, and enable screw-retained restorations. However, their capacity to compensate for implant angulation may be limited.

Objective: This report aims to present two full-arch rehabilitation cases and to highlight the prosthetic limitations associated with severe implant angulation.

Case Reports: This report presents two cases of full-arch rehabilitation using implant-supported prostheses supported by multi-unit abutments (Implance, AGS Medical,Turkey). In both cases, comprehensive clinical and radiographic evaluations were performed, and implants were placed based on prosthetically driven planning. Multi-unit abutments were used to achieve a common path of insertion and improve prosthetic alignment.

The first case involved a completely edentulous patient rehabilitated with screw-retained full-arch prostheses in both jaws. The second case included a patient with terminal dentition who underwent extraction of non-restorable teeth followed by implant placement and prosthetic rehabilitation. In this case, implant angulation may have influenced the position of the screw access opening, which was observed in the anterior region despite the use of multi-unit abutments

Results: At 6-month follow-up, both cases demonstrated stable peri-implant tissues with no biological or mechanical complications. Functional and esthetic outcomes were satisfactory, and patient satisfaction was high. However, the anterior screw access channel in the second case highlighted the limitations of multi-unit abutments in managing severe implant angulation.

Conclusions: Multi-unit abutments provide significant advantages in full-arch implant rehabilitation by improving prosthetic alignment and retrievability. Nevertheless, accurate implant positioning remains critical, as prosthetic compensation is limited in cases of excessive angulation. Careful surgical and prosthetic planning is essential for optimal outcomes.

Keywords: Implant-supported prosthesis, multi-unit abutment, full-arch rehabilitation, case report, Screw-retained prosthesis

ORAL PRESENTATION

OP.189

CLINICAL RELIABILITY OF IMPLANT-SUPPORTED MONOLITHIC ZIRCONIA FULL-ARCH PROSTHESES: EVIDENCE FROM A SYSTEMATIC REVIEW AND META-ANALYSIS

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Introduction: Monolithic zirconia full-arch implant prostheses are increasingly used for rehabilitation of fully edentulous patients due to favorable mechanical and esthetic properties. However, reported survival and complication rates vary across studies.

Objective: To systematically evaluate prosthesis survival, implant survival, and complication rates of monolithic zirconia full-arch implant prostheses after at least 12 months of function.

Materials and Methods: A systematic review and meta-analysis was conducted according to PRISMA guidelines. MEDLINE, EMBASE, and Web of Science were searched up to November 2024. Clinical studies including adult patients rehabilitated with implant-supported monolithic or minimally veneered zirconia full-arch prostheses with ≥12 months follow-up were included. Random-effects meta-analyses were performed. Risk of bias was assessed using RoB 2 and ROBINS-I tools.

Results: Sixteen studies (660 patients; 2,743 prostheses supported by 4,128 implants) were included. Pooled prosthesis survival was 98% (95% CI: 95–99%; I^2=59.9%). Prosthesis success was 87.2% (95% CI: 82.3–90.9%; I^2=0%). Implant survival reached 99.1% (95% CI: 98.2–99.5%; I^2=43.3%). The pooled incidence of technical complications was 13.8% (95% CI: 6.7–26.2%), with framework fractures occurring in 1.0% and veneer chipping in 2.1%. Biological complications showed a pooled incidence of 6.3% (95% CI: 3.0–12.9%).

Conclusions: Monolithic zirconia full-arch implant prostheses demonstrate high prosthesis and implant survival with relatively low rates of biological and material-related complications, supporting their clinical reliability in full-arch rehabilitation, although methodological limitations warrant cautious interpretation.

ORAL PRESENTATION

OP.190

FULL-MOUTH REHABILITATION IN ADVANCED PERIODONTITIS : TEETH AND IMPLANT - SUPPORTED RESTORATIONS

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Introduction: Advanced periodontal destruction leading to tooth loss and mobility presents significant functional and esthetic challenges. Full-mouth prosthetic rehabilitation requires a comprehensive evaluation of both remaining teeth and edentulous areas to achieve optimal outcomes. This process should be supported by proper oral hygiene education to ensure long-term success.

Case Report: A 44-year-old systemically healthy male patient presented with complaints of impaired masticatory function and poor esthetics. Clinical examination revealed advanced periodontal destruction and tooth mobility in the mandible. In the maxilla, existing restorations exhibited inadequate gingival harmony and exposed root surfaces. Following initial periodontal and oral hygiene management, a comprehensive treatment plan was established. The mandibular arch was rehabilitated with a titanium-based, implant-supported full-mouth fixed prosthesis. In the maxilla, existing restorations were replaced with zirconia-based restorations fabricated using a cut-back technique and ceramic layering to improve esthetics and gingival compatibility.

Conclusions: In patients with advanced periodontal destruction accompanied by functional and esthetic deficiencies, successful outcomes can be achieved through detailed clinical evaluation and an interdisciplinary prosthetic approach. The combination of implant-supported restorations and zirconia-based prostheses provides both functional efficiency and high esthetic satisfaction.

ORAL PRESENTATION

OP.191

DENTAL IMPLANTS VERSUS ENDODONTICALLY TREATED TEETH: A CLINICAL DILEMMA

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Introduction: It has been a mature and established debate among two different treatment approaches. Either retaining teeth which had a conservative endodontic treatment or retreatment and/or surgical or non-surgical treatment or extracting those teeth and restoring the edentulous area with dental implants.

Objective: To review the existing evidence about the success and failures of the two different treatment approaches and present a case report.

Materials and Methods: A search of the literature in Pubmed, Scopus, Cochrane and Web of Science was conducted using the key words ‘survival of endodontically treated teeth, “success of dental implants” , “failure of dental implants”, failure of endodontically treated or retreated teeth”, “complications of endodontically treated teeth versus complications of dental implants”.

Results: Review of the literature revealed great heterogeneity in the reported results. Some studies have recorded higher survival rates for single implants, while others have shown similar or even higher success rates for endodontically treated or retreated teeth.

Conclusions: The therapeutic approach should follow an olistic approach, including patient’s preference and economic factors.

ORAL PRESENTATION

OP.192

FACTORS INFLUENCING LONG-TERM SUCCESS OF DENTAL IMPLANTS: BONE QUALITY, PLACEMENT ACCURACY, AND STABILITY ASSESSMENT

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Introduction: Achieving implant stability suitable for future functional loading is crucial. The tooth extraction procedure should be atraumatic, preserving alveolar walls to maintain bone architecture, which influences soft tissue contours and aesthetic outcomes. Covering extraction sockets with bone substitutes helps preserve alveolar bone volume until delayed implant placement. Socket preservation improves conditions for implant positioning, enhances primary stability during insertion, and facilitates osseointegration. The quality and quantity of alveolar bone significantly impact implant placement, affecting prosthetic alignment and aesthetic results. Inadequate bone can lead to complications such as mucosal recession or unfavorable aesthetic profiles, especially after post-extraction resorption.

Objective: To evaluate the primary and secondary stability of implants placed in non-regenerated and regenerated alveolar bone using various bone substitutes after tooth extraction.

Materials and Methods: Implant success depends on several factors, including surgical technique, bone quality, implant design, and patient health. Bone density influences primary stability, assessed via resonance frequency analysis (ISQ), Periotest (PTV), or insertion torque. Higher stability values predict better osseointegration. Primary and secondary stability are interconnected, with bone quality and macro-design being key for long-term success.

Results: Correlations between stability measures, histological evidence of new bone, and site-specific factors—including the type of bone substitute—are essential. These insights inform clinical practices for atraumatic extraction and bone preservation, aiding future prosthetic rehabilitation and aesthetic restoration. (Funding Agreement D-342/04.12.2025, Medical University of Sofia).

Conclusions: Preservation techniques and bone augmentation with grafts enhance bone volume and stability, reducing the need for complex subsequent procedures.

ORAL PRESENTATION

OP.193

CURRENT PERSPECTIVES ON THE REVERSE SCAN BODY PROTOCOL FOR DIGITAL IMPRESSIONS IN IMPLANT DENTISTRY: A COMPREHENSIVE REVIEW

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Aim: The objective of this review is to evaluate the technical principles, clinical advantages, and current literature findings regarding the Reverse Scan Body (RSB) protocol. This study aims to discuss how this innovative approach addresses the challenges of digital impression accuracy and passive fit in full-arch implant-supported restorations compared to conventional digital workflows.

Materials and Methods: A systematic search was performed across major electronic databases, including PubMed, Scopus, and Web of Science. The review focuses on the methodological shift from standard scan bodies (SCB) to reverse engineering-based protocols, specifically analyzing the data acquisition process from laboratory-refined provisional restorations and its impact on the digital master cast.

Results: Theoretical and clinical reports indicate that the reverse scan body protocol significantly mitigates common errors associated with intraoral scanning, such as soft tissue interference and "stitching" discrepancies over long spans. By utilizing the provisional restoration as a vehicle for position transfer, the protocol provides more stable reference points for the scanner. Existing evidence suggests that this method enhances linear accuracy and promotes a more predictable passive fit for definitive frameworks.

Conclusions: The Reverse Scan Body protocol represents a significant advancement in optimizing the digital workflow for complex implant cases. While early findings support its superiority in accuracy over standard methods, further standardized technical studies are required to establish a universal clinical guideline for its integration into daily prosthetic practice.

ORAL PRESENTATION

OP.194

EVALUATION OF THE MICROTENSILE BOND STRENGTH OF HIGHLY FILLED FLOWABLE COMPOSITES TO SOUND AND CARIES-AFFECTED DENTIN SURFACES

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Introduction: Improved mechanical properties and low polymerization shrinkage have positioned second-generation "high-filled flowable composites" as a viable option for minimally invasive posterior restorations.

Objective: This study aimed to evaluate the microtensile bond strength (μGB) and failure modes of two universal adhesive systems combined with four different composite materials on sound versus artificial caries-affected dentin surfaces following thermal cycling.

Materials and Methods: Sixty-four molars were prepared to expose sound or artificial caries-affected dentin (pH-cycling). Two universal adhesives and four resin composites (three high-filled flowables, one nanohybrid) were applied to the substrates. The specimens were subjected to 10,000 thermal cycles prior to μTBS testing and failure analysis. Data were analyzed using ANOVA and Tukey/Games–Howell tests ($p<0.05$).

Results: The highest bond strength was recorded in sound dentin with the G2-Bond Universal + Clearfil Majesty Flow combination (40.75±8.31 MPa), while the lowest value was observed in caries-affected dentin with GC Premio Bond + G-ænial Achord (9.19±4.91 MPa). G2-Bond Universal demonstrated superior bond strength compared to GC Premio Bond on both substrates. Regardless of the restorative material, sound dentin exhibited significantly higher bond strength values than caries-affected dentin. Predominantly cohesive failures were observed in the group with the highest bond strength, whereas adhesive failures characterized the other groups.

Conclusions: The dentin substrate is the most critical factor influencing adhesion, with sound dentin yielding significantly superior results. The combination of G2-Bond Universal and Clearfil Majesty Flow demonstrated optimal performance on both dentin types, presenting a favorable option for clinical practice.

ORAL PRESENTATION

OP.195

INVESTIGATION OF STRESSES TRANSMITTED TO THE DENTOALVEOLAR COMPLEX BY HYBRID AND CONVENTIONAL MOUTHGUARDS IN COMBAT SPORTS–RELATED TRAUMA USING FINITE ELEMENT STRESS ANALYSIS

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Aim: This study evaluates the stresses and deformations produced by hook and uppercut punches on dentoalveolar structures and mouthguards using three-dimensional finite element analysis, and compares the protective effectiveness of conventional and hybrid mouthguards.

Materials and Methods: A three-dimensional solid model of the maxilla, mandible, teeth, and alveolar bone was constructed based on an anatomical head model with Class I occlusion and complete permanent dentition. A conventional mouthguard (4 mm ethylene vinyl acetate) and a hybrid mouthguard (3 mm polycarbonate occlusal surface with ethylene vinyl acetate axial walls) were modeled. Hook and uppercut punches were simulated with a velocity of 12 m/s and an effective mass of 5 kg. Von Mises stresses and displacements in the jaws, teeth, alveolar structures, and mouthguards were analyzed.

Results: For both punches, the highest von Mises stresses in the mandible and mandibular teeth were observed in the model without a mouthguard, while the lowest values were found with the hybrid mouthguard. Stresses transmitted to the maxilla and maxillary teeth were comparatively low. Although stress values in the hybrid model were higher than in the conventional model in some regions, displacement occurred later after impact and deformation was distributed over a wider area rather than being localized when mouthguards were used.

Conclusions: Hybrid mouthguards demonstrated superior biomechanical performance in reducing stress transmission to dentoalveolar structures. The combination of a rigid occlusal component and a flexible axial structure provided more effective energy distribution, enhancing protection, particularly under high-energy vertical loading. Hybrid mouthguards may therefore represent an effective option for preventing dentoalveolar trauma in combat sports.

Keywords: Combat sports, conventional mouthguard, hybrid mouthguard, dentoalveolar structure, finite element analysis.

ORAL PRESENTATION

OP.196

DIGITAL DENTAL PROSTHETIC TREATMENT OF TEMPOROMANDIBULAR JOINT DISK DISPLACEMENT WITH REDUCTION

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Introduction: Aesthetics of the face with deviation of the mandible and visible asymmetry of the face if one of the reasons patients come to the dental office. The diagnosis is complex and requires meticulous multidisciplinary approaches especially if the temporomandibular joint is involved.

Objective: To represent the challenge of digital dental prosthetic treatment in patients with temporomandibular joint disk displacement with reduction.

Materials and Methods: To establish diagnosis of displacement of the temporomandibular articular disc with reduction with measurents established extraorally and intraorally with specific diagnostic tools - clinical, paraclinical and digital. Usage of computed tomography can be helpful before and after the treatment.

Results: Analysing the deviation of the mandible extraorally, then dispositioning the linea mediana before and after treatment with digitally designed repositioning splints shows improvement of the symmetry after 6 months of treatment. The clicking sounds, popping sounds and noises when opening and closing the mouth following the dispositioning of the articular disc from the fossa temporalis are almost eliminated after 6 months strict treatment protocol.

Keywords: Rehabilitation of patients with a displaced temporomandibular articular disc with reduction is enabled with the production and usage of digital repositioning splints. Digital dental prosthetic rehabilitation in treatment of temporomandibular joint disk displacement with reduction enables improvement of the quality of life of patients.
Deviation, displaced temporomandibular articular disc with reduction, digitally designed repositioning splints.

ORAL PRESENTATION

OP.197

EFFECT OF TWO DIFFERENT MOUTH RINSES ON THE COLOR STABILITY OF PROVISIONAL

CROWN MATERIALS: An In Vitro Study Sibel Celik Tofan1, Caglar Bilmenoglu1

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Introduction: Temporary crowns are essential for maintaining esthetics and function during fixed prosthetic treatments. However, exposure to mouth rinses in the oral environment may induce color changes, affecting both patient satisfaction and clinical success.

Objective: This study aimed to evaluate the color stability of temporary crown materials subjected to different mouth rinses over specified periods.

Materials and Methods: Ninety disk-shaped specimens (10 mm × 2 mm) of polymethyl methacrylate (Temdent Classic, light), bis-acrylic resin (Oratemp C&B, A1) and photopolymer resin (Formlabs Temporary CB Resin, A1) were prepared and stored in distilled water at 37 ± 1 °C for 24 hours. Specimens were immersed in Listerine, Andorex and distilled water for 1 h (1 month) and 2 h (2 months), simulating twice-daily 1-minute use (n = 10). Color measurements (L*,a*and b*) were recorded before and after immersion and ΔE00 was calculated. Data were analyzed using Minitab V14; normality was assessed with Shapiro-Wilk and comparisons were made via Generalized Linear Model with Tukey post hoc tests ($p<0.05$).

Results: Material type and mouth rinses significantly influenced color change ($p<0.05$), while exposure time had no significant effect ($p>0.05$). Mean ΔE00 values were 2.238 for polymethyl methacrylate, 2.069 for bis-acrylic and 2.476 for photopolymer resin. Regarding the solutions, ΔE00 values were 1.806 for distilled water, 2.223 for Listerine and 2.754 for Andorex. All values exceeded perceptible thresholds (ΔE00 = 1.8).

Conclusions: Photopolymer resin exhibited the greatest color change, and Andorex caused the greatest color change among the tested mouth rinses. Overall, the findings suggest that both the material type and mouth rinse influence the color stability of temporary crown materials.

ORAL PRESENTATION

OP.198

DIGITAL INTEREST IN ESTHETIC DENTISTRY: TIME SERIES AND FORECASTING ANALYSIS USING GOOGLE TRENDS

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Introduction: Online health-related search behavior can provide insight into population-level dental needs and support public health planning. Google Trends enables the evaluation of public interest in specific health-related topics over time.

Objective: This study aimed to assess temporal changes in interest among Turkish Google users in dental veneers (yaprak diş), smile design (gülüş tasarımı), and porcelain crowns (porselen kaplama).

Materials and Methods: Monthly relative search volume (RSV) data for three dental esthetic terms were obtained from Google Trends (February 2020–February 2026). ARIMA models were used to analyze temporal patterns and generate 12-month forecasts, while Spearman correlation assessed associations between search terms. Statistical significance was set at $p<0.05$, and all analyses were performed using SPSS.

Results: Dental veneer searches were modeled using ARIMA (0,0,0) (Stationary $R^2= 0.311$), while smile design and porcelain crown searches were best fitted by ARIMA (0,1,1) (Stationary $R^2= 0.328$) and ARIMA (1,0,0) (Stationary $R^2= 0.433$), respectively; all models showed adequate residual diagnostics for short-term forecasting. Spearman analysis revealed a weak positive correlation between dental veneers and porcelain crowns ($r= 0.282$, $p= 0.016$) and a moderate positive correlation between smile design and porcelain crowns ($r= 0.376$, $p= 0.001$), with no significant association between dental veneers and smile design ($r= −0.107$, $p= 0.365$).

Conclusions: ARIMA-based analysis indicated that online interest in dental esthetic topics exhibits stable temporal patterns with term-specific differences, supporting the use of Google Trends as a complementary tool for short-term forecasting of public interest.

ORAL PRESENTATION

OP.199

EVALUATION OF SMILE ESTHETICS BY ARTIFICIAL INTELLIGENCE CHATBOTS: A COMPARATIVE STUDY WITH HUMAN EXPERT SCORES

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Introduction: Artificial intelligence (AI) is increasingly employed in dentistry for diagnostic and esthetic assessments. Evaluating the accuracy of AI-driven chatbots in analyzing complex smile parameters is essential for their safe and effective clinical integration.

Objective: This study aimed to evaluate the performance of five AI chatbots (ChatGPT, Gemini, Claude, Grok, and Copilot) in rating smile esthetics, using a gold standard Human-Expert Score (HES) for comparison.

Materials and Methods: Forty-four stock smile photographs were analyzed. Each chatbot scored eight parameters—smile symmetry, smile width, smile index, buccal corridor ratio, maxillary tooth display, tooth–lip parallelism, and overall esthetics—using a 5-point Likert scale. The HES was defined as the mean score of human expert evaluators. Statistical analyses included the calculation of mean scores, Pearson correlation coefficients (r), and Mean Absolute Error (MAE) between chatbot scores and HES.

Results: The mean HES for overall smile esthetics was 4.11. All chatbots generally overestimated esthetic scores, with mean values ranging from 4.43 (Gemini) to 4.89 (Copilot). Copilot demonstrated the highest correlation with HES (r = 0.43), followed by Claude (r = 0.38) and ChatGPT (r = 0.37). The aggregate mean score across all chatbots showed a moderate correlation with HES (r = 0.48). Among individual models, Gemini exhibited the lowest MAE (0.68), whereas Grok showed the highest (0.80).

Conclusions: AI chatbots exhibit emerging potential for the evaluation of smile esthetics; however, they tend to assign more favorable scores than human experts. Copilot showed the greatest consistency with expert evaluations, yet current AI models still require further refinement to achieve human-comparable diagnostic accuracy in complex esthetic assessments.

ORAL PRESENTATION

OP.200

COMPARATIVE EVALUATION OF CHATBOT PERFORMANCE IN PROSTHODONTIC EDUCATION USING TYPE 1 AND TYPE 2 QUESTIONS

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Introduction: Artificial intelligence (AI) chatbots are increasingly used in dental education; however, their accuracy in specialized domains such as prosthodontics requires systematic evaluation.

Objective: This study aimed to assess the diagnostic and theoretical accuracy of the ChatGPT, Gemini, DeepSeek, Copilot, and Grok chatbots across six prosthodontic sub-disciplines using Type 1 (single-answer) and Type 2 (combination-answer) questions.

Materials and Methods: A total of 240 questions (120 Type 1 and 120 Type 2), covering dental anatomy, removable prosthodontics, dental materials, fixed prosthodontics, maxillofacial prosthodontics, and implantology, were submitted to five chatbots. Performance was evaluated based on the proportion of correct responses and analyzed according to question type and prosthodontic sub-discipline.

Results: For Type 1 questions, Gemini demonstrated the highest accuracy (89.17%), followed by Grok (85.83%), ChatGPT (85.00%), and DeepSeek (85.00%). For Type 2 questions, Copilot achieved the best performance (80.00%), whereas DeepSeek (55.83%) and Gemini (58.33%) showed comparatively lower success rates. Significant performance variability was observed across sub-disciplines. Maxillofacial prosthodontics yielded the lowest accuracy in most models, with some chatbots failing completely (0%) on Type 2 questions in this category. Dental materials and implantology consistently exhibited the highest success rates (>90%) for Type 1 questions.

Conclusions: AI chatbots show considerable potential as educational tools in prosthodontics, particularly for Type 1 theoretical knowledge. However, their performance declines substantially in Type 2 questions and in complex sub-disciplines such as maxillofacial prosthodontics. Educators and students should exercise caution when relying on AI-generated content for specialized and complex prosthodontic topics.

ORAL PRESENTATION

OP.201

INFLUENCE OF PRINTING ORIENTATION AND POST-CURING TIME ON FLEXURAL STRENGTH AND VICKERS HARDNESS OF A 3D-PRINTED TEMPORARY CROWN RESIN: AN IN VITRO STUDY

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Introduction: Three-dimensional printing is increasingly used for the fabrication of interim dental restorations; however, printing parameters may influence their mechanical properties.

Objective: The aim of this in vitro study was to investigate the influence of printing orientation and post-curing duration on the mechanical performance of a 3D-printed interim resin to determine an optimized fabrication protocol for clinical use.

Materials and Methods: Specimens were fabricated from a temporary crown resin (SprintRay, USA) using a 3D printer (SprintRay Pro S, USA). Bar-shaped specimens (25x2x2 mm) for flexural strength (ISO 4049) and disc-shaped specimens (10x2 mm) for surface hardness were produced. The specimens were divided into six groups according to printing orientation and post-curing protocol (0°, 45°, and 90°; standard or extended post-curing). Flexural strength was measured using a universal testing machine (Shimadzu, Kyoto, Japan), and surface hardness was evaluated using a micro-Vickers hardness tester (High Wood, HWDM-3, Japan). Data were analyzed using one-way ANOVA followed by Tukey and Tamhane's T2 post hoc tests.

Results: Vickers surface hardness differed significantly among the experimental groups ($p < 0.001$). The lowest hardness was observed in the 0° standard post-curing group, whereas the highest value was recorded in the 90° extended post-curing group. No significant differences were found among the groups in terms of flexural strength ($p = 0.363$).

Conclusions: Extended post-curing and a 90° printing orientation significantly improved surface hardness without affecting flexural strength; therefore, this combination may be preferred for clinical use.

ORAL PRESENTATION

OP.202

VERTICAL DIMENSION INCREASE IN FULL MOUTH REHABILITATION: A CASE SERIES

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Introduction: Loss of occlusal vertical dimension (OVD) is commonly associated with severe tooth wear, posterior tooth loss, and long-term occlusal instability. Rehabilitation of reduced OVD requires careful consideration of functional, esthetic, and biomechanical factors. Increasing OVD may improve occlusal relationships and restorative space; however, patient adaptation and long-term stability remain critical concerns. This case series presents different clinical approaches for the management of severe OVD loss.

Case Report: Three patients presenting to the Department of Prosthodontics with OVD loss were clinically evaluated. Individualized treatment plans were developed based on functional and clinical findings. Anterior guidance was established using direct composite restorations. Prior to definitive treatment, interim prostheses or occlusal splints were used to assess patient adaptation to the increased OVD. Following successful adaptation, posterior regions were rehabilitated with fixed prosthetic restorations.

Results: All patients were followed clinically after treatment. At the 6-month follow-up, functional adaptation and prosthetic stability were evaluated. Oral health–related quality of life was assessed using the Oral Health Impact Profile (OHIP). All patients reported improved comfort, function, and overall satisfaction following treatment.

Conclusions: Rehabilitation of reduced OVD can be successfully achieved using different restorative and prosthetic approaches. Establishment of anterior guidance and ensuring patient adaptation to the increased OVD are key factors for predictable functional outcomes and improved patient satisfaction.

Keywords: occlusal vertical dimension, fixed prosthetic restoration, OHIP

ORAL PRESENTATION

OP.203

EVALUATION OF THE QUALITY OF LIFE IN PATIENTS WITH CONVENTIONAL AND IMMEDIATE DENTURES

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Introduction: All changes occurring within the orofacial system influence the quality of life of individuals as social beings. The acceptance of complete dentures requires psychosocial and functional adaptation, a process influenced by patients’ expectations and perceptions, which ultimately affect their quality of life. According to the World Health Organization, quality of life is defined as an individual’s perception of their position in life within the cultural context and value systems in which they live, and in relation to their goals, expectations, standards, and concerns.

Objective: The aim of this study was to evaluate the quality of life in patients rehabilitated with immediate and conventional complete dentures using the OHIP-49 index.

Materials and Methods: A total of 60 patients aged 54–70 years were examined and divided into two groups: 30 patients received immediate complete dentures, while 30 received conventional complete dentures fabricated 2–6 months after tooth extraction. Quality of life was assessed using the OHIP-49 questionnaire before treatment and six months after prosthetic rehabilitation.

Results: Results demonstrated a statistically significant improvement in quality of life in both groups six months after treatment ($p < 0.001$). Patients treated with immediate dentures showed significantly better quality-of-life outcomes compared to those with conventional dentures ($p < 0.001$).

Conclusions: Immediate dentures contribute to a significantly greater improvement in oral health–related quality of life compared to conventional dentures.

Keywords: Quality of life, OHIP-49, Immediate dentures, Conventional dentures, Oral health

ORAL PRESENTATION

OP.204

GLOBAL RESEARCH TRENDS OF ADDITIVELY MANUFACTURED ZIRCONIA IN PROSTHODONTICS: A BIBLIOMETRIC ANALYSIS

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Objective: This study aimed to analyze the scientific literature on three-dimensional (3D) printed zirconia restorations in prosthodontics using bibliometric methods to identify research trends, influential contributors, and thematic developments.

Materials and Methods: Data were retrieved from the Web of Science Core Collection (WoSCC) using combinations of the keywords "3D printing," "additive manufacturing," and "zirconia." The search covered the period between 2009 and 2025 and yielded 223 records. After independent manual screening, 120 publications met the inclusion criteria. Bibliometric networks, including country, author, and institutional collaborations, as well as keyword co-occurrence patterns, were analyzed using VOSviewer (version 1.6.20).

Results: Publication activity increased markedly after 2019, with the highest output observed in 2024–2025. The total number of citations exceeded 1,200, indicating increasing scientific influence. Marta Revilla-León and Mutlu Özcan were the most productive, authors. The Journal of Prosthetic Dentistry was the leading journal, with 19 publications. Most studies (87.6%) were indexed in SCI-Expanded. Keyword analysis revealed a transition from manufacturing processes to clinical performance parameters, including accuracy, trueness, and mechanical properties.

Conclusions: Research on 3D printed zirconia has increased substantially in prosthodontics. Although the literature is mainly based on in vitro studies, further in vivo investigations and long-term clinical evaluations are needed.

Keywords: 3D printing, additive manufacturing, zirconia, bibliometric analysis, digital dentistry

ORAL PRESENTATION

OP.205

IMMEDIATE LOADING IN FULL-ARCH REHABILITATION: CLINICAL AND BIOMECHANICAL EVALUATION OF AN ALL-ON-SIX CASE

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Introduction: Immediate loading protocols in full-arch implant rehabilitation provide rapid restoration of esthetics and function when sufficient primary stability is achieved. However, implant stability may vary within the same arch, requiring selective loading strategies.

Objective: To present the clinical and biomechanical evaluation of a selective immediate loading protocol in an all-on-six full-arch rehabilitation case.

Materials and Methods: A 50-year-old systemically healthy female patient presented with advanced periodontal destruction and severe tooth mobility. Clinical and radiographic examinations, including panoramic radiography and cone-beam computed tomography, were performed. Following total tooth extraction and debridement, six implants were placed in each jaw with optimized anteroposterior distribution. Anterior implants achieved primary stability ≥35 Ncm. Multi-unit abutments were connected, and a rigidly splinted provisional fixed prosthesis was delivered within 24 hours. Posterior implants with insufficient primary stability were left unloaded for conventional osseointegration. Occlusion was carefully adjusted to minimize lateral forces and prevent overload.

Results: During the three-month follow-up period, peri-implant soft tissue healing was uneventful, and prosthetic stability was maintained. After confirmation of osseointegration, posterior implants were incorporated into the definitive fixed prostheses without complications.

Conclusions: Selective immediate loading based on primary stability and controlled occlusal planning appears to be a safe and predictable approach in full-arch rehabilitation, supporting favorable biological and mechanical outcomes.

Keywords: All-on-six, immediate loading, primary stability

ORAL PRESENTATION

OP.206

EFFECTIVE FACTORS IN DENTAL ANXIETY MANAGEMENT: CLINICAL EXPERIENCE, PROFESSIONAL STATUS, OR SELF-EFFICACY?

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Introduction: Effective dental anxiety management relies on behavioural strategies, communication skills and clinician-related factors, yet the relative influence of professional status and self-efficacy remains unclear.

Objective: To investigate how professional status, clinical experience and self-efficacy relate to diagnostic approaches, communication strategies and structured clinical behaviours in dental anxiety management.

Materials and Methods: A cross-sectional questionnaire including dental students, general dentists and specialist dentists was analyzed. The questionnaire demonstrated high internal consistency (Cronbach α=0.88). Exploratory factor analysis confirmed a five-factor model: self-efficacy, structured clinical behaviours, patient control techniques, diagnostic scale use and communication approaches. Group comparisons were performed using one-way ANOVA. Pearson correlation and regression analyses were applied to factor scores.

Results: Frequency of encountering anxious patients differed across groups, although only weekly patient volume remained independently associated in multivariable analysis. Diagnostic practices and treatment preparation behaviours showed no significant status-based differences. Communication approaches and patient control techniques demonstrated consistently high scores across all professional levels. Perception of institutional protocols differed significantly between groups ($p<0.001$). Self-efficacy was strongly associated with structured clinical behaviours ($\beta=0.42$, $p<0.001$), patient control techniques ($\beta=0.55$, $p<0.001$) and communication approaches ($\beta=0.62$, $p<0.001$), whereas diagnostic scale use showed no significant association.

Conclusions: Behavioural and communication communication of dental anxiety management appear largely independent of professional status. Self-efficacy emerged as the most consistent predictor of clinical behavioural patterns, suggesting that psychosocial clinician factors may play a more decisive role than professional title in shaping practice.

ORAL PRESENTATION

OP.207

REMOVABLE PARTIAL DENTURES USING PRECISION ATTACHMENTS WITH DIFFERENT RETENTION CHARACTERISTICS: A CASE SERIES

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Introduction: Precision attachment–retained removable partial dentures are treatment options that provide esthetic and functional advantages in the rehabilitation of partial edentulism. The retention of these systems may vary depending on the structural characteristics of the attachment and the material components involved.

Objective: To clinically present removable partial dentures prepared using precision attachments with different retention characteristics.

Materials and Methods: Three partially edentulous patients were rehabilitated with attachment-retained removable partial dentures. In the first case, a 37-year-old female with mandibular Kennedy Class I and maxillary Kennedy Class II modification 1 edentulism was treated with a prosthesis incorporating metal–plastic contact VKS-SG ball attachments (Bredent, Germany) with yellow inserts and a major connector. In the second case, a 71-year-old male with bilateral Kennedy Class II edentulism received prostheses using metal–metal contact FM1 precision attachments (Eleksan Ltd., Türkiye) without major connectors. In the third case, a 58-year-old female with mandibular Kennedy Class II and maxillary Kennedy Class I edentulism was treated with metal–metal attachment-retained prostheses in both arches. Retention was evaluated clinically based on stability and resistance to dislodgement.

Results: All attachment systems contributed to prosthesis stabilization. Retention in metal–plastic systems was achieved through the elastic matrix, whereas metal–metal systems provided retention via mechanical interlocking and friction.

Conclusions: Removable partial dentures fabricated with precision attachments exhibiting different retention mechanisms can provide clinically adequate stability when appropriate treatment planning is performed.

ORAL PRESENTATION

OP.208

CLINICAL EFFECTIVENESS OF TRI RAPTOR ATTACHMENT SYSTEM IN NON-SPLINTED IMPLANT-SUPPORTED OVERDENTURES WITH INTER-IMPLANT ANGULATION DISCREPANCIES: TWO CASE REPORTS

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Introduction: Implant-supported overdentures are a well-established treatment option for edentulous patients, providing improved retention, stability, and patient satisfaction. The selection of attachment systems plays a critical role in clinical success, particularly in cases with interimplant angulation discrepancies. Inadequate compensation of such discrepancies may lead to retention loss, accelerated attachment wear, and prosthetic failure.
Purpose: This presentation aims to evaluate the clinical effectiveness of TRI Raptor attachment system in two uncommon clinical cases with pronounced interimplant angulation differences, emphasizing prosthetic adaptation, functional performance, and clinical stability.

Case Presentation and Treatment Approach: Case 1: A 70-year-old female patient with mandibular edentulism and a single pre-existing implant of unknown brand received an additional implant. Due to low bone density, a significant angulation discrepancy developed between the implants. A two-implant-supported mandibular overdenture retained with TRI Raptor attachment system was fabricated.

Case 2: A 60-year-old male patient presented with retention loss and attachment wear in a maxillary overdenture supported by four angulated implants using ball attachments. Owing to the inability of the existing system to tolerate angular discrepancies, a new maxillary overdenture with TRI Raptor attachment system was fabricated.

In both cases, bilateral balanced occlusion was established.

Results: Both patients demonstrated improved retention, stability, functional performance, and comfort. No biological or mechanical complications were observed during follow-up.

Conclusions: TRI Raptor attachment system appears to be a reliable and effective treatment option for non-splinted implant-supported overdentures in the presence of significant interimplant angulation discrepancies.

Keywords: Implant-supported overdenture, TRI Raptor attachment, implant angulation discrepancy, case report, prosthetic rehabilitation.

ORAL PRESENTATION

OP.209

PROSTHETIC REHABILITATION OF A PATIENT WITH TOOTH WEAR USING A MULTIDISCIPLINARY APPROACH: A CASE REPORT

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Objective: The aim of this case report is to present the aesthetic rehabilitation of severely damaged mandibular anterior teeth using a multidisciplinary treatment approach.

Materials and Methods: An 8-year-old pediatric patient was referred from the Department of Pediatric Dentistry to the Department of Prosthodontics at Uşak University Faculty of Dentistry due to aesthetic complaints related to the mandibular anterior teeth. Clinical and radiographic examinations revealed severe crown destruction in the mandibular anterior region. Endodontic treatment was performed, followed by fiber post application. Subsequently, the teeth were restored with composite resin crowns. Clinical and laboratory considerations during the crown fabrication process were carefully evaluated.

Results: The applied multidisciplinary treatment approach resulted in satisfactory aesthetic and functional outcomes. Composite resin crowns successfully restored the form and appearance of the severely damaged mandibular anterior teeth.

Conclusions: When aesthetic outcomes and marginal adaptation are considered, composite resin crowns are economical, patient-specific, and easily fabricated restorations. Through conservative and multidisciplinary approaches, existing teeth can be preserved, and successful aesthetic and functional rehabilitation can be achieved.

Keywords: severe crown destruction, endodontic treatment, fiber post, prosthetic restoration, composite resin crown

ORAL PRESENTATION

OP.210

NEUTRAL ZONE IN COMPLETE DENTURES: A NARRATIVE REVIEW WITH CASE REPORT

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Introduction: The Neutral Zone Concept (NZC) is a physiologically based approach to complete denture fabrication in which artificial teeth are positioned within the zone of equilibrium created by the opposing forces of the tongue and the surrounding perioral musculature. This concept is particularly relevant in patients with severely resorbed mandibular residual ridges, where prosthesis stability is frequently compromised. By harmonizing denture contours with functional muscular dynamics, the NZC aims to enhance retention, stability, and neuromuscular adaptation.

Objective: To critically evaluate the clinical effectiveness, and functional outcomes of the Neutral Zone Concept in complete denture therapy.

Materials and Methods: A structured review—including randomized controlled trials, comparative clinical investigations, and case reports—was conducted in accordance with PRISMA-ScR guidelines to address predefined PICO-based research question. Assessed parameters included denture stability and retention, masticatory efficiency, phonetic performance, patient-reported outcome meassures, recording materials and digital workflows.

Results: Most studies reported superior mandibular denture stability, improved phonetics, enhanced patient comfort, and greater overall satisfaction with the NZC compared to fabrication techniques. Benefits were particularly evident in cases of advanced ridge resorption and compromised neuromuscular control. Although, favorable patient-centered outcomes were observed, objective biomechanical differences were occasionally limited. Emerging approaches included simplified recording materials and CAD/CAM integration. Finally, to illustrate the NZC, a stepwise report of a case with unrestored edentulism of over 20 years, was presented and analyzed.

Conclusions: The NZC remains an evidence-based and clinically relevant modality for managing severely resorbed ridges, with promising adaptation within the digital prosthodontic applications.

ORAL PRESENTATION

OP.211

MANAGING DENTURE-ASSOCIATED POST-COVID-19 CANDIDIASIS AND MUCORMYCOSIS THROUGH COMBINED PROSTHODONTIC AND INFECTIOUS DISEASE CARE: A NARRATIVE REVIEW

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Introduction: Older adults, particularly denture wearers, appeared highly vulnerable to opportunistic fungal infections during the COVID-19 pandemic. Conditions such as mucormycosis and oral candidiasis increased in frequency, likely due to systemic illness, immune disruption, and denture-related factors.

Objective: This review examined how denture use, underlying health conditions, and COVID-19 recovery interact to elevate fungal infection risk in older adults.

Materials and Methods: A narrative review following PRISMA-ScR guidelines included studies published between 2020 and 2025. Of 102 screened articles, 21 met inclusion criteria, representing case-control, cross-sectional, cohort, and retrospective studies from India, Europe, the Middle East, and North America.

Results: Oral fungal colonization was consistently higher among denture wearers, with Candida albicans most frequently isolated and resistant species such as Candida auris also reported. COVID-19–associated mucormycosis -caused by fungi of the order Mucorales- typically presented as rhino-orbito-cerebral disease with palatal necrosis, gingival ulceration, or tooth mobility. Major risk factors included diabetes, mellitus, corticosteroid use, prolonged ICU stays, and inadequate denture hygiene. Mortality ranged from 18% to 56%, while candidiasis, though less severe, impaired oral comfort and nutrition. Diagnostic approaches included clinical and intraoral examinations, microbiological cultures, imaging, and emerging salivary biomarkers. Management involved systemic antifungals, surgical debridement, and prosthesis disinfection. Key gaps remain regarding the prognostic value of oral lesions, long-term COVID-19 effects on the oral microbiome, and standardized denture hygiene protocols.

Conclusions: Findings underscore the need for integrated dental–medical care, improved denture hygiene practices, and further research into early oral indicators of systemic fungal disease in post-COVID-19 older adults.

ORAL PRESENTATION

OP.212

RECONSTRUCTION OF MALOCCLUSION AND JAW DEFORMITIES – CASE REPORT

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Patient (M.P.) presented for examination with the aim of reconstructing malocclusion and jaw deformities. Clinical examination revealed an anterior crossbite in the region of the front teeth, as well as a bilateral open bite in the posterior region.

The treatment plan included orthodontic, surgical, and prosthetic therapy. After completion of orthodontic treatment, which lasted 18 months, and surgical therapy, we proceeded with prosthetic reconstruction. A digital protocol was applied in the reconstruction using ceramic restorations.

Following tooth preparation, temporary crowns were fabricated. Their purpose was to shape and stabilize the position of the soft tissues. After intraoral scanning, a laboratory prototype was produced. This allowed the patient to evaluate the shape and arrangement of the future teeth. Based on the analysis of both the temporary crowns and the proposed prototype in terms of smile aesthetics and function, the fabrication of the final ceramic restorations was initiated.

Full-contour zirconia was used in the posterior region, while a CAD-back protocol was applied for the fabrication of ceramic crowns in the anterior region. With this procedure, we successfully reconstructed the malocclusion and corrected the jaw deformities. The patient regained both confidence and a natural smile.

ORAL PRESENTATION

OP.213

COMPARATIVE ANALYSIS OF INTRAORAL DIGITAL SCANS AND EXTRAORAL SCANS DERIVED FROM CONVENTIONAL IMPRESSION TECHNIQUES

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The research involved 30 volunteer subjects, divided into two groups: patients with a complete set of teeth and patients with partial edentulos arches, who were given appropriate instructions regarding the impression taking protocol, after which 2 ways of intraoral impressions were taken from each volunteer i.e. one digital impression and one impression using conventional techniques. The results of our research showed insignificant dimensional differences between the two tested impression taking methods. However, in some analyses we found minor deviations. Regarding the comparison of the standard deviations between the measured values, we concluded that there are no significant differences between the digital and conventional impression methods, which means both impression techniques were excellent. This indicates that both methods are competent for prosthetic fabrications with similar precision.

ORAL PRESENTATION

OP.214

MARGINAL GAP AND FRACTURE RESISTANCE OF METAL-CERAMIC AND ZIRCONIA CROWNS FABRICATED BY ADDITIVE AND SUBTRACTIVE MANUFACTURING TECHNIQUES

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Introduction: Zirconia crowns are widely used because of their favorable mechanical properties and esthetics. Recently, additive manufacturing has emerged as an alternative to conventional milling for zirconia restorations; however, evidence on their marginal adaptation and fracture resistance remains limited.

Objective: To compare the marginal adaptation and fracture resistance of zirconia crowns fabricated by two additive manufacturing techniques with conventionally milled zirconia and porcelain fused to metal crowns (PFM).

Materials and Methods: A standardized maxillary central incisor abutment was digitally designed to fabricate forty crowns divided into four groups (n=10): milled monolithic zirconia (Zolid Gen-X; Z), additively manufactured zirconia (LithaCon 3Y 210, Lithoz; Group PL) and 3D Mix ZrO_2,3D Ceram; Group PS) and metal-ceramic (Group M) (n = 10). Marginal adaptation was evaluated using a non-invasive dual-scan technique and 3D superimposition (Geomagic Control X) was conducted. Fracture testing was performed on cemented crowns at a 30° loading angle in a universal testing machine. Data were analyzed using one-way ANOVA and Tukey HSD tests (p=0.05).

Results: Marginal gap values differed significantly among groups ($p<0.05$). Z showed the largest discrepancy (75.41±4.29 µm), followed by PL (61.68±4.98 µm), PS (61.93±5.24 µm), and M (55.31±4.98 µm). Fracture resistance also differed significantly ($p<0.05$): PL showed the highest values (3404.72±391.28 N), followed by Z (2690.65±447.07 N), PS (2122.23±727.32 N), and M (1642.51±428.73 N).

Conclusions: Group PL showed superior fracture resistance and marginal adaptation comparable to groups PS and M and better than group Z. These findings suggest that advances in additive manufacturing can achieve, or even exceed, the dimensional accuracy and mechanical reliability of conventional milling.

ORAL PRESENTATION

OP.215

COMPARISON OF OPTICAL PROPERTIES OF DENTAL ZIRCONIA WITH VARYING YTTRIA CONTENTS

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Introduction: In restorative dentistry, the optical properties of all-ceramic materials play a decisive role in esthetic outcomes. With the increasing use of high-translucency zirconia, the influence of yttria content and microstructure on translucency, contrast, and opalescence has become clinically relevant.

Objective: The purpose of this study was to compare the optical properties of high-translucency zirconia materials with varying yttria contents using the relative translucency parameter (RTP), contrast ratio (CR), and opalescence parameter (OP).

Materials and Methods: Three CAD-CAM zirconia materials were evaluated (n=12 per group): Katana UTML (UT), InCoris TZI C (IC), and Cercon Xt (CX). Rectangular specimens (10×12 mm; 1±0.05 mm thickness) were prepared. Optical measurements were conducted using a digital spectrophotometer over black and white backgrounds. RTP values were calculated using the CIEDE2000 (ΔE_{00}) formula; CR was derived from reflectance; and OP was calculated from the differences in the a* and b* color coordinates. Data were analyzed using one-way ANOVA and Bonferroni tests (α=0.05).

Results: Statistically significant differences were observed among the materials for RTP, CR, and OP ($P<0.05$). UT demonstrated significantly higher RTP and lower CR compared to IC and CX ($P<0.001$). UT also exhibited lower OP than IC and CX ($P<0.05$).

Conclusions: The optical properties of yttria-partially stabilized zirconia (Y-PSZ) materials vary depending on material type, yttria content, and microstructure. The UTML material, characterized by a higher yttria content and cubic phase ratio, demonstrated aesthetic advantages due to higher translucency and a lower contrast ratio. These findings may provide clinical guidance for appropriate material selection, particularly for anterior restorations requiring high translucency.

ORAL PRESENTATION

OP.216

EFFECT OF DIFFERENT SURFACE TREATMENTS AND THERMAL AGING ON FLEXURAL STRENGTH OF DENTURE BASE MATERIALS FABRICATED WITH CONVENTIONAL METHOD AND 3D-PRINTER AFTER REPAIR PROCESS

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Introduction: Denture base materials are frequently subjected to fracture during clinical service, making effective repair procedures essential for maintaining their mechanical performance and longevity.

Objective: This study evaluated the effects of various surface treatments and thermal cycling on the flexural strength of both intact and repaired denture base materials fabricated using conventional and 3D-printing techniques.

Materials and Methods: One heat-polymerized and two 3D-printed resins (ASIGA and NextDent) were tested. For each material, 100 rectangular specimens (65×10×2.5 mm) were prepared and assigned to five surface treatment groups: intact, no treatment, MMA application, sandblasting, and sandblasting + MMA. A 2-mm repair gap with a 45° bevel was created and repaired using autopolymerizing acrylic resin. Within each experimental group, specimens were further subdivided into thermocycled and non-thermocycled subgroups (n = 10). Flexural strength tests were performed on all specimens, and the data obtained were analyzed by three-way ANOVA followed by Tukey's HSD test. Failure modes were evaluated stereomicroscopically.

Results: Intact specimens exhibited the highest flexural strength. Heat-polymerized resin showed significantly greater strength than 3D-printed resins ($p<0.05$). Surface treatments significantly increased repair strength, whereas thermocycling decreased it ($p<0.05$). In thermocycled 3D-printed groups, sandblasting + MMA produced the highest values (NextDent: 100.68 MPa; ASIGA: 95.34 MPa), while sandblasting alone was most effective e in non-thermocycled groups (NextDent: 142.64 MPa; ASIGA: 122.23 MPa).

Conclusions: Surface treatments improved flexural strength in all materials. Heat-polymerized PMMA showed the highest flexural strength. In 3D-printed materials, the sandblasting + monomer application was identified as the most effective protocol following thermal cycling.

ORAL PRESENTATION

OP.217

THE EFFECT OF MODEL BASE THICKNESS AND BUILD ORIENTATION ON THE DIMENSIONAL STABILITY OF 3D-PRINTED DENTAL MODELS

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Introduction: The evolution of digital dentistry has transitioned from subtractive to additive manufacturing techniques, allowing the widespread integration of 3D-printed dental models into clinical workflows. Although additive manufacturing offers some advantages, concerns remain regarding the dimensional stability of 3D-printed models. Parameters introduced during the additive manufacturing, particularly model base thickness and internal build design, may influence dimensional stability.

Objective: This study aimed to evaluate the effect of model base thickness and build orientation on the dimensional stability of 3D-printed dental models.

Materials and Methods: A maxillary dentulous typodont model (Frasaco GmbH,Germany) was scanned by desktop scanner (E1, 3Shape,Denmark) and a reference scan was obtained. A total of 90 dental models in different base thickness(0,5; 10 mm) and build orientation(filled, hollow, hexagonal) were produced with 3D Printer (Asiga Ultra,Australia). All models were scanned by desktop scanner (E1, 3Shape,Denmark). The dimensional stability was assessed using Geomagic Control X (3D Systems,USA) through bestfit alignment method. Statistical analysis was performed using IBM SPSS v31. Kruskal–Wallis, Bonferoni, Dunn tests were applied. (p=0.05)

Results: Base thickness influenced dimensional stability ($p < 0.001$), with the 10 mm group demonstrating the lower deviation (0.112) in comparison to the 0 mm (0.173) and 5 mm (0.164) groups. Build orientation type (hexagonal, hollow, filled) did not affect dimensional stability ($p = 0.762$).

Conclusions: The build orientation of the model doesn't affect the dimensional stability of 3D-printed dental models. Whereas, base thickness affect dimensional stability.

ORAL PRESENTATION

OP.218

SINGLE-UNIT PERMANENT RESTORATIONS FABRICATED WITH 3D TECHNOLOGY AND THE DEVELOPMENT OF 3D PERMANENT CROWNS

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Objective: Durable and aesthetic materials such as ceramics,metal ceramics and 3D-printed permanent resins are widely used for single-unit crown restorations. While 3D-printed resins were initially limited to temporary restorations, recent advancements in material composition and manufacturing technologies have enabled their use for long-term intraoral applications. These new-generation resins, reinforced with ceramic filler particles, offer improved mechanical strength, reduced water absorption, and enhanced color stability. This case report aims to present current applications and clinical advantages of 3D-printed permanent crown materials and evaluate their feasibility in anterior single-unit restorations.
Case Report: A 21-year-old male patient presented with discoloration of the maxillary right central incisor due to previous trauma. Root canal retreatment followed by crown restoration was planned. After tooth preparation, an intraoral scan was obtained, and a permanent crown was designed and fabricated using additive manufacturing technology. The crown was produced with a DLP printer and post-processed through cleaning and polymerization procedures according to manufacturer guidelines. Surface finishing procedures were completed, and the crown was cemented using a self-adhesive resin cement.

At the 3-month follow-up, clinical and radiographic evaluations showed satisfactory marginal adaptation, esthetics, and functional stability, with no observed complications.

Conclusions: This case demonstrates that single-unit restorations in the anterior region can be fabricated using 3D printing through a digital, rapid workflow, and that permanent restorations produced this way are minimally invasive, precise, esthetically favorable, and can be delivered through a rapid,time-efficient digital workflow.

Keywords: Permanent restoration, 3D printer, digital dentistry, 3D permanent resin

ORAL PRESENTATION

OP.219

SAME-DAY DUPLICATION OF A FRACTURED MAXILLARY COMPLETE DENTURE USING A FULLY DIGITAL WORKFLOW: A CASE REPORT

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Introduction: Fracture of complete dentures is a frequent prosthodontic complication that may impair mastication, phonetics and patient comfort requiring immediate clinical management. Digital dentistry offers new solutions for rapid prosthesis fabrication.

Objective: To present a fully digital workflow for the same-day fabrication of a maxillary complete copy denture using intraoral scanning and 3D printing, while preserving the prosthetic design and occlusion of the patient's existing denture.

Materials and Methods: A patient presented with a fractured maxillary complete denture and requested immediate replacement. The existing prosthesis was clinically satisfactory; therefore, a copy denture approach was planned. The denture was scanned using an intraoral scanner and additional intraoral scans were obtained to record the opposing arch and maxillomandibular relationship. The data, along with the patient's photographic records, were transferred to CAD software, where the denture was designed with minor modifications. The denture base and artificial teeth were fabricated separately using a 3D printer, subsequently bonded with a resin-based cement, and subjected to surface finishing procedures.

Results: The prosthesis was delivered on the same day maintaining the original occlusion, esthetics and retention with immediate patient satisfaction and functional adaptation.

Conclusions: A fully digital copy denture workflow enables rapid and predictable duplication of complete dentures and provides an effective clinical solution for emergency cases, reducing treatment time and clinical steps.

ORAL PRESENTATION

OP.220

IMPLANT SUPPORTED REHABILITATION OF A SINGLE MAXILLARY CENTRAL INCISOR WITH STAGED SOFT TISSUE CONDITIONING: A CASE REPORT

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Materials and Methods: A patient presenting with a single missing maxillary central incisor was treated with a Bredent implant system. Following osseointegration, a definitive angled cement-retained abutment was selected and intentionally inclined toward the lingual aspect to provide sufficient buccal space for contour development and to facilitate a favorable emergence profile. The abutment was tightened to 25 Ncm. An alginate impression was made over the definitive abutment, and a provisional crown was fabricated manually. The patient was recalled weekly for 3 weeks. At each appointment, flowable composite was incrementally added to the cervical aspect of the provisional restoration to guide peri-implant soft tissue shaping.

Results: Progressive cervical modification of the provisional crown enabled controlled conditioning of the peri-implant mucosa and improved integration with the adjacent dentition. Acceptable gingival architecture, cervical contour, labial support, and symmetry were achieved, resulting in satisfactory esthetic and functional outcomes with high patient satisfaction. The final restoration demonstrated harmonious integration with the contralateral incisor in terms of form and profile.

Conclusions: In single maxillary central incisor rehabilitation, appropriate implant positioning, restorative planning, and deliberate soft tissue conditioning through provisional restorations are critical for predictable outcomes.

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ORAL PRESENTATION

OP.221

MAXIMUM INTERCUSPİDATION WITH OCCLUSAL LAMINATE PROSTHESIS

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1. University
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Introduction: Occlusal laminate restorations represent a minimally invasive and increasingly preferred option for the prosthetic rehabilitation of patients with severe tooth wear and loss of vertical dimension.
Material and Case Description

A narrative review approach was adopted, focusing on clinical procedures including diagnostic wax-up, occlusal analysis, and CAD/CAM fabrication techniques. Additionally, relevant literature regarding occlusal laminate restorations and their biomechanical behavior was critically e

A 45-year-old patient presented with tinnitus, esthetic concerns associated with reduced lower facial height, and anxiety related to substantial vertical loss of tooth structure, estimated at approximately 50%. Clinical examination revealed a decrease in the vertical dimension of occlusion (VDO) of approximately 6 mm.

Following comprehensive anamnesis, all clinical findings and patient-reported symptoms were documented. The treatment protocol was explained in detail, and written informed consent was obtained. The treatment plan aimed to increase the VDO by 4 mm.

A minimally invasive, non-preparative approach was preferred. Digital intraoral impressions were obtained, and occlusal laminate restorations were fabricated from composite CAD/CAM blocks. Eight occlusal laminates were produced for the mandibular posterior teeth (#44–47 and #34–37).

All restorations were adhesively luted using a resin cement system (Variolink, Ivoclar Vivadent) in accordance with the manufacturer’s instructions. Occlusal adjustments were meticulously performed to ensure optimal functional harmony. Subsequently, anterior restorations were completed in accordance with the newly established vertical dimension.

To facilitate force distribution and protect the restorations, a mandibular night guard with a thickness of 2 mm was fabricated and delivered.

Conclusions: Within the limitations of this case, composite CAD/CAM occlusal laminate restorations provided a conservative, functional, and esthetic solution for restoring the lost vertical dimension of occlusion.

ORAL PRESENTATION

OP.222

A PREDICTABLE DIGITAL WORKFLOW FOR DIASTEMA CLOSURE USING LAMINATE VENEERS: A 3-YEAR CLINICAL FOLLOW-UP

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Introduction: Laminate veneers are a minimally invasive treatment option for the correction of esthetic deficiencies, particularly in patients with anterior diastemas. A natural and esthetically pleasing outcome is achieved through digital smile design, resulting in high patient satisfaction, while the digital workflow facilitates treatment completion in a shorter time.

Objective: This case report aims to present the esthetic rehabilitation of a periodontally treated patient with multiple diastemas using laminate veneers and long-term follow-up.
Case report: A 43-year-old female patient with a history of chronic periodontitis presented with esthetic concerns related to multiple diastemas. Periodontal treatment was completed, and disease stability was confirmed at 3-, 6-, and 12-month follow-ups. After establishing periodontal health, a minimally invasive treatment plan involving 12 lithium disilicate laminate veneers and 2 full-coverage crowns was developed using a digital workflow. Conservative tooth preparation was performed, and restorations were fabricated and adhesively luted according to established protocols.

Results: The treatment resulted in significant improvement in esthetics and patient satisfaction. The restorations exhibited excellent integration with the surrounding soft tissues. Periodontal health and prosthetic outcomes remained stable during the 3-year follow-up period.

Keywords: In periodontally stabilized patients, laminate veneers combined with a digital workflow provide a predictable and effective solution for diastema closure. Careful interdisciplinary planning and minimally invasive approaches are critical for achieving long-term esthetic and functional success.
Laminate veneers, diastema closure, digital workflow, lithium disilicate

ORAL PRESENTATION

OP.223

COMPARATIVE EVALUATION OF SURFACE ROUGHNESS AND MICROHARDNESS OF VARIOUS PROSTHETIC MATERIALS FABRICATED USING MILLING AND PRINTING

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Introduction: Surface integrity is vital for the clinical success of dental restorations, influencing both bacterial adhesion and wear resistance.

Objective: The purpose of this study was to evaluate and compare the surface roughness and microhardness of widely used prosthetic materials.

Materials and Methods: Disc-shaped specimens (7×3 mm, n =20) were fabricated from different materials: Monolithic zirconia (Zolid HT+), yttria-stabilized zirconia (Cercon), lithium disilicate ceramic (IPS e.max), indirect composite (SR Nexco Paste), polyetheretherketone (Ceramill PEEK), cobalt-chromium alloy (Wiron 99), and 3D-printed resin (Arma Dental). Specimens were polished using 600-, 800- and 1200-grit silicon carbide papers under water cooling on a polishing machine for 30s. Quantitative surface roughness evaluation (Ra) was performed using a high-resolution noncontact 3D optical profilemeter. Subsequently, surface microhardness (HV) was measured using a Vickers hardness testing machine. One-way analysis of variance (ANOVA) was used to analyze the data. The significance was evaluated at $p<.05$.

Results: Statistically significant differences were observed among the tested materials for both Ra and HV ($p<0.05$). HV values were highest in the monolithic zirconia (1488.97) and lowest in the 3D-Printed Resin (25.96). Yttria-stabilized Zirconia (Cercon) exhibited the highest mean Ra values (0.054 µm) whereas IPS e.max demonstrated the lowest mean value (0.025 µm).

Keywords: The composition and inherent microhardness of prosthetic materials significantly influence their final surface topography. Clinicians must account for these variations, as materials may require different polishing modalities to achieve optimal smoothness, minimizing plaque retention and antagonist wear compared to harder substrates.
Ceramic, composite, metal alloy, microhardness, PEEK, surface roughness, zirconia, 3D printed resin.

ORAL PRESENTATION

OP.224

THE EFFECT OF DIFFERENT STARTING POINTS AND SIZE OF THE SCANNING AREA ON THE INTERNAL FIT OF MAXILLARY CENTRAL INCISOR CROWN RESTORATIONS: AN IN-VITRO STUDY

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Introduction: Scanning accuracy of intraoral scanners influenced by multiple factors. A decrease in scanning accuracy can compromise the fit of the restoration; this is the primary reason why high scanning accuracy is required in intraoral scanners. Furthermore, there is a lack of literature regarding the clinical impact of scanning accuracy factors on the fit of the fabricated restorations.

Objective: This in-vitro study aimed to evaluate the effect of different scanning starting points and scanning directions on the fit of maxillary central incisor crown.

Materials and Methods: Dentulous typodont model with a prepared maxillary central tooth was used in the study. Digital impressions were obtained using an intraoral scanner (Trios3, 3Shape, Denmark) following four different scanning strategies, each repeated ten times. Reference data was obtained with laboratory scanner (E1, 3Shape). Hybrid composite crown was fabricated from reference data by milling (CORiTEC one+, imes-icore, Germany). Trible scan method was used as a measurement methodology for the study. Research data were analyzed using IBM SPSS v3. ANOVA test was used. (p=0.05)

Results: In terms of the fit of restorations fabricated using four different scanning strategies compared to the desktop scanner data, the RMS values were observed to be the highest in the 26-16 group (0.136 ± 0.004) and the lowest in the 11-21 group (0.128 ± 0.011).

Conclusions: Within the limitations of this study, different scanning starting points and directions may influence internal fit measurements; however, the magnitude of these differences appears to have limited clinical relevance for single anterior crown restorations.

ORAL PRESENTATION

OP.225

EVALUATION OF CERAMIC VENEERS ON ENDODONTICALLY TREATED TEETH

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Introduction: Ceramic veneers are a cornerstone of aesthetic and functional dental rehabilitation. However, endodontic treatment can compromise the biomechanical integrity of the tooth. It is therefore critical to evaluate how the application of ceramic veneers influences clinical prognosis and long-term success of endodontically treated teeth.

Objective: This systematic review aims to evaluate the clinical quality, estimated survival and success rates, and failure modalities of ceramic veneers supported by endodontically treated teeth.

Materials and Methods: A comprehensive search of PubMed, Google Scholar, Embase, and Scopus databases was performed by two independent reviewers following PRISMA guidelines. The search strategy utilized terms including “ceramic veneers” and “endodontically treated teeth”. Inclusion criteria were limited to English-language studies published between 2010 and 2025; case reports and literature reviews were excluded. Following screening, 8 articles met the criteria for final analysis.

Results: Ceramic veneers on endodontically treated teeth demonstrate a higher risk of failure compared to vital teeth, with tooth fracture identified as the primary failure mode. Notably, the integration of fiber posts significantly increased the mean maximum load values for ETT restored with porcelain veneers, enhancing structural resistance. Veneer preparations did not significantly influence fracture resistance of endodontically treated teeth.

Conclusions: The clinical longevity of ceramic veneers on endodontically treated teeth is optimized when combined with fiber post-and-core. While endodontically treated teeth are at higher risk for fracture, the use of fiber posts provides a significant biomechanical advantage in preserving the restoration-tooth complex.

ORAL PRESENTATION

OP.226

PRECISE TRANSFER OF PERI-IMPLANT SOFT TISSUE CONTOURS USING CUSTOMIZED IMPRESSION COPINGS: A CASE SERIES

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Introduction: Achieving optimal esthetics in implant-supported restorations requires precise shaping and preservation of the peri-implant soft tissue architecture. Provisional restorations play a critical role in establishing an ideal emergence profile. However, accurate transfer of this conditioned soft tissue contour to the definitive restoration remains challenging, particularly when conventional impression copings are used.

Case Report: This case series presents four systemically healthy patients rehabilitated with single-tooth implants in the esthetic zone. CAD/CAM-designed provisional restorations were used to shape and stabilize the peri-implant soft tissue contours. Following tissue maturation, customized impression copings were fabricated by duplicating the subgingival morphology of the provisional restorations. This approach enabled precise transfer of the established emergence profile during the definitive impression procedure.

Results: In all cases, the peri-implant soft tissue contours achieved during the provisional phase were successfully reproduced in the definitive restorations. Esthetic outcomes, assessed using the Pink Esthetic Score (PES) and White Esthetic Score (WES), were found to be above clinically acceptable thresholds. Clinical follow-up demonstrated stable peri-implant tissue architecture and harmonious integration with adjacent dentition.

Conclusions: Customization of impression copings based on the morphology of provisional restorations allows accurate transfer of peri-implant soft tissue contours to the definitive prosthesis. This technique enhances the predictability of esthetic outcomes in implant-supported restorations.

Keywords: Peri-implant mucosa, customized impression post, emergence profile

ORAL PRESENTATION

OP.227

INFLUENCE OF STAINING BEVERAGES ON COLOR STABILITY OF CAD/CAM PMMA DENTURE TEETH

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Introduction: Polymethyl methacrylate (PMMA) is common in prosthodontics, but staining remains a concern. CAD/CAM technology aims to enhance material properties and aesthetics.

Objective: To compare color stability between CAD/CAM PMMA and conventional acrylic teeth immersed in coffee, tea, and cola over 30 days.

Materials and Methods: Sixty-four teeth (32 conventional, 32 CAD/CAM) were immersed in distilled water, tea, coffee, or cola. Color change (ΔE) was measured via spectrophotometer at 1, 7, and 30 days, then converted to National Bureau of Standards (NBS) units. Statistical comparisons were performed using t-tests and ANOVA, with the significance level set at $p<0.05$.

Results: Discoloration increased with time. Conventional teeth showed perceivable changes in coffee (NBS=2.259±1.059) at 30 days. Significant differences ($p<0.05$) occurred between groups in tea (30 days) and coffee (7 and 30 days), where CAD/CAM teeth showed better stability. Cola showed no significant difference.

Conclusions: CAD/CAM PMMA teeth exhibit significantly higher color stability than acrylic teeth when exposed to coffee and red tea over 30 days.

ORAL PRESENTATION

OP.229

CLINICAL AND RADIOGRAPHIC OUTCOMES OF FULL PULPOTOMY IN IMMATURE PERMANENT MOLARS WITH REVERSIBLE PULPITIS: A 24-MONTH CASE SERIES

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Abstract Introduction: Vital pulp therapy is the preferred treatment for immature permanent teeth with reversible pulpitis, as maintaining pulp vitality allows continued root development. Pulpotomy has been increasingly documented as a predictable option for preserving pulp function in this clinical scenario.

Objective: To evaluate the clinical and radiographic outcomes of full pulpotomy performed in immature permanent molars diagnosed with reversible pulpitis, with a follow-up period of 24 months.

Materials and Methods: This case series included twelve immature permanent molars from twelve patients aged 7–11 years. All teeth presented with signs and symptoms consistent with reversible pulpitis and exhibited open apices. Following caries removal, coronal pulp tissue was excised, hemostasis was achieved, and a bioceramic material was placed over the radicular pulp. Definitive restorations were completed in the same session. Patients were clinically and radiographically evaluated at 6, 12, and 24 months. Treatment success was defined as absence of pain, swelling, fistula, pathological mobility, and radiographic signs of periapical pathology, along with evidence of continued root development.

Results: Eleven of the twelve teeth demonstrated complete clinical success and radiographic healing, including progressive root maturation and apical closure over the 24-month period. One tooth showed persistent symptoms and radiographic changes consistent with treatment failure and required further intervention.

Conclusions: Pulpotomy appears to be a reliable and biologically favorable treatment option for immature permanent molars with reversible pulpitis, supporting continued root formation and maintaining long-term pulp vitality. Larger controlled studies are needed to validate these findings and further standardize treatment protocols.

ORAL PRESENTATION

OP.230

RETROSPECTIVE EVALUATION OF STAINLESS STEEL CROWNS IN PRIMARY MOLARS

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Introduction: Stainless steel crowns (SSCs) are widely used in pediatric dentistry for the restoration of extensively decayed primary molars, particularly following pulp therapy.

Objective: This study aimed to evaluate the success rates of SSC in pediatric patients treated at the Pedodontics Clinic of Atatürk University Faculty of Dentistry.

Materials and Methods: Data on stainless-steel crowns applied in primary molars of patients aged 2–13 years at the Pedodontics Clinic at 2023 and 2024 were obtained retrospectively from the automation system (Turcasoft software). Statistical analysis of the data was performed using the Chi-square test ($p<0.05$).

Results: Between 2023 and 2024, stainless steel crowns (SSCs) constituted 3.1% (n=686) of the restorative procedures performed on primary molars in our clinic. The distribution of SSC placement showed a significant gender-based difference, with first primary molars being more commonly treated in boys (55.9%) and second primary molars in girls (52.5%) ($p=0.033$). Among the total SSCs, 346 (50.4%) were placed following pulpotomy, 68 (9.9%) after root canal treatment, and 272 (39.7%) for restorative purposes. There was a statistically significant difference in the preference of SSC in amputation procedures compared to filling procedures ($p=0.026$). A total of 9 SSCs (1.3%) resulted in failure, of which 2 (0.3%) required pulpotomy, 3 (0.4%) underwent root canal treatment, and 4 (0.6%) were extracted.

Conclusions: SSCs are common procedures in pediatric dentistry, particularly for primary molars with pulpotomy.

Keywords: Primary molar teeth; pulpotomy; restoration; stainless steel crowns

ORAL PRESENTATION

OP.231

BIBLIOMETRIC ANALYSIS OF DENTAL ANXIETY IN TURKISH PEDIATRIC DENTISTRY POSTGRADUATE THESES OVER THE LAST TEN YEARS

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Introduction: Dental anxiety remains a significant challenge for patient management in pediatric dentistry, necessitating a comprehensive evaluation of national postgraduate research trends.

Objective: This study aimed to evaluate the bibliometric characteristics and demographic trends of postgraduate theses on dental anxiety and behavior management in Turkish Pediatric Dentistry, and to compare these findings with the broader field of Pediatric Dentistry research.

Materials and Methods: A retrospective bibliometric analysis was performed using the National Thesis Center database. Postgraduate theses in Pediatric Dentistry published between 2015 and 2025 were screened using keywords such as "dental anxiety" and "behavior management." Eligible studies were analyzed regarding publication year, thesis type, and author/advisor demographics, then compared with the general research output.

Results: Analysis of 433 theses revealed that dental anxiety is a specialized niche, accounting for only 6.0% (n=26) of the total output, whereas restorative dentistry dominated (36.3%). Anxiety research peaked in 2024 but showed distinct characteristics: 96.2% of authors were female (compared to 91.7% in the general pool). Furthermore, 96.2% were clinical specialization theses, significantly higher than the general average (82.0%). Supervision also differed; while professors supervised 48.0% of general theses, anxiety studies were primarily supervised by assistant professors (50.0%).

Conclusions: Despite growing interest, dental anxiety remains a minor proportion (6.0%) of postgraduate research in Turkish Pediatric Dentistry. These findings underscore a significant gap in the literature. Consequently, there is a clear imperative to expand advanced academic research to better address this essential challenge in pediatric oral healthcare.

Keywords: Pediatric dentistry, Dental anxiety, Bibliometric analysis, Behavior management, Postgraduate Thesis, Turkey.

ORAL PRESENTATION

OP.232

BIOACTIVE COMPOSITE RESIN DISCOLORATION INDUCED BY PEDIATRIC OVER THE COUNTER SUPPLEMENTS: AN IN VITRO STUDY

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Introduction: The longevity and acceptance of aesthetic dental materials depend largely on their color stability. In pediatric dentistry, understanding the color changes of bioactive restorative materials following exposure to commonly used over-the-counter (OTC) supplements is important for assessing their long-term clinical performance.

Objective: This in vitro study aimed to evaluate the effect of pediatric OTC supplements on the color stability of alkasite- and giomer-based bioactive composite resins.

Materials and Methods: A total of 36 discs of alkalisit and 36 of giomer were prepared disc-shaped specimens (2mmx5mm). Subsequently, the samples were randomly divided into three solution groups (n=12): Group 1-Sambucol Pediatric Syrup, Group 2- Argivit Syrup, and Group 3-distile water. For 14 days, the specimens were immersed in 10 mL of each multivitamin for two minutes every 24 h. Color measurements were repeated on days 0, 7 and 14.

Results: All statistical analyses were performed using IBM SPSS 27, employing the Shapiro–Wilk test for normality and the Kruskal–Wallis test for non-parametric data. The color change observed in Sambucol-alkalisite group was statistically significantly higher than in in the other supplement–material combinations ($p<0,05$). The highest change was observed in Sambucol–alkasite $\Delta E3 = 19,32(13,85-25,26)$ and the least in Sambucol–giomer $\Delta E2 = 2,58(2,07-4,19)$. Giomer demonstrated better color stability compared with alkasite,

Conclusions: Exposure time and type of OTC product influence the color change of bioactive composites. In addition, color difference values increased with longer exposure times.

Objective: color stability; bioactive composite; alkalisite; giomer
Esra Özgöçmen Tula1, Yakup Doğru1

ORAL PRESENTATION

OP.233

COMPARISON OF TRANSLUCENCY PARAMETERS OF DIFFERENT RESTORATIVE MATERIALS USED IN PRIMARY TEETH

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Introduction: The optical properties of restorative materials used in primary teeth, particularly translucency, are an important parameter determining the aesthetic success of restoring natural tooth structure.

Objective: This study aimed to compare the translucency values of different restorative materials used in primary teeth.

Materials and Methods: Five restorative materials were used: EQUIA Forte® HT, Glasiosite compomer, Polofil NHT Flow, Metafil CX, and Beautifil Flow Plus Resin Bioactive. Five samples measuring 8×8 mm and 2 mm thick were prepared from each material. The Lab* values of the specimens were measured three times on white and black backgrounds using Vita Easyshade® V, and the averages were recorded. Statistical analyses were performed using SPSS 26.0, and the Welch-corrected ANOVA test was applied ($p<0.05$).

Results: The mean TP value for the Polofil group was calculated as 13.29±0.84, for the Compomer group as 13.20±1.19, and for the Beautifil Flow Plus group as 11.25±1.98. The mean TP value was 7.05±3.27 in the Equia Forte group and 8.10±3.55 in the Metafil composite group. A significant difference in translucency was found between the groups ($p<0.05$). Equia Forte and Metafil showed lower translucency values, while Polofil, Kompomer, and Beautifil showed higher translucency values.

Conclusion: Restorative materials used in primary teeth differ in terms of translucency values. Since increased translucency may cause the underlying color to be more clearly perceived through the restoration and affect color matching, the level of translucency is an important parameter to consider from an aesthetic point of view in the selection of pediatric restorative materials.

Keywords: Aesthetics, pediatric restorative materials, translucency,

ORAL PRESENTATION

OP.234

MOLAR–INCISOR HYPOMINERALIZATION (MIH) SYNDROM: EVALUATION OF KNOWLEDGE, DIAGNOSTIC AWARENESS AND CLINICAL APPROACH AMONG DENTISTS

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Introduction: Molar–Incisor Hypomineralization (MIH) is a qualitative developmental enamel defect of systemic origin, primarily affecting first of all permanent molars and frequently permanent incisors. Its heterogeneous clinical presentation, increased susceptibility to post-eruptive enamel breakdown, and atypical caries pattern pose diagnostic and therapeutic challenges, underscoring the importance of adequate professional knowledge.
This study aimed to assess the level of knowledge, diagnostic competence, and therapeutic perception of dental practitioners regarding MIH syndrome.

A cross-sectional observational study was conducted using a well-structured questionnaire administered to 75 dentists practicing in Iasi. The questionnaire included socio-demographic variables and ten closed-ended questions evaluating knowledge of MIH definition, differential diagnosis, prevalence, etiological factors, and caries behavior. Data were statistically analyzed using SPSS software.

More than half of the participants reported being able to differentiate MIH from enamel hypoplasia and dental fluorosis. Nevertheless, a substantial proportion of respondents (64%) demonstrated limited awareness regarding MIH prevalence. Genetic factors were identified as the predominant etiological contributor by 90.7% of dentists, while 53.5% acknowledged fluoride exposure as a potential risk factor. Furthermore, 82.7% of respondents recognized that the carious lesions associated with MIH differ in progression and morphology from conventional dental caries.

The results indicate considerable variability and notable deficiencies in dentists’ knowledge concerning MIH, particularly in relation to epidemiological data and etiopathogenesis. These findings highlight the need for targeted continuing professional education and well-structured postgraduate training to enhance early diagnosis, standardize clinical management, and improve long-term outcomes for patients affected by MIH.

ORAL PRESENTATION

OP.235

TRAUMATIC INJURIES OF PRIMARY TEETH: DIAGNOSTIC APPROACH AND THERAPEUTIC OPTIONS

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Introduction: Traumatic injuries of primary teeth are among the most common dental conditions in preschool children, mainly between the ages of 2 and 4 years. Etiological factors vary widely. These injuries may cause a range of clinical manifestations, from minor enamel cracks to complete avulsions, leading to significant aesthetic and functional consequences. They may also affect the development of the permanent successor teeth. Early diagnosis and timely intervention are crucial for a favorable prognosis.

Objective: This literature review aims to record the prevalence of traumatic injuries in primary teeth, analyze the most common types along with their clinical characteristics and diagnostic features, examine their correlation with etiological factors, and evaluate contemporary therapeutic approaches.

Materials and Methods: A systematic search was conducted in PubMed, NIH, and Google Scholar using the keywords “primary teeth trauma,” and “treatment of primary tooth injuries.” Relevant studies were selected, analyzed in detail, and synthesized to provide a comprehensive overview.

Results: Traumatic injuries of primary teeth are classified into periodontal and hard dental tissue injuries. Luxations, avulsions, and fractures of the maxillary anterior teeth are the most frequently reported. Diagnosis relies on clinical and radiographic evaluation. Prevalence ranges from 10% to 30%. Therapeutic management depends on the type and severity of the injury and varies from observation and follow-up to extraction or splinting.

Conclusions: Primary tooth trauma is a common pediatric dental condition. Early diagnosis and appropriate therapeutic management are essential to ensure favorable prognosis and maintain children's oral health. Long-term follow-up is required due to potential complications affecting both primary and permanent teeth.

ORAL PRESENTATION

OP.236

COMPARISON OF ORAL AND DENTAL HEALTH STATUS IN CHILDREN WITH AUTISM SPECTRUM DISORDER AND HEALTHY CONTROLS

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Introduction: Children with Autism Spectrum Disorder (ASD) often face behavioral, cognitive and sensory challenges that can impair oral hygiene, yet few studies have compared their oral health with healthy peers across a broad pediatric age range.

Objective: To evaluate and compare plaque accumulation, dental caries and PUFA/pufa index scores in children with ASD and age- and sex-matched healthy controls.

Materials and Methods: A cross-sectional study included 68 children (34 ASD, 34 controls) aged 3–17 years. Oral examinations were performed using the Plaque Index (PI), dmft/DMFT, and PUFA/pufa indices. Statistical analyses were performed with Mann–Whitney U and Chi-square tests, with significance set at $p < 0.05$.

Results: No significant differences were observed regarding age ($p = 0.092$) or gender distribution ($p = 0.451$). Children with ASD had higher mean PI and PUFA scores compared to controls, while dmft/DMFT scores were similar. None of these differences reached statistical significance (PI $p = 0.080$, dmft/DMFT $p = 0.364$, PUFA $p = 0.218$).

Conclusions: Although differences were not statistically significant, the PI tended to be higher in children with ASD, and oral health parameters were elevated in both groups. Considering the results of our study, the importance of oral hygiene education and preventive treatment approaches for children has once again been highlighted. Furthermore, conducting studies with larger sample sizes is recommended.

Keywords: Autism Spectrum Disorder, Pediatric Dentistry, Oral Health, dmft/DMFT, PUFA

ORAL PRESENTATION

OP.237

EVALUATION OF GUIDELINE CONSISTENCY OF AN ARTIFICIAL INTELLIGENCE MODEL IN PEDIATRIC DENTAL TRAUMA SCENARIOS

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Objective: The aim of this study was to evaluate the consistency of a large language model's responses to pediatric dental trauma scenarios with current international guidelines.

Materials and Methods: This descriptive study assessed responses generated by Google Gemini to 10 standardized pediatric dental trauma scenarios developed based on the International Association of Dental Traumatology (IADT) 2020 guidelines. All scenarios and responses were conducted in English using an identical prompt structure. The responses were recorded verbatim and evaluated for guideline consistency. Each response was categorized as appropriate (guideline-consistent), partially appropriate, or inappropriate/potentially risky. No human participants or patient data were included; therefore, ethical approval was not required.

Results: Of the 10 evaluated scenarios, 4 (40%) responses were classified as appropriate, while 6 (60%) were considered partially appropriate. No responses were categorized as inappropriate or potentially risky. Appropriate responses were more frequently observed in scenarios involving primary tooth avulsion, lateral luxation injuries, systemic antibiotic use, and follow-up recommendations. In contrast, partially appropriate responses were predominantly associated with more complex trauma scenarios, including avulsion injuries of permanent teeth and crown fractures, where critical clinical details were often incomplete.

Conclusions: The findings suggest that the evaluated AI model can provide generally safe and guideline-aligned information regarding pediatric dental trauma; however, a substantial proportion of responses lacked sufficient clinical detail to be considered fully guideline-consistent. Therefore, while such AI tools may serve as supportive educational resources, they should not be used as standalone decision-making tools in the management of pediatric dental trauma.

Keywords: Pediatric dental trauma; Artificial intelligence; Clinical guidelines

ORAL PRESENTATION

OP.238

COMPARATIVE ANALYSIS OF TRANSLUCENCY IN PEDIATRIC ANTERIOR ESTHETIC CROWNS AYBIKE BAS OZTURK1

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Introduction: In contemporary pediatric dentistry, increasing esthetic demands—particularly in anterior teeth with extensive structure loss—have led to the development of various full-coverage restorations. Translucency is a critical optical property influencing both esthetic integration and cementation outcomes.

Objective: This study aimed to evaluate the translucency of commonly used pediatric anterior restorative materials: zirconia crowns (NuSmile [NS], Prof Zirkon [PZ], Kids Crowns [KC]), 3D-printed VarseoSmile TriniQ (VST) crowns, and Voco Glasiosite compomer (VG).

Materials and Methods: Seventy-five specimens were included (n=15 per group). Translucency measurements were performed using the VITA Easyshade® V device following a standardized protocol. Data were statistically analyzed, and intergroup comparisons were conducted with a significance level set at $p < 0.05$.

Results: Statistically significant differences were observed among the groups ($p < 0.001$). The highest mean translucency values were recorded in the VST (24.68 ± 2.87) and VG (23.74 ± 2.96) groups, with no significant difference between them. Both groups demonstrated significantly higher values compared to the remaining materials. The NS group showed moderate translucency (17.82 ± 2.95), whereas PZ (13.47 ± 5.62) and KC (14.76 ± 3.08) exhibited the lowest and statistically similar values.

Conclusions: VST and VG materials demonstrated superior translucency compared to other evaluated pediatric anterior restorative options. These findings suggest potential advantages in esthetic integration and cementation performance. Further investigations assessing additional optical properties are warranted.

ORAL PRESENTATION

OP.239

CLINICAL AND RADIOGRAPHIC OUTCOMES OF MINERAL TRIOXIDE AGGREGATE PULPOTOMY IN A SYMPTOMATIC IMMATURE PERMANENT MOLAR

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Objective: Vital endodontic treatment in immature permanent teeth aims to ensure continuation of apexogenesis. These procedures not only eliminate infected pulp tissue but also preserve the vitality of the radicular pulp, thereby providing a favorable environment for continued root development. Case Report: A 14-year-old male patient presented with pain associated with tooth #37. Medical history was non-contributory. Clinical examination revealed a positive response to vitality testing, negative percussion and palpation findings, and no mobility or swelling. Radiographic assessment demonstrated normal periodontal tissues. Following administration of local anesthesia, the affected tooth was isolated with a rubber dam. After caries removal, complete coronal pulpotomy was performed. Hemostasis was achieved within 5 minutes using cotton pellets moistened with NaOCl. MTA was placed over the pulp tissue at the canal orifices and on the pulpal floor. A moist cotton pellet was applied to allow material setting. The cavity was restored with a glass ionomer base and resin-based composite, and a stainless steel crown was cemented as the definitive restoration. At the 3-month follow-up, the tooth was asymptomatic, and radiographic examination revealed continued root development. Called for a 6-month follow-up appointment.

Conclusions: Total pulpotomy may be considered a conservative alternative to root canal treatment in immature permanent teeth when proper indication, adequate isolation, and appropriate biomaterial selection are ensured.

Keywords: Total pulpotomy, MTA, Apexogenesis.

ORAL PRESENTATION

OP.240

ENDODONTIC TREATMENT OF A PERSISTENT PRIMARY MOLAR WITH A PERIAPICAL LESION USING MTA: A CASE REPORT

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Objective: To present the endodontic management of a persistent primary molar with a periapical lesion in the absence of a permanent successor using mineral trioxide aggregate (MTA). Congenital absence of permanent teeth is a common developmental anomaly. In such cases, maintaining structurally sound primary teeth in the oral cavity is important for preserving function, arch integrity, and orthodontic stability. Case Report: An 8-year-old male patient presented with pain in the lower left molar region. Anamnesis revealed no systemic disease or medication history. Clinical examination revealed a positive percussion response in tooth #75. Radiographic evaluation demonstrated a periapical lesion and agenesis of the mandibular left second premolar. Root canal treatment was performed under rubber-dam isolation. Calcium hydroxide intracanal medicament was placed, and the tooth was temporarily sealed. After 3 weeks, the medicament was removed, canals were irrigated, and obturation was completed with MTA. The tooth was restored with composite resin and a stainless steel crown.

Conclusions: At the 3-month follow-up, the tooth was asymptomatic and radiographic healing was observed. Persistent primary teeth without permanent successors can be retained long-term even in the presence of periapical pathology when appropriate protocols are followed. Due to its biocompatibility, sealing ability, and regenerative potential, MTA is a suitable root canal filling material in such cases.

Keywords: Endodontic Treatment, MTA, Persistent primary tooth.

ORAL PRESENTATION

OP.241

EVALUATION OF ACCURACY AND INTRA-/INTER-MODEL CONSISTENCY OF AI MODELS COMPARED TO TURKISH DENTAL PROFESSIONALS IN PEDIATRIC DENTAL QUESTIONS

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Introduction: As artificial intelligence becomes increasingly integrated into healthcare and dentistry, evaluating accuracy and reliability has become essential.

Objective: This study aimed to assess the accuracy and consistency of five artificial intelligence models in answering pediatric dentistry questions in Turkish and English, and to compare their performance with that of dental professionals.

Materials and Methods: A set of 36-questions was developed based on the Oral Health Policies and Recommendations of the American Academy of Pediatric Dentistry (AAPD). These questions were asked to five different artificial intelligence models (ChatGPT 4, Claude 3.5, Deepseek, Llama, Perplexity) three times a day, in both Turkish and English for a week. The same questions were asked to dental students, dentists and pediatric dentists twice with a one-week interval. The answers were evaluated according to the answer key prepared from the AAPD guidelines at 0.05 level of significance.

Results: Dental professionals demonstrated significantly higher accuracy (%84.6) compared to AI models (%79.2, $p<0.001$). Among professionals, pediatric dentists achieved the highest accuracy (%94.4), followed by general dentists (%86.1) and students (%75.0). ChatGPT-4 and Perplexity showed consistently high accuracy in both English and Turkish (83%), while DeepSeek performed significantly better in Turkish (%86.1 vs. %72.2). Agreement analysis revealed moderate-to-good consistency for AI models, with Perplexity EN and ChatGPT-4 EN showing the strongest kappa values.

Conclusions: Artificial intelligence models show promise in answering knowledge-based questions in pediatric dentistry. However, model performance varies by language and they do not provide consistency as consistently as humans.

Keywords: Artificial intelligence, pediatric dentistry, multilingual AI, AI-human comparison, model consistency.

ORAL PRESENTATION

OP.242

DENTAL STUDENTS' KNOWLEDGE, ATTITUDES, AND CLINICAL PRACTICE REGARDING TOOTH AVULSION MANAGEMENT: A CROSS-SECTIONAL SURVEY

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Introduction: Tooth avulsion requires immediate management, yet dental students may face challenges due to limited clinical experience and knowledge.

Aim: This study aimed to evaluate dental students' knowledge, attitudes, and clinical practices regarding the management of tooth avulsion.

Materials and Methods: A previously validated questionnaire was administered face-to-face to fourth- and fifth-year dental students. The survey assessed students' knowledge, attitudes, and clinical practices regarding tooth avulsion. Data were analyzed using chi-square tests, with statistical significance set at $p < 0.05$.

Results: A total of 300 dental students participated in the study, including fourth-year (n=158, 52.7%) and fifth-year students (n=142, 47.3%). Self-perceived knowledge regarding dental trauma did not differ significantly between academic years (p=0.742), and most students rated their knowledge as moderate or good. Comparison of avulsion-related knowledge showed no significant differences between fourth- and fifth-year students regarding whether treatment decisions change according to tooth type (primary vs permanent) (p=0.174), replantation of avulsed primary teeth (p=0.312), or emergency management approaches. Similarly, knowledge about the timing of endodontic treatment after replantation demonstrated borderline but non-significant differences for both immature (p=0.055) and mature teeth (p=0.053). A statistically significant difference was found in the selection of the most appropriate splinting method for avulsed immature permanent teeth (p=0.041).

Conclusions: Although overall knowledge levels were comparable between fourth- and fifth-year dental students, variations in specific clinical decision-making highlight gaps in the practical application of avulsion management principles. Case-based training may be necessary to strengthen clinical confidence and standardize evidence-based management of avulsed immature permanent teeth.

Keywords: Avulsed Teeth, Dental Trauma, Knowledge

ORAL PRESENTATION

OP.243

EVALUATION OF DENTAL STUDENTS' KNOWLEDGE, ATTITUDES, AND PERCEPTION LEVELS TOWARD GENERAL ANESTHESIA IN PEDIATRIC DENTISTRY

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Introduction: General anesthesia (GA) is frequently used in pediatric dentistry to manage uncooperative children, extensive treatment needs, and patients with special healthcare requirements.

Aim: This study aimed to evaluate the knowledge, attitudes, and perceptions of dental students regarding the use of GA in pediatric dentistry and to compare responses between fourth- and fifth-year students.

Methods: This cross-sectional observational study was conducted using a face-to-face questionnaire among fourth- and fifth-year dental students in Türkiye. The survey included questions assessing demographic characteristics, knowledge of GA principles, risk perception, educational adequacy, and willingness to participate in GA practices. Data were analyzed using chi-square tests, and statistical significance was set at $p < 0.05$.

Results: A total of 272 dental students participated, including 139 fourth-year (51.1%) and 133 fifth-year (48.9%) students. Fifth-year students reported higher positive responses regarding the adequacy of theoretical knowledge on GA compared with fourth-year students (p=0.039). Willingness to take part in GA practices after graduation was higher among fifth-year students (p=0.021). No statistically significant differences were found between two groups regarding perceptions of anesthesia-related complications (p=0.246) or the need for additional education (p=0.533). Perceived adequacy of practical training showed a borderline difference between groups, without reaching statistical significance (p=0.052).

Conclusions: Fifth-year students showed more positive perceptions of theoretical preparedness and greater willingness to participate in GA practices than fourth-year students, suggesting an effect of increased clinical exposure. These findings emphasize the need to strengthen undergraduate education and clinical training in GA to support safe decision-making and professional confidence.

Keywords: Pediatric dentistry, general anesthesia

ORAL PRESENTATION

OP.244

BARRIERS, ATTITUDES, AND EDUCATIONAL NEEDS REGARDING CHILD ABUSE MANAGEMENT AMONG DENTAL STUDENTS

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Introduction: Dentists play a crucial role in the early identification of child abuse and neglect. However, many are unclear about the processes involved in diagnosis, intervention, and legal reporting.

Objective: To evaluate dental students' awareness, attitudes, barriers, confidence, and educational needs regarding child abuse and neglect.

Materials and Methods: A cross-sectional survey was conducted among 400 dental students in their third, fourth and fifth academic years. The survey comprised a structured questionnaire with 26 questions to assess awareness, perception of professional responsibility, confidence in identifying and reporting suspected cases, perceived barriers, and educational experiences. Data were analyzed using chi-square tests (α=0.05).

Results: The majority of students (91.8%) were aware of child abuse and neglect, and 88.1% agreed that reporting it was a professional responsibility. However, only 13.3% felt competent in identifying suspected cases, and only 12.8% reported having the confidence to manage the reporting process independently. Furthermore, only 19.8% of students reported having sufficient knowledge of legal reporting procedures. The main barriers identified were diagnostic uncertainty (22.2%) and fear of legal consequences (19.2%). 90% of students expressed interest in postgraduate education. No significant differences were found between academic years with regard to parameters such as self-efficacy in detecting cases, independently managing the process, recognizing professional responsibility, and desiring comprehensive training ($p>0.05$).

Conclusions: Despite high awareness and positive attitudes, dental students lacked confidence, legal knowledge, and preparedness in managing child abuse cases. This highlights the need for improved curricula that incorporate legal training to enhance competence and readiness to report.

Keywords: child abuse, dental students, awareness, reporting, education, barriers

ORAL PRESENTATION

OP.245

DEEP LEARNING–BASED AUTOMATED DENTAL AGE ESTIMATION FROM PANORAMIC RADIOGRAPHS: A PILOT STUDY

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Introduction: Conventional dental age estimation using panoramic radiographs is time-consuming and prone to inter-observer variability.

Objective: This pilot study aimed to evaluate and compare deep learning–based automated models for dental age estimation to assess their feasibility.

Materials and Methods: Panoramic radiographs were obtained from a public Zenodo dataset including 296 images of individuals aged 9 to 19 years. Images from ages 9, 10, and 19 were excluded due to limited samples. The remaining data were split into training (80%), validation (10%), and test (10%) sets with maintaining class distribution. Six pretrained convolutional neural network (CNN) backbones (VGG16, ResNet50, ResNet50V2, EfficientNetB3, EfficientNetV2B3 and ConvNeXtTiny) were evaluated under the identical conditions. Data augmentation was applied; pretrained backbone layers were frozen and only classification heads were trained. Performance was assessed using accuracy, precision, recall, specificity, F1-score and ROC-AUC.

Results: ResNet50V2 achieved the highest accuracy (57%), while VGG16 demonstrated the most balanced performance with the highest F1-score (51%) and ROC-AUC (87%). All models demonstrated high specificity (>90%), indicating low false-positive rates. Confusion matrix analysis indicated that classical CNN architectures performed more consistently than more complex models, especially in underrepresented age groups.

Conclusions: Deep learning models demonstrated moderate performance in automated dental age estimation. Classical CNNs were more consistent than more complex models; however, the observed accuracy levels indicate that the system should be regarded as an exploratory decision-support tool. These findings support the feasibility of deep learning–based dental age estimation and highlight the need for validation using larger and more diverse datasets.

ORAL PRESENTATION

OP.246

RISK FACTORS AND INTRAORAL FINDINGS IN CHILDREN WITH MOLAR-INCISOR HYPOMINERALIZATION: AN ANALYSIS ACCORDING TO MIH SEVERITY

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Introduction: The etiology of molar incisor hypomineralization (MIH), which is becoming increasingly common, is not yet fully understood.

Objective: The aim of this study is to investigate possible relationships between risk factors and intraoral findings in children with MIH, according to MIH severity levels.

Materials and Methods: A total of 90 children with MIH aged 8–10 years (47 boys-43 girls) were included. Sociodemographic characteristics of the children and their parents, as well as information regarding prenatal, perinatal, and postnatal periods, were collected using questionnaires. Intraoral findings were recorded through clinical examination and the obtained data were statistically analyzed.

Results: The mean age of participants was 8.81 ± 0.68 years. MIH severity was classified as mild in 37 children, moderate in 29, and severe in 24. Most families lived in rural areas (37%), had low income levels (50%) and were mostly high school graduates (mothers %66-fathers %46). The prevalence of febrile illness during pregnancy was 35.4%, and it was seen more frequently as MIH severity increased ($p<0.05$). Cesarean delivery was observed in 62.2% of cases and was significantly higher in children with severe MIH ($p<0.05$). Additionally, 45.2% of the children were breastfed for 12–24 months, and this rate was higher in severe MIH ($p<0.05$). Most children (71%) had Class I occlusion, MIH defects were most frequently observed in mandibular molars, and DMFT/DMFS index values increased with increasing MIH severity ($p<0.05$).

Introduction: Prenatal febrile illness, cesarean delivery, prolonged breastfeeding, and unfavorable living conditions may contribute to increased MIH severity, supporting the multifactorial etiology of MIH.

ORAL PRESENTATION

OP.247

EVALUATION OF THE EFFECTS OF DIFFERENT AGENTS USED IN SENSITIVITY TREATMENT ON DENTIN TISSUE

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Aim: The aim of this study was to evaluate the effects of different materials used in the treatment of dentin hypersensitivity on dentin tissue.

Materials and Methods: Thirty human third molars were sectioned and assigned to one control and three experimental groups (Curodont™ D'Senz, PRG Barrier Coat, and Curodont™ Repair). 120 dentin-blocks were acid-etched to increase permeability. Following treatment protocols, the specimens were stored in simulated body fluid for 30-days. Surface microhardness were measured using a VHN tester (n=40). The elemental composition was analyzed by SEM-EDS, and surface morphology was evaluated using SEM-images (n=80). The level of statistical significance was set at 0.05.

Results: Microhardness measurements revealed that the most increase in dentin microhardness was observed in PRG Barrier Coat group, which was statistically higher than Curodont™ Repair and Curodont™ D'Senz ($p<0.05$). No statistically significant difference was found between the Curodont™ Repair and Curodont™ D'Senz groups ($p>0.05$). In all groups, dentin hardness significantly decreased from the coronal toward the cervical region ($p<0.05$). SEM-EDS analysis showed no statistically significant differences among the groups in terms of ion levels ($p>0.05$). SEM findings demonstrated a marked reduction in the density of open dentinal tubules in all material groups.

Conclusions: After 30-days of evaluation, the PRG Barrier Coat group exhibited higher surface microhardness compared to the peptide-based materials. All tested materials demonstrated similar effects in terms of mineral deposition on the dentin surface and were found to occlude dentinal tubules to comparable extents.

Keywords: Dental sensitivity, biomaterials, self-assembling peptides, pre-reacted glass filler

ORAL PRESENTATION

OP.248

EVALUATION OF THE CARIES DETECTION METHODS

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Introduction: Accurate assessment of residual caries after cavity preparation is essential for preserving sound dental tissue and ensuring treatment success. Inadequate removal may lead to microleakage, lesion progression, and pulpal complications, while over-excavation may cause unnecessary loss of healthy tissue and pulpal exposure. Visual–tactile examination is commonly used but depends on clinician experience.

Objective: This study aimed to compare visual–tactile assessment, the GC D-Light Pro dual-wavelength fluorescence device, and caries detector dye for evaluating residual caries after cavity preparation and to assess the influence of operator experience on residual caries amount.

Materials and Methods: Fifty extracted human teeth with dentinal caries were included. After caries removal by three operator groups with different experience levels, residual caries was evaluated using visual–tactile examination, GC D-Light Pro, and caries detector dye. Residual caries areas detected by fluorescence and dye were measured in mm² using digital image analysis.

Results: Cochran's Q test revealed significant differences among diagnostic methods ($Q(2)=21.57$, $p<0.001$; Kendall's $W=0.22$). Using caries detector dye as the reference standard, visual–tactile examination showed 60% sensitivity and 100% specificity, while GC D-Light Pro showed higher sensitivity (74%) with the same specificity. The staining method detected significantly larger residual caries areas than GC D-Light Pro ($p<0.001$, $r=0.52$). Significant differences were also found among evaluator groups ($p<0.01$).

Conclusions: GC D-Light Pro showed higher sensitivity than visual–tactile examination but remained more conservative than caries detector dye. Objective diagnostic tools may improve residual caries detection and support minimally invasive clinical decision-making.

Keywords: Residual caries, Caries detection, Fluorescence-based device, Caries detector dye, Minimally invasive dentistry

ORAL PRESENTATION

OP.249

NATAL TEETH IN NEONATES: DIAGNOSIS, RISKS AND TREATMENT APPROACHES

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Introduction: Natal teeth are rare dental anomalies present at birth and most frequently involve the mandibular central incisors. The reported prevalence ranges from 1:2000 to 1:3500 live births. Although the exact etiology remains unclear, genetic predisposition and developmental disturbances have been suggested as contributing factors. Natal teeth may cause feeding difficulties, maternal discomfort during breastfeeding, and, when highly mobile, may pose a risk of aspiration.

Materials and Methods: This study presents a case series of three newborns with natal teeth in the mandibular anterior region. Clinical evaluation included assessment of tooth mobility, feeding difficulties, and complications such as soft tissue trauma. Treatment decisions were based on mobility and clinical risks. In cases with significant mobility, extraction was performed under local anesthesia following pediatric consultation. Follow-up evaluated healing and feeding outcomes.

Results: All three newborns presented with natal teeth in the mandibular anterior region with varying mobility. Feeding difficulties and maternal discomfort during breastfeeding were reported in some cases. One case developed sublingual ulceration (Riga-Fede syndrome), which resolved after extraction. In another case, multidisciplinary evaluation was required due to a cardiac finding before treatment. Extraction was performed in all cases without complications, and follow-up showed uneventful healing and improved feeding.

Conclusions: Early recognition and management of natal teeth are important to prevent complications such as feeding difficulties, soft tissue trauma, and aspiration risk. Healthcare professionals involved in neonatal care should recognize this condition and ensure timely referral to pediatric dentists. Parental education also plays an important role in supporting oral health in newborns.

Keywords: Natal teeth, neonatal teeth, newborn, pediatric dentistry, Riga-Fede syndrome

ORAL PRESENTATION

OP.250

THE IMPACT OF MOLAR-INCISOR-HYPOMINERALIZATION ON CHILDREN'S ORAL HEALTH – RELATED QUALITY OF LIFE: AN ASSESSMENT USING THE PEDIATRIC ORAL HEALTH–RELATED QUALITY OF LIFE SCALE

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Introduction: Molar-Incisor Hypomineralization (MIH) is a developmental enamel defect characterized by demarcated opacities, enamel breakdown, and hypersensitivity, potentially affecting children's daily functioning.

Objective: The aim of this study was to evaluate Oral Health-Related Quality of Life (OHRQoL) in children diagnosed with MIH using the Pediatric Oral Health-Related Quality of Life (POQL) scale, to determine the functional, role, emotional, and social impacts of MIH, and to compare these impacts from the child and parent perspectives.

Materials and Methods: This cross-sectional study included 200 children aged 8–14 years diagnosed with MIH based on the criteria of the European Academy of Pediatric Dentistry (EAPD), along with their parents or caregivers. Oral health–related quality of life was assessed using the child self-report and parent-proxy versions of the POQL scale. Data were analyzed using at significance level of $p<0.05$.

Results: Participants had a mean age of 10.2 ± 1.84 years (♂:50%, ♀:50%). The average number of MIH-affected teeth was 4.76. According to EAPD criteria, 59.5% were classified as mild and 40.5% as severe. MIH negatively influenced oral health–related quality of life, mainly through sensitivity, pain, and aesthetic concerns involving functional, emotional, and social domains. Impact patterns varied according to tooth characteristics and location, with discrepancies observed between child and parent reports.

Conclusions: MIH is associated with measurable impacts on children's oral health–related quality of life. Differences by tooth location and between child and parent evaluations highlight the need for multidimensional assessment.

Keywords: Molar Incisor Hypomineralization, Oral Health-Related Quality of Life, Pediatric Dentistry

ORAL PRESENTATION

OP.251

MILD SEDATION IN PAEDIATRIC DENTISTRY: KNOWLEDGE, ATTITUDES AND PRACTICES IN THE WESTERN BALKANS

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Introduction: Mild sedation (MS) commonly achieved using midazolam (M) or nitrous oxide (NO) is widely applied to reduce anxiety and improve cooperation in paediatric dental patients.

Objective: The aim of the study was to evaluate the knowledge, attitudes and practices regarding MS among final-year dental students, general dentists, residents and specialists in paediatric dentistry in the Western Balkans.

Materials and Methods: The survey was conducted using an anonymous Google Forms questionnaire and included questions on demographic characteristics, education, clinical experience, practical implementation and attitudes towards use of MS. Participants were recruited from Serbia, Croatia, Bosnia and Herzegovina, Montenegro, and North Macedonia.

Results: A total of 272 responses were received. Fifty-two percent of respondents were introduced to MS only theoretically during undergraduate studies, and considered this education insufficient. Forty-five percent of specialists reported detailed theoretical and practical training during postgraduate studies and considered it fully adequate. MS was not/would not be used by 34% of respondents, mainly due to lack of education (71%), equipment (61%) or professional/anesthesiology support (47%). MS would most commonly be used in anxious (M-80%, NO-75%) and disabled children (M-65%, NO-55%). However, most respondents were unfamiliar with correct M (68%) and NO (69%) dosages. Fifty-three percent of respondents reported insufficient knowledge to perform it, while 58% believed it should be more widely used in dental practice.

Conclusions: Although attitudes toward MS are generally positive, insufficient education and limited knowledge of correct dosages remain key barriers to its wider clinical use.

ORAL PRESENTATION

OP.252

DIGITAL PARENTING, MEDIA USE, AND CHILDREN'S ORAL HEALTH: IMPLICATIONS FOR PEDIATRIC DENTISTRY IN THE DIGITAL ERA

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Introduction: The rapid expansion of digital technologies has transformed children's daily routines, influencing dietary habits, oral hygiene behaviors, and overall health-related lifestyles. Early and prolonged exposure to digital media has raised concerns about its potential effects on children's oral health. Digital parenting practices related to children's media use may therefore play an important role in shaping health behaviors and preventive oral care.

Objective: This study aimed to explore the relationship between digital parenting practices, children's media use, and oral health outcomes, and to discuss the implications for pediatric dental practice in the digital era.

Materials and Methods: A narrative review of national and international literature was conducted focusing on children's screen time, problematic media use, parental mediation strategies, digital health literacy, and digital technologies used in pediatric dentistry.

Results: Excessive screen exposure is associated with poorer oral hygiene behaviors, reduced toothbrushing frequency, increased plaque accumulation, gingival inflammation, and higher dmft/DMFT scores in children. Digital media environments frequently promote sugar-rich foods, increasing snacking frequency and caries risk. Parental mediation strategies and digital health literacy are associated with healthier behaviors. Emerging digital approaches, including teledentistry, social media education, and digital distraction techniques, may improve communication with families and enhance children's cooperation during dental treatment.

Conclusions: Digital parenting and children's media exposure are increasingly recognized as determinants of pediatric oral health. Strengthening parental digital health literacy and integrating digital technologies into pediatric dental care may improve preventive oral health outcomes.

Keywords: Digital parenting, child oral health, media use, digital health literacy, teledentistry

ORAL PRESENTATION

OP.253

PREVALENCE AND PATTERNS OF CONGENITAL TOOTH AGENESIS IN CHILDREN: A MIXED-METHOD STUDY ON PARENTAL AWARENESS

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Introduction: Congenital tooth agenesis is a common developmental dental anomaly that may lead to functional, esthetic, and psychosocial problems if not diagnosed early. Despite extensive prevalence data, parental awareness and communication after diagnosis remain unclear.

Objective: This study aimed to determine the prevalence and distribution of permanent tooth agenesis in children and to evaluate parental awareness and prior clinical communication.

Materials and Methods: This mixed-method study included a retrospective radiographic analysis and a prospective telephone survey. Panoramic radiographs of 3,550 children aged 7–15 years (2020–2025) were evaluated for permanent tooth agenesis, excluding third molars. Children diagnosed with agenesis were included in a telephone survey assessing parental awareness. Descriptive statistics and non-parametric tests were used.

Results: Tooth agenesis was detected in 155 children (4.4%). Hypodontia accounted for 4.2% and oligodontia for 0.2%. Mandibular second premolars were the most frequently missing teeth, followed by maxillary lateral incisors. Agenesis was more common in the mandible ($p = 0.009$). No overall sex difference was observed; however, maxillary lateral incisor agenesis was more frequent in females ($p < 0.001$). Among 127 families, 63% reported prior information, though often insufficient; 83.5% requested further evaluation.

Conclusions: Findings are consistent with existing literature; however, parental awareness is limited. Improved communication is essential to support early diagnosis and effective long-term management.

Keywords: Tooth Agenesis; Hypodontia; Prevalence; Awareness; Dental Care

ORAL PRESENTATION

OP.254

THE ROLE OF ANXIETY IN CHOOSING PEDIATRIC DENTISTRY AS A SPECIALTY: ACADEMIC AND PSYCHOLOGICAL DETERMINANTS AMONG FINAL - YEAR DENTAL STUDENTS - A CROSS - SECTIONAL STUDY

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Introduction: Specialty choice in dentistry is influenced by various academic and psychological factors. Pediatric dentistry is often perceived as clinically demanding due to challenges in behavior management and communication with children. Understanding the factors influencing students' willingness to choose this specialty is important for dental education.

Objective: This study aimed to evaluate the relationship between knowledge level, anxiety, self-efficacy, academic performance, and the intention to choose pediatric dentistry among final-year dental students.

Materials and Methods: This cross-sectional study included 161 final-year dental students. Data were collected through an online questionnaire including demographic information, an 11-item pediatric dentistry knowledge test, a 5-point Likert-scale question assessing specialty intention, anxiety assessment (0–10 scale), and self-efficacy evaluation (0–10 scale). Pearson correlation and logistic regression analyses were performed to examine associations between variables. Statistical significance was set at $p<0.05$

Results: The mean knowledge score was 7.84±2.39, anxiety score 4.55±2.15, and self-efficacy score 6.40±1.93. A positive intention to choose pediatric dentistry was reported by 16.8% of students. Anxiety showed a weak but significant negative correlation with specialty intention ($r = -0.195$; $p = 0.01$). Logistic regression analysis demonstrated a borderline inverse association between anxiety and specialty intention (OR = 0.81; 95% CI: 0.65–1.00; $p = 0.053$). Knowledge score, grade point average (GPA), self-efficacy, and gender were not significant predictors ($p > 0.05$).

Conclusions: The intention to choose pediatric dentistry appears to be more closely related to psychological factors, particularly anxiety, than to academic performance or knowledge level.

Keywords: Pediatric dentistry; anxiety, dental; self-efficacy; students, dental

ORAL PRESENTATION

OP.256

ASSESSMENT OF DENTAL FEAR AND ASSOCIATED FACTORS IN CHILDREN ATTENDING A PEDIATRIC DENTISTRY CLINIC

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Introduction: Dental fear is a common problem in children and may negatively affect dental attendance and oral health.

Objective: This study aimed to investigate the relationship between dental fear in children and both children's and parents' dental attendance behaviors and oral hygiene habits.

Materials and Methods: This cross-sectional study included 273 children and their parents attending the Department of Pediatric Dentistry at Bolu Abant İzzet Baysal University Faculty of Dentistry. All participants provided informed consent. Children's dental fear was assessed using the Children's Fear Survey Schedule – Dental Subscale (CFSS-DS). Sociodemographic data, including dental attendance behaviors and oral hygiene habits, were collected via questionnaire. Data were analyzed using descriptive statistics, Mann–Whitney U test, Kruskal–Wallis test, and Spearman correlation. Statistical significance was set at $p<0.05$.

Results: The mean CFSS-DS score was 29.80±10.93, and 36.3% (n=99) showed high dental fear (CFSS-DS ≥32). Highest fear scores were related to choking (2.71±1.39), injections (2.66±1.35), and dental drilling (2.38±1.25). Dental fear was significantly associated with children's toothbrushing frequency ($p=0.005$) and dental visit frequency ($p=0.024$), with lower scores in children who brushed regularly and attended routine check-ups. No significant associations were found with child's gender ($p=0.793$), age ($p=0.365$), parental toothbrushing frequency ($p=0.287$), parental dental visit frequency ($p=0.121$), parental last dental visit ($p=0.737$), or child's last dental visit ($p=0.931$).

Conclusions: Dental fear was generally low to moderate; however, a considerable proportion of children showed high fear. Regular oral hygiene practices and routine dental visits may help reduce dental fear in children.

Keywords: Dental fear, children, parents

ORAL PRESENTATION

OP.257

PRE ERUPTIVE INTRACORONAL RESORPTION IN THREE PAEDIATRIC CASES: CLINICAL AND RADIOGRAPHIC FINDINGS AND TREAMENT

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Introduction: Intracoronal resorption of unerupted teeth is a rare and frequently idiopathic condition that predominantly affects permanent molars and premolars. It is identified during the mixed dentition period, typically involves the occlusal surface and is thought to arise from external resorptive processes mediated by resorptive cells penetrating the dentin.

Cases Report: This report presents three clinical cases of intracoronal resorption. The first involved an 11-year-old boy with mixed dentition, affecting teeth #26, #27. Tooth #26 had previous sealant and after radiographic and CBCT evaluation the resorption area was diagnosed. The second involved a 13-year-old girl with permanent dentition; radiographic examination revealed a large radiolucent area beneath the occlusal dentinoenamel junction of the unerupted #37. The third was a 9 years-old-boy, with mixed dentition, having the same radiographic findings at unerupted #45 in an orthopantomogram examination. All cavities had membranous tissue without clinical characteristics of dental caries.

Treatment and follow up: In the first case the tooth was restored using the adhesive protocol and the same treatment was made in third case when #45 had fully erupted. In the second case, the treatment was extraction. During the first follow up, in the first case, #26 presented with no new pathological findings and #27 is under monitor. In the second and third case no new findings were identified.

Conclusions: Intracoronal resorption of unerupted teeth, can be effectively managed when detected early through radiographic evaluation, with treatment decisions ranging from conservative restorative approaches to extraction.

ORAL PRESENTATION

OP.258

SILVER DIAMINE FLUORIDE IN PEDIATRIC DENTISTRY OVER THE LAST DECADE: A BIBLIOMETRIC ANALYSIS

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Introduction: Silver diamine fluoride (SDF) is a minimally invasive, cost-effective treatment for dental caries, particularly useful for children with limited access to conventional dental care. Due to these advantages, SDF has gained increasing attention in pediatric dentistry over the past decade.

Objective: The aim of this study was to perform a bibliometric analysis of publications on SDF in pediatric dentistry between 2016 and 2026.

Materials and Methods: The Web of Science Core Collection database was used to search and collect data for this research. Articles related to SDF in pediatric dentistry indexed between 2016 and 2026 were retrieved on March 1, 2026. Only original and review articles were included. The records were analyzed in terms of authors, citations, keywords, and bibliometric network visualization was performed using VOSviewer.

Results: A total of 516 articles on SDF in pediatric dentistry were identified between 2016 and 2026, demonstrating a clear increase in research output over the past decade. These publications involved 2034 authors from 75 countries, reflecting substantial international collaboration. The United States was the most productive country, followed by China and India. Chu Chun Hung was the most prolific author, and BMC Oral Health had the highest number of published articles. Keyword analysis indicated that “silver diamine fluoride,” “dental caries,” “children,” and “pediatric dentistry” were the most frequently used term.

Keywords: This bibliometric analysis reveals a marked global increase in research on silver diamine fluoride in pediatric dentistry, with caries prevention in children emerging as the central focus over the past decade.
Silver diamine fluoride; Pediatric dentistry; Dental caries; Bibliometric analysis; VOSviewer

ORAL PRESENTATION

PP.001

ONE-YEAR CLINICAL OUTCOMES OF ODONTOGENIC EXTRAORAL SINUS TRACTS IN THREE CASES MANAGED WITH A MODERN BIOCERAMIC ROOT CANAL SEALER

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Introduction: Odontogenic extraoral sinus tracts are chronic conditions caused by dental infections draining to the skin surface and are frequently misdiagnosed as dermatological lesions, leading to delayed or inappropriate management.

Objective: This case series aimed to present the one-year clinical outcomes of nonsurgical endodontic treatment in three patients with odontogenic extraoral sinus tracts, highlighting the diagnostic value of cone-beam computed tomography (CBCT) and a modern bioceramic root canal sealer.

Materials and Methods: Three systemically healthy female patients presented with extraoral sinus tracts of odontogenic origin. CBCT examination revealed additional root canals in teeth #42, #41, #31, and #32 in Case 1, an apical lesion associated with tooth #36 in Case 2, and two root canals in tooth #41 in Case 3. Nonsurgical endodontic treatment was performed using a standardized protocol including rotary instrumentation with the ProTaper Next system (Dentsply Sirona, USA) up to X2, calcium hydroxide as an intracanal medicament between two visits, final irrigation with 2.5% sodium hypochlorite activated ultrasonically and 17% EDTA, and obturation was completed using gutta-percha in combination with a contemporary bioceramic root canal sealer (Dentac BioSerra; Dentac, Turkey).All procedures were performed under rubber dam isolation.

Results: Regression and complete resolution of extraoral drainage were observed in all cases. Patients became clinically asymptomatic, and radiographic evaluations demonstrated periapical healing. Stable outcomes were confirmed during the one-year follow-up period without the need for surgical intervention.

Conclusions: Accurate diagnosis supported by CBCT and appropriate nonsurgical endodontic treatment using a modern bioceramic root canal sealer can achieve predictable one-year healing of odontogenic extraoral sinus tracts without surgical management.

ORAL PRESENTATION

PP.002

MANAGEMENT OF C-SHAPED CANAL CONFIGURATION WITH THERMOPLASTIC OBTURATION: A CASE REPORT

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Introduction: Endodontic success requires accurate diagnosis of anatomical variations. C-shaped canals, common in mandibular second molars, present significant challenges due to irregular isthmuses that are difficult to debride and obturate.

Objective: This report presents the endodontic management of a C-shaped mandibular second molar using ultrasonic-activated irrigation and thermoplasticized gutta-percha.

Materials and Methods: A 42-year-old female presented with spontaneous pain in tooth 47. Radiographic and clinical findings indicated symptomatic irreversible pulpitis with suspected C-shaped anatomy. Following isolation, the C-configuration was confirmed. Chemomechanical preparation was completed using a #40 K-file. The disinfection protocol included 5% NaOCl and 17% EDTA, enhanced by passive ultrasonic activation (PUI) for maximal debridement. Root canal obturation was performed using the continuous wave of condensation technique. The tooth was subsequently referred for prosthetic restoration.

Results: Post-operative radiographic and clinical assessments confirmed complete three-dimensional obturation of the complex canal system. Symptoms were fully resolved, and the tooth remained functional and asymptomatic during follow-up.

Conclusions: Managing complex C-shaped systems necessitates detailed anatomical assessment and advanced disinfection. Integrating ultrasonic activation with thermoplastic obturation is essential for achieving a hermetic seal in such challenging configurations.

Keywords: C-shaped canal, anatomical variation, thermoplastic obturation, ultrasonic activation.

Figure 1: Radiographic and clinical stages of the treatment. (A) Pre-operative radiograph; (B) Confirmation of C-shaped anatomy in the access cavity; (C) Access cavity after three dimensional obturation; (D) Post-operative radiograph.

ORAL PRESENTATION

PP.003

MULTIDISCIPLINARY TREATMENT APPROACH IN A TOOTH WITH EXTERNAL CERVICAL RESORPTION: CASE REPORT

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Introduction: External cervical resorption is a pathological resorptive process that usually develops following trauma and progresses from the cervical region of the tooth into the dentin. Because it may remain asymptomatic in the early stages, diagnosis can be delayed, and advanced cases may require complex treatment due to pulpal involvement.

Objective: This case report aims to present the treatment of tooth #14 with external cervical resorption using combined endodontic and surgical approaches.

Materials and Methods: Clinical and radiographic examination of a 16-year-old female patient revealed external cervical resorption in tooth #14. The tooth was determined to be non-vital and sensitive to percussion. In the first appointment, root canal preparation was performed using a reciprocating file system. Following preparation, calcium hydroxide ($Ca(OH)_2$) was placed as an intracanal medicament, and the tooth was temporarily restored.
At the beginning of the second appointment, the patient was asymptomatic. The resorption area was isolated with polytetrafluoroethylene (PTFE) tape, and the root canals were obturated with Biodentine. Subsequently, a mucoperiosteal flap was elevated to expose the external resorptive defect. After removal of the granulation tissue within the defect area, the lesion was repaired with Biodentine. The flap was repositioned and sutured.

Results: Following completion of the treatment, the tooth was evaluated as asymptomatic and functional. The patient remains under clinical follow-up.

Conclusions: In cases of external cervical resorption, surgical repair of the resorptive defect with biocompatible materials, in addition to endodontic treatment, allows the tooth to be preserved in an asymptomatic and functional condition.

Keywords: Biodentine, endodontic treatment, external cervical resorption, surgical management

POSTER PRESENTATION

PP.004

RADIOGRAPHIC HEALING AFTER APICAL RESECTION WITH RETROGRADE MTA FILLING: A CASE REPORT

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Introduction: Persistent periapical lesions may remain despite adequate conventional endodontic treatment and may require surgical intervention. Apical resection combined with retrograde filling using mineral trioxide aggregate (MTA) has been associated with improved healing. Radiographic follow-up is essential to assess treatment success.

Objective: This poster presents the radiographic healing of a persistent periapical lesion after apical resection and retrograde MTA filling during long-term follow-up.

Materials and Methods: A systemically healthy male patient presented with a persistent periapical lesion associated with tooth 13. Due to lack of healing after root canal treatment, apical resection was performed. Retrograde cavity preparation was completed and MTA was used as the root-end filling material. The patient was followed clinically and radiographically over an extended period.

Results: Radiographs showed progressive reduction in periapical radiolucency with increased bone fill and trabecular formation. Substantial bone regeneration and lesion resolution were observed. No clinical symptoms or complications occurred.

Conclusions: Apical resection with retrograde MTA filling resulted in favorable radiographic healing. Proper case selection and long-term follow-up are essential for predicting surgical success.

Keywords: Apical resection, Mineral trioxide aggregate, Periapical lesion, Radiographic healing, Endodontic surgery

POSTER PRESENTATION

PP.005

TREATMENT OF INTERNAL AND EXTERNAL ROOT RESORPTION: TWO CASE REPORTS

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Introduction: Root resorption is a pathological condition that may complicate diagnosis and treatment.

Objective: To present management of internal and external root resorption cases.

Materials and Methods: A 28-year-old female patient attended for routine examination. Periapical radiography revealed a well-defined radiolucency in the middle third of tooth 21. As the lesion was related to the canal pathway and no external contour irregularity was observed, internal root resorption was diagnosed. After access, working length was determined and shaping was performed with Reciproc R40 (VDW, Germany). Irrigation was carried out using 2.5% NaOCl and EDTA. Calcium hydroxide [$Ca(OH)_2$] was placed, and temporary restoration completed with glass ionomer cement.
A 22-year-old female patient attended for routine examination.Radiography showed an irregular radiolucency in the middle–apical region of tooth 22, not directly associated with the canal and with external contour irregularities, indicating external root resorption. Preparation was performed using Reciproc R50 (VDW, Germany), followed by irrigation with 2.5% NaOCl and EDTA. Calcium hydroxide was applied and temporary restoration was provided.

Results: After three weeks, both patients remained asymptomatic. In the first case, the apical third was filled with MTA (Angelus, Londrina, Brazil), and the remaining canal obturated using thermoplastic gutta-percha injection (Beefill VDW, Germany).
In the second case, obturation was completed with MTA (Angelus, Londrina, Brazil). Follow-up was scheduled.

Conclusions: Early diagnosis and proper treatment ensure success in root resorption.

Keywords: External, internal, resorption

POSTER PRESENTATION

PP.006

ENDODONTIC MANAGEMENT OF TRAUMATIC DENTAL INJURIES: A CASE SERIES

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Objective: Dental trauma represents significant clinical condition that may lead to some complications. Therefore, accurate diagnosis and endodontic treatment planning are critical for treatment success. This case series evaluates different types of traumatic dental injuries and the treatment approaches applied. Case Report: In case 1, a patient who experienced trauma during a boxing match was diagnosed with a complicated crown fracture. Root canal treatment (RCT) was initiated for teeth 21 and 22; Ca(OH)2 was placed intracanal for 3-week, apical sealing was achieved using MTA then fiber post (FP) was placed and referral for restoration. In case 2, a patient presenting with a horizontal root fracture in tooth 21 and a complicated crown fracture in tooth 22 and initiated RCT. After 2-week of Ca(OH)2 medication, the canals were filled with a sealer and gutta-percha (GP) then FP was placed and referral for restoration. In case 3, a young patient who was presented on the same day after a traffic accident with pulp exposure in tooth 11 was treated with pulpotomy and the tooth was restored. In case 4, RCT was initiated for teeth 11 and 12 diagnosed with extrusion. The same treatment protocol was applied as in the other reported cases.

Conclusions: Early diagnosis, appropriate endodontic treatment, and regular follow-up are essential to prevent complications and preserve traumatized teeth.

Keywords: trauma, root canal treatment, fracture

POSTER PRESENTATION

PP.007

ENDODONTIC TREATMENT OF 2-CANALLED CANINES: A CASE REPORT

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Objective: A thorough understanding of root canal morphology is critical for achieving predictable outcomes in endodontic therapy. The aim of this case report is to present the diagnosis and endodontic management of canine teeth with a rare 2-canal anatomy.
Case Report: In Case 1, a 32-year-old female presented with chewing sensitivity in the mandibular right canine. Clinical examination revealed percussion sensitivity without periodontal pocketing. Radiographic evaluation showed periapical radiolucency associated with inadequate root canal treatment. A diagnosis of chronic apical periodontitis was made, and nonsurgical retreatment was planned. In Cases 2 and 3, a 32-year-old female and a 32-year-old male presented with spontaneous pain in the mandibular right and maxillary right canines. Severe percussion sensitivity was observed, while radiographs showed healthy periapical tissues. Both teeth were diagnosed with irreversible pulpitis and scheduled for primary root canal treatment. All procedures were performed under local anesthesia and rubber dam isolation. Canals were prepared with NiTi files, irrigated using 5.25% NaOCl and 17% EDTA, and obturated by cold lateral condensation. Composite restorations were placed, and patients were referred for definitive prosthetic rehabilitation.

Conclusions: Successful endodontic treatment of teeth with rare root canal anatomies requires accurate diagnosis and meticulous clinical procedures.

Keywords: canine tooth, additional canal, root canal treatment, anatomical variation, retreatment

POSTER PRESENTATION

PP.008

TREATMENT OF MID-MESIAL CANALS IN MANDIBULAR MOLARS

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Introduction: The presence of mid-mesial canals in mandibular molars is a frequent anatomical variation that is frequently overlooked during endodontic procedures. Detecting these canals is crucial for the overall success of endodontic treatments.

Objective: This presentation aims to highlight the importance of identifying mid-mesial canals in mandibular molars and their impact on endodontic therapy.

Materials and Methods: Two cases are presented; Case 1 involved a 47-year-old male with irreversible pulpitis in tooth 36, and Case 2 involved a 26-year-old female with chronic apical periodontitis and a radix entomolaris in tooth 46. In both cases, endodontic access was performed under rubber dam isolation, and five distinct canals, including a mid-mesial canal, were identified using an endodontic explorer. Apical patency was secured in all canals with a size 15 K-file.

Results: The root canal systems were instrumented using Reciproc R25 files and disinfected with activated sodium hypochlorite irrigation. Case 1 was obturated in a single visit using gutta-percha and a bioceramic sealer. Case 2 was managed with a two-week calcium hydroxide intracanal medicament before final instrumentation with a Reciproc R40 file and subsequent obturation with a bioceramic sealer.

Conclusions: Identifying mid-mesial canals is strictly essential for the clinical success of endodontic treatments. A thorough exploration of the pulpal floor is required to prevent missed anatomy, as mid-mesial canals are frequently encountered in clinical practice.

POSTER PRESENTATION

PP.009

THERMAL MODULATION OF SODIUM HYPOCHLORITE ALTERS TORSIONAL LOAD IN RECIPROCATING ENDODONTIC INSTRUMENTATION: A BIOMECHANICAL ANALYSIS

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Introduction: Sodium hypochlorite (NaOCl) is the gold-standard irrigant in endodontics. Heating NaOCl enhances its chemical efficacy, but its effect on the mechanical stresses generated during instrumentation remains unclear.

Objective: To evaluate whether NaOCl temperature influences the dynamic torque generated during reciprocating instrumentation with Reciproc Blue R25.

Materials and Methods: Thirty-six standardized simulated canals in acrylic resin blocks (VDW, Germany) with a 35° curvature and 18-mm length were randomly allocated to three groups (n=12) according to irrigant temperature (22°C, 37°C, 60°C). Each canal received 20 mL of 2.5% NaOCl during preparation. The irrigants temperature was monitered using a digital thermometer. Instrumentation was performed with new Reciproc Blue R25 instruments for per specimen using a specially designed custom made instrumentation device integrated with endomotor (C-Smart 1, Coxo, China) using “Reciproc All” mode. Mean dynamic torque (N·cm) was recorded via the motor’s real-time monitoring system. Data were analyzed using one-way ANOVA and Tukey’s HSD (α=0.05). Effect size was expressed as eta-squared (η^2).

Results: Mean torque increased from 0.373±0.016 N·cm (22°C) to 0.500±0.032 N·cm (37°C) and 0.488±0.072 N·cm (60°C). Temperature significantly affected torque ($p<0.001$, $\eta^2=0.59$). Both 37°C and 60°C showed higher torque than 22°C ($p<0.001$), with no difference between 37°C and 60°C ($p=0.83$).

Conclusions: Heated NaOCl was associated with increased dynamic torque during reciprocating preparation. Clinicians should consider potential increases in torsional load when using warmed irrigants.

POSTER PRESENTATION

PP.010

CHALLENGING ENDODONTIC MANAGEMENT OF A MANDIBULAR PREMOLAR WITH COMPLEX TYPE V ROOT CANAL MORPHOLOGY UNDER MICROSCOPE AND CONE BEAM COMPUTED TOMOGRAPHY GUIDANCE

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Introduction: Mandibular premolars present significant challenges in endodontic treatment due to their complex and highly variable root canal morphology. The presence of accessory canals and atypical canal configurations may complicate canal location, chemomechanical instrumentation, and obturation.

Objective: This case report aimed to present the diagnosis and non-surgical endodontic management of a mandibular premolar exhibiting Type V root canal configuration.

Materials and Methods: A 23-year-old systemically healthy female patient referred to the endodontic clinic presented with diffuse pain in the right mandibular region. Clinical examination revealed positive percussion and palpation on tooth #44. Radiographic examination demonstrated a large periapical lesion and canal ramification in the apical region of the affected tooth. Cone-beam computed tomography (CBCT) confirmed canal bifurcation from the middle-apical third, terminating in two separate apices, which was defined as Type-V configuration according to Vertucci's classification. Root canal treatment was performed under rubber dam isolation and x15 magnification using a dental operating microscope. Irrigation was performed using 2.5% NaOCl, followed by 17% EDTA with ultrasonic activation. The canals were obturated using gutta-percha and bioceramic-based root canal sealer (Cerafill RCS PrevestDenpro, India). Composite restoration was performed.

Results: At the one-year follow-up, clinical and radiographic examinations revealed complete resolution of symptoms and significant healing of the periapical lesion. The tooth remained functional and asymptomatic.

Conclusions: Accurate diagnosis supported by CBCT imaging and magnification systems is essential for the successful management of mandibular premolars with complex root canal anatomy. Non-surgical endodontic treatment can provide predictable outcomes in teeth exhibiting Type V canal morphology.

POSTER PRESENTATION

PP.011

NON-SURGICAL ENDODONTIC MANAGEMENT OF MANDIBULAR ODONTOGENIC CUTANEOUS FISTULAS MIMICKING DERMATOLOGICAL LESIONS: TWO CASE REPORTS

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Introduction: Odontogenic cutaneous fistulas (OCF) in the mandibular region are rare extraoral manifestations of chronic periapical periodontitis. Due to their clinical appearance on the lower jaw line, they are frequently confused with dermatological conditions, leading to inappropriate surgical interventions.

Objective: This report aims to demonstrate the healing provided by endodontic protocols in resistant extraoral fistulas without the need for surgery.

Materials and Methods: A 20-year-old male and a 19-year-old female patient were referred to our faculty from the dermatology clinic with complaints of non-healing skin lesions in the submandibular region. Periapical lesions and negative vitality were detected in teeth 46 and 37. During the treatment, canals were shaped, irrigation was activated with EDDY, and calcium hydroxide was applied as an intracanal medicament for 3 weeks. In the second session, canals were obturated using a bioceramic sealer and permanent restorations were completed.

Results: At the 6-month follow-up, only a minimal scar tissue remained on the skin, and radiographic periapical bone healing was observed.

Conclusions: Odontogenic sources should be thoroughly evaluated in the differential diagnosis of persistent skin lesions in the mandibular region. Non-surgical endodontic treatment and effective disinfection protocols offer successful clinical outcomes in these cases without the need for invasive surgery.

POSTER PRESENTATION

PP.012

COMPLETE CANAL OBTURATION WITH BIODENTINE IN A NECROTIC IMMATURE MAXILLARY LATERAL INCISOR: A CASE REPORT

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Introduction: Management of necrotic permanent teeth with open apices remains challenging due to the absence of an apical constriction and the difficulty in achieving an adequate seal. Bioceramic materials such as Biodentine offer favorable sealing ability and bioactivity.

Objective: To present the management of a symptomatic necrotic maxillary lateral incisor with an open apex using complete canal obturation with Biodentine.

Materials and Methods: A 30-year-old male patient presented with pain and tenderness to percussion in tooth 22. Clinical and radiographic examination revealed pulp necrosis and an open apex. After access cavity preparation, minimal mechanical instrumentation and copious irrigation with sodium hypochlorite followed by EDTA were performed. Calcium hydroxide was placed as an intracanal medicament and renewed twice at 3-week intervals to ensure adequate disinfection. At the subsequent appointment, the entire root canal space was filled with Biodentine to create a complete bioceramic obturation. The tooth was then permanently restored.

Results: At the 3-month follow-up, the patient was asymptomatic, and radiographic evaluation demonstrated reduction of periapical radiolucency and signs of progressive periapical healing.

Conclusions: Complete canal obturation with Biodentine may represent a viable alternative for managing necrotic immature teeth, providing effective sealing and favorable early healing outcomes.

POSTER PRESENTATION

PP.013

ORTHOGRADE ENDODONTIC MANAGEMENT OF TRAUMA-INDUCED EXTERNAL ROOT RESORPTION WITH EXTENSIVE PERIAPICAL LESION: A CASE REPORT

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Introduction: Dental trauma may result in pulp necrosis accompanied by external root resorption, which can clinically manifest years later as extensive periapical lesions. In such cases, accurate diagnosis and appropriate treatment planning are critical for prognosis.

Objective: To present the orthograde endodontic management of a trauma-induced extensive periapical lesion complicated by external root resorption and involving multiple mandibular anterior teeth.

Materials and Methods: A 28-year-old systemically healthy male presented to our clinic. Medical history revealed chin trauma 18 years earlier. Clinical examination showed that teeth 42, 41, 31, and 32 were non-vital, with no mobility detected. Cone-beam computed tomography demonstrated a well-defined extensive periapical radiolucent lesion involving the mandibular anterior region and affecting teeth 42, 41, 31, and 32, with buccal cortical bone resorption and perforation. External root resorption was observed in teeth 42, 41, and 32. All affected teeth were treated with calcium hydroxide intracanal medication for three weeks, followed by placement of mineral trioxide aggregate in the apical resorption area and warm gutta-percha obturation.

Results: At six-month follow-up, the patient was clinically asymptomatic. Radiographic evaluation demonstrated reduction in lesion size and evidence of bone healing.

Conclusions: Orthograde endodontic treatment may provide successful clinical and radiographic outcomes in extensive trauma-related periapical lesions complicated by external root resorption and cortical perforation. Placement of an apical mineral trioxide aggregate barrier appears to be an effective approach for managing resorptive defects and promoting healing.

POSTER PRESENTATION

PP.014

MANAGEMENT OF INTERNAL ROOT RESORPTION AND CHRONIC APICAL PERIODONTITIS: A CLINICAL CASE REPORT

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Introduction: Internal root resorption (IRR) is an inflammatory condition characterized by progressive intraradicular dentin loss secondary to clastic cell activation associated with pulpal inflammation. The condition is frequently asymptomatic and may remain undetected until radiographic examination. Chronic apical periodontitis (CAP) may likewise progress without clinical signs despite persistent periapical inflammation. Accurate diagnosis and appropriate treatment planning are essential to ensure structural preservation and periapical healing.

Objective: This case report describes the management of IRR and CAP in maxillary incisors and emphasizes the role of accurate diagnosis and treatment sequencing in achieving favorable short-term healing while avoiding unnecessary retreatment.

Materials and Methods: A 30-year-old female patient was referred for endodontic evaluation following radiographic findings. The patient reported no symptoms related to the involved teeth. Clinical examination revealed that teeth #22 and #12 were non-vital; palpation was positive in #12. CBCT demonstrated mid-root IRR without perforation in tooth #22 and a periapical radiolucency associated with tooth #12 extending toward tooth #11. Tooth #11 had a previous root canal treatment with radiographically adequate obturation; therefore, treatment was initiated for tooth #12.
After rubber dam isolation, canals were prepared using ProTaper Gold (Dentsply Sirona) to size F4. Calcium hydroxide was placed as an intracanal medicament in a multi-visit protocol. At the second visit, tooth #12 was obturated with gutta-percha and a resin-based sealer (Endoart, Meta Biomed, Korea). In tooth #22, the apical portion was obturated with gutta-percha and sealer, and the remaining canal space was filled with Biodentine (Septodont, France) using hand pluggers. Both teeth were restored with composite resin.

Results: At 6-month follow-up, both teeth were asymptomatic. Radiographic evaluation demonstrated reduction of the periapical radiolucency associated with tooth #12, showing progressive healing, and retreatment of tooth #11 was deemed unnecessary.

Conclusions: Careful diagnostic assessment and staged endodontic management enabled conservative treatment and favorable short-term periapical healing. Accurate interpretation of radiographic findings may help clinicians avoid unnecessary retreatment while preserving previously treated teeth.

POSTER PRESENTATION

PP.015

ENDODONTIC AND SURGICAL MANAGEMENT OF AN EXTENSIVE PERIAPICAL LESION WITH PALATAL CORTICAL INVOLVEMENT IN A YOUNG PATIENT

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Introduction: Extensive periapical lesions may result in cortical bone involvement and present therapeutic challenges, particularly in young patients where tooth preservation is of great importance. While such lesions are not uncommon, they pose a specific challenge regarding the predictability of non-surgical healing. Conservative management focused on elimination of intracanal infection and control of associated soft tissue pathology is critical for successful outcomes.

Case Description and Management:

A 24-year-old systemically healthy male patient presented with pain and palatal swelling associated with the maxillary left lateral incisor. Radiographic examination revealed a previously treated tooth with inadequate root canal obturation terminating short of the apex, and an extensive periapical radiolucency. Nonsurgical root canal retreatment was initiated to eliminate intracanal infection through chemomechanical preparation and irrigation. Due to significant palatal swelling and the extent of the lesion, a vertical incision was performed, and a rubber strip drain was placed to allow continuous purulent drainage. Once acute symptoms subsided, retreatment was completed using 2.5% sodium hypochlorite irrigation, calcium hydroxide as an interappointment medicament, and conventional obturation techniques.

Results: At the 10-month follow-up, complete clinical resolution of symptoms and palatal swelling was observed. Radiographic evaluation showed evidence of periapical healing and bone regeneration. The affected tooth was preserved without the need for further surgical intervention.

Conclusions: Endodontic treatment combined with surgical drainage represents an effective and conservative approach for managing extensive periapical lesions with palatal cortical involvement in young patients. In this case, timely intervention and appropriate case management resulted in successful clinical and radiographic outcomes.

POSTER PRESENTATION

PP.016

SUCCESSFUL MANAGEMENT OF AN IMMATURE PERMANENT NECROTIC TOOTH BY A REGENERATIVE ENDODONTIC APPROACH

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Introduction: Endodontic treatment of immature permanent necrotic teeth remains a clinical challenge due to open apices, thin dentinal walls, and a high risk of fracture. Regenerative endodontic treatment is a biologically based approach that aims to restore pulp vitality and promote continued root development.

Case Description and Management

This case report describes the regenerative endodontic management of a immature permanent necrotic maxillary central incisor (#11) associated with an intraoral sinus tract and a large periapical lesion, representing a challenging clinical scenario. Regenerative endodontic treatment was performed in two visits. During the first session, the root canal was irrigated with sodium hypochlorite, ethylenediamine tetraacetic acid (EDTA) followed by saline, and dressed with calcium hydroxide medicament. At the second visit, after resolution of clinical symptoms, the medicament was removed, and the canal was irrigated with EDTA followed by saline. Periapical bleeding was induced using a sterile #20 K-file to allow blood clot formation up to the cementoenamel junction, and calcium silicate cement was placed on top. Composite restoration was placed following the regenerative procedure.

Results: At the 6 and 12-month clinical and radiological follow-ups, complete resolution of the sinus tract and periapical healing was observed. Continued root maturation was observed, including increased root length and thickening of dentinal walls.

Conclusions: This case highlights the successful management of an immature permanent necrotic tooth with severe periapical pathology using regenerative endodontic treatment. The findings suggest regenerative procedures as a predictable treatment option for achieving periapical healing and root maturation in challenging immature teeth cases.

POSTER PRESENTATION

PP.017

MANAGEMENT OF BROKEN INSTRUMENTS AND ENDODONTIC RETREATMENT USING A DENTAL OPERATING MICROSCOPE: A CASE REPORT

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Objective: The aim of this case report is to present the nonsurgical retreatment, performed under a dental operating microscope, and one-year follow-up of a tooth with a broken instrument in the middle third of the root canal and a periapical lesion.

Case Report: A 40-year-old, systemically healthy male patient presented to the Faculty of Dentistry, Ordu University, with a chief complaint of pain during mastication in the right mandibular posterior region. Clinical examination revealed percussion sensitivity in the right mandibular second premolar. Radiographic evaluation showed the presence of a broken instrument in the middle third of the canal and a periapical lesion in a tooth that had previously undergone root canal treatment. Based on the clinical and radiographic findings, the tooth was diagnosed with acute apical periodontitis and nonsurgical endodontic retreatment was planned. An access cavity was prepared under rubber dam isolation. The existing gutta-percha was removed using Ni-Ti rotary retreatment files. The broken instrument was retrieved under a dental operating microscope. The working length was re-established, and canal preparation was completed up to size 40/.04 using Ni-Ti reciprocating files. During chemomechanical preparation, 2.5% sodium hypochlorite and 17% EDTA were used. After canal obturation was completed, the tooth was permanently restored.

Conclusions: At the one-year follow-up examination, the patient was asymptomatic, and radiographic evaluation revealed significant healing of the periapical lesion. Teeth with periapical lesions and broken instruments occurring during root canal treatment can be successfully managed using a dental operating microscope.

Keywords: Broken instrument; Endodontic retreatment; Operating microscope; Periapical lesion

POSTER PRESENTATION

PP.018

COMPLETE MTA OBTURATION AS A MANAGEMENT APPROACH FOR IMMATURE TEETH WITH OPEN APEX: A CASE SERIES

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Introduction: Endodontic treatment of immature permanent teeth with open apices presents clinical challenges due to absence of an apical constriction and incomplete root development. Determination of working length and achievement of adequate apical sealing may therefore be difficult. Mineral trioxide aggregate (MTA) is frequently preferred in such cases because of its biocompatibility, hard tissue–inductive capacity, and superior sealing properties. The aim of this case report is to present clinical management of complete MTA obturation in two immature maxillary incisors with open apices.

CASE 1

Radiographic examination of a 17-year-old female revealed a wide apical opening with inverted triangular morphology in tooth #12. Under rubber-dam isolation, an electronic apex locator failed to provide reliable measurements due to absence of apical constriction; therefore working length was confirmed radiographically. Circumferential canal enlargement was performed using Reciproc R25, R40, and R50 files, and calcium hydroxide was placed as intracanal medicament. Two weeks later, the canal was completely filled with MTA.

CASE 2

Incompletely treated root canal therapy was detected in tooth #22 referred from another clinic, and radiographic evaluation confirmed an open apex. Under rubber-dam isolation, the apex locator provided unreliable readings; thus working length was determined radiographically. Following circumferential preparation with Reciproc files, calcium hydroxide was placed. After two weeks, the canal was completely obturated with MTA.

Conclusions: Complete MTA obturation is an effective and clinically applicable treatment option for immature teeth with open apices. In such cases, radiographic verification of working length is essential to ensure accurate obturation.

POSTER PRESENTATION

PP.019

RETRIEVAL OF ROTARY ENDODONTIC FILE SEPARATED IN MAXILLAR INCISOR

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Introduction: Endodontic instrument separation is a complication that prevents effective cleaning and shaping of root canal space hindering favorable result of the therapy. Longer file fragments require longer preparation and retrieval time due to significantly increased contact area with canal walls.

Objective: To report a case of successful retrieval of a long rotary instrument fragment separated in maxillary incisor root canal.
CASE PRESENTATION - Patient was referred to our department for removal of an endodontic file fragment separated in maxillary central incisor. Retroalveolar radiograph showed long instrument fragment along almost the entire root canal. Clinically, fragment was below the canal orifice embedded in the dentin, visible without additional magnification. Straight-line access was already obtained allowing good visibility of the fragment without additional magnification. There was sufficient space between coronal part of the separated instrument and one of the dentine walls to place ultrasonic tip. There was no need for additional dentine removal around the fragment. Adequate endodontic ultrasonic tip was used to transfer vibrations to coronal aspects of the fractured file. These vibrations allowed loosening up and removal of the broken instrument. Afterwards, root canal patency was confirmed, instrumentation and obturation completed. Control radiography revealed satisfactory result.

Conclusions: Removal of separated instrument affects the outcome of complete endodontic therapy and is prerequisite for successful irrigation and instrumentation. Adequate planning, clinical experience and use of already available armamentarium enabled effective removal of fractured instrument.

POSTER PRESENTATION

PP.020

REMOVAL OF ROTARY INSTRUMENT SEPARATED IN SECOND LOWER MOLAR

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Introduction: Separation of an endodontic file is unpredictable complication during the treatment that often is a result of procedural error. It´s effect depends on different factors such as diagnosis or instrumentation phase during which this mishap occurred.

Objective: To report a clinical case report of rotary endodontic file retrieval separated in lower second molar.

CASE PRESENTATION - Patient was referred to our department due to endodontic instrument separated in her second lower molar. The radiogram showed 6 mm long fragment in the coronal third of the mesial root. Dental pulp was vital before the beginning of the treatment and the patient had no palpation or percussion sensitivity. Straight line access enabled precise removal of dentin around coronal aspect of the separated instrument. The formed space enabled application of a specialized ultrasonic tip and vibrations transfer to the fragment. These vibrations caused secondary fracture so it was needed to repeat dentine removal around coronal aspect of remaining fragment. This detached and successfully retrieved fractured fragments and it was confirmed by periapical radiogram. Afterwards, all canals were irrigated, instrumented and obturated. Control radiogram showed satisfactory result.

Conclusions: As instrument separated in canal affects instrumentation and irrigation, complete fragment retrieval is the most desirable solution. Although, it is, in some cases, connected with root dentine damage due to need for adequate access and requires significant clinical experience and specialized equipment, it should be the first option in treatment planning.

POSTER PRESENTATION

PP.021

MANAGEMENT OF FOUR SEPARATED INSTRUMENTS USING A MULTIMODAL RETRIEVAL STRATEGY: A CASE REPORT

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Introduction: This case report presents a multimodal retrieval strategy for the management of four separated instruments in a previously treated mandibular first molar.
Case Description: A 39-year-old patient was referred to our clinic for a routine dental examination. Radiographic assessment revealed a previously treated right mandibular first molar with four separated instruments: one in the distal canal, one in the mesiolingual canal, and two in the mesiobuccal canal. The tooth had a large amalgam restoration and was diagnosed with asymptomatic apical periodontitis.

Following local anesthesia and rubber-dam isolation, the amalgam restoration was removed and the separated fragments were exposed. The fragment in the distal canal was bypassed and removed using hand files. The fragments in the mesiobuccal and mesiolingual canals were retrieved using the Endo Extractor System (Dentco Medical Co. Ltd, Shenzhen), while the second fragment in the mesiobuccal canal was removed using the wire-loop technique. Subsequently, canals were prepared using the Protaper Gold system (Dentsply Maillefer, Ballaigues, Switzerland) under copious irrigation with sodium hypochlorite. After the removal of smear layer by EDTA, root canals were dried and obturated with a single cone technique using a resin based sealer.

Results: At the 8-months follow-up, the tooth was asymtomatic and functional. Radiographic evaluation demonstrated a reduction in periapical radiolucency.

Conclusions: Successful management of multiple separated instruments requires strategic decision-making based on fragment location, canal anatomy, and remaining dentin thickness. The use of appropriate retrieval systems combined with clinical experience allows preservation of the tooth and favorable healing outcomes.

POSTER PRESENTATION

PP.022

MANAGEMENT OF AN IATROGENIC FURCATION PERFORATION: A CASE REPORT

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Objective: The aim of this case report is to describe the multidisciplinary management and rehabilitation of tooth #47, which suffered dual perforation of the pulp chamber floor during a previous endodontic intervention.

Case Presentation: A 47-year-old systemically healthy female patient presented with acute pain in tooth #47. Clinical examination revealed that during the previous treatment, the dentin overlying the mesial canals had not been removed, and two distinct perforations were created on the cavity floor instead. Upon modification of the access cavity, the mesial canals were located successfully, and the perforation sites were repaired using Mineral Trioxide Aggregate (MTA). Following subsequent endodontic treatment, comprehensive periodontal and prosthetic rehabilitation procedures were performed.

Results: The MTA application and successful canal identification resolved the patient's symptoms. The previous restoration was removed, and the tooth was restored with a single crown and integrated into the design of a new removable partial denture.

Conclusions: The use of MTA in managing perforations, combined with proper anatomical access to the root canals, provides predictable outcomes even in complex scenarios. A multidisciplinary approach is essential for salvaging compromised teeth and restoring long-term oral function.

POSTER PRESENTATION

PP.023

ANATOMICAL VARIATIONS OF MAXILLARY MOLARS AND ENDODONTIC FAILURES

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Introduction: Maxillary molars pose significant anatomical challenges during non-surgical endodontic treatment and exhibit a high failure rate among posterior teeth. Although the second mesiobuccal canal (MB2) is a well-documented variation, rarer anomalies, such as four-rooted maxillary second molars, may also cause failure. These variations are often undetectable in intraoral radiographs; however, three-dimensional imaging, such as Cone-Beam Computed Tomography (CBCT), enables identification of roots and canals. This case series analyzes anatomical and morphological variations of maxillary molars and presents clinical and radiographic cases of endodontic failure.
Case 1:

MB2 (Maxillary First Molar)

A patient exhibited persistent percussion sensitivity after initial treatment. CBCT identified an untreated canal in the mesiobuccal root. Retreatment under high magnification (DOM) aimed to locate the separate orifice. Thorough instrumentation and obturation of additional root canal resolved the apical periodontitis in a six-month recall.

Case 2:

The Four-Rooted Variant (Maxillary Second Molar)

In this case, failure was attributed to an undetected fourth root. CBCT revealed the anatomical variation, and symptoms subsided following identification and obturation of the additional root(1.1 + 0.4 mm).

Conclusions: Missed anatomy is strongly associated with endodontic failure. Studies report MB2 prevalence in first maxillary molars commonly exceeding 60% and often much higher in CBCT/micro-CT studies. Although four-rooted second molars are rare (<10% prevalence), assuming a standard triangular access often leaves the fourth canal untreated and infected. Recognizing anatomical variations is essential for achieving success. Cone Beam Computed Tomography (CBCT) and dental operating microscopes serve as valuable tools for detecting additional roots and canals, thereby transforming potential failures into predictable treatment.

POSTER PRESENTATION

PP.024

CLINICAL AND RADIOGRAPHIC OUTCOMES OF REGENERATIVE ENDODONTIC TREATMENT IN A PRIMARY MOLAR: A 24-MONTH FOLLOW-UP CASE REPORT

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Introduction: In patients with congenital absence of permanent teeth, long-term preservation and functional maintenance of primary teeth are of great importance.

Objective: This case report aims to present the regenerative endodontic treatment protocol and 24-month follow-up of a mandibular second primary molar with pathological root resorption in the absence of a permanent tooth germ.

Materials and Methods: A healthy 11-year-old girl presented with toothache. Clinical examination revealed increased percussion sensitivity, palpation tenderness, and mobility in the mandibular right second primary molar with deep dentinal caries. Radiographic examination revealed congenital absence of the mandibular second premolar tooth germ and internal root resorption in the mandibular right second primary molar, accompanied by apical and furcation lesions. At the first visit, following pulp extirpation, each canal was irrigated with 20 mL of 2.5% sodium hypochlorite and 20 mL of EDTA, and calcium hydroxide was placed as an intracanal medicament. Two weeks later, at the second visit, the canals were irrigated with 20 mL of EDTA, and bleeding was induced by extending a K-file 1 mm beyond the working length to allow intracanal blood clot formation. Mineral trioxide aggregate was placed over the clot, followed by glass ionomer cement, and the tooth was restored with composite resin.

Results: At 24 months, the tooth remained asymptomatic and functional, with healthy surrounding tissues and radiographic resolution of the lesions.

Keywords: Regenerative endodontic treatment may be a promising alternative for preserving primary teeth with poor prognosis, especially in the absence of a permanent successor.
Congenital tooth deficiency; Regenerative endodontic treatment; Pediatric dentistry

POSTER PRESENTATION

PP.025

MTA APEXIFICATION AND INTERIM ROCHETTE BRIDGE IN AN IMMATURE TOOTH WITH OPEN APEX: A CASE REPORT

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Introduction: Traumatic dental injuries in children may lead to pulp necrosis and progressive root resorption, compromising both function and esthetics. The management of immature permanent teeth with open apices remains challenging and requires biologically compatible treatment strategies that preserve the remaining root structure and surrounding tissues.

Objective: This case report aims to present the management of an immature permanent tooth with advanced apical root resorption using mineral trioxide aggregate (MTA) apexification and interim prosthetic rehabilitation.

Materials and Methods: A 13-year-old female patient presented with a history of dental trauma at the age of six affecting teeth 11 and 21. Clinical and radiographic examination revealed both teeth were non-vital. Tooth 11 exhibited grade III mobility and was extracted after periodontal and prosthetic consultation. Tooth 21 showed advanced apical root resorption with a radiographically measured root length of 15 mm. After chemomechanical canal disinfection, an apical barrier was created using mineral trioxide aggregate (NeoMTA Plus; Avalon Biomed Inc., Bradenton, FL, USA).

Results: Two months after apexification, an interim Rochette bridge was delivered to maintain esthetics and space until implant placement following completion of skeletal growth. At the December 2025 follow-up, the treated tooth remained asymptomatic and functional without clinical complications.

Conclusions: MTA apexification provides a predictable apical seal in immature teeth with open apices and resorptive defects. The use of a Rochette bridge represents a minimally invasive transitional solution that preserves esthetics and alveolar bone during the patient's growth period.

Keywords: Open apex, Mineral trioxide aggregate, Apexification, Dental trauma, Rochette bridge

POSTER PRESENTATION

PP.026

ENDODONTIC MANAGEMENT OF A MANDIBULAR FIRST MOLAR WITH RADIX ANTEMOLARIS AND FIVE ROOT CANALS IN A PEDIATRIC PATIENT: A CASE REPORT

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Introduction: The presence of an additional distolingual root (radix entomolaris) and five root canals in a mandibular first molar is a rare anatomical variation that may complicate root canal treatment and require modified treatment strategies.

Objective: To report the endodontic management of a mandibular first molar with radix entomolaris and five root canals in a 13-year-old female patient presenting with apical periodontitis.

Materials and Methods: Following clinical and radiographic examination, access cavity preparation was performed. Five canal orifices were identified: two mesial and three distal canals, including one located in the accessory distolingual root. Root canal preparation was performed using T-Must Reciproc files (25.06). During preparation, 5.25% sodium hypochlorite was used as the irrigant. After instrumentation, 2 mL of 5.25% NaOCl was activated using passive ultrasonic irrigation (PUI) for 20 seconds in two cycles. Final irrigation was performed using 2 mL of 5.25% NaOCl, 2 mL of 17% EDTA, and 2 mL sterile saline.

Results: The root canal system was obturated using a bioceramic sealer and the single-cone technique. Postoperative radiographic evaluation demonstrated dense filling of all five canals.

Conclusions: Successful management of mandibular first molars with radix entomolaris depends on recognition of anatomical complexity, appropriate access modification, and effective chemomechanical preparation. In this case, reciprocating instrumentation, ultrasonic activation, and bioceramic sealer obturation enabled satisfactory management of a complex root canal system.

POSTER PRESENTATION

PP.027

MANAGEMENT OF MULTIPLE DENTAL TRAUMA INVOLVING AVULSION, INTRUSION, AND ALVEOLAR FRACTURE IN A ADOLESCENT PATIENT: A CASE REPORT

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Introduction: Severe dental trauma in adolescents requires immediate and multidisciplinary intervention to preserve dental arch integrity and prevent long-term complications.

Objective: This case report describes the clinical management of a 15-year-old male patient presenting with multiple dental injuries following a fall from stairs.

Materials and Methods: The patient presented 48 hours after the trauma. Clinical and radiographic examinations revealed total avulsion of teeth 11 and 21, approximately 5mm intrusive luxation of 12 and 13, and comminuted fractures of the buccal alveolar bone. Although the patient initially lacked the avulsed teeth, they were recovered from the accident site three days post-trauma. Due to the prolonged extra-oral time, replantation was deemed unsuitable. Teeth 12 and 13 were surgically repositioned and stabilized with a semi-rigid splint for four weeks. Endodontic treatment was initiated after one week. Calcium hydroxide was placed as an intracanal medicament for three weeks, followed by a three-week application of Ledermix paste to minimize the risk of inflammatory resorption.

Results: Following the intracanal medication period, root canal treatment was completed, and the splints were removed. At the one-month follow-up, the teeth exhibited slight physiological mobility but remained asymptomatic with no clinical signs of infection or severe resorption. The patient remains under periodic clinico-radiographic observation.

Conclusions: In delayed presentations of complex trauma with severe intrusion (3-7 mm), surgical repositioning combined with four-week splinting and proactive endodontic protocols remains an effective approach for salvaging teeth, even when avulsed counterparts are lost due to unfavorable conditions. The patient remains under periodic clinico-radiographic observation.

POSTER PRESENTATION

PP.028

USE OF ANTIMICROBIALS AS AN ADJUNCT IN THE MANAGEMENT OF ENDODONTIC INFECTIONS: A LITERATURE REVIEW.

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Introduction: Antimicrobials either kill microbes (microbiocidal) or inhibit their growth (microbiostatic). Endodontic infections are polymicrobial, and in most cases, the prescription of antimicrobials is empirical, leading to the increasing use of broad-spectrum antimicrobials even in cases that are unnecessary. Inappropriate prescription and misuse of antimicrobials have been identified as major factors contributing in the emergence of antimicrobial resistance which has been a growing global problem

Objective: The aim of this study was to investigate whether antimicrobials are effective as an adjunct to root canal treatment in the management of endodontic infections. Methods and Materials: A literature search was conducted using PubMed and Google Scholar databases. The keywords “antimicrobials”, “antibiotics” and “endodontics” were used to identify articles discussing the indications, effectiveness, and clinical application of antimicrobial therapy in endodontic practice.

Results: Irreversible pulpitis, pulp necrosis, apical periodontitis, localized fluctuant swellings or chronic apical periodontitis with a sinus tract are not indicated for antimicrobials administration. However, antimicrobials are indicated in immunocompromised patients, in cases of acute apical abscess with systematic involvement (fever/malaise), spreading infection and tooth replantation. Amoxicillin is the first line treatment sometime in combination of clavulanic acid and the duration of the therapy is generally 3-7 days

Conclusions: Most endodontic infections can be successfully managed through established local operative treatment, drainage or tooth extraction. However, when there is evidence of systemic involvement and rapid, diffuse spread of infection, antimicrobials may be indicated as an adjunct to local treatment.

POSTER PRESENTATION

PP.029

REMOVAL OF A FRACTURED INSTRUMENT FROM THE ROOT CANAL USING THE LOOP TECHNIQUE: A CASE REPORT

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Introduction: Instrument fracture is a significant complication in root canal treatment that may hinder adequate cleaning and shaping of the canal system. Various techniques have been developed for its removal.

Objective: This case report describes the successful retrieval of a fractured in instrument from the apical third of the distobuccal canalusing the Terauchi File Retrieval Kit (TFRK; DTE, Guilin Woodpecker Medical Instruments, China) under a dental operating microscope

Materials and Methods: A 42-year-old female patient presented with symptoms related to tooth #16 and was diagnosed with symptomatic apical periodontitis. Periapical radiography revealed a fractured instrument in the distobuccal root canal. Following rubber dam isolation, straight-line access to the coronal aspect of the fragment was achieved using a modified Gates-Glidden drill and ultrasonic tips under magnification. A semi-circular trough was then created around the fragment using TFRK ultrasonic tips (E87–89) to expose its coronal portion while preserving dentin. The fragment was subsequently engaged with a TFRK micro-loop (0.08 mm wire loop) and a 4 mm segment was successfully retrieved. The MB2 canal was located, canals were prepared, and obturation was completed at the second visit using a bioceramic sealer.

Results: Radiographic evaluation demonstrated satisfactory obturation, and the tooth remained asymptomatic throughout a three-year follow-up period.

Conclusions: In this case, the loop technique used under magnification allowed conservative retrieval of an apically located fractured instrument and was associated with favorable clinical follow-up.

POSTER PRESENTATION

PP.031

MANAGEMENT OF A MAXILLARY CENTRAL INCISOR WITH ROOT CANAL OVERFILLING AND CERVICAL PERFORATION USING A COMBINED ENDODONTIC-SURGICAL APPROACH: A CASE REPORT

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Introduction: Iatrogenic complications such as root canal overfilling and cervical perforations may compromise endodontic success and lead to persistent periapical pathology. In such cases, combined orthograde and surgical approaches may be required.

Objective: To present the management of a maxillary central incisor with root canal overfilling and buccal cervical perforation through a combined endodontic and surgical approach.

Materials and Methods: A systemically healthy 19-years-old female patient presented with pain in the maxillary left central incisor (#21), previously treated endodontically. Clinical examination revealed tenderness to percussion and palpation. Radiographic evaluation showed a periapical lesion associated with overextended root canal filling. Reatreatment was initiated. After removal of the previous filling material, a buccal cervical perforation was detected and confirmed by CBCT, measuring approximately 3 mm below the gingival margin. The perforation was repaired internally using glass ionomer cement. Calcium hydroxide intracanal medication was applied in three sessions at 10-day intervals. Orthograde removal of the extruded material was unsuccessful, and due to persistent mild percussion sensitivity, surgical intervention was planned. The apical third was sealed with mineral trioxide aggregate (MTA) as an apical plug and obturation was completed using the warm back-fill technique. A surgical flap was elevated, extruded material and granulation tissue were removed and apical root resection was performed. Platelet-rich fibrin (PRF) was placed into the defect.

Results: At 1,3 and 6-month follow-ups the patient was asymptomatic No tenderness to percussion or palpation was observed, and radiographs showed progressive lesion reduction and bone healing.

Conclusions: Combined orthograde and surgical management was associated with favorable clinical and radiographic outcomes in presence of cervical perforation and root canal overfilling.

POSTER PRESENTATION

PP.032

REGENERATIVE RETREATMENT OF PREVIOUSLY ROOT CANAL–TREATED MAXILLARY INCISORS WITH OPEN APEX AND LARGE PERIAPICAL LESIONS USING T-PRF: A 1-YEAR FOLLOW-UP

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Introduction: Management: of previously root canal-treated teeth with open apices and large periapical lesions remains challenging. Regenerative endodontic procedures offer a biological alternative to conventional apexification by promoting periapical healing.

Objective: This case report aimed to present the clinical and radiographic outcomes of regenerative endodontic treatment using T-PRF in maxillary incisors with failed root canal treatment, open apices, and large periapical lesions over a one-year follow-up.

Materials and Methods: A 15-year-old male patient presented with pain, swelling, and tenderness in teeth 21 and #22, which had been previously treated endodontically. Clinical examination revealed tenderness to percussion and palpation in both teeth, and a sinus tract was detected in the affected region. Radiographic evaluation showed an open apex, root resorption in tooth #21, and a large periapical lesion.After removal of previous restorations, multi-visit disinfection was performed using calcium hydroxide. Following the healing of the sinus tract, the regenerative phase was initiated.The canals were irrigated with 1% sodium hypochlorite and 17% EDTA. Apical bleeding was induced, and T-PRF was placed into the canals. Coronal sealing was completed using Biodentine and composite.

Results: Clinical and radiographic evaluations were performed at one, three, and six months, and one year. At the one-year follow-up, both teeth were asymptomatic with no tenderness to percussion or palpation, the sinus tract had completely resolved, and a reduction in radiolucency was observed.

Conclusions: T-PRF-assisted regenerative endodontic retreatment provides favorable clinical and radiographic healing, offering a successful alternative to conventional apexification in immature teeth with large periapical lesions

POSTER PRESENTATION

PP.033

ENDODONTIC TREATMENT OF MANDIBULAR PREMOLARS WITH EXTERNAL ROOT RESORPTION: A CASE REPORT

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Introduction: External root resorption (ERR) is an asymptomatic condition that is typically detected incidentally during routine checkups. Cone-beam computed tomography (CBCT) is the gold standard for determining the location of the lesion and its relationship to surrounding tissues during the diagnostic phase.

Objective: The purpose of this case report is to present the treatment process and outcomes of endodontic surgery, including root canal therapy and RetroMTA (BioMTA, Seoul, Korea), for external root resorption detected in the right mandibular second premolar.

Materials and Methods: A 62-year-old male patient in good general health presented to the Endodontics Clinic at Inönü University Faculty of Dentistry for routine check-ups. Clinical and radiographic examinations revealed a radiolucent area within the root canal of tooth No. 45. The diagnosis of external root resorption was confirmed by CBCT. After completing root canal treatment at the Endodontics Clinic, a flap was elevated to access the resorption site. The debrided defect area was sealed with RetroMTA. Following the procedure, the flap was closed, and the patient was placed under follow-up.
Findings: At the 3-month follow-up examination, the patient was found to be asymptomatic, and the tooth was functionally healthy. Clinical evaluation revealed healthy periodontal tissues, normal pocket depth, and no increase in mobility.

Conclusions: This case demonstrates that the use of RetroMTA in the surgical repair of root resorption defects provides excellent biocompatibility and sealing. With proper diagnosis and appropriate material selection, the prognosis for resorbed teeth can be significantly improved.

Keywords: CBCT, External root resorption, MTA

POSTER PRESENTATION

PP.034

MULTIDISCIPLINARY APPROACH TO THE TREATMENT OF ACUTE APICAL ABSCESS: A CASE REPORT

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Introduction: Acute apical abscess is characterized by rapid pain and swelling and may require surgical intervention when intracanal drainage is insufficient.

Objective: To present the management of an acute apical abscess with unsuccessful intracanal drainage using surgical drainage, medication, and endodontic treatment.

Materials and Methods: A 22-year-old male patient presented with pain and extraoral swelling in the left mandibular region. Clinical examination revealed percussion and palpation sensitivity in tooth #36, which was non-responsive to thermal testing, whereas teeth #35 and #37 responded positively. Extraoral examination revealed a fluctuant abscess. After written informed consent was obtained,root canal treatment was initiated. Working length was determined using an apex locator and a #10 K stainless steel file(Dentsply Maillefer, Ballaigues, Switzerland) and confirmed radiographically. Root canal shaping was completed to X2(25/.06) using ProTaper Next(Dentsply Sirona, Switzerland). Irrigation was performed with 2.5% NaOCl. As intracanal drainage could not be achieved,calcium hydroxide was placed and the cavity was temporarily sealed. Extraoral incision and drainage were performed under local anesthesia, and a drain was placed for 24 hours. Antibiotics and analgesics were prescribed. Two weeks later, final irrigation was performed with 17% EDTA and 2.5% NaOCl activated by passive ultrasonic irrigation. Obturation was completed using a bioceramic-based sealer(CeraSeal, Meta Biomed, Korea) and the single-cone technique. Coronal restoration was performed with nanohybrid composite resin(Filtek™,3M ESPE,USA).

Results: At eight months,the tooth was asymptomatic, extraoral healing was complete and periapical healing was ongoing.

Conclusions: Combined endodontic treatment and extraoral surgical drainage may provide successful outcomes in acute apical abscesses with insufficient intracanal drainage.

Keywords: Acute apical abscess; Endodontic treatment; Extraoral drainage; Multidisciplinary approach

POSTER PRESENTATION

PP.035

EVALUATION OF APICAL MICROLEAKAGE OF BIOCERAMIC AND RESIN-BASED ENDODONTIC SEALERS

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Introduction: Optimal apical seal is essential for long-term success of endodontic treatment. Microleakage at the root canal filling interface may compromise periapical healing.

Objective: Evaluating and comparing apical microleakage of root canal fillings using bioceramic or resin-based sealers in ex vivo model.

Materials and Methods: Extracted single-rooted human teeth (n = 18) were instrumented using a standardized rotary protocol. Following irrigation and drying, specimens were randomly assigned to two groups based on sealer used for obturation: bioceramic or resin-based. After obturation, samples were stored for 7 days to allow complete setting. The external root surfaces were coated with nail varnish except for the apical 1–2 mm and immersed in 2% methylene blue solution for 72 hours. Teeth were longitudinally sectioned, and photographed under standardized conditions. Linear dye penetration was measured using ImageJ software. Statistical analysis was performed using the Mann–Whitney U test, while interobserver reliability was evaluated using the intraclass correlation coefficient (ICC).

Results: The mean dye penetration was 1.00 ± 0.74 mm in the bioceramic sealer group and 1.08 ± 0.85 mm in the resin-based sealer group. No statistically significant difference in apical microleakage was observed between the groups (p = 0.839). Interobserver reliability showed moderate agreement (ICC = 0.669).

Conclusions: Within the limitations of this study, both sealers demonstrated comparable apical sealing ability. Both materials may be considered equally effective. Further studies with larger sample sizes and clinical correlation are recommended to confirm these findings.

Keywords: Apical microleakage; Bioceramic sealer; Resin-based sealer; Dye penetration; ImageJ.

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POSTER PRESENTATION

PP.036

DENTAL TISSUE REGENERATION: STRATEGIES, LIMITS AND PROSPECTS OF MODERN REGENERATIVE DENTISTRY. AN UMBRELLA REVIEW.

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Introduction: Regenerative dentistry is a rapidly advancing field that focuses on repairing and regenerating dental tissues through biologically driven technological strategies. Objective The objective of this review is to present biotechnological models that offer treatment solutions through regenerative dentistry. Specifically, this study aims to evaluate the limits and prospects of enamel and the dentin-pulp complex regeneration. Methods & Materials For the present systematic review, PRISMA (2020) guidelines were followed to obtain information from scientific databases (PubMed, Scopus, Web of Science), by using the terms “dentin-pulp complex regeneration”, "enamel regeneration", “regenerative dentistry", “regenerative endodontics”, “pulp regeneration” "tissue engineering", “stem cell’’, “growth factor”, “signaling molecules", “scaffold”, “cell homing” and "systematic review". The initial search yielded 538 records of systematic reviews and meta-analyses. Finally, 10 studies met the eligibility criteria and were included, while 366 were excluded. Results Pulp and dentin regeneration are enhanced by cell homing strategies, mediated by chemotactic biomolecules and biofunctional scaffolds, that promote migration, adhesion, and differentiation of endogenous stem cells and progenitor cells, including the apical papilla, bone marrow, and periapical tissue. However, enamel regeneration presents challenges. The epithelial cells responsible for enamel formation, ameloblasts, and their precursors are lost upon tooth eruption, making human adult teeth incapable of enamel regeneration. The complexity of amelogenesis, the acellular nature of the tissue, and its chemical structure pose additional limitations. Conclusions Overall, regenerative dentistry demonstrates substantial potential for biologically based tissue regeneration, which could potentially replace conventional dental procedures and minimize invasiveness.

POSTER PRESENTATION

PP.037

SUCCESSFUL ENDODONTIC TREATMENT OF THE MANDIBULAR RIGHT SECOND MOLAR USING THE “BY-PASS” TECHNIQUE IN THE MESIOLINGUAL CANAL

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Introduction: Fracture of endodontic instruments is a complication that can occur during endodontic treatment, impeding effective cleaning and shaping of the root canal system.

Aim: To present a case of successful endodontic treatment of the mandibular right second molar using the "by-pass" technique in the mesiobuccal canal.

Case Presentation: A male patient was referred to the Department of Restorative Dentistry and Endodontics, School of Dental Medicine, University of Belgrade, due to pain in the region of tooth 47. During mechanical instrumentation there has been fracture of the instrument. Analysis of the retroalveolar radiograph revealed a fractured endodontic instrument in the middle third of the mesiolingual root canal. A "by-pass" procedure was performed using a K#08 instrument. After instrumentation the working length was confirmed radiographically and with electronic apex locator. The root canals were medicated with calcium hydroxide for 14 days, after which they obturated. The quality of obturation was assessed on a follow-up retroalveolar radiograph.
Discussion: Re-establishment of the working length alongside the fractured part of the endodontic instrument is essential for successful chemo-mechanical root canal treatment, treating existing infections, and preventing potential complications.

Conclusions: In cases of infected root canals, instrumentation and disinfection beyond the fractured instrument apex are crucial for a desirable treatment outcome.

Keywords: By-pass, endodontic instrument, fracture, mesiolingual canal

POSTER PRESENTATION

PP.038

ENDODONTIC TREATMENT OF A C-SHAPED MANDIBULAR SECOND MOLAR

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Introduction: Knowledge of root canal anatomy and its variation is important in achieving successful endodontic therapy. Mandibular second molar can have highly complex root canal systems and requires careful assessment.

Objective: To demonstrate treatment of second mandibular molar with C-shape features of root canal system.

CASE PRESENTATION - A female patient presented to our department for endodontic treatment of mandibular second molar. patient was symptom free and without percussion and palpation sensitivity but endodontic treatment was previously initiated and temporary filling present. Radiography showed fused roots with large canal space in coronal and middle thirds that visually disappears in apical third. There was no evidence of periapical radiolucency. After adequate access cavity preparation pulp chamber was tactile explored to locate all canal orifices. Size 10 hand K-file followed three different directions on repeated introductions and three canal orifices splitting in the apical region were identified. Orifices were arranged in c-shape configuration. Canal space was instrumented using file systems combination, having in mind shape differences between fist two and apical third. After cleaning, shaping and copious irrigation canals were obturated using single-cone technique with gutta percha and epoxy resin sealer. Control radiography showed favorable outcome.

Conclusions: Conventional radiography can indicate aberrant anatomy but cannot conveniently reveal variations in root canal morphology. Careful tactile examination of the pulp chamber and knowledge of root canal space variations should help the clinician to identify complexities and increase the success rate of endodontic treatment.

POSTER PRESENTATION

PP.039

SUCCESSFUL MANAGEMENT OF INTERNAL ROOT RESORPTION

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Introduction: Internal resorption is often discovered as an incidental radiographic finding. It is initiated within the pulp space and characterized by the loss of dentin from its walls, so endodontic therapy should begin as soon as possible.

Objective: Our report describes successful endodontic therapy of maxillary lateral incisor with internal root resorption.

CASE PRESENTATION - Patient reported to our department for treatment of maxillary lateral incisor with internal root resorption in the middle part of the canal. Periapical radiography showed this as an incidental finding but it was without periapical pathosis. Tooth was restored with composite fillings and without percussion or palpation sensitivity. Access cavity preparation revealed wide coronal aspects of the canal up to resorptive defect. Canal space and resorptive defect were cleaned and shaped using reciprocating and adaptive motion file system with copious irrigation. Calcium hydroxide paste was used as an intracanal medicament. In the next visit, after fifteen days, medication paste was removed using adaptive motion files and copious active irrigation. Monocone gutta-percha technique and epoxy-based sealer was used for obturation. Control radiography showed satisfactory result and compact filling in the region of resorptive defect.

Conclusions: Cleaning and mechanical instrumentation of resorptive lacunas is a challenging task, even with specialized endodontic instruments. Untreated areas could be a source of infection and consequent treatment failure. Adequate irrigation and medication protocols can provide good seal even with standard obturation method.

POSTER PRESENTATION

PP.040

MANAGEMENT OF ENDODONTIC FILE SEPARATED IN UPPER PREMOLAR

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Introduction: Fracture of endodontic instruments can result in inadequate cleaning and shaping of endodontic space. Beside shaping files, the fracture of other endodontic instruments can also occur but infrequently.

Objective: To present a clinical case of successful treatment of upper second premolar after removal of a separated lentilo spiral.

Case Presentation: Male patient was referred to our department for the removal of endodontic instrument fractured in the upper second premolar. Periapical radiography revealed broken file resembling lentulo spiral filler in the middle and apical part of the canal but without periapical pathosis. Straight line access enabled good visibility of coronal aspect of the instrument even without additional magnification. Retrieval was tried by passing Hedström hand instrument through lentulo spiral threads and retracting it coronally. After several attempts instrument was detached and finally removed. Complete removal of the lentulo spiral was confirmed by radiogram. Afterwards, endodontic space was irrigated, instrumented and obturated using single-cone gutta-percha and resin-based endodontic sealer. Control radiogram showed good outcome.

Conclusions: Proper assessment, taking into account anatomical features and individual circumstances, can lead to clinical solution without the use of additional sophisticated equipment. In our case experience and simple armamentarium enabled successful treatment with minimal root canal wall damage and original canal shape preservation.

POSTER PRESENTATION

PP.041

REMOVAL OF FRACTURED CAST METAL POST AND RETREATMENT OF MAXILLARY CANINE

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Introduction: Removal of a cast metal post is a complex procedure that carries a risk of root fracture or its perforation. Ultrasonic vibrations are often used to break the bond between the canal dentine and post but in case of post fracture it is difficult to transfer these vibrations to the post.

Objective: Our report describes successful removal of fractured cast metal post and retreatment of maxillary canine.

CASE PRESENTATION – Patient was referred to our clinic for removal of cast metal post fractured in maxillary canine. Dental radiograph showed about 10mm long metal post fractured 2mm below coronal root surface. On the palatal side of the post portion of dentine was removed during previous attempt of its retrieval. Using ultrasonic endodontic tip, a platform around the coronal aspect of the post was formed, on buccal and palatal sides mainly. Formed space enabled transfer of vibrations precisely to the sides of the post coronal end. These vibrations broke the cement and loosened up the post. After post removal, previous filling was removed, canal irrigated and instrumented using reciprocating file system. Canal was obturated using monocone gutta-percha and resin-based sealer in the same visit. Control radiograph showed good outcome.

Conclusions: Retrieval of fractured cast metal post requires canal dentine removal in order to enable transfer of ultrasonic vibrations to deeper portions of the post. Fractured post removal is not always predictable clinical procedure but if the dentine removal is conservative, enables the usage of the affected tooth to anchor a new restoration.

POSTER PRESENTATION

PP.042

NONSURGICAL MANAGEMENT OF A PERIAPICAL LESION USING CALCIUM HYDROXIDE INTRACANAL MEDICATION: A CASE REPORT

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Aim: To present a case of successful clinical and radiographic healing of a periapical lesion in a permanent mandibular left lateral incisor following endodontic treatment.

Case Report: A 27-year-old male patient was referred to Department presenting with pain in the region of tooth 32. Clinical examination revealed sensitivity to percussion and tenderness on palpation, while the tooth exhibited a negative response to electrical pulp testing. Radiographic evaluation demonstrated a well-defined periapical radiolucency associated with the apex of tooth 32, consistent with apical periodontitis.
Following access cavity preparation, straight-line access was achieved. Chemomechanical preparation was performed using a full-sequence rotary system (ProTaper Next, Dentsply Sirona) under copious irrigation with sodium hypochlorite. Calcium hydroxide paste was placed as an intracanal medicament for one week.

During the inter-appointment period, the patient developed pain and swelling. Upon removal of the medicament, purulent exudate was observed, indicating persistent infection. Calcium hydroxide dressing was therefore reapplied for an additional week, resulting in resolution of clinical symptoms.

Subsequently, the root canal system was obturated using gutta-percha in combination with an epoxy resin-based sealer (AH Plus, Dentsply Sirona). Definitive coronal restoration was performed using composite resin.

Radiographic follow-up at one year demonstrated complete periapical healing, confirming the success of the treatment.

Conclusions: This case highlights the importance of calcium hydroxide intracanal medication in managing persistent endodontic infections. Careful monitoring of clinical signs is essential for guiding treatment decisions. Conservative nonsurgical endodontic treatment can be successfully performed even in extensive periapical lesions and should be considered the first-line approach.

POSTER PRESENTATION

PP.043

TOOTH PRESERVATION BY APICAL SURGERY IN A MANDIBULAR FIRST MOLAR WITH PERSISTENT PERIAPICAL PATHOLOGY AFTER TWO FAILED RETREATMENTS: A CASE REPORT

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Introduction: Persistent apical pathology despite repeated nonsurgical endodontic retreatment may compromise tooth prognosis and lead to extraction, particularly in multirooted teeth. In selected cases, apical surgery may provide a predictable tooth-preserving alternative.

Aim: To present the clinical, radiographic, and histopathological findings of apical surgery performed in a mandibular first molar with persistent periapical pathology after two unsuccessful retreatments.

Materials and Methods: An 18-year-old male patient presented with a sinus tract and a persistent periapical radiolucent lesion associated with tooth 36. The tooth had undergone two previous retreatment procedures without resolution and had been indicated for extraction. Based on clinical and radiographic evaluation using periapical and panoramic imaging, surgical endodontic treatment was planned. Following sulcular incision, the pathologic lesion was curetted, and 3 mm of both root apices were resected. Retrograde root-end filling was performed with mineral trioxide aggregate (MTA). Platelet-rich fibrin (PRF) was placed at the surgical site, and wound closure was achieved with 4-0 Vicryl sutures. The excised tissue was submitted for histopathological examination and diagnosed as a radicular cyst.

Results: At the 1-year follow-up, the patient was asymptomatic, with complete resolution of the sinus tract and no postoperative complications. Radiographic examination revealed evident bone healing and regression of the periapical lesion.

Conclusions: Apical surgery may be an effective tooth-preserving approach in mandibular molars with persistent periapical pathology after failed retreatment. In the present case, surgical management resulted in favorable clinical and radiographic healing at 1 year.

POSTER PRESENTATION

PP.044

CLINICAL EFFICACY OF MINERAL TRIOXIDE AGGREGATE AND PUTTY CALCIUM SILICATE MATERIALS IN PRIMARY MOLAR PULPOTOMY: A LITERATURE REVIEW

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Introduction: Mineral Trioxide Aggregate (MTA) is considered the gold standard in vital pulp therapy and endodontic repair due to its excellent biocompatibility, sealing ability, and capacity to induce hard tissue formation. However, limitations such as difficult handling and prolonged setting time have led to the development of premixed bioceramic materials with improved clinical properties.

Objective: This review aims to evaluate the efficacy of MTA compared to putty calcium silicate materials in primary molar pulpotomy.

Materials and Methods: A comprehensive literature search was conducted across PubMed, Cochrane, and Scopus databases.Studies were selected based on methodological quality, predefined eligibility criteria, and relevance to the clinical and biological evaluation of MTA and bioceramic putty.

Results: Clinical trials in primary molars demonstrate that both MTA and bioceramic putty achieve high success rates, generally above 90%, in pulpotomy procedures. Success remained consistently high at both 12- and 24-month follow-ups, with no significant differences observed between the materials. Both materials were associated with favorable outcomes, including absence of clinical symptoms, successful pulp healing, and dentin bridge formation in most cases. Overall, bioceramic putty performed comparably to MTA in terms of clinical and radiographic success, supporting its use as a reliable alternative for pulpotomy in primary molars.

Conclusions: Bioceramic putty exhibits clinical effectiveness and biological performance comparable to MTA while offering advantages such as premixed consistency and easier handling. Therefore, it represents a practical and reliable alternative for vital pulp therapy.

POSTER PRESENTATION

PP.045

REMOVAL OF A SEPARATED ROTARY INSTRUMENT USING THE XP-ENDO FINISHER: A CASE REPORT

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Aim: To present the successful management of a separated rotary instrument resembling a lentulo spiral from the mesiolingual canal of the mandibular left first molar using a minimally invasive approach.

Case Report: A 20-year-old female patient was referred for the removal of a separated instrument from the root canal of the mandibular left first molar. Radiographic examination revealed a fractured instrument resembling a lentulo spiral in the mesiolingual canal. After bypassing with a #10 K-file, the fragment was displaced beyond the apex during chemomechanical preparation, extending into the periapical lesion, as confirmed radiographically.
Following rubber dam isolation, the distal and mesiobuccal canals were blocked with paper points. The fragment was successfully retrieved using sodium hypochlorite irrigation in combination with a highly flexible NiTi instrument operating in adaptive motion (XP-Endo Finisher, FKG Dentaire). Calcium hydroxide was placed as an intracanal medicament for one week. At the subsequent visit, the root canal system was obturated with gutta-percha and an epoxy resin-based sealer (AH Plus, Dentsply Sirona), followed by definitive restoration.

Conclusions: Successful management of separated instruments depends on clinical expertise, appropriate case selection, and modern endodontic techniques. The XP-Endo Finisher proved to be an effective adjunct for fragment retrieval, enabling a conservative and predictable treatment outcome.

POSTER PRESENTATION

PP.046

NON-SURGICAL RETREATMENT OF UPPER SECOND PREMOLAR AFTER METAL POST REMOVAL

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Introduction: Microleakage around existing restorations frequently causes infiltration of root canal system by microorganisms or/and their by-products and consequent inflammatory process. Intracanal posts and anatomical irregularities, such as abrupt root curvatures, make conservative retreatment significantly more difficult.

Objective: To describe a successful endodontic retreatment of upper second premolar with severe root curvature and periapical lesion after metal post removal.
CASE PRESENTATION - A male patient reported to our department for treatment of upper second premolar with large periapical lesion that was incidental finding on panoramic radiograph. The tooth was restored with extensive filling retained around metal post that reached almost apical part of the canal that had severe curvature. Metal post was retrieved using an ultrasonic tip, under water cooling and 15-20 seconds breaks after each cycle of vibration to avoid temperature rise. Previous gutta-percha filling was removed and it was concluded that previously formed ledge prevented canal instrumentation to the full length. Hand files were used to pass the ledge and enable full instrumentation. After medication phase and obturation premolar was restored with intracanal post and crown. Control clinical examination and radiography, six years later, showed good outcome.

Conclusions: Although it could be challenging task for clinicians and is not always predictable, post removal is a conservative approach that minimizes loss of remaining tooth structure. Considering that it reduces patient discomfort, non-surgical retreatment should always be the first choice for previously treated teeth with infected root canal system.

POSTER PRESENTATION

PP.047

TOOTH DISCOLORATION ASSOCIATED WITH ENDODONTIC MATERIALS: MECHANISMS AND PREVENTION

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Introduction: Tooth discoloration following endodontic treatment is a relatively common occurrence and represents an aesthetic concern, particularly in the anterior region. It is mainly associated with interactions between endodontic materials and dental tissues. The penetration of material components into dentinal tubules may result in progressive and irreversible color alterations. Understanding the underlying biological and chemical mechanisms is essential for informed material selection and use.

Objective: To identify the mechanisms responsible for tooth discoloration caused by endodontic filling materials and to propose preventive strategies during endodontic treatment.

Materials and Methods: A structured literature search was performed in the PubMed and Cochrane Library databases using combinations of the keywords “tooth discoloration”, “endodontic materials”, and “root canal sealers”. Studies published up to December 2026 were included. Only original research articles were considered.

Results: Discoloration mainly arises from the diffusion of endodontic material components into dentinal tubules, followed by chemical interactions and degradation within the tooth structure. Radiopacifiers, particularly bismuth oxide, have been associated with dark discoloration due to oxidative reactions after interaction with irrigants such as sodium hypochlorite. Blood contamination during regenerative procedures further contributes to staining through the breakdown of blood products. Additionally, resin-based and zinc oxide–eugenol sealers may discolor over time.Technical factors, including inadequate coronal sealing, further increase the risk of discoloration.

Conclusions: Tooth discoloration following endodontic treatment results from the combined effects of material-related and clinical factors. Careful material selection and proper clinical handling are essential to minimize the risk of intrinsic discoloration and ensure optimal aesthetic outcomes.

POSTER PRESENTATION

PP.048

FULL MOUTH REHABILITATION OF A PATIENT WITH AMELOGENESIS IMPERFECTA AND DISTAL TUBULAR ACIDOSIS WITH MONOLITHIC ZIRCONIA CROWNS: A CASE REPORT

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Introduction: Amelogenesis Imperfecta (AI) is a rare hereditary condition affecting enamel structure, often resulting in negative effects on dental function and aesthetics. The clinical management of AI becomes exponentially more complex when it presents as part of a systemic syndrome, such as distal renal tubular acidosis (dRTA), a condition that impairs the kidney's ability to acidify urine, often linked to nephrocalcinosis and hearing or visual impairments. This diagnosis necessitates a careful treatment plan.
Case Description: A 21-year-old female patient diagnosed with AI and dRTA presented with severe plaque accumulation, low vertical dimension of occlusion (VDO), and extensive enamel hypoplasia. Key clinical challenges included the patient’s significant visual impairment, which heightened their tactile sensitivity and fear of the unknown, manifesting as dental anxiety. The systemic dRTA required monitoring of metabolic stability. Intra-oral examination revealed yellowish-brown color, pitted enamel surfaces, requiring a full-mouth rehabilitation to restore function and aesthetics.

Management: Following medical clearance a full-mouth rehabilitation was planned. To preserve the maximum amount of fragile tooth structure while providing high fracture resistance, monolithic zirconia crowns were selected. The VDO was increased using a long-term provisional restorations before the final cementation of the monolithic zirconia crowns

Conclusions: The use of monolithic zirconia provided a biocompatible, durable, and aesthetically pleasing result that successfully addressed the functional deficits. Patient exhibited a significant reduction in dental anxiety.
amelogenesis imperfecta, monolithic zirconia, distal renal tubular acidosis

POSTER PRESENTATION

PP.049

MINIMALLY INVASIVE MANAGEMENT OF A SINGLE ANTERIOR DISCOLORED NON-VITAL TOOTH: A LITERATURE REVIEW

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Introduction: Discoloration of a single anterior tooth presents a common aesthetic and restorative challenge, often resulting from pulpal necrosis, trauma, or iatrogenic staining from endodontic materials. Clinicians must balance aesthetic demands against the necessity of preserving structural integrity, as aggressive tooth reduction for masking often compromises the long-term biomechanical prognosis of the non-vital tooth.

Objective: To review minimally invasive approaches for managing discoloration in a single non-vital anterior tooth.

Materials and Methods: A structured literature search was conducted using PubMed, Scopus, and Google Scholar. Studies investigating the etiology or management of discoloration in anterior teeth were evaluated according to predefined inclusion and exclusion criteria. Clinical studies, including randomized controlled trials where available, as well as case reports and literature reviews were included. Studies focusing on vital bleaching, posterior teeth, systemic causes of discoloration, or purely laboratory investigations were excluded. Following screening and eligibility assessment, 15 studies met the inclusion criteria.

Results: Current evidence supports intracoronal bleaching—particularly the “walking bleach” technique—as a primary conservative intervention. Sodium perborate and carbamide peroxide remain effective bleaching agents, though long-term shade stability varies. While chemical bleaching is generally predictable, refractory cases or those with significant coronal loss require restorative masking. Direct composite veneers represent a conservative and repairable option compared with ceramic restorations, which may be considered in teeth with extensive structural degradation.

Conclusions: Management should follow a conservative hierarchy, prioritizing intracoronal bleaching to maximize tissue preservation, with restorative masking considered only when bleaching alone fails to achieve acceptable aesthetic outcomes.

Keywords: Intracoronal bleaching; Walking bleach technique; Endodontically treated teeth; Tooth discoloration; Composite veneers.

POSTER PRESENTATION

PP.050

USE OF CARIES DETECTION DYES: BENEFITS AND LIMITATIONS

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Introduction: Contemporary caries management emphasizes minimally invasive strategies, increasing the use of adjunctive diagnostic tools such as caries detector dyes. Although widely applied to guide caries removal, their clinical reliability remains controversial. Debate mainly concerns their ability to accurately distinguish between infected dentin requiring removal and affected dentin that can be preserved.

Objective: To assess the advantages and limitations of caries detection dyes in comparison to other caries detection methods, including visual–tactile examination, radiographic assessment, laser fluorescence devices, and optical diagnostic technologies.

Materials and Methods: A search of the literature was performed, using PubMed and Google Scholar databases, and keywords “caries detector dye”, “caries detection methods”, “affected dentin”, and “selective caries removal”.

Results: Caries detector dyes enhance visual differentiation between infected and sound dentin, significantly improving lesion detection and aiding clinical decision-making during excavation. They are simple, low-cost, and particularly useful in deep cavities to reduce the risk of pulp exposure. However, their major limitation is low specificity, as they may stain demineralized but not infected (affected) dentin, leading to unnecessary removal of healthy tooth structure. Variability in staining patterns and lack of standardization further limit their reliability.

Conclusions: Caries detector dyes are valuable adjuncts for visual guidance, especially in minimally invasive dentistry, but should not be used as sole diagnostic criteria due to the risk of overtreatment. Evidence suggests that optimal outcomes are achieved when combined with contemporary diagnostic frameworks and clinical criteria assessing dentin hardness and lesion activity.

POSTER PRESENTATION

PP.051

ESTHETIC TRANSFORMATION OF CANINES INTO LATERAL INCISORS USING CERAMIC LAMINATE VENEERS

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Introduction: The absence of maxillary lateral incisors presents an esthetic challenge in prosthetic dentistry. Although canine substitution (transformation of canines into lateral incisors) is a known treatment approach, the presence of discolored composite laminate restorations combined with the need for morphological transformation represents a relatively uncommon clinical situation.

Objective: This case report aims to present the esthetic rehabilitation of a patient with missing lateral incisors through canine substitution using ceramic laminate veneers.
Case Report: Case Report: A female patient presented with esthetic concerns in the maxillary anterior region. Clinical examination revealed the absence of teeth 12 and 22, while teeth 13 and 23 were restored with discolored composite laminate veneers exhibiting inadequate morphology. The existing restorations were removed, and minimal tooth preparation was performed using fine-grit diamond burs for laminate veneer preparation. A digital impression was obtained using an intraoral scanner (TRIOS 5, 3Shape). The restorations were designed using CAD software (Exocad GmbH), where canine morphology was modified to resemble lateral incisors. Lithium disilicate laminate veneers (IPS e.max Press, Ivoclar Vivadent) were fabricated. The restorations were adhesively cemented using a resin cement (Variolink Esthetic LC, Ivoclar Vivadent). Final adjustments were performed to achieve optimal esthetics and occlusion.

Results: The transformation of canines into lateral incisors resulted in improved color harmony, morphology, and overall smile esthetics.

Conclusions: Ceramic laminate veneers provide a predictable and minimally invasive solution for the esthetic rehabilitation of patients with missing lateral incisors, allowing effective morphological correction and long-term color stability.

Keywords: Porcelain laminate veneer, Lithium disilicate ceramic, Esthetic rehabilitation

POSTER PRESENTATION

PP.052

THE CURIOUS CASE OF COLOR-CHANGING CEMENTS: CAN A RESTORATION PREDICT ITS OWN FAILURE

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Objective: Secondary caries remain the primary cause of restoration failure, often developing undetected at the tooth-material interface due to micro-leakage and acidic bacterial byproducts. Traditional diagnostics (visual/tactile) are passive, often detecting lesions only after significant structural damage. This review evaluates dental restorative materials engineered to actively sense and visually signal these pH drops, predicting failure before cavitation.
An electronic literature search was conducted on PubMed, Scopus, and Embase for articles published from 2005-2025. Keywords included "smart dental composites," "pH-responsive," "anthocyanin pH indicator," and "chromogenic dental materials." Studies focusing on color-changing mechanisms for caries detection were analyzed for sensing efficacy and mechanical stability.

Results: Recent innovations integrate pH-sensitive agents – specifically natural anthocyanins and synthetic dyes – into resin matrices. These "self-reporting" materials demonstrate a distinct chromatic shift (e.g., Red to Blue/Purple) when local pH drops below the critical demineralization threshold (pH < 5.5). However, critical new data reveals a trade-off: higher pigment concentrations (e.g., >2.5%) necessary for visible detection compromise the material's translucency and microhardness, weakening structural integrity. Furthermore, external factors such as bleaching agents have been shown to alter the color stability of these ion-releasing materials, creating a risk of "false positive" signals.

Conclusions: Color-changing restorations represent a paradigm shift from "drill and fill" to "monitor and mitigate". While successfully functioning as early warning systems in vitro, clinical viability requires optimizing the ratio between sensing sensitivity and mechanical durability, so the "alarm" does not compromise the restoration itself.

POSTER PRESENTATION

PP.053

FACTORS AFFECTING BOND STRENGTH TO DENTIN

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Introduction: Achieving durable adhesion to dentin remains a continuous challenge in restorative dentistry due to its heterogeneous structure, high water content, organic composition, and susceptibility to degradation. These characteristics complicate the formation and long-term stability of the resin–dentin interface. Bond strength is influenced by multiple interacting factors related to the substrate, adhesive systems, and clinical procedures.

Objective: To evaluate the key factors affecting dentin bond strength and highlight their clinical implications for improving adhesive performance and long-term durability of restorations.

Materials and Methods: A search of the literature was performed, using PubMed and Google Scholar databases, and keywords “adhesive bond strength”, “dentin bond strength”, “smear layer”, “hybrid layer”, “dentin adhesion” and “10-MDP”.

Results: Dentin-related factors such as depth, tubular density, moisture, and smear layer characteristics significantly influence bonding, with superficial dentin showing higher bond strength compared to deep dentin. Adhesive-related factors—including solvent type, functional monomers (e.g., 10-MDP), and hydrophilicity—affect hybrid layer formation and long-term stability. Technique-related variables, particularly moisture control, active adhesive application, prolonged application time, and multiple adhesive layers, were shown to enhance bond strength. On the contrary, enzymatic degradation of exposed collagen and incomplete resin infiltration contributes to bond failure over time.

Conclusions: Dentin bond strength is a multifactorial phenomenon requiring careful control of substrate conditions, material selection, and clinical technique. A comprehensive, evidence-based approach is essential to enhance adhesion and ensure long-term success of restorative treatments.

POSTER PRESENTATION

PP.054

ESTHETIC MANAGEMENT OF PEG-SHAPED MAXILLARY LATERAL INCISORS WITH PORCELAIN LAMINATE VENEERS: A 5-YEAR FOLLOW-UP

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Introduction: Peg-shaped maxillary lateral incisors may adversely affect smile esthetics, particularly when associated with malposition and rotation. In such cases, restorative treatment is often required to correct tooth form and improve esthetic integrations.

Objective: To present the esthetic management of peg-shaped maxillary lateral incisors with porcelain laminate veneers and to report the 5-year clinical outcome.

Materials and Methods: A 35-year-old female patient presented with esthetic concerns regarding her smile. Clinical examination revealed peg-shaped maxillary lateral incisors (teeth 12 and 22), palatal displacement relative to the adjacent teeth, and rotation of tooth 22. Although orthodontic treatment was considered, restorative treatment was indicated because of the tooth shape anomaly. As the patient declined orthodontic treatment, treatment was completed with porcelain laminate veneers alone. Following mock-up and shade selection, minimal tooth preparation was performed. Lithium disilicate porcelain laminate veneers were fabricated and adhesively cemented. Direct composite restorations were not preferred because of concerns regarding long-term discoloration and durability.

Results: The restorations improved smile esthetics and were well matched with the adjacent teeth. At the 5-year follow-up, the veneers remained clinically stable, with preserved marginal adaptation and color stability and no debonding or fracture.

Conclusions: Porcelain laminate veneers may be a conservative and durable option for peg-shaped maxillary lateral incisors in selected cases. In the present case, stable esthetic and clinical results were maintained at the 5-year follow-up.

Keywords: Peg-shaped maxillary lateral incisors; Porcelain laminate veneers; Esthetic management; Lithium disilicate; Long-term follow-up

POSTER PRESENTATION

PP.055

QUALITY ASSESSMENT OF DIGITAL PLATFORMS REGARDING CONTENT ON PORCELAIN LAMINATE VENEERS

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Objective: This study aimed to compare the content on digital platforms regarding porcelain laminate veneers (PLV) based on quality, and dependability in prosthodontic and esthetic dentistry.

Methods: YouTube (Google, San Bruno, CA, USA), TikTok (ByteDance, Beijing, China), Instagram (Meta Platforms, Menlo Park, CA, USA), as three popular platforms of video content, were searched regarding PLV using the hashtags #laminateveneers #porcelainvenners #dentalveneers and #veneerprep. A total of 300 videos were selected for assessment after being classified based on uploader type. Videos were evaluated using the Global Quality Scale (GQS), Journal of the American Medical Association (JAMA) score, m-DISCERN scores. Scoring was performed in reference to “Fundamentals of Fixed Prosthodontics” by Herbert T. Shillingburg.

Results: Analysis indicates that YouTube scored significantly higher scores in each scoring scale compared to Tiktok and Instagram ($p < 0.05$) while Instagram achieved more consistent and moderate results compared to Tiktok and had significantly higher m-DISCERN scores. ($p < 0.05$) The uploader type of the videos also had a significant influence on reliability scores as the professional-led content stood out earning higher scores ($p < 0.05$).

Conclusions: Based on our data YouTube has the superior scores and showcases the most sufficient content. While Instagram provides effective visualization for clinical demonstrations, TikTok’s utility is limited due to its lack of narration. Practitioners may guide their patients toward Youtube for additional information and demonstrations before treatment; however the primary source of information should be their practitioner for more accurate expectations on PLV treatment.

Keywords: Dental Esthetics; Information Quality; Instagram; Porcelain Veneers; TikTok; YouTube.

POSTER PRESENTATION

PP.056

MINIMALLY INVASIVE ANTERIOR VENEERS FOR AESTHETIC REHABILITATION

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Introduction: Recent advancements in ceramic materials with improved mechanical and optical properties have enabled the fabrication of highly aesthetic, minimally invasive restorations that preserve dental tissues.

Objective: To present the aesthetic rehabilitation of the anterior maxillary region using minimally invasive ceramic veneers.

Methods: AND MATERIALS A 25-year-old female patient presented with aesthetic concerns regarding the anterior maxillary teeth. Following clinical examination and smile analysis, a digital diagnostic wax-up was performed and transferred intraorally via a bis-acryl mock-up, which guided conservative tooth preparation (0.5 mm). After final impressions, thin ceramic veneers (0.2–0.3 mm) were digitally designed using a cut-back technique. Patterns were printed in castable resin (Asiga SuperWAX), invested, and pressed with lithium disilicate (IPS e.max Press), followed by ceramic layering (IPS e.max Ceram). After intraoral try-in, adhesive protocols were applied to both tooth surfaces and restorations. Veneers were bonded using light-cure resin cement, followed by finishing and polishing.

Results: The patient reported complete satisfaction with the aesthetic outcome. The technique achieved excellent esthetics while preserving maximum tooth structure.

Conclusions: Digital planning combined with the mock-up technique provides a predictable and minimally invasive approach for ceramic veneer therapy. Accurate diagnosis and meticulous treatment planning are essential for optimal aesthetic and functional outcomes.

POSTER PRESENTATION

PP.057

CLINICAL PERFORMANCE OF PARTIAL AND FULL COVERAGE RESTORATIONS IN SINGLE ANTERIOR TEETH: A LITERATURE REVIEW

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Introduction: A wide range of partial- and full-coverage techniques have been used for the restoration of a single anterior tooth, making the selection of the appropriate material and type of restoration a clinical challenge.

Objective: The aim of the present review is to evaluate and compare the failure rates, survival rates, and complications of full- and partial-coverage restorations in single anterior teeth.

Materials and Methods: A literature search was conducted using electronic databases (PubMed, Scopus), employing appropriate keywords to identify relevant clinical studies and systematic reviews.

Results: Anterior full- and partial-coverage restorations demonstrate high 5-year survival rates ranging from 96.4% to 96.9% and low annual failure rates ranging from 0.62 to 0.72. Although no differences were reported between the two techniques regarding technical complications, partial-coverage restorations present significantly fewer biological complications compared to full-coverage restorations. Finally, according to a recent systematic review, the choice of restorative material does not show a significant association with restoration failure rates.

Conclusions: Full- and partial-coverage anterior restorations exhibit similar survival rates and technical complication profiles; however, full-coverage restorations appear to be more prone to biological complications. Further randomized clinical trials are required to draw more robust conclusions.

POSTER PRESENTATION

PP.058

ESTHETIC REHABILITATION OF DENTAL TRAUMATIC INJURY IN FRONTAL REGION WITH ZIRCONIA CROWN

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Introduction: Sport plays an important role in physical and mental health, but also carries a risk of injuries. Dental traumatic fractures in esthetic region are mostly unanticipated event that pose serious consequences for the patient on esthetic function and psychological aspect. The most common cause of dental injury are participation in sport activities, car crashes, foreign body hitting the teeth.

Objective: The aim of this case is to present the esthetic rehabilitation of injured maxillary teeth of female football player during football training session.

Materials and Methods: The female football player, 25 years old came to the Department of Prosthodontic with fractured tooth 21. The patient reported history of fall during football training session. The clinical and radiographic examination showed need for revision of endodontic treatment of tooth 21, and application of fiber-glass post and zirconia crown followed after.

Results: Excellent esthetic and function of the final translucent zirconia restoration for patient and doctor satisfaction.

Conclusions: Dental traumatic injury in frontal region are very serious dental problems, especially for the young people whom esthetic is playing very important role. Esthetic rehabilitation using modern technology and modern materials such as translucent zirconium oxide ceramic plays very significant role in solving these challenge. Education of the patient who takes part in sport activities like football enables prevention and reduction of dental injuries.
Key word: traumatic injury, front region, zirconia crown

POSTER PRESENTATION

PP.059

A SCOPING REVIEW OF ARTIFICIAL INTELLIGENCE VERSUS CONVENTIONAL COMPUTER-AIDED DESIGN FOR SINGLE CROWN FABRICATION

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Introduction: Artificial Intelligence (AI) is increasingly integrated into digital dentistry workflows, with applications in computer-aided design (CAD) showing potential to improve efficiency and standardization in crown fabrication. However, its comparative accuracy relative to conventional human-operated CAD remains unclear.

Objective: To evaluate whether AI-generated single tooth-supported crown designs outperform conventional human-operated CAD in terms of design time, morphological accuracy, internal fit, and functional outcomes.

Materials and Methods: A scoping review of 14 in vitro and simulation studies was conducted through literature searches in PubMed and Scopus databases. Extracted outcomes included design time, morphological and occlusal accuracy, internal fit, cusp angulation, and fracture resistance. Due to heterogeneity among studies, a qualitative analysis was performed without meta-analysis.

Results: AI-based CAD significantly reduced design time compared to conventional workflows. Crown morphology generated by AI was generally comparable to that produced by dental technicians, particularly in axial and occlusal contours, and fracture loads were acceptable. However, limitations were noted in occlusal contacts, cusp angles, and the reproduction of wear facets. While the overall workflow was streamlined and outcomes were promising, most studies reported the need for minor human adjustments to achieve optimal functional results.

Conclusions: AI-generated crown designs demonstrate acceptable quality and improved efficiency in the CAD process. However, further refinement of algorithms is required before widespread clinical implementation. Hybrid human–AI workflows are recommended to ensure optimal functional outcomes, particularly in complex cases.

POSTER PRESENTATION

PP.060

BIOLOGICAL WIDTH AND ITS IMPORTANCE IN RESTORATIVE DENTISTRY

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Introduction: The relationship between periodontal health and dental restorations is undeniable and inseparable. Despite increased awareness of the perio-restorative interface, many clinicians have been unable to apply the concept of biologic width in a practical manner.

Objective: The aim of this review is to describe the types of biological width, to evaluate the effect of restoration design on optimal periodontal health and longevity, and to present methods to prevent and manage biologic width violation.

Materials and Methods: A literature search was conducted using PubMed, Google Scholar, and ResearchGate databases with the keywords “biologic width,” “periodontal health,” “restorative dentistry,” “crown lengthening,”

Results: A thorough understanding of the relationship between periodontal tissues and restorative dentistry is essential to ensure proper form, function, and aesthetics. Violation of the biological width due to improperly placed restorative margins and poorly adapted restorations may lead to unpredictable bone loss and gingival recession.

Conclusions: The goal of any restorative treatment should be to restore the health of the tooth and periodontium. The factors to be considered are proper contour, correct polishing, rounding of gingival margins and adequate attached gingiva. In cases where the margin must be placed close to the alveolar crest, crown-lengthening surgery or orthodontic extrusion should be considered to provide adequate tooth structure and maintain periodontal health.

POSTER PRESENTATION

PP.061

MANAGING WHITE SPOT LESIONS IN THE ERA OF MINIMALLY INVASIVE DENTISTRY

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Introduction: White spot lesions (WSLs) are opaque white or chalky areas on tooth surfaces with multifactorial etiology, and their diagnosis is mainly based on visual examination. They occur due to changes in tooth enamel caused by mineral loss without cavity formation, indicating an imbalance between enamel demineralization and remineralization, and their presence suggests an increased risk for caries development.

Objective: The aim of this review is to present etiology, appearance, and methods of prevention and management for both functional and aesthetic outcomes.

Materials and Methods: A literature search was conducted using PubMed, Google Scholar, and ResearchGate databases with the keywords “white spot lesions”, “remineralization”, “demineralization”, “oral hygiene”, and “minimally invasive dentistry”.

Results: White spot lesions are alterations that can be caused by a highly cariogenic diet, poor oral hygiene, previous orthodontic treatment, acidic salivary pH, fluoride consumption, abnormalities in enamel development, fluorosis, or trauma. They are classified in the 1–2 range of the International Caries Detection and Assessment System (ICDAS II).

Conclusions: These lesions are managed by educating and motivating the patient to maintain good oral hygiene. Casein phosphopeptides-amorphous calcium phosphate (CPP-ACP) antiseptics, probiotics, polyols, sealants, lasers, tooth bleaching, resin infiltration, and microabrasion have also been recommended. The depth of the defect is crucial for success, and the literature suggests that a combination of minimally invasive techniques is the most appropriate approach for treatment.

POSTER PRESENTATION

PP.063

POST REMOVAL WITHIN THE PROSTHETIC RESTORATION: CLINICAL FEASIBILITY OR LACK OF EVIDENCE?

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Introduction: The presence of posts creates obstacles for accessing root canals and performing endodontic retreatment.

Objective: To present and discuss whether post removal during retreatment can be predictably carried out with the prosthetic restoration in place.

Materials and Methods: Preservation of the pre-existing prosthetic restoration (or not) during endodontic retreatment has been a matter of discussion, particularly in clinical practice. It is well known that only removal gives full and undoubted information about the underlying caries and the amount of healthy tissue remaining, let alone in retreatment cases. However, this may not be always feasible. Such conditions include both extensive restorations like full-arch bridges, or patient-related factors such as financial difficulty for a new restoration. Traditionally, post removal is the utmost indication for the clinician to completely remove the restoration.

Results: Many such cases can also be handled with the restoration in place. Such an approach is affected by the type of the post, the type and quality of the prosthetic restoration, the clinician's skills and the patient's willingness (or not) to financially support a new prosthetic rehabilitation.

Conclusions: Ideally, all restorations should be removed in cases of retreatment with post. However, post removal with the restoration in place is feasible in many cases.
Screw & glass-fiber posts are easier to be removed with the restoration in place than cast posts; the latter far more difficult to be removed in that way.

Glass fiber post cut through the crown of tooth #16./ Three glass fiber posts cut through the crown of tooth #16.

Screw post removed through the zirconia crown of tooth #36/ Before retreatment ,after retreatment, 18 months follow up.

Pre-operative, Post-operative, follow up 2.5 years and 7 years.

POSTER PRESENTATION

PP.064

VITAL PULP PRESERVATION IN DEEP CARIES: DECISION-MAKING AND BIOACTIVE MATERIALS

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Introduction: Dental caries is a bacterial infectious disease, and deep caries with pulp exposure represents a major clinical challenge in preserving tooth vitality.

Objective: To assess the prevalence of deep caries in daily practice and to evaluate therapeutic decision-making among dentists, with emphasis on vital pulp preservation and the use of bioactive materials.

Materials and Methods: A cross-sectional survey was conducted among 50 dentists in Strumica, Skopje and Shtip using a structured questionnaire. The survey analyzed the frequency of deep caries cases, preferred treatment approaches, and the influence of clinical experience on therapeutic choice.

Results: Most respondents (90%) reported frequently encountering patients with deep caries. Endodontic treatment was the most commonly selected approach (70%), while 30% preferred vital pulp therapy procedures. No statistically significant correlation was found between years of clinical experience and the choice of therapy. Among practitioners performing direct pulp capping, Biodentin was more frequently selected than MTA, indicating a growing preference for newer bioactive materials. All respondents agreed that the degree of pulp involvement is the decisive factor in treatment planning.

Keywords: Although conventional endodontic therapy remains predominant, there is an increasing tendency toward vital pulp preservation supported by bioactive materials. Early diagnosis and appropriate case selection are essential for maintaining pulp vitality and improving long-term clinical outcomes.
deep caries, pulp exposure, vital pulp therapy, Biodentin, MTA

POSTER PRESENTATION

PP.065

BONDING STRATEGIES FOR INDIRECT ADHESIVE RESTORATIONS: PREHEATED COMPOSITE VERSUS FLOWABLE COMPOSITE AND RESIN LUTING CEMENTS

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Introduction: Indirect adhesive restorations have gained significant traction, partly due to the increasing prioritization of minimally invasive treatments. In an effort to optimize the adhesive luting, flowable composites and preheated conventional composites have been proposed as alternative bonding strategies, aiming to overcome the limitations associated with resin luting cements, which remain the most widely used materials.

Objective: To compare preheated composite resins, flowable composites, and resin luting cements regarding polymerization efficiency and bonding performance under indirect restorations.

Materials and Methods: A narrative review of the literature was conducted using PubMed. In vitro and clinical studies evaluating film thickness, bond strength, degree of conversion, microhardness, marginal adaptation, and the influence of restoration thickness were included. Mean values and reported ranges were descriptively compared without statistical pooling.

Results: Resin luting cements demonstrated consistently lower film thickness and predictable bond strength across different substrates. Preheated composites showed improved flowability and acceptable degree of conversion while maintaining higher filler content and favorable mechanical properties; however, increased film thickness and technique sensitivity were frequently reported. Flowable composites exhibited satisfactory adaptation but generally lower mechanical performance. Polymerization efficiency of light-cured materials was significantly influenced by restoration thickness and optical properties, with reduced degree of conversion observed beneath thicker or less translucent restorations.

Conclusions: Resin luting cements remain the most evidence-based option, particularly in cases of increased restoration thickness. Evaluation of restoration thickness and material translucency is essential when selecting the luting strategy to ensure adequate polymerization and long-term clinical success.

POSTER PRESENTATION

PP.066

ANALYSIS OF THE QUALITY OF POLYMERIZATION AND MICROHARDNESS OF BULK-FILL COMPOSITE MATERIALS

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Introduction: Bulk-Fill composite materials are innovative materials that enable an easier cavity restoration technique because they can be placed in layers of 4 mm.

Objective: was to examine the quality of polymerization of two Bulk-Fill composite materials by examination of their microhardness, as well as to compare the microhardness values on the surface of the samples and at a depth of 4mm.

Materials and Methods: 20 samples of two composite materials, Filtek One Bulk Fill and Tetric PowerFill, were prepared in cylindrical plastic molds, covered with mylar strips and polymerized. After the final polishing procedure the samples was tested using the Vickers microhardness test. Each sample was analyzed from the upper polymerized side, and the lower, non-polymerized side at a depth of 4 mm. Three measurements were made for each sample, and the microhardness is shown as the mean value.

Results: Filtek One Bulk Fill and Tetric Power Fill had a higher microhardness value on the polymerized side of the sample compared to the non-polymerized side at a depth of 4mm ($p<0.001$). A higher microhardness value was demonstrated with Filtek One Bulk Fill compared to Tetric PowerFill at the surface ($p<0.001$) as well as at a depth of 4 mm ($p<0.001$).

Conclusions: The difference in microhardness on both sides of the tested samples indicates that placing of composite material in a thicker layer can cause weaker polymerisation and microhardness in deeper layers, so it is necessary to follow the manufacturer's recommendations regarding thickness as well as the polymerization technique.
Key words Bulk-Fill, dental composites, microhardness, polymerization.

POSTER PRESENTATION

PP.067

REHABILITATION OF CERVICAL CARIES CAUSED BY EROSIVE EFFECTS AND INADEQUATE ORAL HYGIENE WITH DIRECT COMPOSITE RESIN: A CASE REPORT

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Objective: Dental erosion is defined as the irreversible and progressive loss of dental hard tissues caused by acids in the absence of bacterial involvement. Following the erosive process, inadequate oral hygiene facilitates the development and progression of caries in the weakened dental tissues. This case report describes the restoration of carious lesions located in the cervical region using composite resin.
Case Report: A 16-year-old male patient presented to our clinic with complaints of carious lesions and significant substance loss in the cervical regions of both anterior and posterior teeth. Detailed anamnesis revealed a history of regular consumption of acidic beverages for a certain period. Clinical examination indicated poor oral hygiene. Based on clinical and radiographic evaluations, removal of the carious lesions followed by restoration with composite resin material was planned. After achieving proper isolation, the carious tissue was removed. The enamel surface was selectively etched with 37% orthophosphoric acid using the selective etching technique. Subsequently, a universal adhesive (Clearfil S3 Bond Universal, Kuraray, Tokyo, Japan) was applied, and the restoration was completed using a composite resin material (Omnichroma, Tokuyama, Japan). Surface finishing was performed using polishing discs (OptiDisc, Kerr, USA), followed by finishing and polishing procedures with polishing rubbers.

Conclusions: The patient was highly satisfied with the treatment outcomes. During follow-up visits, no fracture, discoloration, or sensitivity was observed. Direct composite resin restorations are widely preferred due to their aesthetic success, absence of laboratory procedures, repairability, and favorable color matching.

Keywords: Cervical caries, composite resin, erosion

POSTER PRESENTATION

PP.068

DIRECT COMPOSITE RESIN RESTORATION IN THE TREATMENT OF ANTERIOR POLYDIASTEMA: A CASE REPORT

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Objective: Diastema is defined as the space between teeth resulting from genetic factors, tooth agenesis, frenulum anomalies, or periodontal diseases. This case report describes the minimally invasive restoration of an anterior polydiastema patient using direct composite resin.
Case Report: A 23-year-old female patient presented to our clinic with aesthetic concerns regarding spaces between her anterior teeth. Clinical and radiographic examinations revealed no pathological findings, pain, or swelling. Based on the evaluations, closure of the polydiastema with direct composite resin was planned. After shade selection using the button technique, isolation was achieved with a rubber dam. The enamel surface was etched for 30 seconds with 37% orthophosphoric acid using the total-etch technique. Subsequently, a universal adhesive (Clearfil S3 Bond Universal, Kuraray, Tokyo, Japan) was applied, and the restoration was completed with a composite resin material (Omnichroma, Tokuyama, Japan). Surface finishing procedures were performed using polishing discs (OptiDisc, Kerr, USA), followed by final finishing and polishing with polishing rubbers.

Conclusions: Postoperative aesthetic and functional outcomes met expectations, and patient satisfaction was high. No fracture, discoloration, or morphological deterioration was observed during follow-up. Direct composite resin restorations represent a reliable and effective option for diastema closure due to their rapid application, elimination of laboratory procedures, and color stability.

Keywords: Polydiastema, aesthetics, composite resin

POSTER PRESENTATION

PP.069

DIRECT COMPOSITE RESIN RESTORATION OF PEG-SHAPED LATERAL INCISORS ASSOCIATED WITH DIASTEMAS: A CASE REPORT

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Introduction: Peg-shaped lateral incisors are anomalies of the maxillary anterior region characterized by reduced mesiodistal width and a tapered crown morphology, often associated with diastemas. The reported global prevalence of peg-shaped lateral incisors is approximately 1.8%.

Objective: This poster aims to present the aesthetic rehabilitation of peg-shaped lateral incisors and associated diastemas using direct composite resin restorations.

Materials and Methods: A 19-year-old male patient was admitted to the Department of Restorative Dentistry, with aesthetic complaints. A peg-shaped morphology was observed in the lateral incisors of teeth #12 and #22, with a diastema present between teeth #11 and #21.The treatment plan involved the direct restoration of the teeth with resin composites. Shade selection was performed using the button technique. After rubber dam isolation, the enamel surfaces were etched with 37% orthophosphoric acid (Dispodent, Turkey) for 30 seconds, rinsed, and air-dried. A universal adhesive system (Tokuyama Bond Force II, Japan) was applied according to the manufacturer's instructions. A sectional matrix system (Tecci Spoon Matrix, Turkey) was placed, and the restorations were completed using a microhybrid composite G-aenial Anterior (A1, JE, AE; GC, Japan). Surface texture was created with diamond burs and abrasive discs. Final polishing was performed using spiral polishing discs and composite polishing paste (Lucida, Diashine, USA) with felt discs.

Results: At the one-week follow-up, the restorations demonstrated satisfactory aesthetic integration, and the patient reported a high level of satisfaction.

Conclusions: Direct composite resin restorations provide a conservative and aesthetic solution for the management of peg-shaped lateral incisors with associated diastemas.

POSTER PRESENTATION

PP.070

ENDODONTIC AND RESTORATIVE TREATMENT OF A MOLARIZED MAXILLARY FIRST PREMOLAR

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Introduction: Molarization of maxillary premolars is an anatomical variation characterized by molar-like morphology, including additional cusps and a complex root canal configuration, which may complicate endodontic treatment and increase the risk of untreated canals.

Objective: This case report presents the endodontic management of a molarized maxillary first premolar with three separate roots, each containing a single canal.
Case Report: A 37-year-old patient with a non-contributory medical history presented with pain in tooth 24, clinically suggestive of pulpitis. Examination revealed occluso-mesial caries and an increased response to electric and cold pulp testing, consistent with symptomatic pulpitis. Retroalveolar radiography revealed a three-rooted morphology. Chemo-mechanical preparation was performed using the ProTaper Ultimate system (Dentsply Sirona, Switzerland) with copious irrigation. Obturation was achieved using Bio-C sealer (Angelus, PR, Brazil) and cold lateral compaction of gutta-percha. Post-endodontic restoration included cementation of a RelyX Fiber Post (3M, MN, USA) in the palatal canal with G-Cem One self-adhesive resin cement (GC, Tokyo, Japan). FRC core build-up was completed using everX Flow, and final coronal reconstruction was achieved using an incremental layering technique with G-ænial A'CHORD and G-ænial Universal Injectable (all GC, Tokyo, Japan).

Conclusions: Anatomical variations in maxillary premolars may pose significant endodontic challenges, requiring accurate diagnosis and knowledge of root canal morphology for successful outcomes.

Keywords: premolar molarization, anatomical variation, endodontic treatment

POSTER PRESENTATION

PP.071

EVALUATION OF DIFFERENT ARTIFICIAL INTELLIGENCE APPLICATIONS IN ANSWERING TECHNICAL QUESTIONS RELATED OF DENTAL AVULSION

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Introduction: Dental avulsion constitutes a critical dental emergency, necessitating expeditious and precise clinical decision-making. Artificial intelligence platforms can be used by both general dentists and specialists as sources for technical inquiries related to the management of dental avulsion. Consequently, evaluating the accuracy of artificial intelligence-powered chatbots in answering technical questions related to avulsion is crucial for assessing their potential uses in dental clinical practice.

Objective: This study aims to evaluate the accuracy of responses provided by five different artificial intelligence chatbots to technical questions that dentists might ask regarding dental avulsion.

Materials and Methods: A total of 30 dichotomous (yes/no) questions related to dental avulsion procedures were developed based on the International Association of Dental Traumatology 2020 guidelines for the management of traumatic dental injuries. These questions were asked three times a day for 10 days on five platforms: ChatGPT-5.2, DeepSeek-R1, Gemini-3, Grok-3, and Copilot. The responses obtained were categorized as correct or incorrect according to the guidelines, and the results were statistically analyzed.

Results: The analysis of 4500 responses showed significant differences between the responses given by the platforms during morning, noon, and evening sessions ($p < 0.05$). DeepSeek-R1 had the highest accuracy rate (94.6%), followed by ChatGPT-5.2 (90.3%), Gemini-3 (85.6%), Grok-3 (80.4%), and Copilot (65.1%).

Conclusions: Artificial intelligence-powered chatbots have shown varying accuracy rates in answering questions about dental avulsion. The use of these robots should be considered supportive, and their answers must be validated against guidelines.

POSTER PRESENTATION

PP.072

DIASTEMA CLOSURE WITH LITHIUM DISILICATE LAMINATE VENEERS IN A YOUNG PATIENT

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Introduction: Multiple diastemas in the maxillary anterior region combined with insufficient anatomical definition of the incisors represent a significant aesthetic concern in young patients and require a minimally invasive yet predictable therapeutic approach.

Objective: To present the aesthetic rehabilitation of a young patient with diastemas between all maxillary incisors using lithium disilicate laminate veneers.

Materials and Methods: A 21-year-old female patient presented requesting aesthetic correction due to spacing in the maxillary anterior region. Clinical examination revealed healthy periodontal tissues, stable occlusion, probing depths of 3 mm in the maxillary anterior sextant, and a 2–3 mm gingival display on smiling. Diastemas of approximately 1 mm were present between the central and lateral incisors. All maxillary incisors exhibited insufficient anatomical definition. Clinical crown lengthening with 1 mm gingivectomy was performed to improve smile harmony. Tooth preparation included 0.5 mm incisal reduction to create a 1 mm butt joint platform and minimal vestibular refinement. Four lithium disilicate laminate veneers were fabricated. Veneers were etched with 9% hydrofluoric acid, silanized, and bonded following selective enamel etching with 35% phosphoric acid and adhesive application. Cementation was performed using light-cure resin cement.

Results: Complete closure of diastemas, improved tooth morphology, and harmonious smile integration were achieved. Marginal adaptation was optimal and periodontal health was maintained. Gingival exposure was reduced. No postoperative sensitivity was observed.

Conclusions: Lithium disilicate laminate veneers provide a predictable, minimally invasive approach for the management of multiple maxillary diastemas in young patients, preserving enamel integrity and promoting long-term aesthetic and periodontal stability.

POSTER PRESENTATION

PP.073

DIRECT AND INDIRECT RESTORATIVE STRATEGIES FOR MODERATE TO SEVERE TOOTH WEAR: A SYSTEMATIC REVIEW

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Introduction: Tooth wear is a multifactorial condition commonly encountered in clinical practice. In its advanced stages, substantial loss of tooth structure may require various restorative interventions to restore aesthetics and function.

Objective: This systematic review aimed to evaluate clinical outcomes, survival, and failure rates of direct and indirect restorative materials in patients with moderate to severe tooth wear.

Materials and Methods: A comprehensive search was conducted in PubMed, Scopus, and the Cochrane Library, following the PRISMA guidelines. The search results were filtered by language, and studies in English were eligible. Case series and randomized controlled clinical trials were included, while case reports, review articles, short communications, conference proceedings, in vitro studies, and ongoing clinical trials were excluded. Data extraction and screening were performed by two independent evaluators. The Johanna Briggs Institute (JBI) critical appraisal tools were used to assess the studies quality.

Results: A total of 1,148 records were identified. After duplicate removal, title/abstract screening, and full-text assessment, 37 studies were included in the qualitative synthesis.

Conclusions: Both direct and indirect restorative approaches demonstrated favourable clinical performance. Direct resin composite restorations demonstrated acceptable medium- to long-term survival rates, high patient satisfaction, and predictable functional and aesthetic outcomes, though with higher complication rates in posterior teeth. Indirect ceramic restorations, particularly lithium disilicate and zirconia, exhibited high survival rates, reduced wear, and stable vertical dimension, whereas indirect resin-based materials were associated with increased wear and greater technical complications.

POSTER PRESENTATION

PP.074

COMPARATIVE EFFECTS OF PEROXIDE-FREE AND PEROXIDE-BASED TOOTH WHITENING AGENTS ON ENAMEL COLOR AND SURFACE CHARACTERISTICS – LITERATURE REVIEW

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Introduction: Tooth whitening utilizing peroxide-based agents has proven an effective method, however, it is linked to alterations in enamel morphology and surface properties. Newer peroxide-free systems such as phthalimidoperoxycaproic acid have been suggested as less hazardous options to the common peroxide-based agents; nevertheless, evidence comparing these two systems is still limited.

Objective: To evaluate the whitening efficacy of peroxide-free to conventional peroxide-based agents such as hydrogen peroxide, carbamide peroxide and placebo and to assess the relative degree of enamel surface alteration.

Materials and Methods: A comprehensive search was conducted in major scientific databases (PubMed, Scopus, ScienceDirect etc.) using a combination of relevant keywords (peroxide-free whitening agents, phthalimidoperoxycaproic acid, enamel surface properties, bleaching efficacy). Articles that evaluated the whitening effectiveness and the degree of alteration to the enamel surface were included. All relevant references listed in the identified articles were reviewed to ensure that no additional studies were missed.

Results: Peroxide-based agents produced higher degrees of whitening than both the peroxide-free agent and placebo. However, they caused significant increases in surface roughness and had more apparent morphological effects compared to the peroxide-free agent. Both the peroxide-free agent and placebo were found to produce similar color improvements with less variability in surface roughness and fewer alterations to the enamel surface.

Conclusions: Peroxide-free whitening systems can provide excellent whitening results with minimal negative effects on the integrity of the enamel surface. Standardized comparative protocols are necessary to determine the clinical value and safety profiles of these new products.

POSTER PRESENTATION

PP.075

THREE-DIMENSIONAL MICRO-CT EVALUATION OF ER,CR:YSGG LASER IN FIBER POST RETRIEVAL

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Objective: To assess the effectiveness of Er,Cr:YSGG laser irradiation for fiber post removal and compare it with an ultrasonic technique using micro-computed tomography (micro-CT).

Materials and Methods: Twenty single-rooted premolars were endodontically treated and restored with fiber posts. Specimens were randomly assigned to two groups (n=10): ultrasonic removal with a diamond-coated tip (control) and Er,Cr:YSGG laser irradiation (2780 nm; 2.5 W, 20 Hz, 140 μs, 40% air, 20% water, close-contact mode). Micro-CT scanning (50 kVp, 300 μA) was performed before and after post removal. The number of newly formed microcracks, dentinal tissue loss, residual resin cement, and removal time were evaluated. Statistical analysis was conducted at α=0.05.

Results: The laser group demonstrated significantly fewer newly formed microcracks and shorter removal time compared with the ultrasonic group. Residual cement and dentinal tissue loss were comparable between techniques.

Conclusions: Er,Cr:YSGG laser irradiation represents a conservative and time-efficient alternative for fiber post removal, reducing microcrack formation compared with ultrasonic instrumentation. Micro-CT analysis proved to be a reliable non-destructive method for evaluating structural changes in radicular dentin.

POSTER PRESENTATION

PP.076

TREATMENT OF DEEP BROWN MIH OPACITIES ON MAXILLARY CENTRAL INCISORS USING A MODIFIED RESIN INFILTRATION APPROACH: A CASE REPORT

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Introduction: Resin infiltration was initially introduced for masking enamel white spot lesions caused by dental caries. Its use was later extended to white developmental enamel defects of non-carious origin. In Molar Incisor Hypomineralization (MIH), modifications such as repeated etching cycles and prolonged application time have been proposed in the literature to enhance resin penetration and improve masking. However, evidence regarding the management of deep brown opacities remains limited.

Objective: To present the management of severe brown MIH lesions using a modified resin infiltration protocol.

Materials and Methods: A 10-year-old patient presented with aesthetic concerns due to brown opacities on the maxillary central incisors. Both incisors were affected by severe MIH. Medical history was clear and non-contributory. For the restoration of these teeth, enamel macro-abrasion was performed to remove the demarcated brown opacities. Three cycles of 15% HCl (Icon Etch) and Icon Dry (ethanol) were applied. After sufficient masking of the lesions was observed, the resin infiltrant was administered twice (1 minute for each application) and light cured for 40 seconds. Due to enamel loss, a composite material (Admira 5, VOCO, Germany) was placed over the infiltrated surfaces.

Results: Effective masking of the lesions was achieved, resulting in good esthetic integration with the adjacent teeth. At the two-year follow-up, color stability was maintained and no adverse outcomes were observed.

Conclusions: Macro-abrasion combined with modified resin infiltration and composite restoration may represent a promising minimally invasive approach for managing deep brown MIH opacities. Further clinical studies are required.

POSTER PRESENTATION

PP.077

CONSERVATIVE MANAGEMENT OF AN INFRA-OCCLUDED PRIMARY MOLAR USING A POSTERIOR STRIP CROWN: A CASE REPORT

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Introduction: Ankylosis of primary molars associated with congenital agenesis of their permanent successors can lead to infra-occlusion. If left untreated, this condition may contribute to space loss, tilting of adjacent teeth, midline shift and supra-eruption of the opposing dentition. Conventional management involves extraction, followed by orthodontic space closure or space maintenance and subsequent implant placement. In certain cases, however, selective retention of infra-occluded primary molars may represent a conservative alternative.

Objective: To present a minimally invasive approach for managing an infra-occluded second primary molar using a posterior strip crown.

Materials and Methods: An 18-year-old patient presented with an ankylosed mandibular second primary molar. Clinically, the tooth exhibited infra-occlusion accompanied by mild tipping of the adjacent permanent teeth. Radiographic examination revealed permanent successor agenesis. Treatment consisted of anatomical reconstruction using a posterior strip crown and composite resin. Minimal occlusal and proximal reduction was performed. Following etching and adhesive application, a carefully selected crown form (TOR VM, Moscow, Russia) was loaded with a bulk-fill composite resin (VisCalor Bulk, VOCO, Germany), seated and light-cured. Occlusion was subsequently adjusted.

Results: This technique required negligible tooth preparation, preserving the remaining dental structure while bringing the tooth into functional occlusion. At the one-year clinical evaluation, the vertical dimension remained stable, and the periodontal tissues exhibited good gingival health.

Conclusions: In cases of premolar agenesis, restoring an ankylosed primary molar with a posterior strip crown is a highly effective strategy that ensures long-term functional stability and bone preservation until definitive implant rehabilitation becomes feasible.

POSTER PRESENTATION

PP.078

DENTIN HYPERSENSITIVITY: A CLINICAL CHALLENGE WITH EVOLVING SOLUTIONS

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Introduction: Dentin hypersensitivity (DH) is defined by short, sharp pain originating from exposed cervical dentin when reacting to thermal, tactile, osmotic, or chemical stimuli that cannot be linked to other dental pathologies. It is a common condition with a multifactorial etiology. Its pain mechanism is explained by the hydrodynamic theory, which suggests that symptoms result from fluid movement within open dentinal tubules that activate pulpal nerve endings.

Objective: To examine the causes, diagnostic criteria, and modern treatment options available for managing dentin hypersensitivity

Materials and Methods: A focused literature review was performed, concentrating on the latest evidence related to the pathophysiology, clinical evaluation, and treatment of DH. Both at-home and in-office therapeutic protocols suggested by the literature were evaluated, considering their mechanisms of action and clinical effectiveness.

Results: DH requires two essential conditions: dentin exposure and patent dentinal tubules. A precise diagnosis depends on detailed history-taking, differential diagnosis, and clinical evaluations. Treatment follows a stepwise method beginning with patient education and elimination of etiological factors. At-home treatments mainly include potassium salts and fluoride-containing agents. In-office treatments include fluoride varnishes, oxalates, adhesive systems, bioactive materials, silver diamine fluoride, and laser therapies. These methods act by tubule occlusion or modulation of nerve transmission. Clinical outcomes vary, partly due to the subjective nature of pain assessment.

Conclusions: Successful management of DH relies on accurate diagnosis, individualized treatment planning, and combination therapy. Although numerous therapeutic options exist, no single definitive treatment has been established, highlighting the need for continued research and standardized assessment methods.

POSTER PRESENTATION

PP.079

INTERDISCIPLINARY MANAGEMENT OF PEG-SHAPED LATERAL MAXILLARY INCISORS: A RESTORATIVE-ORTHODONTIC APPROACH

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Introduction: Peg-shaped maxillary lateral incisors are a common form of localized microdontia characterized by reduced crown size and conical morphology. Interdental spacing, accompanied hypodontia, poor aesthetics, and functional problems, can appear due to this anomaly. Efficient treatment may require an interdisciplinary approach, which involves orthodontic space and restorative management to achieve harmonious aesthetic and functional results.

Objective: To demonstrate an interdisciplinary orthodontic and restorative protocol for the comprehensive treatment of peg-shaped maxillary lateral incisors and evaluate aesthetic and functional outcomes within the context of the literature.

Materials and Methods: A literature review was conducted using databases such as PubMed, Scopus, and Google Scholar for articles focusing on the diagnosis, orthodontic space management, restorative therapy, and interdisciplinary treatment planning of peg-shaped maxillary lateral incisors. Publications included focused on proportional analysis, smile design, wax-up and mock-up protocols, minimally invasive restorative treatments, and long-lasting aesthetic and functional results. Clinical recommendations and treatment sequencing protocols were analyzed to synthesize a comprehensive treatment approach.

Results: Orthodontic space redistribution resulted in proportional interdental proportions and harmonious arch alignment. Improved incisor morphology, enhanced smile design, and patient satisfaction were outcomes of composite resin or veneer restorations. Interdisciplinary treatment planning reduced the need for invasive procedures and enhanced conservative restorative outcomes.

Conclusions: An interdisciplinary approach integrating orthodontic and restorative rehabilitation is crucial for a predictable aesthetic and functional result for patients with peg-shaped maxillary lateral incisors. The coordinated treatment planning is critical to achieve ideal tooth proportions and a harmonious smile.

POSTER PRESENTATION

PP.080

CARIES DENTAL MANAGEMENT OF A PATIENT WITH AMELOGENESIS IMPEFECTA - A CASE REPORT

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Objective: Amelogenesis imperfecta (AI) is a rare genetic disorder that disrupts formation and quality of tooth enamel, leading to weak, discolored and easily damaged teeth. The aim of this case report was to present the dental management of a pediatric patient diagnosed with AI.
CASE REPORT: A 9-year-old child presented for dental examination with main complaints of dental hypersensitivity and enamel defects on the upper permanent central incisors. A detailed medical and dental history was obtained followed by comprehensive clinical assessment. The patient had mixed dentition. Clinical examination revealed noticeable vestibular surface loss of the upper permanent central incisors and primary teeth defects associated with yellow-brown discoloration in both jaws. One primary molar had an active caries lesion. Addicionally, localized gingivitis was present. Family history revealed that the patient’s sibling exhibited enamel opacities affecting the upper and lower permanent central incisors, suggesting a hereditary component. Dietary advice was provided and the patient was instructed on how to improve oral hygiene with supplementary daily use of toothmousse containing CPP-ACP and fluoride. Prophylactic treatment included scaling and polishing followed by fluoride varnish application. Caries and enamel defects in primary dentition were restored using glass ionomer cement with minimal tooth preparation to preserve remaining tooth structure. The upper permanent central incisors were restored using direct composite resin material. Follow-up examinations were scheduled three times a month until oral hygiene was improved.

Conclusions: The implemented treatment that combined preventive care and minimally invasive restorative approach resulted in significant functional and esthetic improvement leading to increased self-confidence of the patient with AI.

POSTER PRESENTATION

PP.081

INTRAORAL SCANNERS USE FOR THE QUANTITATIVE ASSESSMENT OF TOOTH WEAR

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Introduction: Tooth wear is a multifactorial condition characterized by the loss of dental tissue due to both mechanical and chemical factors. Traditional diagnostic methods rely heavily on visual clinical examination, which is often subjective, prone to observer error, and lacks standardization. Early and accurate diagnosis is essential for implementing preventive measures. Intraoral scanners (IOS) have emerged as a promising alternative, providing clinicians with precise, quantitative data to monitor tissue loss over time.

Objective: To evaluate current methodologies for detecting and monitoring tooth wear using intraoral scanning technology.

Materials and Methods: A literature search was conducted using the PubMed database with

Keywords: “intraoral scanner”, “tooth wear” and “quantitative assessment”. The search was limited to studies published within the last five years to ensure relevance with current IOS technology.

Results: The initial search yielded 45 articles, of which 12 met the inclusion criteria by specifically addressing quantitative wear assessment through digital model superimposition. The described methodology included scans’ superimposition and further process of the data to generate a detailed surface color map depicting linear and volumetric changes of each tooth surface.

Conclusions: Intraoral scanners provide a reliable and easily reproducible method for the documentation and measurement of tooth wear. The integration of intraoral scanners in such cases facilitates treatment planning and enhances patient communication.

POSTER PRESENTATION

PP.082

WHITE SPOT LESIONS ASSOCIATED WITH FIXED ORTHODONTIC TREATMENT: ETIOLOGY, PREVENTION AND CONTEMPORARY MANAGEMENT STRATEGIES

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Introduction: The increasing demand for orthodontic treatment has highlighted the importance of managing treatment related complications affecting enamel integrity. White spot lesions (WSLs) are among the most common adverse effects observed during fixed orthodontic therapy.

Objective: To review the etiology, pathophysiological mechanisms, and current prevention and management strategies of WSLs associated with fixed orthodontic appliances.

Materials and Methods: A narrative literature review was conducted using electronic databases including PubMed, ScienceDirect, and Google Scholar. Articles published between 2000-2025 were screened using keywords such as “white spot lesions”, “demineralization”, “orthodontic appliances” and “prevention”. Studies focusing on the etiology, epidemiology, prevention, and management of WSLs were selected and analyzed.

Results: Evidence demonstrates that dental plaque accumulation around orthodontic brackets promotes acidogenic bacterial activity, resulting in enamel demineralization and subsurface porous lesions. Preventive and therapeutic strategies include optimized oral hygiene, dietary modification, and remineralizing agents such as fluoride, CPP-ACP, and bioactive glass. Minimally invasive techniques, including resin infiltration and enamel microabrasion, show favorable clinical outcomes, while emerging natural agents, including green tea and herbal extracts, may enhance remineralization and exert antimicrobial effects.

Conclusions: WSLs remain a frequent complication of fixed orthodontic therapy. Early detection, patient education, and the use of remineralizing agents are essential for effective prevention.

POSTER PRESENTATION

PP.083

THE AESTHETIC MANAGEMENT OF DIASTEMA CLOSURE TREATMENT WITH LITHIUM DISILICATE REINFORCED EMPRESS LAMINATE VENEER: CASE REPORT

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Introduction: Laminate veneers are a conservative approach to treating many aesthetic problems. They are frequently preferred to meet patients' aesthetic expectations for diastemas in the anterior teeth.

Case Report: A 24-year-old patient with diastemas and mild crowding presented to our clinic to address these issues. Following radiological and clinical examinations, the indications and treatment plan were determined, and the patient's consent was obtained. A mock-up was performed to assess whether the patient's aesthetic expectations were met, to estimate the required amount of preparation, and to identify necessary pre-prosthetic needs. Gingivoplasty was planned based on this evaluation. This procedure aimed to prevent disproportionate length and width resulting from closing the diastema. In the next stage, the mock-up was reapplied to the mouth, guide grooves were created for preparation, and then the preparation was completed. Impressions were taken using type A silicone. According to our plan, laminates were fabricated using lithium disilicate-reinforced Empress glass ceramics. A final trial was conducted with try-in paste. In the final stage, permanent cementation was carried out using dual-cure resin cement.

Conclusions: Laminate veneers, as a minimally invasive method, address the aesthetic needs of a young patient with unrestored teeth, perform minimal reduction rather than crown preparation, and thus eliminate the possibility of long-term complications arising from secondary caries and enamel removal.

POSTER PRESENTATION

PP.084

THE RELATIONSHIP BETWEEN TOOTH WHITENING-RELATED INTERNET SEARCH TRENDS AND SOCIOECONOMIC INDICATORS IN TÜRKİYE: A GOOGLE TRENDS ANALYSIS

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Introduction: Internet search data serve as a valuable tool in health economics for understanding public interest in aesthetic dental procedures. Socioeconomic factors and of out of pocket payment burden are known to influence health-seeking behaviors and interest in elective dental treatments.

Objective: This study aimed to examine internet search trends related to tooth whitening in Türkiye between 2020 and 2025 using Google Trends and to evaluate their relationship with socioeconomic indicators.

Materials and Methods: Search data for the keywords "diş beyazlatma" (tooth whitening), "diş beyazlatma fiyatı" (tooth whitening price), and "diş beyazlatma ücreti" (tooth whitening fee) were obtained from Google Trends. Google Trends Scores (GTS) for provinces were compared with socioeconomic indicators, including per capita Gross Domestic Product (GDP) and mean years of education. Relationships between variables were analyzed using Spearman's correlation test.

Results: A moderate positive and statistically significant correlation was found between the GTS for "tooth whitening price" and per capita GDP ($r=0.614$; $p<0.001$). A weak but significant positive correlation was also observed between this keyword and education ($r=0.343$; $p=0.018$). No significant correlation was found for "tooth whitening fee" with GDP ($r=-0.121$; $p=0.502$) or education ($r=-0.013$; $p=0.943$). The keyword "tooth whitening" showed a moderate negative correlation with education ($r=-0.473$; $p<0.001$).

Conclusions: Internet search trends related to tooth whitening in Türkiye are associated with certain socioeconomic indicators. Specifically, the positive correlation between searches for prices and GDP suggests that economic prosperity influences information-seeking behavior regarding aesthetic dental treatments, highlighting the importance of health economics in dental public health research.

POSTER PRESENTATION

PP.085

THE EFFECT OF LAYER THICKNESS ON MARGINAL ACCURACY OF THREE-DIMENSIONALLY PRINTED LAMINATE VENEERS DESIGNED WITH COMPUTER-AIDED DESIGN SOFTWARE

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Introduction: The advancement of digital dentistry has enabled the fabrication of laminate veneers using computer-aided design and additive manufacturing technologies. Layer thickness is a critical parameter in digital light processing (DLP) printing that may influence the marginal accuracy of the final restoration.

Objective: This study aimed to evaluate the effect of two different layer thicknesses on the marginal accuracy of DLP-printed laminate veneers fabricated with a butt-joint preparation design.

Materials and Methods: A typodont tooth (Ivoclar Vivadent AG, Schaan, Liechtenstein) with a butt-joint laminate preparation was used as the reference model and scanned using a TRIOS desktop scanner (3Shape, Copenhagen, Denmark). A single laminate veneer design was created using DentalCAD software (exocad GmbH, Darmstadt, Germany) and printed using an Asiga Ultra 3D DLP printer (Asiga, Sydney, Australia) with ArmaResin temporary crown resin (ArmaDental, Istanbul, Turkey) at two layer thicknesses: 0.025-mm (Group 1, n = 10) and 0.050-mm (Group 2, n = 10). Sample and control group scans were obtained using a TRIOS 5 intraoral scanner (3Shape, Copenhagen, Denmark). Marginal accuracy was assessed via superimposition analysis using the Medit Design module of Medit Link software (Medit Corp., Seoul, South Korea) with only the marginal area selected during the superimposition process.

Results: The results showed higher marginal accuracy in the 0.050-mm layer thickness group (Group 2). Group 1 (0.025-mm) demonstrated 24% lower marginal accuracy compared to Group 2. The mean for Group 2 was $\bar{x}$ = 0.016 ± 0.025 mm and that of Group 1 was $\bar{x}$ = 0.021 ± 0.031 mm.

Conclusions: A layer thickness of 0.050-mm resulted in superior marginal accuracy compared with 0.025-mm in DLP-printed laminate veneers.

POSTER PRESENTATION

PP.086

HISTOLOGICAL ANALYSIS OF NOVEL DENTAL CEMENTS' LONG-TERM EFFECT ON RAT KIDNEY TISSUE

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Objective: Dental cements based on calcium silicate and calcium aluminate are widely used in dentistry. These cements, enhanced with zirconium dioxide, exhibit improved solubility, setting time, and compressive strength. However, their chronic systemic effects on the kidneys remain unresolved.

Methods: Male Wistar rats (n=36) were intraalveolary-implanted with mineral trioxide aggregate (MTA) as a positive control (n=12), calcium aluminate cement with 20% ZrO2 (CaAl+ZrO2) (n=12), or calcium silicate cement with 20% ZrO2 (CaSi+ZrO2) (n=12). Rats were sacrificed after 30 and 180 days. Cortical and medullary parts of the kidneys were microscopically assessed using the modified endothelial, glomerular, tubular, and interstitial tissue (EGTI) histology scoring system.

Results: The CaAl+ZrO2 exhibited an EGTI score of 0 at both time intervals (30 and 180 days), whereas CaSi+ZrO2 recorded scores of 2.1 at 30 days and 0.6 at 180 days, similar to MTA scores of 2.3 at 30 days and 0 at 180 days. Given that the EGTI score can reach up to 14 points, our results suggest similar, positive outcomes for all tested materials, with a slight advantage of CaAl+ZrO2 in both periods.

Conclusions: . The new CaSi+ZrO2 and CaAl+ZrO2 showed good nephro-compatibility, but further research is necessary.

Keywords: calcium cements, chronic effect, rat, kidney, MTA
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POSTER PRESENTATION

PP.087

LIMITATIONS OF STATIC BIOCOMPATIBILITY TESTING FOR ALLERGOLOGICAL RISK IN TEMPORARY IMPLANT-SUPPORTED POLYMER MATERIALS

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Introduction: Temporary implant-supported polymer restorations may remain in direct peri-implant mucosal contact for weeks to months. ISO 10993-based evaluation often relies on standardized static, single-interval extraction and predominantly acute endpoints, which may not reflect cumulative allergological mechanisms relevant to dental polymers.

Objective: To assess whether static biocompatibility testing is methodologically sufficient for allergological risk evaluation of temporary implant-supported polymer materials.

Materials and Methods: Critical narrative review integrating: peri-implant mucosal barrier biology; allergological principles (hapten-mediated delayed hypersensitivity and cumulative exposure); evidence of time-dependent release of low-molecular-weight constituents from temporary polymers (PMMA-based materials, dimethacrylate-based provisionals, CAD/CAM and additively manufactured resins); and the scope/assumptions of ISO 10993 static extraction and endpoint testing.

Results: Synthesis indicates a three-part mismatch: (1) peri-implant mucosa is a distinct barrier interface; (2) temporary polymers can exhibit time-dependent leachable release; and (3) static extraction plus single-timepoint endpoints under-represent dynamic oral drivers (aging, thermal cycling, salivary flow, micro-stress) that can alter exposure kinetics and allergological relevance.

Conclusions: Static testing is necessary for baseline safety assessment but is insufficient alone to characterize allergological behavior under prolonged peri-implant exposure. Repeated-extraction and dynamic exposure designs, combined with chemical characterization, are justified to improve biological relevance for implant temporization.

POSTER PRESENTATION

PP.088

METAL-BAR REINFORCEMENT OF LONG-SPAN ZIRCONIA FRAMEWORKS

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Introduction: Long-span zirconia fixed dental prostheses (FDPs) are widely used due to their excellent esthetics and biocompatibility. However, their clinical reliability may be compromised by mechanical failure, mainly due to tensile stress concentration in connector areas. While zirconia exhibits high compressive strength, its brittle behavior under tensile loading remains a key limitation in extended-span restorations.

Objective: This presentation evaluates the effect of incorporating a metal-bar reinforcement within zirconia frameworks, illustrated through four clinical cases of long-span FDPs. The concept is supported by biomechanical principles and evidence from in vitro and computational studies. Key parameters assessed include stress distribution, connector integrity, flexural resistance, and clinical performance under functional loading.

Materials and Methods: The incorporation of a metal bar helps redistribute occlusal forces, reducing tensile stress in critical regions, particularly in connectors. As a result, reinforced frameworks demonstrate improved load-bearing capacity and a reduced risk of crack initiation and propagation. The ductile nature of the metal component enhances energy absorption and contributes to greater structural resilience.

Results: Clinically, all four cases showed stable, long-term outcomes without significant complications. The restorations maintained excellent esthetics, favorable soft tissue response, and high patient satisfaction.

Conclusions: Metal-bar reinforcement is a reliable strategy for improving the strength, longevity, and esthetic performance of long-span zirconia FDPs, providing predictable and durable results in complex prosthodontic rehabilitations.

POSTER PRESENTATION

PP.089

EVALUATION OF COLOR CHANGES IN CAD/CAM FABRICATED POLYOXYMETHYLENE

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Introduction: Polyoxymethylene (POM) is a polymer characterized by favorable mechanical properties, biocompatibility and chemical stability, which makes it a potential material for the fabrication of removable partial dentures with clasps or precision attachment elements. However, its resistance to color change in the oral environment still requires further investigation. Long-term visual stability is essential, as it directly influences patient satisfaction and the clinical applicability of this material in the fabrication of removable partial dentures.

Objective: The aim of this study was to quantitatively evaluate the color change of polyoxymethylene during exposure to pigmented liquids.

Material and methods: In this study, samples of polymethylmethacrylate was used as a control material with established clinical application, while POM was investigated as a potential alternative. Both materials were processed using milling methods within CAD/CAM technology. The samples were immersed in pigmented liquids simulating six months of denture use in the oral environment. Color change was quantified spectrophotometrically within the CIELAB system and E values were calculated to monitor the dynamics of discoloration. The analysis included multiple samples per material to ensure statistical relevance.

Results: The obtained E date indicates that color changes were recorded for both materials during the tested period. Changes were evident already at early time points and showed a tendency to increase over time.

Conclusion: Materials fabricated using CAD/CAM technology, despite their compact structure, are susceptible to pigment influence. These findings may contribute to clinical recommendations.

POSTER PRESENTATION

PP.090

COMPARATIVE ANALYSIS OF THE WEAR RESISTANCE OF CROWNTEC AT DIFFERENT PRINTING ANGLES

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Introduction: . Mechanical loading during masticatory function leads to wear of natural dental tissues when interacting with restorative materials.

Aim: . To investigate the wear resistance of specimens manufactured with different structural orientations from the material CROWNTEC.

Materials and Methods: . The test specimens were divided into groups A, B, C, and D according to the angle between the normal vector to the surface and the printing platform – 0°, 30°, 60°, and 90°, respectively. Laboratory tests were performed using the “Sofia” chewing simulator. Distilled water was used as the liquid medium, and factory-made silicon nitride spheres served as antagonists. The specimens were subjected to six tracks of cyclic loading. Weight loss was measured using an analytical balance Mettler Toledo ME303. The results were statistically processed using IBM SPSS Statistics 26.

Results: . Before testing, the highest mean weight was observed in group B (6.563 g ± 0.036 g), and the lowest in group D (6.517 g ± 0.031 g). In groups C and A, the mean values were 6.528 g (± 0.033 g) and 6.530 g (± 0.041 g), respectively. After the experiment, the highest mean weight was again recorded in group B (6.526 g ± 0.037 g), and the lowest in group D (6.511 g ± 0.032 g). In groups C and A, the mean mass was identical – 6.515 g (± 0.032 g) and 6.515 g (± 0.044 g).

Conclusions: . The CROWNTEC material exhibited wear in all groups, expressed by a decrease in specimen weight after the experiment. The spatial orientation of the layers during printing of CROWNTEC samples does not influence the wear resistance of the material.

Keywords: additive technologies; wear resistance; fixed prosthodontics.

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POSTER PRESENTATION

PP.091

NEW SILANE CONTAINING UNIVERSAL ADHESIVES: SILOXANE FORMATION RATE, HYDROPHOBICITY AND BOND STRENGTH WITH AN ETCHED LITHIUM DISILICATE CERAMIC

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Introduction: Silane-containing universal adhesives (UA) were introduced for resin-luting of HF acid-etched glass ceramics, but with contradictory results. Currently new UA are marketed, with new types of silanes.

Objective: To evaluate the silanol reactivity, hydrophobicity, and the shear bond strength (SBS) with a lithium disilicate ceramic of modern silane-containing UA.

Materials and Methods: The materials tested were BeautiBond Xtreme (BXB), Clearfil Universal Bond Quick 2 (CBQ), Scotchbond Universal Plus (SUP) and Tokuyama Universal Bond II (TUB). A silane primer was used as control (Clearfil Ceramic Primer Plus/KCP). The siloxane formation rate (SFR) was investigated by IR spectroscopy (T=0,10,30,60 min after application, n=5/product). The water contact angles (WCA) were determined on acid-etched (9% HF, 20s) and silane treated lithium disilicate surfaces (IPS e.max Press), 10 min after application (n=5/product). The SBS of a flowable composite bonded to etched and silane treated ceramic surfaces was assessed after 1 week storage (water/37oC). Statistical analysis was performed by one-way ANOVA (SFR), Kruskal–Wallis/Dunn's tests (WCA, SBS α=0.05).

Results: All products demonstrated a significant increase in SFR as a function of time. The significant differences per time interval were SUP>TUB>BXB,CCP,CBU (T10), SUP>TUB >CBQ,CCP (T30), and TUB>SUP>CBQ,CCP>BXB (T60). SUP and TUB were the most reactive, which also demonstrated the highest WCA (range of means 31.5-15.5o, SUP>KCP, BXB; TUB>KCP) and highest SBS (range of means: 30.4-11.5 MPa, TUB>CBQ,BXB,KCP; SUP>KCP).

Conclusions: From the new silane-containing UA, TUB (self-cured/methacryloxypropyltriethoxysilane) and SUP (light-cured/methacryloxypropyltriethoxysilane + aminopropyltriethoxysilane) demonstrated the most favorable characteristics.

POSTER PRESENTATION

PP.092

COMPARATIVE EVALUATION OF TITANIUM ALLOY SURFACE TREATMENT

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Introduction: The long-term stability of screw-retained implant-supported restorations is influenced by the quality and strength of the bond between the crown and the abutment. Debonding of crowns from titanium abutments presents a significant challenge to the longevity and functionality of implant-supported prostheses. This clinical issue, coupled with the absence of clearly defined protocols for pre-cementation surface treatment of dental materials, has motivated the present research.

Objective: The study aims to evaluate different titanium alloy surface treatment methods and their impact on surface characteristics relevant to adhesive performance, with the goal of optimizing cementation protocols.

Materials and Methods: Titanium alloy specimens (n = 20 per group) were subjected to different surface treatment

Methods: sandblasting (50 μm and 110 μm aluminum-oxide particles), pink and gold anodization combined with sandblasting, hydrofluoric acid etching combined with anodization. Surface morphology, roughness, wettability and surface elemental composition were analyzed using scanning electron microscopy, profilometry, contact angle measurements and energy dispersive X-ray spectrometry, respectively. Statistical analysis was conducted to determine significant differences among treatment methods.

Results: Surface morphology evaluation suggested discernible variations in surface topography among the evaluated methods. There was statistically significant difference in surface roughness and wettability among certain treatment methods, indicating potential for superior adhesive performance of specific pre-cementation surface treatment methods.

Objective: This study underscores the influence of titanium alloy surface treatment on characteristics critical to bonding performance. Optimizing preparation protocols may improve the long-term durability of implant-supported restorations and serve as a foundation for standardized clinical procedures in dental laboratories and clinics.

POSTER PRESENTATION

PP.093

A COMPREHENSIVE FIVE-YEAR REVIEW OF MALIGNANT SALIVARY GLAND TUMORS AT A SPECIALIZED CENTER FOR THE MANAGEMENT OF ORAL CANCER AND ORAL & MAXILLOFACIAL SURGERY

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Introduction: Malignant salivary gland tumors (MSGTs) are rare, histologically diverse neoplasms of the head and neck region that present significant diagnostic and therapeutic challenges. Their varied biological behavior and anatomical distribution necessitate detailed institutional documentation to better understand epidemiological patterns and treatment outcomes in specialized oral and maxillofacial oncology settings.

To evaluate the demographic characteristics, anatomical distribution, histopathological spectrum, treatment modalities, and clinical outcomes of malignant salivary gland tumors over a five-year period at a specialized cancer treatment center focusing on oral and maxillofacial surgery.

A retrospective descriptive study was conducted by reviewing medical records of patients with histopathologically confirmed malignant salivary gland tumors treated over five years. Data collected included age, gender, tumor site, histopathological type, stage, treatment modality, and follow-up outcomes. Descriptive statistical analysis was performed.

The parotid gland was the most frequently affected site, followed by minor salivary glands of the palate. Mucoepidermoid carcinoma and adenoid cystic carcinoma were the most common histological subtypes. Surgical management, with or without adjuvant radiotherapy, was the primary treatment approach.

Comprehensive institutional documentation enhances understanding of clinicopathological patterns and supports improved multidisciplinary management of malignant salivary gland tumors.

POSTER PRESENTATION

PP.094

RETROSPECTIVE ANALYSIS OF INOPERABLE ORAL CAVITY SQUAMOUS CELL CARCINOMA: A FIVE-YEAR STUDY AT THE SPECIAL CANCER TREATMENT CENTER FOR ORAL AND MAXILLOFACIAL SURGERY

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Introduction: Inoperable oral cavity squamous cell carcinoma (OCSCC) poses a formidable challenge in head and neck oncology, characterized by advanced presentation and poor prognosis. Given its aggressive nature, systematic institutional recording is vital to understand epidemiological trends and the limitations of current therapeutic interventions in specialized maxillofacial settings.

This study aims to analyze the demographic profile, anatomical distribution, and clinical characteristics of inoperable OCSCC cases managed over a five-year period at a specialized oral and maxillofacial cancer center.

A retrospective descriptive study was conducted, reviewing medical records of patients with OCSCC deemed inoperable at initial assessment or due to extensive recurrence. Parameters analyzed included age, gender, primary site, TNM staging, histological grading, and specific surgical contraindications. Findings were synthesized using descriptive statistical analysis.

Most cases involved advanced Stage IV disease, with the tongue and floor of the mouth being the most prevalent sites. Extensive local invasion and regional lymphatic involvement were the primary factors precluding resection, while comorbidities and delayed referral significantly contributed to inoperability.

Systematic recording highlights the critical necessity for earlier diagnosis and improved screening protocols. Comprehensive documentation in specialized centers remains essential for optimizing palliative strategies and refining multidisciplinary management for late-stage oral malignancies.

POSTER PRESENTATION

PP.095

SOME SPECIFICS ABOUT OROMAXILOFACIAL MANIFESTATIONS IN HIV/AIDS INFECTION IN ALBANIA

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Background: secondary to compromised immune function. Our objectives were to investigate the oral manifestations in patients with HIV/AIDS in
Albania.

Methods: We conducted a prospective, observational study of 160 patients newly diagnosed with HIV/AIDS who were not yet on antiretroviral
therapy. The study was conducted from April 2024 to July 2025 at the Infectious Disease Service of the University Hospital Center

“Mother Teresa” in Tirana, Albania. Patients were categorized into two groups based on disease stage: the HIV (non-AIDS) group and

the AIDS group. and compared for the presence of oral pathologies.

Results: A total of 87 patients were included in the non-AIDS group and 73 in the AIDS group. Overall, 70.6% of all patients had at least one oral pathology, with a significantly higher prevalence in the AIDS group compared to the non-AIDS group (83.6% vs. 59.8%, p=0.023).
Periodontal disease was the most prevalent pathology, affecting 51.9% of all patients, with a significantly higher presence in the AIDS group (63.0% vs. 42.5%, p=0.01). Oral candidiasis was the second most prevalent, affecting 38.8% of patients and showing a significantly higher presence in the AIDS group (52.1% vs. 27.6%, p=0.002). Xerostomia was observed in 31.9% of patients, with a non-significant trend toward higher frequency in the AIDS group (38.4% vs. 26.4%, p=0.11). Other, less frequent manifestations included oral hyperpigmentation, oral hairy leukoplakia, ulcerations, and oral non-Hodgkin lymphoma. A single case of Kaposi’s Sarcoma and parotitis was also diagnosed.

Conclusions: The prevalence of oral pathologies is high among HIV/AIDS patients, with the most common being periodontal disease, oral
candidiasis, and xerostomia. The higher prevalence of oral pathologies in AIDS patients implies a late HIV diagnosis. Early diagnosis of oral pathologies and vigilance by healthcare professionals may facilitate an earlier diagnosis and improve the prognosis of HIV infection.

POSTER PRESENTATION

PP.096

COMPARATIVE CLINICAL EVALUATION OF TERMINAL PLEXUS AND INTRALIGAMENTARY ANESTHESIA APPLICATION

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Objective: To perform a clinical evaluation and comparison of the efficacy of intraligamentary anesthesia (ILA) and plexus anesthesia (PA) during dental extractions.
Material and Method. The study included 30 patients with an indication for tooth extraction requiring terminal infiltrative anesthesia, divided into two groups. In the first study group, consisting of 15 patients, ILA was administered for the tooth extraction, while the second group of 15 patients received PA. Both groups of patients were clinically monitored regarding: pain during injection and during the procedure(VAS scale), anesthetic efficacy(Likert scale), amount of anesthetic required to achieve anesthesia(ml), extent of the anesthetized area(mm), duration of anesthesia, and latency period (min).

Results: No statistically significant difference was registered in pain intensity between the two study groups during injection ($p=0.2$) and during extraction ($p=0.96$). The ILA group used a statistically significantly smaller amount of anesthetic compared to the PA group ($p<0.001$), and the latency period was significantly shorter compared to PA ($p<0.001$). Regarding the duration of anesthesia and the width of the anesthetized field, a statistically significant difference was found in favor of PA compared to ILA ($p<0.001$).

Conclusions: ILA provides optimal conditions for performing outpatient tooth extractions. It represents a minimally invasive, safe, and suitable alternative to classical PA for tooth extractions.

Keywords: extraction, intraligamentary anesthesia, plexus anesthesia, terminal infiltrative anesthesia, clinical symptoms

POSTER PRESENTATION

PP.097

NON-STANDARD TECHNIQUES OF ANESTHETIZING THE ANTERIOR SEGMENT OF THE UPPER JAW

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Introduction: Conventional maxillary anaesthesia is typically achieved by supraperiosteal infiltration in the mucobuccal fold, often requiring multiple injections and potentially causing collateral numbness of the upper lip and facial soft tissues. The anterior middle superior alveolar (AMSA) nerve block, administered via a palatal approach, has been proposed as a technique capable of producing a broader and more selective anaesthetic field.

Objective: To evaluate the width and anatomical distribution of the anaesthetic field produced by the AMSA injection, with emphasis on multi-tooth pulpal anaesthesia achieved from a single palatal injection site and its selectivity regarding adjacent soft tissues.

Materials and Methods: Sixty-seven patients treated at the Department of Oral Surgery, Faculty of Dentistry, Pančevo, received an AMSA alveolar field block using a standardized palatal protocol. The primary outcome measure was the extent of contiguous maxillary teeth demonstrating pulpal anaesthesia. Secondary parameters included latency period, presence of soft tissue numbness, and electric pulp vitality testing results.

Results: An anaesthetic field encompassing five maxillary teeth was achieved in 14 patients (20,9%). A latency period of 5 minutes was observed in 28 patients (41,8%). None of the patients experienced numbness of the upper lip. Maximum pulp testing readings were recorded in 29 patients (43,3%), confirming effective pulpal anaesthesia.

Conclusions: The AMSA injection provides a clinically useful multi-tooth anaesthetic field from a single palatal injection while avoiding facial soft tissue numbness. Further controlled studies are required to establish its predictability and safety as a standard local anaesthetic technique.

Keywords: AMSA, Maxillary local anaesthesia, Electric pulp testing, Palatal injection

POSTER PRESENTATION

PP.098

APPLICATION OF AUTOLOGOUS PLATELET RICH FIBRIN FOR LOCAL HEMOSTASIS AND WOUND HEALING AFTER MULTIPLE ANTERIOR MAXILLARY EXTRACTIONS IN A PATIENT RECEIVING ASPIRIN

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Introduction: Dental extractions in patients receiving long-term antiplatelet therapy present a clinical challenge not only because of the risk of prolonged postoperative bleeding, but also due to potential disturbances in early clot organization and subsequent soft tissue healing. In anatomically sensitive regions such as the anterior maxilla, where vascularization is pronounced and esthetic considerations are significant, careful planning of local hemostatic and supportive regenerative measures becomes essential.

Objective: To describe the clinical management and short-term hemostatic and healing outcomes following multiple adjacent anterior maxillary extractions performed with the adjunctive use of autologous platelet rich fibrin in a patient maintained on continuous aspirin therapy.

Materials and Methods: A 74-year-old female taking acetylsalicylic acid 100 mg daily presented with advanced periodontal destruction affecting teeth 11, 12, and 13. Extraction was indicated due to severe mobility and loss of alveolar support. Aspirin therapy was not interrupted. After atraumatic extraction, autologous platelet rich fibrin membranes were prepared from venous blood and placed into the sockets prior to wound stabilization.

Results: Hemostasis was achieved without modification of systemic therapy or the use of additional hemostatic agents. No postoperative bleeding or early complications were observed. Clinical follow-up at 48 hours and one week demonstrated stable clot formation and satisfactory soft tissue healing, with complete epithelialization after one month.

Conclusions: Within the limitations of a single case, the adjunctive use of autologous platelet rich fibrin was associated with satisfactory local hemostasis and uneventful healing following multiple adjacent extractions in a patient receiving aspirin therapy.

POSTER PRESENTATION

PP.099

IMMUNOHOSTOCHEMICAL ANALYSIS OF THE LYMPHOID INFILTRATE IN ODONTOGENIC INFLAMMATORY CYSTS

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Objective: Odontogenic inflammatory cysts (OIC) occur as a result of the immunological response to continuous antigenic stimulation. We analyzed the immunophenotypically composition of the lymphoid infiltrate in OIC.
SUBJECTS AND

Methods: Sixty-three cases of OIC were divided into three groups (radicular, residual and periodontal-lateral cysts) and evaluated by IHC-immunohistochemistry using antibodies against T- and B-cell antigens (CD3, CD4, CD8, CD20). The reaction was visualized with the Dako En Vision Flex detection system. Statistical analysis was performed.

Results: IHC studies defined the dominant presence of CD3- T lymphocytes (T-Ly) in radicular cysts - 60.87±20.59%, residual cysts - 69.50±10.99% and in periodontal lateral cysts - 53±5.71%. The presence of subpopulations of T-lymphocytes was confirmed, the predominantly represented CD4 helper-lymphocytes in radicular cysts-61.74±21.19%, residual cysts - 73.25±12.59% and in periodontal lateral cysts - 52.50± 5.50%. CD8- cytotoxic/suppressor lymphocytes were in radicular cysts - 12.17±5.39%. residual cysts - 15.90±9.11% and in periodontal lateral cysts - 6.65±3.03%. The presence of CD20 - B lymphocytes in radicular cysts - 26.59±12.57%, residual cysts - 22.25±10.32% and in periodontal lateral cysts - 45.50±6.05%.

Keywords: IHC has an immense value as a diagnostic marker in making an accurate confirmatory diagnosis in odontogenic cyst pathologies. Both cellular and humoral immune reactions are likely to occur in the complex events of tissue destruction during the development and growth of OIC.
Odontogenic inflammatory cysts (OIC), B-lymphocytes, T-lymphocytes, immunohistochemistry (IHC)

POSTER PRESENTATION

PP.100

DEEP BENIGN FIBROUS HISTIOCYTOMA OF LINGUAL TISSUE- A CASE REPORT

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MATERIALS AND METHODS- Histopathological and Immunohistochemical Findings

Immunohistochemical analysis demonstrated:

S-100: positivity in scattered individual dendritic cells;

SMA and beta-catenin: negative staining.

Results

The lesion measured 3 mm in greatest diameter and was completely excised with tumor-free margins. The minimal clearance was 3 mm from the lateral margin and 4 mm from the deep surgical margin.

Final Diagnosis- Deep benign fibrous histiocytoma of the tongue.

The postoperative period was uneventful, and no recurrence was observed during the 2 month follow-up period.

Conclusion

Due to its rarity in the oral cavity, deep benign fibrous histiocytoma may present a diagnostic challenge and should be considered in the differential diagnosis of submucosal tongue lesions. Complete surgical excision remains the treatment of choice, with careful long-term follow-up recommended because of the reported risk of local recurrence.

POSTER PRESENTATION

PP.101

PROPHYLACTIC AND THERAPEUTIC INDICATIONS FOR THIRD MOLAR EXTRACTIONS AS COMPARED TO OBSERVATION AND CONSERVATIVE MANAGEMENT. A SYSTEMATIC REVIEW AND META-ANALYSIS.

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Introduction: Third molar (M3) extraction is a frequent oral surgery performed for therapeutic and prophylactic purposes, such as preventing orthodontic relapse, caries, and periodontal disease. However, extraction risks include pain, trismus, inferior alveolar nerve (IAN) damage, and bacteremia. Consensus is lacking on whether prophylactic removal outweighs conservative management.

Materials and Methods: This systematic review compares outcomes of prophylactic and therapeutic M3 extraction versus conservative observation. Key evaluated factors include post-surgical infections, complications, hospitalization, economic burden, and adjacent tooth periodontal health.
A literature review and meta-analysis were conducted to assess M3 removal impacts. Evaluated parameters included the second molar's (M2) periodontal status (pocket depth [PPD] and clinical attachment level [CAL]), caries prevalence, IAN damage, bacteremia, hospitalization indications, and procedural costs.

Results: M3 retention correlates with increased plaque accumulation, higher PPD, and an elevated caries risk for adjacent M2s. Conversely, prophylactic extraction often introduces unnecessary morbidity and expense. Extraction complications include pain, trismus, and IAN damage (permanent in 25% of affected cases). Furthermore, transient bacteremia occurs in 60% of extractions, occasionally requiring hospitalization. Economically, direct and indirect costs often exceed €1000 per patient.

Conclusions: Both M3 retention and extraction carry distinct risks. While retention increases M2 periodontal and caries susceptibility, routine extraction frequently causes unnecessary morbidity, complications, and high financial costs. Careful case-by-case evaluation is necessary to balance these parameters.

POSTER PRESENTATION

PP.102

MANAGEMENT OF PATIENTS WITH MEDICATION RELATED OSTEONECROSIS OF THE JAWS: A 15 YEARS COHORT STUDY FROM A TERTIARY CENTRE.

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Introduction: Medication-related osteonecrosis of the jaw (MRONJ) is a severe complication of antiresorptive and antiangiogenic therapies lacking a definitive treatment consensus.

Objective: To evaluate clinical outcomes and identify predictors of resolution in MRONJ patients at a tertiary referral center over 15 years.

Materials and Methods: We conducted a retrospective cohort study of 130 patients (2006–2021) diagnosed via AAOMS criteria. Data included demographics, drug history, staging, and triggers. Outcomes were categorized as complete resolution, stable disease, or progression. Logistic regression identified predictors of healing.

Results: Most patients (84.6%) had underlying malignancies; zoledronic acid (47.7%) and denosumab (30.0%) were the primary agents. The mandible (66.2%) was the most frequent site, often triggered by extraction (59.2%). Resolution rates were 20.3% for conservative versus 83.6% for surgical management. At 12 months, 43.1% achieved complete resolution. Multivariate analysis identified surgical treatment as the only independent predictor of resolution (OR=20.1, 95% CI: 8.1–50).

Conclusions: Conservative care is appropriate for Stage I disease, but surgical intervention is the strongest predictor of healing for advanced MRONJ. Results support an individualized, stage-driven treatment strategy.

POSTER PRESENTATION

PP.103

THERAPEUTIC POTENTIAL OF TOPICAL DOXYCYCLINE IN THE MANAGEMENT OF ORAL INFECTIONS AND MRONJ: A SYSTEMATIC REVIEW

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Objective

The objective is to evaluate the efficacy and biological mechanisms of doxycycline—focusing on antimicrobial properties, host modulation, and clinical outcomes—as a conservative approach to treating bone necrosis.

Results

Sustained Action: This binding provides a sustained antimicrobial effect directly at the infection site, combating local colonization.

Clinical Improvements: Literature associates these mechanisms with complete mucosal healing, control of suppuration, and significant pain reduction.

Conclusions

Topical and systemic doxycycline represents a scientifically grounded conservative approach for MRONJ. Its dual ability to provide targeted antimicrobial action via bone binding and protect tissue integrity through MMP inhibition makes it a vital tool in non-surgical management.

POSTER PRESENTATION

PP.104

EXTRANODAL MARGINAL ZONE LYMPHOMA ISOLATED TO EXTRAOCULAR MUSCLES: DIAGNOSTIC CHALLENGES AND THE ROLE OF IMAGE-GUIDED NAVIGATION

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Introduction: Extranodal marginal zone lymphoma (EMZL) rarely involves the extraocular muscles in isolation. Such atypical presentations frequently mimic common inflammatory or infiltrative orbital processes, leading to potential diagnostic delays and withhold therapy.

Objective: To present a rare case of EMZL isolated to the extraocular muscles and underscore the utility of advanced diagnostic technologies in establishing a definitive diagnosis.

Materials and Methods: A 77-year-old male presented with left periorbital edema and vision impairment. Following a complete clinical and 3D imaging workup, an incisional biopsy was performed. To ensure precision within the sensitive orbital anatomy and minimize surgical morbidity, an image-guided navigation system was utilized to target the affected muscle tissue.

Results: The use of contemporary navigation facilitated the procurement of high-quality biopsy specimens from the deep orbital structures while preserving vital neurovascular elements. Histopathological and immunohistochemical analysis of the abundant raw muscle tissue provided the definitive diagnosis of EMZL. Appropriate systemic therapy was instituted promptly following the multidisciplinary evaluation.

Conclusions: Isolated extraocular muscle involvement in EMZL is a rare diagnostic pitfall that requires high clinical suspicion. The integration of image-guided navigation systems enhances the safety and accuracy of biopsies in complex maxillofacial regions. Such personalized approaches, combined with proficient multidisciplinary collaboration, are essential for optimizing patient outcomes in rare orbital pathologies.

POSTER PRESENTATION

PP.105

DIAGNOSTIC AND THERAPEUTIC CHALLENGES IN A PATIENT WITH OSTEOPETROSIS COMPLICATED BY RECURRENT OSTEOMYELITIS: A 10-YEAR FOLLOW-UP CASE REPORT

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Introduction: Osteopetrosis, or "marble bone disease," comprises rare inherited skeletal disorders where impaired osteoclast function leads to increased bone density and decreased vascularity. This pathology significantly increases the risk of complications such as osteomyelitis following minor oral interventions.

Objective: To report the long-term management of a rare case of osteopetrosis in a 17-year-old female complicated by recurrent mandibular osteomyelitis, highlighting the diagnostic and therapeutic challenges encountered over a 10-year period.

Materials and Methods: The patient, monitored since childhood, recently presented with an inflammatory odontogenic mandibular cyst. Surgical enucleation was performed under antibiotic coverage. However, the patient was readmitted one month later with signs of acute-on-chronic osteomyelitis, illustrating the persistent susceptibility to infection.

Results: The patient’s clinical course demonstrates that despite surgical intervention and pharmacological support, the unique biological behavior of osteopetrotic bone—characterized by high mineral density but poor healing capacity—leads to frequent relapses. Meticulous long-term management strategies tailored to the patient’s health status were critical for controlling episodes of remission and relapse.

Conclusions: Osteopetrosis is a heterogeneous disease requiring multidisciplinary monitoring to manage its diverse clinical manifestations. In cases of jaw involvement, conservative surgical approaches or personalized strategies are essential to enhance quality of life and mitigate severe risks such as mandibular fracture or permanent neurovascular dysfunction.

POSTER PRESENTATION

PP.106

COMPARATIVE CLINICAL STUDY OF BONE REMODELING AFTER MARSUPIALIZATION OF JAW CYSTS USING A WATER FLOSSER VERSUS IODOFORM GAUZE: AN INTERIM ANALYSIS

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Introduction: Jaw cysts are common pathologies requiring prompt intervention to prevent the destruction of adjacent structures. Marsupialization is a primary therapeutic modality that reduces surgical morbidity by opening the cyst into the oral cavity.

Objective: This study evaluates the efficacy of a water flosser in promoting bone remodeling and reducing cyst dimensions compared to traditional iodoform gauze packing.

Materials and Methods: In this randomized controlled trial, adult patients with periapical or dentigerous cysts (≥2cm) underwent marsupialization. Following a 3-week stabilization period with iodoform gauze, patients were randomized into Group A (periodic gauze replacement) or Group B (daily water flosser irrigation). Outcomes include bone density (Hounsfield units) and volume changes via CBCT every six months.

Results: Preliminary analysis of the first 10 cases indicates that the water flosser protocol is a viable alternative to gauze packing. Interim data suggests high patient compliance and satisfaction (VAS scale) with the flosser due to reduced clinical visits compared to the 3-week gauze replacement schedule. No significant early complications, such as mandibular fracture or permanent nerve dysfunction, have been recorded in the initial cohort.

Conclusions: While follow-up is ongoing, early results suggest that water flosser irrigation after marsupialization simplifies postoperative care and maintains the surgical stoma effectively without the necessity for frequent clinical interventions.

POSTER PRESENTATION

PP.107

THE CONVERGENCE OF REGENERATIVE SCIENCES: A CROSS-DISCIPLINARY APPROACH TO SKELETAL RECONSTRUCTION

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Introduction: Bone regeneration is a biologically regulated process critical to multiple dental and surgical disciplines, including orthopedics, maxillofacial surgery, prosthodontics, orthodontics, and periodontal surgery. Despite variations in anatomical location and biomechanical requirements, successful skeletal reconstruction relies on the coordinated progression of inflammation, angiogenesis, osteogenesis, and remodeling. While technological advancements have enhanced clinical precision, biological capacity remains the principal determinant of regenerative outcomes.

Objective: The objective of this review is to systematically evaluate shared biological principles, biomaterial strategies, and regenerative technologies applied across orthopedic and dental-surgical specialties, with an emphasis on interdisciplinary translational integration. To address this aim, a specific methodology was employed.

Materials and Methods: A structured literature review was conducted using PubMed, Scopus, and Web of Science databases for peer-reviewed publications between 2005 and 2025. Keywords included “bone regeneration,” “orthopedic reconstruction,” “maxillofacial surgery,” “prosthodontics,” “orthodontics,” “periodontal regeneration,” “biomaterials,” “mesenchymal stem cells,” “BMP,” and “digital surgical planning.” Clinical trials, systematic reviews, meta-analyses, and translational experimental studies involving appendicular and craniofacial models were included.

Results: The database search yielded 1,248 records, of which 186 full-text articles were assessed for eligibility. After applying inclusion criteria, 72 studies were included: 18 randomized clinical trials, 21 systematic reviews/meta-analyses, 24 prospective or retrospective clinical studies, and 9 translational experimental investigations.

Conclusions: Biologically guided, technology-enhanced regenerative protocols—incorporating autologous grafts, growth factors, and 3D-printed scaffolds—are transforming orthopedic and dental practice, with interdisciplinary collaboration improving predictability in patient-specific skeletal reconstruction.

Keywords: Bone regeneration, Maxillofacial surgery, Orthopedics, Prosthodontics, Periodontal regeneration, Mesenchymal stem cells, 3D printing

POSTER PRESENTATION

PP.108

FROM RISK ASSESSMENT TO RECOVERY: MODIFIABLE FACTORS INFLUENCING MORBIDITY AFTER THIRD MOLAR EXTRACTION

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Introduction: One of the most common procedures in oral surgery is the extraction of mandibular third molars. Even though it is a routine, patients often experience issues, such as pain, swelling, trismus and alveolar osteitis, which can affect their recovery.

Objective: This study aims to identify factors that can be changed before and during surgery that affect recovery and to explore ways to reduce negative outcomes.

Materials and Methods: A prospective clinical study was conducted with patients undergoing mandibular third molar extraction with local anesthesia. Various factors recorded, including surgical time, flap design, bone removal, tooth sectioning, and the use of corticosteroids and antibiotics before and during surgery. Postoperative issues recorded using Visual Analogue Scale (VAS) pain scores on specific days into a week, measuring maximum interincisal opening, assessing facial swelling and cases of dry socket. Multivariate analysis used to find independent predictors.

Results: Prolonged surgical time and extensive bone removal were linked to higher levels of postoperative pain and trismus ($p<0.05$). Corticosteroids before and during surgery associated with reduced swelling and quicker recovery. There was no significant decrease in complications with the use of antibiotics.

Conclusions: Postoperative issues can be influenced by factors related to the surgery. Thoughtful surgical planning and selectively use of corticosteroids may help improve recovery and patient outcomes.

POSTER PRESENTATION

PP.109

ORAL SURGICAL TREATMENT AND MANAGEMENT UPDATE FOR PROSTHETIC HEART VALVES PATIENTS

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The individuals with implanted prosthetic heart valves (PHV) belong in the group of patients with high risk from several aspects. The aim of this work was to show the specific stomatological approach and treatment of patients with PHV. The research included 40 individuals. The preparation included: laboratory blood examination (number of blood platelets, haematocrit, prothrombin time, INR), and antibiotic prophylaxis (according to the protocol of the American Heart Association – AHA).

Selective approach and preparation as well as interdisciplinary cooperation with the cardiologists are the base for safe and quality oral surgery treatment of prosthetic heart valves patients.

POSTER PRESENTATION

PP.110

ATRAUMATIC RESTORATIVE TREATMENT (ART) : TECHNIQUE AND INDICATIONS

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Introduction: This study was conducted to compare the accuracy and adequacy of prosthetic treatment indications generated by different large language models in cases of maxillary central incisor deficiency.Objectives: The aim of this study is to evaluate the accuracy and clinical suitability of prosthetic treatment plans generated by different large language models (LLMs) and to compare their performance.

Materials and Methods: Twelve clinical scenarios involving maxillary central incisor deficiency were created and presented to three large language models (LLMs): ChatGPT-5.3 (OpenAI, San Francisco, CA, USA), Gemini Flash-3.0 (Google AI, Mountain View, CA, USA), Microsoft Copilot Smart (Microsoft, Redmond, Washington, USA) using standardized prompts. The responses were evaluated by a prosthodontist with nine years of experience using a 3-point Likert scale. The scores were statistically analyzed to compare model performance across scenarios.

Results: ChatGPT-5.3 exhibited significantly higher prosthetic treatment planning performance scores compared to Copilot Smart ($p < 0.05$). However, the difference between performance scores of ChatGPT-5.3 and Gemini Flash-3.0 were not statistically significant ($p > 0.05$). Similarly, no statistically significant difference was found between performance scores of Gemini Flash-3.0 and Copilot Smart ($p > 0.05$).

Conclusions: The findings of this study demonstrate that ChatGPT-5.3 outperforms other evaluated LLMs in prosthetic treatment planning for various scenarios involving maxillary central incisor deficiency. Integrating LLMs into treatment planning processes may accelerate the clinical decision-making mechanism. However, the reliability of these models must be validated across more comprehensive clinical scenarios and supported by randomized clinical trials.

Keywords: Artificial Intelligence; Large Language Models; ChatGPT-5.3; Gemini Flash-3.0; Copilot Smart

POSTER PRESENTATION

PP.111

MINIMALLY INVASIVE APPROACH IN ESTHETIC DENTISTRY - A CASE REPORT

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Introduction: Minimal intervention is increasingly used in all areas of dentistry, especially in cosmetic dentistry. Laser gingivectomy can be performed in everyday dental practice and it's simpler and faster method than surgery. At the same time, the fabrication of composite veneers to improve aesthetics leads to maximum saving of healthy dental substance.

Materials and Methods: A case report with improved esthetics through laser clinical crown lengthening and diastema mediana closure with composite veneers.
A 28-year-old male patient was admitted to the Clinic of Periodontology and Oral pathology at the PHI USKC "St. Panteleimon", with a request to improve the aesthetics in the upper front. Clinically, a diastema mediana and short clinical crowns were present in the maxillary frontal region, with an extremely marked short crown on tooth #12. Clinical crown lengthening was performed using a diode laser. After complete gingival healing, composite veneers were fabricated using a histological build-up technique.

Results: After laser correction and complete healing of the gingiva and six composite veneers, complete aesthetic and functional rehabilitation was achieved.

Conclusions: Clinical crown lengthening using laser is a safe and effective clinical procedure. The minimal pain and the short time period of the overall intervention are the key factors due to which patients accept it. In addition, the fabrication of composite veneers provides excellent aesthetics with a minimally invasive approach to therapy.

Keywords: Gingivectomy, Veneers, Composite, Laser

POSTER PRESENTATION

PP.111

TREATMENT OF DRUG INDUCED OSTEONECROSIS IN THE UPPER JAW- CASE REPORT.

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Introduction: Medication-related osteonecrosis of the jaw (MRONJ – Medication-Related Osteonecrosis of the Jaw) is a serious and increasingly common complication mainly associated with the administration of bisphosphonates, denosumab, or antiangiogenic therapy.

Objective: To report a rare case of extensive medication-related osteonecrosis in the first quadrant with simultaneous extraction of an impacted decayed canine tooth.

Materials and Methods: A 75-year-old female patient presented to the postgraduate clinic of the Department of Oral and Maxillofacial Surgery, Implantology and Radiology of the Aristotle University of Thessaloniki with stage 2 osteonecrosis. Cone beam computed tomography revealed a large bone defect extending to the margins of the right maxillary sinus and right nasal cavity. The exposed necrotic bone was removed and the impacted canine tooth was extracted. Finally, the wound was treated and the flap was sutured.

Results: The postoperative course was smooth, with complete tissue healing and no signs of recurrence during the three-month follow-up. The presence of osteonecrosis was confirmed by histopathological examination.

Conclusions: Osteonecrosis of pharmacological etiology requires timely diagnosis, staging, and a personalized therapeutic approach. The combination of conservative and surgical treatment can lead to complete healing, while informing the dentist about the issue is crucial for the prevention and management of these cases.

POSTER PRESENTATION

PP.112

ARTIFICIAL INTELLIGENCE IN ORAL SURGERY: CURRENT APPLICATIONS, ACCURACY, AND FUTURE DIRECTIONS

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Introduction: Artificial intelligence (AI) has emerged as a transformative technology in healthcare, with expanding applications in dentistry and oral surgery. The integration of machine learning and deep learning algorithms into radiographic analysis and surgical planning may enhance diagnostic accuracy and reduce intraoperative and postoperative complications.

Objective: To review the current literature regarding the applications of artificial intelligence in oral and maxillofacial surgery, focusing on diagnostic imaging, risk prediction, implant planning, and pathology detection.

Methods: A narrative literature review was conducted using electronic databases including PubMed, Scopus, and Google Scholar. Articles published within the last 10 years were screened using keywords such as “artificial intelligence,” “deep learning,” “oral surgery,” “CBCT,” “implant planning,” and “inferior alveolar nerve.” Relevant original studies, systematic reviews, and meta-analyses were included and analyzed qualitatively.

Results: Recent evidence demonstrates that AI-based systems show high accuracy in detecting anatomical landmarks and assessing the proximity of impacted mandibular third molars to the inferior alveolar nerve. Deep learning algorithms have also been successfully applied in the detection of cystic and tumoral lesions, automated segmentation of anatomical structures in CBCT imaging, and prosthetically driven implant planning. Several studies report diagnostic performance comparable to or exceeding that of experienced clinicians. However, limitations include small datasets, lack of external validation, and limited integration into routine clinical workflows.

Conclusions: Artificial intelligence represents a promising adjunct in oral surgery, particularly in radiographic interpretation and surgical planning. While current evidence supports its diagnostic potential, further large-scale, standardized clinical trials are necessary before widespread implementation. AI is likely to play a significant role in the future of precision oral surgery.

POSTER PRESENTATION

PP.113

A SINGLE-CENTER PROSPECTIVE STUDY OF CHRONIC GRAFT-VERSUS-HOST DISEASE BIOMARKERS EVALUATION IN ALLOGENEIC HEMATOPOIETIC CELL TRANSPLANTATION RECIPIENTS: PRELIMINARY RESULTS

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Introduction: Chronic graft-versus-host disease (cGVHD) is leading cause of death in Allogeneic Hematopoietic Cell Transplantation (allo-HCT) patients. Biomarkers in cGVHD are limited, especially for minor salivary gland biopsies (mSGB) that may contribute to earlier or more accurate diagnosis.

Objective: This prospective study examines for the first time soluble serum biomarkers and mSGB biomarkers simultaneously in cGVHD patients.

Materials and Methods: Consecutive patients who underwent allo-HCT over a one-year period wereenrolled. mSGB was performed three months after allo-HCT for cGVHD assessment. Matrix metalloproteinase-9 (MMP-9) and ST2 levels were measured using immunoenzymatic techniques and the Endothelial Activation and Stress Index (EASIX) score were calculated. In mSGB samples, fibrosis was evaluated using Masson's trichrome staining and expression of the potential biomarker ZG16B antibody was assessed. Associasions among biomarker levels, cGVHD grading and overall survival (OS) were analyzed.

Results: 85 patients were included. Serum ST2 levels measured three months post-transplant predicted the development of moderate/severe cGVHD ($p=0.043$), which was associated with lower OS. No statistically significant associations were observed for MMP-9 ($p=0.378$) or EASIX score ($p=0.722$). Histopathologic analysis of mSGB demonstrated significant associations between cGVHD and both fibrosis ($p=0.006$) and loss of ZG16B expression ($p<0.001$). Moderate/severe fibrosis was observed in 71.4% of cGVHD patients compared with 40.6% of non-cGVHD group, while loss of ZG16B expression occurred in 78.6% versus 25.8%, respectively.

Conclusions: Our preliminary results highlight potential diagnostic value of ST2 and ZG16b in cGVHD. Larger multicenter studies are warranted to validate these findings and improve risk stratification and outcomes for patients after allo-HCT.

POSTER PRESENTATION

PP.114

MANDIBULAR REHABILITATION IN TWO IRRADIATED MANDIBULECTOMIZED PATIENTS: IMPLANT-RETAINED IN FIBULA FREE FLAPS USING GUIDED SURGER

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Materials and Methods: Extensive oromandibular defects are related with significant clinical and technical challenges. In most cases, these defects occur after tumor resection procedures, such as segmental or hemimandibulectomy. In recent years, innovations in microvascular surgery, implant dentistry, and computer-assisted planning have improved both functional and aesthetic outcomes.
This report describes two clinical cases involving extensive mandibular tumors in adult patients. The focus is placed on the surgical and prosthetic rehabilitation, as well as on the challenges encountered during treatment.

Results: The first case concerned a male patient with squamous cell carcinoma of the tongue. Treatment was performed in two stages. Initially, tumor resection and mandibular reconstruction were carried out using a free fibula flap. One year later, implants were placed with the aid of digital guidance, followed by prosthetic rehabilitation.
The second case involved a male patient diagnosed with squamous cell carcinoma of the floor of the mouth. A similar two-stage approach was followed. Tumor resection and reconstruction with a vascularized fibula flap were performed first. Implant placement was carried out one year later, also using digitally guided techniques.

Conclusions: Rehabilitation of reconstructed and irradiated mandibles remains demanding. Careful planning is essential. The combination of fibula free flap reconstruction and guided implant placement can lead to predictable results. Implant-supported prostheses contribute significantly to oral function and aesthetics. They also improve the patient's overall quality of life. This underlines the cornerstone of implant therapy in the management of oncologic mandibular defects.

POSTER PRESENTATION

PP.115

ODONTOGENIC ABSCESS VERSUS MAXILLOFACIAL CELLULITIS: CLINICAL DIFFERENTIATION AND CRITICAL DECISION-MAKING IN ORAL SURGERY

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Introduction: Odontogenic infections represent a common yet potentially life-threatening condition in oral surgery. Differentiating between a localized abscess and diffuse maxillofacial cellulitis is essential, as clinical progression, systemic involvement, and management strategies differ significantly.

Objective: To critically analyze the clinical differences between odontogenic abscess and cellulitis of the jaws, and to highlight key decision-making parameters for the clinician.

Materials and Methods: A narrative review of the literature was conducted using PubMed, Scopus, and ScienceDirect databases focusing on clinical presentation, spread of infection, systemic involvement, and management protocols of odontogenic infections. Emphasis was placed on studies describing diagnostic criteria and treatment outcomes.

Results: Odontogenic abscess typically presents as a localized, fluctuant swelling with well-defined borders and may be associated with purulent discharge. In contrast, cellulitis is characterized by diffuse, firm, non-fluctuant swelling, poorly defined margins, rapid spread, and significant systemic signs such as fever and malaise. Cellulitis carries a higher risk of progression to deep neck space infections, airway compromise, and life-threatening complications. Clinical decision-making differs accordingly: abscesses are primarily managed with incision and drainage combined with elimination of the source, whereas cellulitis often requires aggressive systemic antibiotic therapy, close monitoring, and possible hospital admission.

Conclusions: Maxillofacial cellulitis represents the more insidious and potentially dangerous condition compared to a localized abscess. Early recognition and timely intervention are critical in preventing severe complications. Clinicians must be able to promptly distinguish between these entities and escalate treatment appropriately.

POSTER PRESENTATION

PP.116

MANDIBULAR FRACTURES TWENTY DAYS AFTER EXTRACTION OF DEEPLY IMPACTED THIRD MOLARS: REPORT OF TWO CASES

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Introduction: Mandibular fracture is a rare but serious complication following the extraction of impacted third molars. Deep impaction increases surgical difficulty and may weaken mandibular integrity, predisposing to late fractures.

Objective: To present two cases of delayed mandibular fractures occurring more than twenty days after extraction of deeply impacted mandibular third molars and to discuss their management.

Materials and Methods: Two male patients, ages 51 and 56, underwent surgical extraction of deeply impacted mandibular third molars at the Department of Oral Surgery. Both procedures were uneventful. Twenty days postoperatively, the patients presented with pain and discomfort during mastication. Clinical examination and radiographic evaluation confirmed mandibular fractures at the extraction sites. Conservative management was selected, including close clinical monitoring and radiographic follow-up.

Results: Immediate postoperative radiographs demonstrated fracture lines without significant displacement. Conservative treatment resulted in progressive symptom resolution. Radiographic reassessment three months later showed satisfactory bone healing in both cases, with restoration of function and no complications.

Conclusions: Delayed mandibular fracture following extraction of deeply impacted third molars, although uncommon, may occur particularly in middle-aged male patients. Careful preoperative assessment, controlled bone removal, and strict postoperative instructions are essential to minimize risk. Early diagnosis and appropriate conservative management may lead to favorable outcomes in selected cases.

POSTER PRESENTATION

PP.117

PREVALENCE OF ORAL SURGICAL TREATMENT MODALITIES IN RADICULAR CYSTS AND THEIR RADIOGRAPHIC DIAMETER DISTRIBUTION

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Introduction: Radicular cysts represent the most common odontogenic cystic lesions, typically arising as a consequence of chronic periapical inflammation. Their management depends on several clinical and radiographic factors, particularly cyst size and anatomical location, which influence the choice of surgical intervention.

Objective: The aim of this study was to evaluate the prevalence of different oral surgical treatment modalities in radicular cysts and to analyze the radiographic diameter distribution of these lesions.

Materials and Methods: This study was conducted at a PHO specialized dental clinic for oral surgery and included a sample of 44 patients diagnosed with radicular cysts. Each participant underwent detailed anamnesis, clinical examination, and paraclinical investigations to establish diagnosis and treatment planning. The surgical procedures performed were cystectomy with apicoectomy and enucleation with tooth extraction. Preoperative radiographic measurements of cyst diameter were categorized into three groups: Group 1 (0.5–1.0 cm), Group 2 (1.1–1.5 cm), and Group 3 (1.6–2.0 cm). Statistical analysis was applied to interpret the findings.

Results: The majority of cysts (68%) were within Group 1, followed by 18% in Group 3 and 14% in Group 2. Regarding treatment modalities, cystectomy with apicoectomy was performed in 65% of cases, while enucleation with extraction accounted for 35% of cases.

Conclusions: Smaller radicular cysts were more prevalent in the studied population. Cystectomy with apicoectomy was the most frequently applied surgical approach, indicating a tendency toward tooth-preserving procedures when clinically feasible.

POSTER PRESENTATION

PP.118

SURGICAL SITE INFECTION RISK IN ORAL SURGERY PATIENTS ON MONOCLONAL ANTIBODY TREATMENTS: CURRENT EVIDENCE AND ANTIBIOTIC CONSIDERATIONS

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Introduction: Monoclonal antibody therapies are increasingly prescribed for oncologic, autoimmune, and metabolic conditions. These biologic agents modulate immune pathways, angiogenesis, and bone remodeling, potentially influencing postoperative healing and infection risk in oral surgical procedures.

Objective: To review current literature regarding the risk of surgical site infections in patients receiving monoclonal antibody therapies and to evaluate implications for perioperative antibiotic use in oral surgery.

Materials and Methods: A structured literature search was conducted in PubMed and related databases using combinations of the terms “monoclonal antibodies,” “biologic therapy,” “denosumab,” “bevacizumab,” “tocilizumab,” “oral surgery,” “tooth extraction,” “dental implant,” and “surgical site infection.” Human studies published in English evaluating postoperative infection outcomes in oral or maxillofacial surgical settings were included.

Results: Available evidence remains limited and heterogeneous. Anti-resorptive agents such as denosumab primarily affect bone remodeling, while anti-angiogenic agents and immunomodulatory monoclonal antibodies may theoretically impair wound healing and host defense. However, current studies do not consistently demonstrate a significantly increased incidence of surgical site infections following routine oral surgical procedures. Data regarding modification of standard antibiotic prophylaxis protocols in this patient population are insufficient and inconclusive.

Conclusions: Although monoclonal antibody therapies may alter biological mechanisms involved in healing, robust evidence linking their use to increased surgical site infection risk in oral surgery is lacking. At present, antibiotic administration should be individualized based on overall patient risk assessment rather than biologic therapy alone. Further prospective studies are required.

POSTER PRESENTATION

PP.119

MARSUPIALIZATION AND DECOMPRESSION: METHODS OF TREATMENT OF LARGE MANDIBULAR RESIDUAL CYSTS. TWO CASE REPORTS.

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Introduction: Large residual cysts are relatively rare inflammatory cysts of the jaws. They derive from radicular cysts that had not been completely removed after dental extraction. These lesions can grow large without any symptoms and they are discovered as incidental radiographic findings.

Results: The purpose of this e- poster is to present two case reports of large mandibular residual cysts and the surgical methods of treatment.

Materials and Methods: We present two different cases of male patients with mandibular residual cysts, who were referred to our department. Both patients presented with swelling. The radiological examination revealed large well-defined lesions that had absorbed extensive jaw sites. The localization of both cysts was significantly close to the inferior alveolar nerve. The follow up period of 12 months from surgery is presented.
Marsupialization and decompression are alternative treatments for large cysts, avoiding significant complications such as nerve injury, jaw fracture, sinus or nasal perforation which can occur from curettage during enucleation.

Conclusions: Marsupialization and decompression are conservative, efficient surgical techniques that promote bone healing and the shrinkage of the existing lesion.

POSTER PRESENTATION

PP.120

THE ROLE OF MRI IN THE PREOPERATIVE ASSESSMENT OF THE FACIAL NERVE FOR PAROTID TUMORS: A SYSTEMATIC REVIEW

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Introduction: Preserving the structural integrity of the extracranial intraparotid facial nerve is the primary challenge during parotid gland surgery. Traditional reliance on anatomical landmarks is increasingly supplemented by advanced imaging. Recent progress in Magnetic Resonance Imaging (MRI) allows for the direct visualization of the nerve's main trunk and primary branches, potentially transforming preoperative surgical planning and reducing morbidity.

Objective: To systematically review recent literature regarding the efficacy and practical applications of high-resolution MRI in mapping the intraparotid facial nerve prior to parotidectomy.

Materials and Methods: This systematic review analyzed 17 clinical studies (prospective and retrospective) published between 2010 and 2024. The studies utilized 1.5T and 3T MRI scanners with specialized sequences, including 3D double-echo steady-state with water excitation (3D-DESS-WE), constructive interference in steady state (CISS), 3D-PSIF-DWI, and 3D-FIESTA.

Results: Successful visualization of the main facial nerve trunk from the stylomastoid foramen was achieved in 90–100% of cases. Identification of primary divisions (temporofacial and cervicofacial) ranged from 70% to 100%. Diagnostic accuracy for defining the anatomical relationship between tumors and the nerve reached up to 97.8%. Crucially, preoperative MRI mapping was associated with a reduction in perioperative nerve identification time.

Conclusions: High-resolution 3D MRI sequences provide satisfactory visualization of the facial nerve and its main branches, significantly aiding preoperative planning. While highly effective for the main trunk and primary divisions, further research is needed to standardize protocols for peripheral branch visualization in routine clinical practice.

POSTER PRESENTATION

PP.121

IPS IMPLANTS PREPROSTHETIC FOR REHABILITATION OF ACQUIRED MAXILLARY DEFECTS: A CASE SERIES

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Introduction: Maxillary defects following tumor resection, trauma or cyst removal present major reconstructive challenges, affecting oral function, speaking ability and facial aesthetics. The development of Individual Patient-Solutions (IPS) implants using the newest digital technology offers a custom made approach to patients treatment.

Objective: To evaluate the clinical application and outcomes of IPS implants in patients with acquired maxillary defects of different etiologies.

Materials and Methods: Four different patients with maxillary defects were treated. The first patient underwent partial maxillectomy after ameloblastoma resection. The second presented with a defect following a self-inflicted gunshot injury. The third patient exhibited a bony defect of the alveolar ridge after cyst removal. The fourth patient underwent unilateral maxillectomy due to squamous cell carcinoma of the maxillary sinus. In all cases, IPS implants were designed using virtual surgical planning and fabricated via CAD/CAM technology. Prosthetic rehabilitation followed implant placement. Evaluation criteria included implant stability, functional outcomes, and patient overall satisfaction.

Results: All cases demonstrated successful implant placement with primary stability and precise anatomical fit. Functional improvement in masticatory efficiency and speech was achieved in all four patients. Aesthetic improvement was significant, with great restoration of facial symmetry. No major complications or implant failures were observed during the follow-up period. Patient satisfaction was high.

Conclusions: IPS implants provide a reliable and effective solution for complex maxillary defect rehabilitation. Their customized design allows a predictable functional and aesthetic outcome, improving ,overall, quality of life.

POSTER PRESENTATION

PP.122

CONSERVATIVE AND RESTORATIVE APPROACHES IN THE MANAGEMENT OF TRAUMATIC ANTERIOR TOOTH FRACTURES: TWO CASE REPORTS

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Introduction: Dental trauma is highly prevalent in children, with enamel–dentin fractures representing one of the most common injury types.These fractures may lead to functional and esthetic concerns, necessitating prompt and appropriate management. This two case-report aims to present two different treatment approaches for enamel–dentin fractures of maxillary central incisors following traumatic injuries.
Case Series

Two pediatric patients (9 and 11 years old) with uncomplicated enamel–dentin fractures of the maxillary right central incisor were treated using different approaches. In the first case, the fractured fragment was unavailable, and the tooth was restored with composite resin. In the second case, the fragment was available and reattachment was performed, followed by minimal composite restoration to enhance adaptation and esthetics. At the 1-month follow-up, both restorations demonstrated satisfactory clinical performance. However, fragment reattachment provided superior anatomical form and esthetic integration.

Conclusions: Both fragment reattachment and direct composite restoration demonstrated favorable clinical outcomes in the management of enamel–dentin fractures. reattachment provides superior esthetic and anatomical results when the fragment is available. In contrast, composite restoration remains a predictable and effective alternative. Therefore, treatment choice should be guided by clinical conditions and fragment availability.

POSTER PRESENTATION

PP.123

DELAYED ERUPTION OF UPPER FIRST PERMANENT MOLARS

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Introduction: Delayed eruption of the first permanent molars is a relatively rare condition with a prevalence of 0.4%. It occurs particularly in the upper jaw and is more common in males.
Cases report

This report presents 3 clinical cases with a significant delay in the eruption of the maxillary first permanent molars. The delay is observed both in relation to the patients' chronological age and in comparison to the mandibular first permanent molars. For all three patients, a comprehensive medical and dental history was obtained. In two cases, the history was uneventful, whereas the third patient reported asthma and multiple allergies. The orthopantomography in all 3 cases revealed a delay in root development of teeth 16 and 26 compared to teeth 36 and 46. No physical obstacles or pathological findings were identified that could impede the eruption process.

In all 3 cases monitoring with 6-month recalls was decided. In the first case, tooth 26 emerged at 9 years, with tooth 16 appearing after 6 months. In the second case, both teeth 16 and 26 had erupted at 9 years and 5 months, reaching full eruption by age 10. In the third case, tooth 26 erupted at 8 years, followed by tooth 16 three months later.

Conclusions: Delayed eruption of the maxillary first permanent molars requires careful monitoring to exclude underlying pathologies or mechanical obstructions. When no such factors are identified, the most appropriate clinical approach may simply be observation and no active intervention.

POSTER PRESENTATION

PP.124

DIGITAL DENTAL IMPRESSIONS IN PEDIATRIC DENTISTRY: A LITERATURE REVIEW

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Introduction: Traditional dental impressions often cause significant anxiety and discomfort in paediatric dental patients. Digital dental impressions have been introduced as an alternative to improve the overall clinical experience.

Objective: This review evaluates the effectiveness and acceptability of digital impressions, focusing on whether they simplify the procedure for both the patient and the practitioner compared to conventional methods.

Materials and Methods: A literature search was conducted across PubMed, Cochrane and Embase databases. Studies involving children were selected based on their methodological quality and sample size.

Results: Digital impressions significantly reduce discomfort and stress, particularly in younger patients. Although pain levels showed no significant difference, digital impressions resulted in fewer reports of gag reflex, breathing difficulties and anxiety related to taste and smell. Parents also demonstrated a clear preference for the digital approach. High-accuracy scanning also facilitates definitive restorations in children with MIH. Regarding efficiency, chair time and maximal mouth opening showed no statistically significant differences. Economically, the costs of both procedures tend to equalize within 3–4 years. In terms of accuracy, measurements on digital models are as reliable as those on plaster casts, although both show slight differences when compared to direct measurements inside the mouth. Promising results were noted for patients with special needs, such as craniofacial disorders.

Conclusions: Digital dental impressions are a viable alternative, offering a preferable and more comfortable experience, especially for children with dental anxiety or special needs. While current evidence does not definitively confirm a reduction in clinical time, the psychological benefits and diagnostic accuracy justify its integration into modern pediatric practice.

POSTER PRESENTATION

PP.125

DIGITAL SURGICAL GUIDES AS A TOOL FOR IMPROVING ACCURACY AND RISK CONTROL IN IMPLANT PLACEMENT

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Introduction: Accurate implant placement is a key determinant of long-term functional and prosthetic success in dental implantology. In cases with limited anatomical defects, even small deviations may increase surgical risk or compromise prosthetic outcomes. Digital surgical guides have been introduced to enhance precision and reduce intraoperative uncertainty.

Objective: To evaluate the effect of digitally guided implant surgery on surgical accuracy, complication rates, and operative efficiency compared with conventional freehand implant placement in patients with limited implantological defects.

Materials and Methods: A comparative observational study was conducted on 40 patients presenting with limited implantological defects. Patients were divided into two groups: guided implant surgery (n = 20) and conventional freehand surgery (n = 20). Evaluated parameters included surgical time, intraoperative complications, and implant positioning in relation to adjacent anatomical structures and prosthetic orientation, assessed using postoperative panoramic radiographs. Statistical analysis was performed using Student's t-test for independent samples and the chi-square test for categorical variables, with statistical significance set at $p < 0.05$.

Results: Digitally guided implant placement was associated with significantly shorter surgical time and a lower incidence of intraoperative complications compared to freehand surgery ($p < 0.05$). Implant positioning in the guided group showed improved alignment with planned prosthetic orientation and safer distances from surrounding anatomical structures. Greater variability in implant angulation and positioning was observed in the conventional group.

Conclusions: The use of digital surgical guides improves accuracy, reduces surgical risk, and enhances operative efficiency in implant placement for limited defects. Guided implant surgery represents a reliable clinical approach for increasing predictability and safety in contemporary implant dentistry.

POSTER PRESENTATION

PP.125

SURGICAL MANAGEMENT OF A SUBMERGED MANDIBULAR PRIMARY SECOND MOLAR WITH DEEP CARIOUS LESIONS: A RARE CASE REPORT

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Introduction: Submergence of primary molars, also referred to as infraocclusion, is a clinical condition characterized by a tooth positioned below the occlusal plane of adjacent teeth, most commonly as a result of ankylosis. If not diagnosed and managed early, submerged primary molars may lead to space loss, tipping of adjacent teeth, and disturbances in the eruption of the permanent successors.

Objective: The aim of this case report is to present the diagnosis and surgical management of a severely submerged mandibular primary second molar.

Materials and Methods: A six-year-old patient was referred to the clinic with a complaint of dental caries. Intraoral and radiographic examinations revealed a submerged left mandibular primary second molar with deep carious lesions. Considering the risk of caries progression, space loss and potential disturbances in the eruption of the permanent successor, extraction was indicated. Due to the patient's limited cooperation, all dental procedures, including surgical extraction, were performed under general anesthesia.

Results: Early extraction of the submerged tooth was undertaken to minimize the risk of future orthodontic complications and to support the normal eruption of the permanent successor. Accordingly, the family was informed about the need for space maintenance, and placement of a space maintainer when appropriate was planned.

Conclusions: Submerged primary teeth may also be affected by dental caries and may lead to future complications. In pediatric patients with limited cooperation who require comprehensive dental care, management under general anesthesia may represent a safe and effective treatment option, particularly when the risk of complications is anticipated.

POSTER PRESENTATION

PP.126

CARIES EXPERIENCE OF CHILDREN WITH CHRONIC DISEASES IN UNIVERSITY HOSPITAL CENTER “MOTHER TERESA”, TIRANA, ALBANIA

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Introduction: Chronic diseases in childhood have been associated with poor oral health and increased caries.

Objective: To determine the prevalence of dental caries experience among children with chronic diseases and to evaluate relationship between chronic disease and dental caries compared to controls.

Materials and Methods: This case-control study was conducted for 8 months in Tirana, Albania and included children aged 3-18 years (n=203); 103 children with chronic diseases hospitalized at University Hospital Center “Mother Teresa” and 100 children without chronic diseases presented for treatment at the University Dental Clinic. Information was collected through structured questionnaires completed by parents and intraoral examination of children according to WHO criteria 1999. The collected data were statistically analyzed.

Results: The prevalence of caries in children with chronic diseases was higher (79.6%) compared to healthy children (22%) with a statistically significant difference. The mean value of the dmft in case group (9.45) was higher compared to control group (0.61) with a statistically significant difference. The mean value of the DMFT in case group (4.62) was higher compared to control group (1.07) with a statistically significant difference. The results of this study confirmed the statistically significant relationship between chronic diseases and dental caries.

Conclusions: The prevalence of caries in children aged 3-18 years with chronic diseases is very high. The high mean values of dmft and DMFT in children with chronic diseases indicate a high level of caries experience. The results of this study confirm the statistically significant relationship between chronic diseases and dental caries.

POSTER PRESENTATION

PP.127

COMPLEX MANAGEMENT OF MOLAR INCISOR HYPOMINERALISATION IN A PAEDIATRIC PATIENT: A CASE REPORT

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Introduction: Molar–incisor hypomineralisation (MIH) is a qualitative enamel defect of systemic origin affecting first permanent molars and frequently permanent incisors. Clinically, MIH is associated with hypersensitivity, rapid caries progression, restorative failure, and behavioural management difficulties, posing significant challenges in paediatric dental care.

Objective: To present the clinical management of a paediatric patient with severe MIH complicated by recurrent caries, pain, pulpal pathology and cooperation difficulties, highlighting the complexity of treatment decisions and interdisciplinary care.

Materials and Methods: A 10-year-old male patient was referred with dental pain and cooperation issues. Clinical and radiographic examination revealed MIH affecting all first permanent molars. Mandibular molars had extensive enamel breakdown, recurrent caries, and atypical restorations. Preventive measures included oral hygiene instruction, professional cleaning, and fluoride varnish application. First permanent maxillary molars were restored using resin composite restorations. Due to persistent symptoms in mandibular first permanent molars, the patient was referred to the postgraduate endodontic clinic. Root canal treatment of teeth #36 and #46 was completed in two appointments, including sodium hypochlorite irrigation and obturation with gutta-percha. Owing to insufficient remaining tooth structure, stainless steel crown (SSC) placement was planned for tooth #36, whereas tooth #46 received a definitive resin restoration.

Results: Following endodontic therapy and definitive restorations, the patient remained asymptomatic. Clinical and radiographic follow-ups demonstrated satisfactory short- and mid-term outcomes, with improved oral hygiene and patient cooperation.

Conclusions: This case highlights the complexity of managing severe MIH. Early diagnosis, individualized preventive and restorative strategies, behavioural management, and timely interdisciplinary referral are essential to improve prognosis.

POSTER PRESENTATION

PP.128

CORRECTION OF A SINGLE-TOOTH ANTERIOR CROSSBITE USING A COMPOSITE INCLINED PLANE: A CASE REPORT

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Introduction: Single-tooth anterior crossbite is a common malocclusion observed during mixed dentition and may lead to functional mandibular shifts, occlusal discrepancies, periodontal complications, and esthetic concerns when left untreated. Early interceptive and guidance-based treatment approaches are essential to promote normal dental and occlusal development.

Objective: The aim of this case report is to present the correction of a single-tooth anterior crossbite using a conservative and minimally invasive composite inclined plane technique in a pediatric patient.

Materials and Methods: An eight-year-old boy presented with a single-tooth anterior crossbite involving tooth 21. Clinical and radiographic examinations indicated a dental-origin anterior crossbite associated with occlusal interference restricting labial movement of the affected tooth. Occlusal interference was eliminated and guided eruption of the tooth into the correct position was achieved through functional forces by applying a composite inclined plane to the anterior region, while posterior disocclusion was accomplished by increasing the occlusal height of the maxillary first molars using composite resin.

Results: Following placement of the composite inclined plane, spontaneous labial movement of tooth 21 was observed. Complete correction of the anterior crossbite was achieved within three weeks without the need for active orthodontic appliances. The treatment period was completed without discomfort or adverse events.

Conclusions: Composite inclined plane therapy represents an effective, rapid, and minimally invasive interceptive treatment option for the management of single-tooth anterior crossbite in pediatric patients. When implemented at an early stage, this approach may reduce the need for more complex orthodontic interventions and contribute to favorable occlusal development.

POSTER PRESENTATION

PP.129

A CLINICAL OVERVIEW OF ENAMEL RENAL SYNDROME

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Objective: Enamel Renal Syndrome (ERS) is a rare autosomal recessive disorder characterized by amelogenesis imperfecta, delayed eruption, gingival enlargement, and nephrocalcinosis. This study aims to describe its main clinical and radiological features and highlight the role of dentists in early diagnosis. Case Report: A 12-year-old female patient presented with tooth discoloration, structural defects, and gingival swelling. The patient had no known systemic disease. The defects were present since eruption. Clinical and radiographic examinations revealed generalized gingival abscesses, severe periodontal destruction, abnormal crown/root morphology, enamel defects, impacted teeth and generalized diastema. Based on these findings, the patient was referred to Medical Genetics with a preliminary diagnosis of amelogenesis imperfecta/enamel renal syndrome. Genetic analysis identified a homozygous frameshift mutation in the FAM20A (c.77del; p.Gln258Argfs*28, chr17-66539810 GA>G), classified as likely pathogenic according to ACMG (American College of Medical Genetics and Genomics) criteria. Based on the genetically confirmed amelogenesis imperfecta with periodontal involvement, ERS was diagnosed. Subsequently, she was referred to Nephrology. Urinary system ultrasonography revealed bilateral microechogenicities (2–3 mm) suggestive of crystalloid microcalcifications without distinct acoustic shadowing. Following the final diagnosis, the patient was scheduled for full-mouth rehabilitation and follow-up.

Conclusions: ERS exhibits pathognomonic oral findings that can be recognized early in life; therefore, pediatric dentists are often the first clinicians to suspect the condition. In this case, ERS was diagnosed based on clinical and radiographic findings, confirmed by genetic analysis, and supported by renal ultrasonography. Dentists play a pivotal role in early diagnosis and multidisciplinary management of genetic disorders.

Keywords: Amelogenesis imperfecta, Periodontal disease, Enamel renal syndrome, Enamel hypoplasia

POSTER PRESENTATION

PP.130

A TWO-YEAR EPIDEMIOLOGICAL ANALYSIS OF PREVENTIVE, RESTORATIVE, AND ENDODONTIC TREATMENTS IN A PEDIATRIC DENTISTRY CLINIC

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Introduction: The quantitative distribution of dental procedures performed during childhood provides indirect yet robust epidemiological indicators of caries burden and the penetration of preventive services within the population.

Objective: This study aimed to evaluate the distribution of major dental procedures and to characterize the clinical service profile among patients aged 0–13 years who attended a pediatric dentistry clinic between January 2024 and December 2025.

Materials and Methods: Patient records from the two-year period were retrospectively reviewed. Fissure sealant applications, fluoride applications, restorative treatments, and endodontic treatments were analyzed as separate procedural categories. The data were analyzed using the chi-square test.

Results: A total of 59,161 teeth received treatment during the study period. Fissure sealants accounted for 10,863 treated teeth (18.4%), fluoride applications for 6,320 (10.7%), restorative treatments for 38,326 teeth (64.8%), and endodontic treatments for 3,652 teeth (6.2%) of all procedures performed. The chi-square analysis revealed a statistically significant difference among the procedural categories (χ^2 = 51,734.12; $p < 0.001$). Restorative and endodontic treatments together accounted for 71.0% of all procedures performed.

Conclusions: The findings suggest a high level of dental treatment need in the pediatric population and indicate that caries progression continues to represent a significant public health concern. Although preventive interventions have been integrated into clinical practice, they have not yet reached a level sufficient to balance the overall curative treatment burden. Strengthening risk-based preventive programs and expanding early intervention strategies may reduce the need for restorative and endodontic treatments in the long term.

POSTER PRESENTATION

PP.131

INFLUENCE OF PREHEATING ON THE WATER SORPTION AND SOLUBILITY OF FISSURE SEALANTS: A COMPARATIVE EVALUATION

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Introduction: Pit and fissure sealants are widely used for the prevention of occlusal caries, and their clinical success depends on their physicochemical properties such as water sorption and solubility. Preheating may influence these properties by altering the polymerization behavior of materials with different chemical compositions.

Objective: This study aimed to evaluate the impact of preheating on the water sorption and solubility characteristics of fissure sealant materials with different chemical compositions.

Materials and Methods: Three resin-based fissure sealants (Helioseal F Plus, Clinpro, and Fissurit FX) along with one glass ionomer-based sealant (Riva Protect) were included in the investigation. Specimens were fabricated under two thermal conditions: at room temperature and 55 °C. Following polymerization, samples were stored in distilled water for 14 days, and water sorption and solubility were calculated in accordance with ISO 4049 standards. Statistical evaluation was performed using one-way ANOVA, Tukey's post hoc test, and independent samples t-test.

Results: Riva Protect showed significantly higher water sorption than the resin-based sealants at both temperatures ($p < 0.05$). Among resin-based materials, only Clinpro exhibited a significant increase after preheating, while Helioseal F Plus and Fissurit FX showed no significant change. Clinpro had the highest solubility in non-preheated groups, Fissurit FX the lowest overall, and only Riva Protect demonstrated a significant increase in solubility after preheating ($p < 0.05$).

Conclusions: Preheating affected water sorption and solubility in a material-dependent manner. Although Helioseal F Plus is Bis-GMA-free, its values were comparable to Bis-GMA-based sealants, suggesting it may be a suitable clinical alternative.

POSTER PRESENTATION

PP.132

EARLY INTERCEPTIVE TREATMENT OF DEVELOPING CLASS III MALOCCLUSION USING PLANAS DIRECT TRACKS: A THREE-YEAR CASE REPORT

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Introduction: Anterior crossbite is a common occlusal alteration characterized by an abnormal anteroposterior relationship between the maxillary and mandibular arches. If untreated in the deciduous dentition, it may promote mandibular overgrowth, restrict maxillary development, and contribute to skeletal Class III patterns. Children aged 3–5 years typically first attend pediatric dental clinics, placing pediatric dentists in a crucial position for early diagnosis and interceptive care. Planas Direct Tracks (PDT), within neuro-occlusal rehabilitation, provide continuous occlusal guidance independent of patient compliance and may support favorable neuromuscular adaptation during growth.

Objective: To evaluate the three-year clinical stability of early interceptive treatment with Planas Direct Tracks in a young Class III patient.

Materials and Methods: A 3-year-old child in the deciduous dentition presented with anterior crossbite affecting four maxillary incisors and negative overjet. Baseline intraoral photographs and cephalometric records were obtained. After parental consent, PDT were fabricated using anterior composite resin to eliminate the crossbite and guide mandibular repositioning. Follow-ups were conducted at 3, 6, and 12 months, with monitoring continued for three years.

Results: Negative overjet was corrected within one month. Progressive improvement during the first three months eliminated functional mandibular shift. The initial Class III canine relationship converted to Class I. After three years, composite removal confirmed stable Class I occlusion without relapse or temporomandibular symptoms.

Conclusions: Early interceptive use of PDT achieved stable correction and may help prevent progression of Class III malocclusion.

POSTER PRESENTATION

PP.133

SOCIODEMOGRAPHIC AND BEHAVIOURAL RISK FACTORS FOR DENTAL NEGLECT IN CHILDREN

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Aim: To assess the frequency and risk factors of dental neglect in children aged 3–12 years in Plovdiv, Bulgaria.

Materials and Methods: A cross-sectional study was conducted in 276 children aged 3–12 years. Clinical examination recorded dft, DMFT, and PLI indices and included screening for dentofacial deformities and dental trauma. Parents completed a direct questionnaire on age, education, family social status, oral hygiene knowledge, treatment-seeking behavior, and preventive practices. Associations between variables were analyzed using Spearman correlation with SPSS version 27.

Results: Of the examined children, 154 were girls and 122 were boys. High or very high caries experience in the primary dentition (dft >4.5) was found in 21.0% (n=58). Markedly poor oral hygiene (PLI >2.1) was observed in 20.3% (n=56). Most families reported moderate social status, while low social status was least represented. Parents with higher education demonstrated greater engagement in prevention, fluoride use, and additional oral hygiene measures. Significant correlations were found between dft index and pain-related dental visits ($r=0.374$, $p<0.01$), social status and financial barriers to dental attendance ($r=-0.408$, $p<0.01$), and financial difficulties and dft ($r=0.296$).

Conclusions: Socioeconomic disadvantage, financial barriers, and lower parental education are key factors associated with dental neglect patterns and higher caries burden in children.

POSTER PRESENTATION

PP.134

INTENSITY OF DENTAL CARIES AND BODY MASS INDEX IN CHILDREN WITH PERMANENT DENTITION

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Introduction: Excess body weight in children is a global health problem influenced by multiple environmental and genetic risk factors. It results from an imbalance between energy intake through food and energy expenditure, leading to the storage of excess energy as fat. Poor nutrition is considered a primary factor contributing to obesity. Obesity and oral health share common risk factors, particularly unhealthy and unbalanced dietary habits.

Objective: Body Mass Index (BMI), defined as the ratio of weight to height, is used as a tool to assess body weight status. The American Academy of Pediatric Dentistry recommends BMI as a diagnostic screening tool for identifying underweight, normal weight, overweight, and obesity in children starting from the age of two.

Materials and Methods: The study included 71 children aged 12 years (26 girls and 45 boys). The control group consisted of 31 children without caries, fillings, or extractions, while the experimental group included 40 children with caries experience. BMI was determined according to age and sex using charts provided by the Centers for Disease Control and Prevention. Participants were classified into four categories: underweight, normal weight, overweight, and obese. Dental health was assessed using the Klein–Palmer DMFT index.

Results: Most children had normal weight. Although variations in caries prevalence were observed across BMI categories, the associations were not statistically significant ($p>0.05$). The findings suggest a possible relationship between BMI and dental caries in permanent dentition.

Keywords: These parameters may contribute to developing individualized caries risk assessment strategies and targeted preventive approaches.
BMI, dental caries, permanent dentition

POSTER PRESENTATION

PP.135

A RARE CASE OF DOUBLE-DILATED ODONTOMA IN THE POSTERIOR MANDIBLE OF A CHILD

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Introduction: Dilated odontoma is the most severe variant of dens invaginatus, which is characterized by a profound invagination of the enamel organ into the dental papilla. While typically localized in the maxillary anterior region, its occurrence in the posterior mandible as two independent foci is an exceptionally rare developmental phenomenon that requires precise radiographic evaluation.
Case Report: An 11-year-old girl presented to the pediatric dentistry clinic with pain in the right mandibular region. Extraoral examination revealed mild facial asymmetry. Clinical evaluation of the right mandibular first molar showed extensive caries and significant root resorption. Panoramic imaging incidentally revealed two separate radiopaque-radiolucent entities associated with the unerupted second and third molar tooth germs. To further delineate the pathology, cone-beam computed tomography was performed. CBCT analysis identified two independent, well-defined, "donut-shaped" lesions, each measuring approximately 5 mm in diameter, with radiopaque peripheries and radiolucent cores. While the buccal cortical plate exhibited slight expansion, cortical integrity was maintained. Following endodontic treatment of the symptomatic first molar, a conservative monitoring strategy was adopted. This decision was based on the lesions' limited size and their close relationship to the mandibular basis. Avoiding aggressive surgical intervention was prioritized due to the significant risk of mandibular fracture, especially considering the patient’s ongoing growth and development.

Conclusions: This case highlights the atypical presentation of multiple dilated odontomas. CBCT is indispensable for defining anatomical relationships and supporting careful radiographic follow-up as a safe management strategy, prioritizing the preservation of developing structures over aggressive surgery in growing patients.

Keywords: Double Dilated Odontoma, posterior mandible, conservative management

POSTER PRESENTATION

PP.136

CONSERVATIVE MANAGEMENT OF A TRAUMATIZED MAXILLARY ANTERIOR TOOTH USING CVEK PULPOTOMY AND FRAGMENT REATTACHMENT: A CASE REPORT

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Introduction: Maxillary anterior teeth are affected by traumatic dental injuries in children and adolescents, resulting in complicated crown fractures. Preservation is essential for esthetics, function, alveolar development, and psychosocial well-being in growing patients. Conservative vital pulp therapy techniques aim to maintain pulp vitality.

Objective: Conservative management of a traumatized maxillary anterior tooth through the combined Cvek (partial) pulpotomy and fragment reattachment. Cvek pulpotomy preserves healthy pulp tissue by removing only the superficially inflamed portion, while fragment reattachment maximizes the preservation of esthetics, function, and structural integrity.

Materials and Methods: An 11-year-old female patient presented 8 days after a fall-related dental trauma. Clinical and radiographic examinations revealed a complicated crown fracture of tooth FDI 21 with pulp exposure, without pathological changes in the root or surrounding tissues. Considering the patient's age and pulp vitality, Cvek pulpotomy followed by fragment reattachment was planned. Approximately 2 mm of exposed pulp tissue was removed with a sterile round bur. Hemostasis was achieved using 2.5% sodium hypochlorite. Calcium hydroxide was placed and covered with a glass ionomer cement base. Both surfaces were etched, and reattachment was performed using nanohybrid composite resin.

Results: At 1-week, 3-month and 5-month follow-ups, the tooth remained asymptomatic, responded positively to vitality tests, and showed no adverse radiographic findings. The reattached fragment remained stable.

Conclusions: Cvek pulpotomy is a biologically based, minimally invasive approach for preserving pulp vitality in traumatized anterior teeth with complicated crown fractures. Fragment reattachment using the patient's own tooth structure provides favorable esthetic and functional outcomes.

POSTER PRESENTATION

PP.137

THE FEASIBILITY OF MULTIDISCIPLINARY APPROUCH IN DENTAL TRAUMA TREATMENT

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Introduction: Dental trauma refers to injuries affecting the teeth and/or their supporting tissues. These injuries most commonly occur because of direct impact, including traffic accidents. They are frequently observed in both primary and permanent dentition, with the highest incidence involving the maxillary central and lateral incisors.

Case Presentation: An 8-year-old child referred to our clinic one hour following trauma, presenting with avulsion of teeth #21, #62, and #63, accompanied by loss of the buccal plate. Radiographic assessment revealed hypodontia of tooth #22. Treatment procedure included: immediate reimplantation of tooth #21 done and wire–composite splint was placed for a period of two months, while tooth #21 underwent endodontic treatment. Due to incomplete root development, the root canal was obturated with an MTA-based bioceramic cement. During the same period, a bone grafting and resorbable membrane covered with coronally advanced flap was performed to repair and preserve the residual maxillary alveolar ridge. Fourteen days postoperatively, laser-assisted vestibuloplasty was conducted to deepen the vestibule followed by orthodontic treatment for correction of the reverse overjet previously present.

Results: At the one-year follow-up, complete repositioning of tooth #11 into normal occlusion was achieved, along with complete apical closure of tooth #21 and satisfactory clinical stability of the tooth within the alveolar bone.

Conclusions: This case supports the feasibility of a multidisciplinary approach in preserving natural dentition and alveolar architecture following severe dental trauma.

Keywords: Dental trauma, dental injuries, tooth avulsion, fracture, replantation.

POSTER PRESENTATION

PP.138

MULTIDISCIPLINARY TREATMENT OF A MANDIBULAR DENTIGEROUS CYST IN A PRIMARY TOOTH: A CASE REPORT

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Introduction: Dentigerous cysts associated with primary teeth may cause displacement of developing permanent teeth and require careful management during the mixed dentition period.

Objective: This case report describes the multidisciplinary treatment of a dentigerous cyst located in the right mandibular molar region involving the permanent tooth germ and presents a 24-month follow-up.

Materials and Methods: A 10-year-old, systemically healthy male patient presented with a firm swelling in the mandibular region. Clinical examination revealed intraoral swelling in the right mandibular posterior area. Radiographic examination showed a unilocular radiolucent lesion extending from the mesial roots of tooth 84 to the distal root of tooth 46. The cyst had surrounding the germ of tooth 45, causing displacement of the developing tooth. Under local anesthesia, teeth 84 and 85 were extracted and marsupialization was performed. Cystic fluid was aspirated from the opened cyst roof, and histopathological examination confirmed a dentigerous cyst. A drainage tube was placed in the cyst cavity and an acrylic obturator was fabricated. Bone regeneration and the eruption of tooth 45 were monitored. After removal of the obturator, a space maintainer was applied to preserve the arch length.

Results: At the 24-month follow-up, the tooth remained asymptomatic and functional. Clinical examination showed healthy surrounding tissues and radiographic evaluation confirmed resolution of the lesion.

Conclusions: This case demonstrates that dentigerous cysts in pediatric patients can be successfully managed with a multidisciplinary and conservative approach. Marsupialization combined with obturator use and long-term follow-up may allow preservation of the developing permanent tooth.

Keywords: Dentigerous cyst; Marsupialization; Pediatric dentistry

POSTER PRESENTATION

PP.139

MANAGEMENT OF COMPLICATED CROWN FRACTURES AND EXTRUSIVE LUXATION

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Objective: Traumatic dental injuries are frequent in children and commonly include crown fractures and luxation injuries. Complicated crown fractures involve enamel and dentin with pulp exposure, while extrusive luxation is the displacement of the tooth out of its socket in an incisal/axial direction. This case report aims to show the clinical management of complicated crown fractures of teeth #11 and #21 and extrusive luxation of tooth #11.
Case Report: A 9-year-old boy with no medical history attended the postgraduate clinic of Paediatric Dentistry at Aristotle University of Thessaloniki, 45 minutes after the accident. Following clinical and radiographic examination were observed: complicated crown fractures in teeth #11 and #21, extrusive luxation in tooth #11 with increased mobility and open wound in the lower lip. The immediate treatment consisted of repositioning of #11 and stabilization with flexible and passive wire and partial pulpotomies (Cvek pulpotomy) in #11 and #21. After two weeks, the splint was removed and reattachment of intact tooth fragments of #11 and #21 was performed. After 2, 4, 8, 12 weeks and 6 months, no radiographic and clinical signs were observed, but at the 1-year follow up root canal obliteration was observed in tooth #11.

Conclusions: This report highlights the significance of immediate management and adherence to follow-up protocols on managing combined traumatic injuries. Early evidence-based treatment leads to favorable biological, functional, and aesthetic outcomes in cases with high risk of complications.

Keywords: Complicated Crown Fracture, Extrusive Luxation, Splint, Cvek Pulpotomy, Reattachment of Tooth Fragments, Root Canal Obliteration

POSTER PRESENTATION

PP.140

MANAGEMENT OF NECROTIC PRIMARY MOLARS WITH EXTENSIVE PERIAPICAL LESIONS USING LESION STERILIZATION AND TISSUE REPAIR: TWO CASE REPORTS

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Introduction: Managing necrotic primary molars is challenging due to complex root anatomy and resorption, and lesion sterilization and tissue repair (LSTR) therapy has been proposed as an alternative treatment approach.

Objective: The aim of this report was to present the clinical outcomes of LSTR therapy in primary molars with extensive periapical lesion and internal resorption.
Case Description: Two female pediatric patients presenting with necrotic primary molars associated with pathological conditions were treated using the LSTR protocol. The treated teeth were the mandibular right primary second molar in an 11-year-old patient with an extensive periapical lesion and the mandibular left primary first molar in a 7.5-year-old patient with internal root resorption. Following clinical and radiographic examination and management of acute symptoms, LSTR therapy was performed using a double-antibiotic paste. The medicament was placed in the pulp chamber, and the cavities were restored with a suitable restorative material.

Results: Clinical and radiographic follow-up examinations were conducted for both cases. During follow-up examinations, it was observed that the initial pathological tooth mobility had completely resolved, the teeth remained functional, no tenderness to percussion or palpation or soft tissue swelling was detected, and the patients' clinical symptoms had resolved completely.

Conclusions: Within the limitation of this case report, LSTR therapy may represent a minimally invasive and effective treatment option for necrotic primary molars associated with extensive periapical lesions or internal root resorption, allowing preservation of the affected teeth and resolution of clinical symptoms.

Keywords: Lesion Sterilization and Tissue Repair, Primary Molars, Periapical Lesions, Healing

POSTER PRESENTATION

PP.141

MANAGEMENT OF A SEVERE PERIRADICULAR LESION IN A TRAUMATIZED IMMATURE INCISOR: COMBINED SURGICAL–ENDODONTIC APPROACH

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Introduction: Dental trauma in immature permanent teeth may lead to pulpal necrosis and open apices, making endodontic treatment challenging. Inadequate root canal treatment may result in persistent periradicular infection and extensive lesions. In complex cases, conventional retreatment alone may be insufficient, and combined surgical–endodontic management may be required.

Objective: This case report describes the management of a severe periradicular lesion associated with inadequate root canal treatment in a traumatized immature maxillary incisor.

Materials and Methods: A 13-year-old patient presented with pain and swelling in the left maxillary region. The patient had a history of trauma to the maxillary left central incisor (#21) four years earlier and previous root canal treatment at a private clinic. Clinical and radiographic examination revealed an immature tooth with an open apex, inadequate root canal filling, and a large periradicular lesion. Retreatment procedures revealed gutta-percha extrusion beyond the apex. Cone-beam computed tomography (CBCT) imaging was obtained for surgical planning.

Results: Due to the large lesion and extruded filling material, a combined surgical–endodontic approach was performed. The lesion and extruded gutta-percha were surgically removed, followed by apical resection and retrograde filling with mineral trioxide aggregate (MTA). Endodontic retreatment was completed. Radiographic follow-up after 10 months demonstrated significant bone healing and resolution of the periradicular pathology.

Conclusions: Inadequate root canal treatment in traumatized immature teeth may result in persistent periradicular pathology requiring combined surgical and endodontic intervention. Careful diagnosis, retreatment planning, removal of pathological tissue and extruded materials, and establishment of an adequate apical seal are critical for successful healing.

Keywords: Dental trauma; Immature permanent tooth; Periradicular lesion; Endodontic retreatment; Mineral trioxide aggregate

POSTER PRESENTATION

PP.142

POST-ORTHODONTIC NON- INVASIVE RECONTOURING OF ANTERIOR TEETH-CASE REPORT

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Objective: Modern resin-composite materials offer innumerous possibilities for direct restorations. This case report highlights their use in a young patient with different tooth size discrepancies.
Case report: A 16-year-old female patient was referred to the Clinic of Preventive and Pediatric Dentistry in Belgrade, by orthodontist for reshapping her upper permanent lateral incisors.

Teeth proportions were analyzed and photographic documentation was taken. The treatment plan included reshaping the mesiodistal width of both upper permanent lateral incisors using direct composite restorations. An impression was taken and a silicone index was prepared based on the diagnostic wax-up. Additionally, the initial material color selection was made using the composite buttons technique. Direct composite restorations on the upper permanent lateral incisors were successfully completed using resin material.

Conclusions: Direct composite restorations offer the possibility of closely matching the natural characteristics of the teeth and can complement the results of orthodontic treatment.

Keywords: direct restoration; tooth reshaping; composite restoration; silicone index, Bolton discrepancy.

POSTER PRESENTATION

PP.144

PREVALENCE OF DENTAL CARIES AND ASSOCIATION WITH VARIOUS RISK FACTORS AMONG PRESCHOOL CHILDREN: A CROSS-SECTIONAL STUDY

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Introduction: Dental caries remains a major public health problem among preschool children.

Objective: This study aimed to determine the prevalence of dental caries among preschool children and to examine the association between potential risk factors and dental caries occurrence.

Materials and Methods: This cross-sectional study was conducted at the Department of Preventive and Pediatric Dentistry, Faculty of Dentistry, Pančevo, and included 98 healthy children aged 3 to 6 years who use free public dental healthcare. Dental status was assessed using the dmft index. Data on dietary habits, dental visits, socioeconomic status and oral hygiene habits were collected using a previously validated questionnaire completed by parents. The results were analysed using the Chi-square test, Fisher's exact test and multivariate logistic regression.

Results: Dental caries prevalence was recorded in 73.5% of the participants, while the mean dmft index value was 4.39 ± 3.86. Among all examined sugar-sweetened beverages, only the frequent consumption of fruit juices with added sugar was significantly associated with higher dental caries prevalence (OR = 4.50; 95% CI: 1.15–17.65; p = 0.048). In the multivariate logistic regression model, frequent consumption of fruit juices (aOR = 10.97; p = 0.029) and the use of non-fluoridated toothpaste (aOR = 25.22; p = 0.023) were identified as significant risk factors for dental caries occurrence.

Conclusions: Within the limitations of this study, it can be concluded that frequent consumption of fruit juices with added sugar and the use of non-fluoridated toothpaste were associated with higher dental caries prevalence in preschool children.

Keywords: dental caries, preschool children, oral hygiene, dmft index

POSTER PRESENTATION

PP.145

MINIMALLY INVASIVE SURGICAL TECHNIQUES IN PERIODONTOLOGY: REVIEW AND CASE PRESENTATION

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Introduction: Minimally Invasive Surgical Techniques (MIST) in periodontology were introduced and studied using operating microscopes and microsurgical instruments to enhance magnification and visual acuity with reduced surgical trauma, producing minimal wounds and minimal flap reflection for better post-surgical healing. Lasers are additionally a part of the MIS techniques because they provide precise control, good hemostasis, and smaller tissue injury.

Objective: To review the literature about minimally invasive surgical techniques in periodontology, and to present specific clinical cases and how effective they were.

Materials and Methods: A literature review was performed using the electronic database: PubMed, Scopus and Google Scholar from 2019 until 2024. Additionally, selected clinical cases that use those techniques.

Results: Based on the current literature and presented cases, minimally invasive techniques have shown that probing depth is significantly reduced, adhesion levels are improved and interdental papillae are preserved. Furthermore, insignificant discomfort and negligible gingival recession are observed postoperatively. Minimal reflection and manipulation of the flaps allow limited or no scarring, achieving enhanced esthetic results.

Conclusions: Even though it is vaguely believed that MIST in periodontology are time efficient, less morbid and invasive, further studies are yet required, due to lack of evidence. In comparison with traditional techniques, their effectiveness needs yet to be confirmed, although outcomes appear promising.

POSTER PRESENTATION

PP.146

CERVICAL ENAMEL PROJECTIONS AS AN ANATOMICAL RISK FACTOR FOR FURCATION INVOLVEMENT: A NARRATIVE REVIEW AND A REGENERATIVE CLINICAL CASE

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Objective: To review the available evidence regarding the role of CEPs in the development of furcation involvement and to present a relevant treatment approach.

Materials and Methods: Review of the literature was conducted using MEDLINE (PubMed) and Cochrane databases. In addition, a clinical case of a mandibular molar presenting with Class II furcation involvement associated with a CEP was treated surgically.

Results: The literature consistently demonstrates a strong association between CEPs and the early onset and increased severity of furcation involvement. In the present case, elimination of the enamel projection combined with regenerative therapy resulted in reduced furcation probing depth, resolution of inflammation, and stable periodontal conditions during follow-up.

Objective: CEPs constitute an important but frequently overlooked anatomical risk factor for furcation involvement. Their identification and removal should be considered essential for successful periodontal and regenerative treatment, significantly improving the prognosis of furcation-involved teeth.

POSTER PRESENTATION

PP.147

PERIODONTAL PLASTIC SURGERY: TUNNEL TECHNIQUE FOR MULTIPLE GINGIVAL RECESSIONS IN THE MAXILLARY AESTHETIC ZONE

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1.Introduction: Gingival recessions in the aesthetic zone present significant clinical challenges, especially when multiple adjacent teeth are involved. The Tunnel Technique is a preferred minimally invasive approach, offering superior aesthetic outcomes and blood supply maintenance by avoiding vertical incisions.

This case report evaluates the 6-month clinical efficacy of the modified coronally advanced tunnel (MCAT) technique combined with a subepithelial connective tissue graft (SCTG) in a 55-year-old female patient with a thick gingival phenotype.

A 55-year-old female patient presented with aesthetic concerns and dentin hypersensitivity in teeth 13 to 23. Clinical examination revealed Miller Class I/II recessions and a thick phenotype. An MCAT procedure was performed. After meticulous full-thickness tunnel preparation, an SCTG harvested from the palate was inserted and secured with microsurgical suturing. The entire complex was then coronally advanced and stabilized with suspensory sutures.

The postoperative healing was uneventful. At the 6-month follow-up, the combination of the thick phenotype and SCTG contributed to excellent graft stability and tissue integration. Complete root coverage was achieved across all treated sites (13-23). Significant increases in gingival thickness were observed, with total resolution of hypersensitivity and high patient satisfaction.

The Tunnel Technique with SCTG is a predictable procedure for treating multiple adjacent recessions. In patients with a thick phenotype, this approach ensures long-term stability and excellent aesthetic blending in the maxillary anterior region.

POSTER PRESENTATION

PP.148

AGING AND GINGIVAL TISSUES: MOLECULAR, IMMUNOLOGICAL AND CLINICAL IMPLICATIONS FOR PERIODONTAL HEALTH

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Introduction: Population ageing is associated with progressive biological alterations affecting immune regulation, extracellular matrix integrity, and tissue repair. Although ageing does not directly cause periodontitis, it modifies host responses and influences disease susceptibility and progression.

Objective: To summarize current evidence on molecular, immunological, and clinical changes occurring in gingival tissues with ageing and their implications for periodontal health.

Materials and Methods: A narrative review of experimental, translational, and clinical studies investigating age-related gingival alterations was conducted. Evidence from gene expression analyses, proteomic investigations, immunological profiling, microbiome research, and clinical studies in elderly populations was synthesised.

Results: Aged gingival tissues demonstrate increased oxidative stress, mitochondrial reactive oxygen species accumulation, dysregulation of epidermal growth factor receptor signalling, and altered matrix metalloproteinase expression. Extracellular matrix remodeling includes collagen cross-linking and increased degradation activity, leading to diminished elasticity and regenerative potential. Cellular senescence, impaired fibroblast proliferation, and reduced epithelial renewal further compromise tissue homeostasis. Immunologically, ageing is characterised by chronic low-grade inflammation, altered macrophage polarisation, impaired neutrophil function, reduced naïve T and B lymphocytes, and dysbiotic microbial shifts. Clinically, older individuals present with increased clinical attachment loss, gingival recession, modified inflammatory patterns, and delayed wound healing responses.

Conclusions: Ageing significantly alters gingival biology by impairing immune competence, extracellular matrix dynamics, and regenerative capacity. These changes might amplify periodontal disease susceptibility and highlight the need for personalised preventive and therapeutic strategies in older adults.

POSTER PRESENTATION

PP.149

ESTHETIC AND FUNCTIONAL MANAGEMENT OF INTERDENTAL PAPILLA LOSS ASSOCIATED WITH PERIODONTITIS: A CASE REPORT

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Introduction: Periodontitis is a chronic, multifactorial inflammatory disease associated with dysbiotic biofilms and characterized by progressive destruction of tooth-supporting tissues. Clinical attachment loss, alveolar bone resorption, periodontal pocket formation, and bleeding on probing are major clinical findings. In advanced cases, interproximal bone loss may lead to interdental papilla loss, resulting in “black triangles,” particularly in the anterior region, causing significant esthetic concerns.

Aim: To present the esthetic and functional management of interdental papilla loss in the maxillary anterior region using a tuberosity-derived connective tissue graft.

Materials and Methods: A 45-year-old female patient presented with esthetic complaints related to papilla loss in the maxillary anterior region. Clinical and radiographic examination revealed 4 mm probing depth at the distal aspect of tooth 21 and mesial aspect of tooth 22, accompanied by 3 mm gingival recession. Intraoral assessment demonstrated 4 mm interproximal papilla loss. Following Phase I periodontal therapy, surgical intervention was performed using the VISTA technique combined with a connective tissue graft harvested from the maxillary tuberosity.

Results: At the 2-month follow-up, gingival thickening and partial papilla reconstruction were observed. A clinical attachment gain of up to 2 mm was recorded at the treated sites.

Conclusions: Connective tissue grafts obtained from the maxillary tuberosity may demonstrate a favorable volumetric response and hyperplastic growth tendency, making them a predictable option for the esthetic reconstruction of interdental papilla loss.

POSTER PRESENTATION

PP.150

THE ROOT OF THE MATTER: “AGEING” OF CEMENTUM AND THE ROLE OF INFLAMMAGING

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Introduction: Dental cementum is a highly specialized, non-uniform mineralized tissue covering the tooth root surface, enabling essential attachment, adaptation, and repair. Unlike alveolar bone, which continuously undergoes remodeling and declines in mass with age, cementum is avascular and continuously increases in thickness throughout life, creating a major biological paradox.

Objective: The objective of this presentation is to systematically investigate morphological and molecular alterations occurring during cementum ageing, specifically emphasizing cellular senescence, the inflammaging process and their subsequent clinical implications.

Materials and Methods: Relevant literature from PubMed (1976-2022) was reviewed and a comprehensive analysis was performed in order to describe these processes.

Results: Ageing cementum displays significantly increased thickness, reduced overall cellularity, and altered physicochemical properties. Cementocytes undergo rapid degeneration and apoptosis, leaving empty lacunae deep inside the tissue, while the superficial layer of cementoblasts remains viable, continuing slow deposition. The remaining cells experience irreversible cycle arrest due to accumulating DNA damage. These senescent cells release senescence-associated secretory phenotype (SASP) , which prominently includes pro-inflammatory cytokines such as IL-6, IL-8, and TNF-alpha, alongside tissue-degrading molecules. This destructive process is termed inflammaging, defined as chronic, low-grade, non-microbial inflammation. Clinically, this might directly lead to surface collagen degradation, cervical root resorption, rapid hypermineralization of the exposed cementum, and elevated risk of bacterial invasion.

Conclusions: The physiological ageing of cementum is fundamentally propelled by cellular senescence and SASP-induced inflammaging. These critical molecular shifts greatly increase overall susceptibility to dental pathology with concomitant impaired tissue regenerative capacity, highlighting the urgent need to fully understand cementoblast behavior for developing targeted periodontal therapies for older subjects and true regeneration.

POSTER PRESENTATION

PP.151

ALVEOLAR RIDGE PRESERVATION AFTER TOOTH EXTRACTION: CURRENT EVIDENCE

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Introduction: Tooth extraction initiates remodeling of the alveolar ridge, leading to progressive horizontal and vertical bone resorption, within the first 24 months. These dimensional changes may compromise future implant placement and esthetic outcomes.

Objective: Alveolar ridge preservation (ARP) techniques aim to minimize post-extraction bone loss while maintaining soft tissue integrity and creating conditions for implant rehabilitation.

Materials and Methods: A literature review was conducted using PubMed, Google Scholar focusing on publications from 2024–2026. Relevant studies were selected and synthesized based on predefined keywords related to ARP and regenerative approaches.

Results: Evidence indicates that regenerative materials are more effective than spontaneous healing in limiting post-extraction bone resorption. Bone graft materials provide support and preservation of ridge dimensions. Freeze-dried bone allograft (FDBA) demonstrates a tendency to maintain socket width. Platelet concentrates, especially platelet-rich fibrin (PRF), enhance soft-tissue healing and bone quality rather than providing stability. Moreover, the combination of bone mineral grafts with resorbable collagen membranes shows preservation of ridge height and width compared with natural healing.

Conclusions: ARP effectively reduces post-extraction dimensional changes and improves conditions for future implant placement. However, results remain inconsistent, highlighting the need for well-designed, long-term randomized clinical trials to confirm its long-term effectiveness.

Keywords: alveolar ridge preservation, platelet-rich fibrin, freeze-dried bone allograft, dental implants

POSTER PRESENTATION

PP.152

STUDY OF THE IMPACT OF CHRONIC APICAL PERIODONTITIS ON CARDIOVASCULAR RISK

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Introduction: Atherosclerosis is a chronic inflammatory disease characterised by lipid-rich plaque build-ups within arterial walls and represents the primary pathology of cardiovascular disease (CVD). Chronic apical periodontitis (CAP) is an inflammatory reaction involving the apical periodontium, alveolar bone and cementum, resulting from persistent microbial infection within the endodontic space. It represents a persistent source of chronic inflammation and could be viewed as a modifying factor for CVD.

Objective: This study aimed to evaluate the existing literature regarding the association between CAP and CVD and to identify potential indicators that could demonstrate a directly proportional relationship between the two pathologies.

Materials and Methods: A literature review was conducted using the electronic database PubMed. The keywords used included: “chronic apical periodontitis”, “cardiovascular diseases” and “atherosclerosis”. Articles published between 2003 and 2025 and meeting predefined inclusion criteria were selected.

Results: Patients with at least one chronic periapical lesion exhibited significantly greater aortic atherosclerotic burden compared with patients without such lesions.
A systematic review and meta-analysis reported that patients with atherosclerosis were nearly three times (OR = 2.94) more likely to present with CAP.

Inflammatory biomarkers including interleukin-6, matrix metalloproteinase-8 and high-sensitivity C-reactive protein are frequently investigated as they contribute to CAP pathogenesis, participate in multiple stages of atherogenesis and possess prognostic potential for future vascular events.

Objective: These findings provide evidence that an association between the two pathologies exists. However, further well-designed studies are required to clarify the extent of this relationship.

POSTER PRESENTATION

PP.153

LATERAL POSITIONAL FLAP COMBINED WITH CONNECTIVE TISSUE GRAFT IN A SMOKING PATIENT: A CASE REPORT

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Introduction: Mucogingival surgery primarily aims to achieve root coverage and enhance the width of keratinized gingiva to ensure long-term periodontal stability.

This case report aims to evaluate the clinical outcomes of treating localized gingival recession using a combination of Connective Tissue Graft (CTG) and Lateral Positional Flap (LPF) in a smoking patient, considering that smoking adversely affects surgical success by impairing vascularization.

A systemically healthy, smoking 10 cigarettes per day, 49 years old male patient, referred to periodotolgy clinic with the complaint of gingival recession and sensitivity on tooth 11. Clinical and radiographic examinations confirmed a Cairo Type 1 (RT1) recession. After local anesthesia, root surface debridement was performed at the recipient site. A partial-thickness flap was elevated, encompassing the recipient site and the adjacent tooth 12. A CTG obtained from the right maxillary palate was secured to the recipient site, and the lateral flap was positioned over the graft to cover the root surface.

At the 3-month post-operative follow-up, although 100% root coverage was not achieved, a significant reduction in the patient's sensitivity was observed. Additionally, a marked increase in gingival thickness and the width of the keratinized tissue band was obtained compared to the baseline.

The combination of LPF and CTG provides clinically significant improvement and increased gingival thickness even in smokers. However, the vasoconstrictive effect of smoking remains a limiting factor for complete root coverage. Despite this, functional gingival structures can be established and symptoms can be successfully minimized through these combined techniques.

POSTER PRESENTATION

PP.154

FREE GINGIVAL GRAFT PROCEDURE IN THE MANDIBULAR ANTERIOR REGION

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Introduction: Free Gingival Graft (FGG) is a commonly used mucogingival surgical method applied to increase the amount of keratinized attached gingiva and to provide a certain level of root surface coverage. The absence of sufficient attached gingiva may negatively affect periodontal health, make plaque control more difficult, and contribute to the progression of gingival recession.

Objective: The aim of this case report is to evaluate the clinical outcomes of FGG application in a patient with Miller Class 1 gingival recession in the mandibular anterior region.

Materials and Methods: A 28-year-old, non-smoking, systemically healthy female patient presented with gingival recession in the mandibular anterior region. Periodontal examination revealed Miller Class 1 gingival recession in the mandibular central teeth accompanied by edema, bleeding on probing, presence of dental plaque, and Miller Class 1 tooth mobility. Phase 1 periodontal therapy was completed, and FGG application was decided after the two-week follow-up evaluation when clinical healing was considered sufficient. The surgical procedure was started with vestibuloplasty under local anesthesia. A graft approximately 5×10 mm in size and about 1.5 mm in thickness was harvested from the palatal mucosa in the premolar-molar region and stabilized at the recipient site using 5/0 prolene suture. The area was compressed and covered with periodontal dressing. Postoperatively, sutures were removed at the second week, and clinical evaluation was performed only during this period; longer-term follow-up was planned.

Results: Adequate vestibular depth and increased width of keratinized attached gingiva were obtained, and improvement in periodontal parameters and plaque control was observed during follow-up.

Conclusions: It was concluded that the SDG procedure predictably increased keratinized tissue amount, facilitated plaque control, and positively affected periodontal tissue health.

POSTER PRESENTATION

PP.155

ESTHETIC GINGIVAL COLOR OPTIMIZATION: DEPIGMENTATION PROCEDURE

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Introduction: Gingival pigmentation is a discoloration of the gingiva caused by intrinsic or extrinsic factors, primarily melanin produced by melanocytes. Gingival color significantly influences dental aesthetics. Depigmentation is a periodontal surgical procedure performed to eliminate gingival hyperpigmentation.

Objective: The aim of this procedure is to improve aesthetic appearance by removing excessive gingival pigmentation.

Materials and Methods: A 40-year-old, systemically healthy male smoker presented with hyperpigmentation in the maxillary and mandibular anterior regions. Periodontal examination revealed bleeding on probing, dental plaque, and mild edema. After completion of Phase I periodontal therapy, depigmentation was performed two weeks later. The gingival epithelium was removed using a 15c blade and a Kirkland periodontal knife under saline irrigation. All visible pigmentation was eliminated, and hemostasis was achieved by applying pressure for two minutes. Follow-up evaluations were conducted at one week and two months.

Results: The scalpel technique effectively removed gingival pigmentation and improved aesthetics. Although economical and simple, it may cause intraoperative and postoperative bleeding; therefore, periodontal dressing during the first week is recommended.

Conclusions: Traditional scalpel depigmentation is an effective, simple, and cost-efficient method for managing gingival hyperpigmentation and enhancing gingival aesthetics.

POSTER PRESENTATION

PP.156

ROOT COVERAGE OF MULTIPLE GINGIVAL RECESSIONS VIA TUNNEL TECHNIQUE

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Introduction: Gingival recession is characterized by apical displacement of periodontal tissues, resulting in root exposure, esthetic concerns, hypersensitivity, and increased risk of cervical caries. For multiple recessions, the Tunnel Technique is a minimally invasive alternative to traditional flap procedures. It involves creating a subgingival tunnel without vertical incisions and placing a connective tissue graft or biomaterial to achieve root coverage while preserving papillary integrity.

Objective: To evaluate the clinical efficacy and esthetic outcomes of the Tunnel Technique in managing multiple gingival recessions.

Materials and Methods: A systemically healthy, non-smoking 50-year-old male with multiple Miller Class I–II recessions in the maxilla was treated. Following Phase I therapy and oral hygiene instruction, surgery was performed after two weeks. Under local anesthesia, a mucoperiosteal tunnel was prepared using specialized instruments while preserving interdental papilla. After root decontamination, a connective tissue graft was inserted and stabilized with 6-0 resorbable sutures. The flap was coronally advanced and secured using sling sutures.

Results: Healing was uneventful with minimal discomfort. At 2 months, 90–100% root coverage, increased keratinized tissue, resolution of hypersensitivity, and excellent esthetic outcomes were observed.

Conclusions: The Tunnel Technique is a predictable, minimally invasive, and esthetically effective way to approach for multiple gingival recessions.

POSTER PRESENTATION

PP.157

FREE GINGIVAL GRAFT FOR MANAGEMENT OF GINGIVAL RECESSION ASSOCIATED WITH INADEQUATE KERATINIZED TISSUE

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Introduction: Gingival recession is a mucogingival condition characterized by apical displacement of the gingival margin, leading to root exposure, aesthetic problems, and plaque control difficulties. Inadequate keratinized tissue and thin periodontal phenotype are important factors affecting periodontal stability.

Objective: This case report aimed to evaluate the clinical effectiveness of a free gingival graft to increase keratinized tissue width and reduce gingival recession.

Materials and Methods: A 35-year-old systemically healthy, non-smoking female presented with calculus accumulation and mild mobility in the mandibular anterior region. Clinical examination revealed 5 mm gingival recession and absence of keratinized gingiva at tooth 41. Following initial periodontal therapy and oral hygiene instruction, a free gingival graft approximately 1.5 mm thick and 15 mm long was harvested from the maxillary premolar–molar region under local anesthesia. The recipient site was prepared using a 15C blade, and the graft was stabilized with sutures. The donor site was protected with a surgical stent.

Results: At 2-month follow-up, keratinized tissue width increased by 4 mm. Gingival recession decreased from 5 mm to 2 mm, resulting in 3 mm root coverage. Satisfactory healing and improved tissue stability were observed.

Conclusions: Free gingival graft is a predictable and effective procedure for increasing keratinized tissue width and improving periodontal stability. Partial root coverage may also be achieved.

POSTER PRESENTATION

PP.158

WHEN THE PDL AGES: IMMUNOSENESCENCE, INFLAMMAGING, AND A FRAGILE PERIODONTAL INTERFACE

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Introduction: The periodontal ligament (PDL) is a fibrous connective tissue anchoring the tooth to alveolar bone. With aging, PDL space narrows and collagen organization deteriorates, while host defense shifts toward immunosenescence and chronic low-grade inflammation (inflammaging), creating tissue vulnerability rather than inevitable disease.

Objective: To summarize age-related morphological and molecular changes of PDL, focusing on (1) senescence/SASP-like catabolic behavior of periodontal fibroblasts and (2) immunosenescence–inflammaging mechanisms that increase inflammatory output and impair resolution, and their link to clinical implications such as tissue breakdown and regeneration.

Materials and Methods: Literature review (PubMed/Google Scholar/Elsevier);

Keywords: aging, PDL, immunosenescence, inflammaging, fibroblasts, collagen, stem cells.

Results: Aging is associated with reduced PDL width and poor collagen quality, with pro-resorptive signaling (increased TRAP, higher RANKL on the pressure side, and IL-1α expression in older individuals). Fibroblast function declines (chemotaxis, motility, proliferation, matrix production) with lower type I collagen synthesis (up to ~5-fold) and reduced fibroblast density (e.g., ~51 to ~20 cells per defined area). Under challenge, aged fibroblasts become hyper-responsive: cyclic strain and bacterial LPS drive higher PGE2, IL-1β, IL-6, and plasminogen activator/tPA, promoting proteolysis and bone resorption. In parallel, immunosenescence impairs microbial clearance, while inflammaging sustains elevated cytokine tone (IL-6, IL-1, TNF-α), prolonging local injury. Regeneration also declines as PDLSCs show reduced proliferation/osteogenesis and weaker ECM-rich cell-sheet formation.

Conclusions: PDL-aging lowers resilience and repair, while amplifying inflammatory responses to plaque accumulation and mechanical stress. Additionally, the increasing susceptibility to tissue breakdown and the limiting regeneration in older adults require, immaculate plaque control, preventive measures and careful orthodontic/occlusal loading strategies.

POSTER PRESENTATION

PP.159

THE CHALLENGES OF ULCERATIVE GINGIVITES IN ALBANIAN POPULATION: A LITERATURE REVIEW

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Introduction: Ulcerative gingivitis (UG) is an acute necrotizing periodontal disease characterized by interdental papilla necrosis, spontaneous bleeding, pain, and halitosis. It is associated with anaerobic bacteria and several predisposing factors, and may represent a public health concern in Albania due to socioeconomic conditions and limited access to dental care.

Materials and Methods: A literature review was conducted using PubMed, Scopus, and Google Scholar, including studies from the last 20 years related to ulcerative gingivitis, risk factors, and treatment. Regional data on oral health in Albania were also considered.

Results: UG is strongly associated with anaerobic microorganisms, particularly spirochetes and fusiform bacteria. Major risk factors include poor oral hygiene, smoking, psychological stress, and immunosuppression. In Albania, smoking prevalence, irregular dental attendance, and limited oral health education appear to contribute to disease occurrence. Early diagnosis and treatment with mechanical debridement and antiseptic rinses show favorable outcomes.

Keywords: Ulcerative gingivitis remains a relevant condition in the Albanian population. Strengthening preventive programs and improving access to dental care are essential to reduce disease burden. ulcerative gingivitis, Albanian population

POSTER PRESENTATION

PP.160

PREGNANCY AND PERIODONTITIS:BIOLOGICAL MECHANISMS,ADVERSE OUTCOMES AND CLINICAL MANAGEMENT

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Introduction: Pregnancy induces significant hormonal, immunological, and microbiological changes that increase susceptibility to periodontal inflammation. Elevated estrogen and progesterone levels enhance vascular permeability, modify immune responses, and alter connective tissue metabolism, predisposing gingival tissues to exaggerated inflammatory reactions.

Objective: To review the association between pregnancy and periodontal diseases, explore potential links with adverse pregnancy outcomes (APOs), and summarize current clinical management recommendations.

Materials and Methods: Narrative review of epidemiological studies, biological mechanism analyses, randomized clinical trials, and current periodontal guidelines.

Results: Pregnancy gingivitis affects up to 70–90% of pregnant women. Hormonal fluctuations promote a Th2-dominant immune shift, increased inflammatory response to plaque, connective tissue breakdown, and microbiome changes favoring periodontal pathogens. Periodontitis has also been associated with preterm birth, low birth weight, and pre-eclampsia; however, findings remain heterogeneous and causality has not been definitively established. Non-surgical periodontal therapy during pregnancy is safe and improves periodontal status but has not consistently reduced APO rates. Surgical therapy is generally deferred until postpartum.

Conclusions: Pregnancy-related biological changes increase periodontal vulnerability. Although periodontitis may contribute to adverse pregnancy outcomes within a multifactorial risk framework, definitive causal evidence is lacking. Preventive care and non-surgical periodontal therapy during pregnancy are safe and recommended, with emphasis on preconception periodontal stabilization and interdisciplinary collaboration.

POSTER PRESENTATION

PP.161

ASSESSMENT OF GINGIVAL PHENOTYPE BY THE TRANSPARENCY METHOD USING SPECIFICALLY DESIGNED PROBES

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Introduction: The periodontal phenotype includes gingival phenotype and bone morphotype. Gingival phenotype is defined by gingival thickness and keratinized tissue width. Accurate assessment of gingival thickness is important for successful periodontal and restorative treatment.

Objective: To evaluate gingival thickness in different tooth groups in the upper and lower jaws using the transparency method with color-coded phenotype probes.

Materials and Methods: Forty patients were included. Gingival thickness was assessed on central incisors, canines, first premolars, and first molars in the first and third quadrants using color-coded phenotype probes and compared with the transgingival probing as the reference standard.

Results: A very high correlation was found between the transparency method and transgingival probing. The thin phenotype predominated in the lower central incisors, upper and lower canines, and upper first premolars (>72.5%). The medium phenotype was most common in upper and lower first molars (40%; 47.5%). In upper central incisors, thin and medium phenotypes were equally represented (47.5%). The thick phenotype was most frequent in upper and lower molars (40%). A significant difference between jaws was observed only in central incisors ($p<0.001$).

Conclusions: The transparency method with color-coded probes is reliable for identifying gingival phenotype. Thin phenotype is most common in lower central incisors, while thick phenotype predominates in upper and lower first molars.

Keywords: gingival phenotype; gingival thickness; color–coded probes

POSTER PRESENTATION

PP.162

PERIODONTAL ABSCESS FOLLOWING IN-OFFICE VITAL BLEACHING: THE POSSIBLE ROLE OF MUCOGINGIVAL RISK FACTORS: A CLINICAL CASE

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Introduction: In-office vital bleaching with high-concentration hydrogen peroxide is widely used in aesthetic dentistry. Postoperative dentin sensitivity and transient gingival irritation are the most frequently reported adverse effects. However, periodontal abscess formation following bleaching procedures is extremely rare.

Objective: The aim of this report is to present a case of periodontal abscess occurring after in-office vital bleaching and to discuss the role of mucogingival anatomical factors in the development of this complication.

Materials and Methods: A patient underwent in-office vital bleaching using a 35% hydrogen peroxide agent. A light-cured gingival barrier was applied before the procedure. The bleaching agent was applied to the anterior teeth of both jaws (teeth 15–25 region) in a single 40-minute session without light or heat activation. The patient reported sensitivity during the final 15 minutes of the procedure. Three days later, localized swelling and pain developed in the mandibular anterior region. Clinical and radiographic examination revealed a periodontal abscess at the vestibular aspect of tooth 31. The affected site presented limited width of attached gingiva and pronounced frenal pull.

Results: As no systemic symptoms were present, systemic antibiotic therapy was not prescribed. The treatment consisted of abscess drainage, root surface debridement, and irrigation with povidone-iodine solution. Clinical findings suggested that unfavorable mucogingival conditions, such as insufficient attached gingiva and increased frenal tension, may have facilitated plaque accumulation and subsequent periodontal inflammation following the bleaching procedure. A three-week follow-up demonstrated satisfactory healing and resolution of clinical symptoms.

Conclusions: Although in-office vital bleaching is considered a safe aesthetic procedure, careful evaluation of mucogingival anatomical conditions before treatment is recommended. Sites with reduced attached gingiva and increased frenal pull may increase the risk of inflammatory periodontal complications following bleaching procedures.

POSTER PRESENTATION

PP.163

GINGIVITIS RISK FACTORS IN ADOLESCENCE: A REVIEW

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Aim: The objective of this narrative review is to summarize recent evidence on the risk factors that influence the incidence of gingivitis during adolescence.

Methods: A narrative review was conducted, including studies published in PubMed between 2021 and 2026. Randomized controlled trials, cross-sectional studies, epidemiological studies, as well as scoping and systematic reviews were included.

Results: Evidence confirms that hormonal fluctuations during adolescence increase the incidence of gingivitis. Moreover, orthodontic treatment and inadequate oral hygiene remain well-documented contributing factors. Recent evidence expands the traditional framework of puberty-associated gingivitis highlighting the role of metabolic factors, as adolescents with obesity or higher body mass index were found to have higher rates of gingivitis. Additionally, lifestyle behaviors, such as poor sleep quality, internet addiction or unhealthy dietary habits have been associated with increased gingival inflammation. Socioeconomic factors and systematic diseases further increase the severity of gingivitis in adolescents.

Conclusions: Gingivitis in adolescence is a multifactorial condition. Early identification of contributing factors and the implementation of comprehensive preventive strategies are therefore crucial to promote effective oral hygiene practices and optimal gingival health in adolescents. Further clinical trials with larger sample sizes are needed to strengthen the above findings.

POSTER PRESENTATION

PP.164

THE SUPPLEMENTARY ROLE OF OMEGA-3 FATTY ACIDS IN TREATMENT OF PERIODONTAL DISEASES

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Introduction: Periodontal diseases are inflammatory diseases caused by specific oral bacteria. The aim of periodontal treatment is to remove the bacterial biofilm and modify local and systemic predisposing factors such as smoking, diabetes, oral hygiene and immunomodulating supplements.

Objective: To review and address the role of Omega-3 fatty acids systemic supplementation in the treatment of periodontal diseases.

Materials and Methods: Search of the literature was done using the key words “fatty acids, supplementary treatment to periodontal disease, immunomodulation of periodontal diseases” in ‘Cochrane’, ‘Pubmed’ and ‘Webscience’ until January 2026.

Results: Various supplementary factors have been utilized in the treatment of periodontal disease such as probiotics. Among them, Omega 3-fatty acids have been also examined. It has been shown that Omega-3 fatty acids have generally immunomodulatory capacity in different systemic diseases such as cardiovascular disease and diabetes. Similarly, they also have a role in resolution of inflammation in periodontal disease. Specifically, previous studies have shown that Omega 3-fatty acids can affect the destructive ability of cytokines such as interleukins (IL), or prostaglandins (PG), or enzymes such as metalloproteinases (MMPs). Clinically the supplementation of Omega-3 fatty acids, either systematically or locally, can improve the periodontal probing depth (PPD) and the Clinical Attachment Level (CAL).

Conclusions: Review of the literature suggests a significant supplementary role of Omega-3 fatty acids as an immunomodulation factor in treatment of periodontal diseases.

POSTER PRESENTATION

PP.165

COMPARATIVE CLINICAL EVALUATION OF PRF AND CONNECTIVE TISSUE GRAFT IN THE TREATMENT OF MILLER CLASS I AND II GINGIVAL RECESSIONS

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Introduction: Subepithelial connective tissue graft with coronally advanced flap (SCTG + CAF) is considered the gold standard for the treatment of Miller Class I and II gingival recessions, providing predictable root coverage and long-term stability. An alternative approach is platelet-rich fibrin with coronally advanced flap (PRF + CAF), which has gained attention due to the biological properties of PRF, including angiogenesis, mitogenesis, osteopromotion, immunomodulation, and stem cell entrapment. The aim of this study was to evaluate the clinical effectiveness of the CAF + PRF technique in treating localized Miller Class I and II gingival recessions by comparing periodontal clinical parameters measured preoperatively and one month postoperatively with those obtained using the CAF + CTG technique.

Materials and Methods: Twenty patients treated at the Oral Surgery Department of the Clinic “St. Panteleimon” in Skopje were included in the study. Ten patients were treated with CAF + PRF, while the remaining ten underwent CAF + CTG surgery. Periodontal parameters recorded one day before surgery included gingival recession depth (RD), probing pocket depth (PPD), clinical attachment level (CAL), keratinized tissue width (KTW), gingival thickness (GT), and gingival biotype. The same measurements were repeated one month postoperatively and compared within and between groups.

Results: showed minor, statistically insignificant changes in PPD, CAL, and KTW in both groups. A significant improvement in RD was observed in the SCTG + CAF group ($Z = 1.984$; $p = 0.0472$). However, gingival thickness significantly increased in the PRF + CAF group ($Z = 2.507$; $p = 0.0122$), and two patients showed a change in gingival biotype from thin to thick.

Conclusions: These findings suggest that PRF may represent a potential alternative to SCTG in the surgical treatment of Miller Class I and II gingival recessions.

POSTER PRESENTATION

PP.166

TWO YEARS FOLLOW UP OF FREE GINGIVAL GRAFT: A CASE REPORT

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Attached keratinized gingiva is essential for maintaining periodontal health, patient comfort, and effective plaque control. Insufficient attached gingiva may lead to discomfort, inflammation, and gingival recession. This case report aims to evaluate the clinical outcomes of a free gingival graft (FGG) procedure performed to increase the width of attached gingiva in the mandibular anterior region, with a focus on long term stability and soft tissue changes. A systemically healthy 44 year old female patient presented with aesthetic concerns in the mandibular anterior region. The patient was diagnosed with insufficient attached gingiva and gingival recession associated with a high frenum attachment and tooth malposition. A free gingival graft was performed to augment keratinized tissue. Postoperatively, flurbiprofen (Majezik 100 mg, 2x1, 7 days) and 0.12% chlorhexidine gluconate and 0.15% benzydamine hydrochloride (Kloroben 200 mL, 2x1, 7 days) were prescribed. Clinical evaluations were conducted at the 1st and 2nd weeks, 3rd month, and 2nd year. Sutures were removed at the 1st week follow up. Subsequent healing progressed uneventfully with satisfactory epithelialization and graft integration. By the 3rd month, a notable increase in the width of keratinized tissue was observed. At the 2nd year follow up, the augmented attached gingiva remained stable and satisfactory, with reduced gingival recession attributed to creeping attachment. No signs of inflammation or patient discomfort were reported. Free gingival grafting is a predictable and effective technique for increasing the width of attached gingiva.

POSTER PRESENTATION

PP.167

NON-SURGICAL PERIODONTAL THERAPY IN A MOUTH-BREATHING PATIENT WITH GINGIVAL INFLAMMATION: A CASE REPORT

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Introduction: Gingival inflammation is primarily associated with dental plaque; however, local and systemic modifying factors such as mouth breathing may worsen the condition by causing oral dryness and increasing the risk of inflammation.

Objective: To present the clinical outcome of non-surgical periodontal therapy combined with the management of mouth breathing in a patient with gingival inflammation.

Materials and Methods: A 38-year-old female patient presented with gingival sensitivity. She reported no systemic disease and was using a soft-bristled manual toothbrush. Clinical examination revealed generalized gingival inflammation, and mouth breathing was suspected. The patient was referred to an otorhinolaryngologist and was subsequently diagnosed with allergic asthma. Periodontal treatment consisted of one session of scaling and polishing and one session of subgingival soft tissue curettage. The patient was prescribed chlorhexidine mouthwash for 7–10 days and was advised to switch to an electric toothbrush. Plaque disclosure was performed at baseline and follow-up visits to enhance patient motivation and oral hygiene awareness.

Results: Following treatment, a marked clinical improvement was observed. The gingival index showed a clear reduction compared to baseline. Plaque disclosure demonstrated a significant reduction in plaque accumulation. Additionally, gingival sensitivity decreased, and overall oral hygiene improved.

Conclusions: Non-surgical periodontal therapy, when combined with patient education and management of mouth breathing, can improve gingival health. Identification and control of contributing factors such as allergic conditions may enhance treatment outcomes and long-term stability.

POSTER PRESENTATION

PP.168

THE EFFECT OF NON-SURGICAL PERIODONTAL THERAPY ON GLYCEMIC CONTROL IN PATIENTS WITH TYPE 2 DIABETES MELLITUS: A SYSTEMATIC LITERATURE REVIEW

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Introduction: Periodontitis and Diabetes Mellitus (DM) are linked through a well established bidirectional relationship. Chronic periodontal inflammation triggers a systemic immune response, increasing pro-inflammatory cytokines that contribute to insulin resistance, thereby complicating the management of glycemic levels in diabetic patients.

Objective: To evaluate the impact of non- surgical periodontal therapy (NSPT) on glycemic control, specifically measuring changes in glycated hemoglobin (HbA1c) levels, in patients with Type 2 Diabetes Mellitus (T2DM).

Materials and Methods: An electronic search was performed in the PubMed/MEDLINE database for systematic reviews and meta-analyses published within the last decade. The search focused on clinical studies investigating the effects of scaling and root planing (SRP) on HbA1c levels in T2DM patients.

Results: The synthesis of current evidence indicates that NSPT leads to a statistically significant reduction in HbA1c levels. Most studies report an average reduction ranging from 0.4% to 0.6% at three to six months post-treatment. This clinical improvement is associated with the reduction of systemic inflammatory markers, such as TNF-a and C-reactive protein, which enhances insulin sensitivity.

Conclusions: Non-surgical periodontal treatment serves as an effective adjunctive intervention for improving glycemic control in patients with T2DM. These findings underscore the necessity of interdisciplinary collaboration between dental and medical professionals. Promoting oral health should be an integral part of the standard care protocol for diabetic patients to improve their overall systemic health outcomes.

POSTER PRESENTATION

PP.169

SMOKING-INDUCED GINGIVAL MELANIN PIGMENTATION: A CASE REPORT

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Introduction: Gingival melanin pigmentation is a common condition characterized by a dark appearance of the gingiva resulting from the accumulation of melanin pigment in the epithelial tissue. Smoking may increase melanocyte activity and lead to the development of gingival pigmentation. These pigmentations, particularly observed in the anterior region, may cause esthetic concerns for patients. Gingival depigmentation is a periodontal esthetic treatment method that aims to improve gingival color by removing the pigmented epithelial tissue.

Objective: The aim of this case report was to present the clinical outcomes of the conventional gingival depigmentation procedure performed for the treatment of gingival melanin pigmentation associated with smoking.

Case Report: An ex-smoker female patient who presented with esthetic complaints was clinically examined, and diffuse brown-black gingival pigmentation areas were detected in the maxillary and mandibular anterior regions. The patient's anamnesis revealed a long-term smoking habit. After the completion of initial periodontal therapy, gingival depigmentation was performed under local anesthesia by surgically removing the pigmented epithelial tissue. The surgical site was protected with a periodontal dressing to support healing.

Results: Clinical follow-up examinations showed that the gingival tissues healed uneventfully and that the pigmentation was significantly reduced. It was observed that the gingival color gained a more homogeneous appearance. The patient reported minimal postoperative discomfort and expressed satisfaction with the obtained esthetic outcome.

Conclusions: Within the limitations of this case report, gingival depigmentation may be considered an effective and reliable treatment option for the management of smoking-induced gingival melanin pigmentation from an esthetic perspective.

Keywords: Gingival depigmentation, melanin pigmentation, smoking-induced pigmentation, periodontal esthetics.

POSTER PRESENTATION

PP.170

REGENERATIVE MANAGEMENT OF A CIRCUMFERENTIAL PERIODONTAL DEFECT ASSOCIATED WITH PERIODONTAL ABSCESS: A CASE REPORT

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Introduction: Circumferential periodontal defects associated with periodontal abscesses represent a challenging clinical condition because of its rarety, severe attachment loss, deep periodontal pocketing, and compromised tooth stability. Regenerative periodontal surgery may improve both clinical and radiographic outcomes in such defects.

Aim: To present the clinical and radiographic outcome of regenerative treatment of a circumferential periodontal defect associated with a periodontal abscess in tooth #21.

Materials and Methods: A 39-year-old male patient presented with swelling in the maxillary left central incisor region. Tooth #21 showed a periodontal abscess and Miller Class II mobility. Probing depths were 12 mm at the buccal/distal aspect, 10 mm lingually, and 3 mm mesially. CBCT and intraoperative findings revealed complete bone loss at the buccal and distal aspects. On the mesial aspect, a thin coronal bony bridge was present; however, the defect extended apically beneath this bridge in a circumferential configuration. An intrabony component was also observed lingually. The tooth was temporarily splinted to adjacent teeth. After initial periodontal therapy, regenerative surgery was performed using xenograft. No membrane was used. L-PRF was placed over the graft, and the flap was sutured for primary closure.

Results: At 6 months, clinical, radiographic, and intraoral photographic evaluation showed favorable healing and defect fill. Probing depths were reduced to 2 mm at the mesial and buccal sites and 3 mm at the distal and lingual sites. Mobility resolved completely.

Conclusions: Regenerative therapy with xenograft and L-PRF may provide favorable outcomes in selected circumferential periodontal defects.

POSTER PRESENTATION

PP.171

COMPREHENSIVE PERIODONTAL MANAGEMENT AND ONE YEAR FOLLOW UP OF A STAGE 2 GRADE A PATENT: A CASE REPORT

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Introduction: and Aim Periodontitis is a chronic inflammatory disease characterized by the loss of tooth-supporting tissues. Mucogingival problems, such as insufficient keratinized tissue, may compromise periodontal stability after successful therapy. This case report presents the periodontal treatment process and management of mucogingival insufficiency using a free gingival graft (FGG).

Materials and Methods: A 32-year-old female patient with Stage 2 Grade A periodontitis received initial periodontal therapy (scaling and root planing) and oral hygiene instruction. A toothpaste-related allergic reaction prior to surgery was successfully managed before proceeding. Following periodontal stabilization, an FGG was performed due to inadequate keratinized tissue. The patient was followed for 12 months after initial therapy and 6 months postoperatively.

Results: Gingival and plaque index scores decreased, and pathological pockets were eliminated after initial therapy. Clinical attachment loss at tooth 41 improved from 3 mm to 1 mm. The allergic reaction was resolved using a hyaluronic acid mouthwash. Post-surgical evaluation showed increased keratinized tissue width and stable gingival margins, with no complications observed. During maintenance, the patient was diagnosed with iron deficiency anemia and referred for medical management.

Conclusions: FGG following periodontal therapy improves soft tissue conditions and enhances stability. A bidirectional relationship may exist between iron deficiency anemia and periodontitis, and correcting hematological deficiencies may support treatment outcomes.

Keywords: Periodontitis, Free gingival graft (FGG), Keratinized tissue, Mucogingival surgery, Iron deficiency anemia

POSTER PRESENTATION

PP.172

IMPROVING COOPERATION AND REDUCING ANXIETY IN CHILDREN WITH AUTISM SPECTRUM DISORDER IN THE DENTAL SETTING

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Introduction: Children with Autism Spectrum Disorder (ASD) frequently present poor oral health, exhibit dental anxiety and reduced cooperation in the dental setting. In parallel with evolving child-centered approaches, contemporary paediatric dentistry emphasizes adaptive strategies for enhancing cooperation and decreasing stress in children with ASD.

Objective: This review aims to summarize current evidence for improving cooperation and reducing anxiety in children with ASD during dental visits.

Materials and Methods: A narrative review was conducted using the PubMed database. The literature search included studies published between 2020 and 2026. Randomized controlled trials, systematic reviews, pilot studies and prospective interventional studies involving children with ASD aged 3–17 years were included.

Results: Systematic desensitization was associated with improved cooperation in children with ASD. Furthermore, a study showed that when desensitization was spread over about seven visits, patients cooperated better than with fewer visits. Virtual reality further improved cooperation and decreased dental anxiety in children with ASD during preventive dental procedures. Moreover, behaviour guidance techniques such as sensory-adapted dental environments and culturally-adapted dental visual aids substantially reduced their dental anxiety during preventive dental care. Furthermore, the combination of pre-visit imagery implemented in school settings as part of habituation programs and in-office systematic desensitization further enhanced their cooperation during dental examination.

Conclusions: An individualized, multidisciplinary approach incorporating systematic desensitization, sensory modulation and close collaboration with caregivers and educators is recommended to enhance cooperation and alleviate dental anxiety in children with ASD. Further clinical studies with larger sample sizes are required to strengthen the above evidence.

POSTER PRESENTATION

PP.173

DENTAL REHABILITATION UNDER GENERAL ANESTHESIA-CASE REPORT

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Objective: Individuals with physical and/or intellectual disabilities tend to experience a higher prevalence of dental caries and greater treatment needs compared to the general population, resulting in a substantial demand for dental care under general anesthesia (GA). The aim of this case report was to present dental procedures performed under GA.
Case Report: A 14-year-old female patient has been diagnosed with epilepsy and autism since early childhood. She has been a long-term patient at Poliklinika IMED and was admitted for treatment under general anesthesia in January 2026 for the restoration of the maxillary incisors and periodontal therapy.

The procedure was preceded by a clinical examination, radiological diagnostics and an anesthesiological evaluation. The treatment plan involved the replacement of worn restorations on teeth 37 and 12, and direct composite restorations of teeth 21 and 22. The patient was placed under general anesthesia. During the procedure, an additional clinical examination was performed to confirm the treatment plan. After isolation of the working field and prior tooth preparation, the material of choice for the direct composite restorations on teeth 21 and 22 was G-ænial resin composite. Tooth 37 was restored using GC Fuji Filling™ LC, a resin-modified glass ionomer restorative material. The dental rehabilitation was completed within one hour of the induction of general anesthesia.

Conclusions: Dental treatment under general anesthesia enables safe, efficient, and comprehensive oral rehabilitation in patients with special healthcare needs who are unable to undergo conventional dental procedures.

Keywords: dental rehabilitation; general anesthesia; pediatric dentistry

POSTER PRESENTATION

PP.174

GENERAL ANESTHESIA IN PATIENTS WITH ANGELMAN SYNDROME: PRESENTATION OF TWO CLINICAL CASES.

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Introduction: Angelman syndrome is a rare neurogenetic disorder with an incidence of 1/10,000 to 1/20,000 births. It is characterized by intellectual disability, severe speech impairment, ataxia and paroxysms of inappropriate laughter accompanied by distinct facial deformities and manifestations of the stomatognathic system.
Purpose: To present the dental condition of two patients who visited the Dental Department of the General Hospital of Thessaloniki, "G. Gennimatas -Agios Dimitrios", as well as their dental treatment under general anesthesia.

Discussion: An 18-year-old and a 16-year-old females presented with a diagnosis of Angelman syndrome at the outpatient clinics of the Dental Department of the General Hospital of Thessaloniki "G. Gennimatas-Agios Dimitrios." The patients exhibited typical oral-maxillary characteristics of the syndrome, such as prognathism, protruding tongue with drooling, and thin upper lip. During the clinical examination, multiple carious lesions and tricuspid deposits were found. After assessing their level of cooperation, dental treatment under general anesthesia was planned, during which the patients underwent composite resin fillings, preventive fillings (sealants), and ultrasonic scaling.

Conclusions: Ensuring good oral hygiene by caregivers and regular dental check-ups are critical parameters in the prevention of oral diseases in patients with Angelman syndrome, due to the complete inability of these patients to care for their own oral hygiene. In addition, interprofessional collaboration is a basic prerequisite for the effective treatment of these patients, since dental treatment under general anesthesia is usually necessary due to their lack of cooperation.

POSTER PRESENTATION

PP.175

MULTIDISCIPLINARY MANAGEMENT OF A SPECIAL CARE DENTAL PATIENT REQUIRING GENERAL ANESTHESIA: A HOSPITAL-BASED CASE REPORT

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Introduction: Cerebral palsy (CP) comprises a group of non-progressive disorders affecting movement and posture due to early brain injury, with a prevalence of approximately 2–3 per 1,000 live births. It is frequently associated with feeding difficulties, gastroesophageal reflux, and respiratory dysfunction. These comorbidities significantly increase the perioperative risk of dental surgical management under general anesthesia (GA).

Objective: To highlight the importance of comprehensive preoperative assessment and structured multidisciplinary collaboration in the dental management of a young adult with spastic quadriplegic CP and complex systemic comorbidities.

Materials and Methods: The patient presented with significant orthopedic, respiratory, and gastrointestinal comorbidities. Preoperative evaluation revealed severe scoliosis and abdominal distension secondary to colonic gas accumulation, resulting in diaphragmatic elevation and restrictive pulmonary impairment. Reduced respiratory capacity and increased aspiration risk necessitated thorough systemic evaluation and optimization before dental intervention. A multidisciplinary team—including anesthesiologists, gastroenterologists, pulmonologists, and dental surgeons—collaborated to stabilize the patient's condition before proceeding with surgical treatment under GA. Postoperative monitoring was planned in the intensive care unit (ICU).

Results: Diagnostic investigations confirmed gastrointestinal and respiratory compromise, requiring targeted intervention, including colonoscopic management before dental surgery. Following systemic optimization, dental treatment under GA was completed successfully without intraoperative complications. Postoperative ICU monitoring allowed early detection of potential adverse events, and the patient's clinical course remained stable.

Conclusions: Meticulous preoperative assessment and coordinated multidisciplinary management are essential when treating medically complex patients with CP. Such an approach ensures perioperative safety and enables the delivery of necessary dental treatment under general anesthesia.

POSTER PRESENTATION

PP.176

DENTAL MANAGEMENT OF A PATIENT WITH RUBINSTEIN-TAYBI SYNDROME UNDER GENERAL ANESTHESIA: A CASE REPORT

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Introduction: Rubinstein–Taybi syndrome is a rare developmental disorder characterized by distinctive craniofacial features, skeletal anomalies, intellectual disability, and multiple systemic manifestations.

Objective: This case report describes the dental management of a 27-year-old Greek male diagnosed with Rubinstein–Taybi syndrome, who required comprehensive dental treatment under general anesthesia.

Materials and Methods: Clinical data were retrospectively collected from the archives of the Special Care Dental Department at the General Hospital of Nikaia–Piraeus.

Results: The patient exhibited significant cooperation difficulties secondary to intellectual disability, rendering conventional dental treatment unfeasible. Comprehensive dental care was therefore performed under general anesthesia. Preoperative assessment revealed an anticipated difficult airway due to craniofacial dysmorphism associated with RTS. Oral endotracheal intubation was ultimately achieved with difficulty by an experienced anesthesiologist.

Conclusions: The management of patients with this syndrome requires careful perioperative planning and close collaboration within a multidisciplinary team. Airway challenges represent a significant anesthetic consideration in these individuals. Early intervention, structured follow-up, and caregiver education are essential to improve long-term oral health outcomes in this vulnerable population.

POSTER PRESENTATION

PP.177

THE BIDIRECTIONAL CLINICAL IMPACT OF PERIODONTITIS SEVERITY ON COGNITIVE PROGRESSION IN ALZHEIMER'S DISEASE

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Introduction: Periodontitis, and Alzheimer's disease seem to affect each other in a bidirectional manner. Several studies have been conducted to investigate this correlation. Emerging evidence shows that chronic oral infections can accelerate neurodegenerative, while cognitive impairment intervenes in maintaining oral health.

Objective: To investigate the bidirectional relationship between Periodontitis and Alzheimer's disease progression as well as the systemic inflammation caused by their synergy.

Materials and Methods: A thorough review and evaluation of the most recent research from PubMed, Scopus and Cochrane (2018-2026) was conducted, followed by a comprehensive analysis to describe these processes.

Results: Due to progressive cognitive impairment which results in poor oral hygiene maintenance, patients with Alzheimer's disease exhibited significantly higher pathological periodontal indices and pronounced tissue destruction. Simultaneously, rapid neurocognitive deterioration demonstrated a strong correlation to neglected severe periodontitis and chronically elevated oxidative stress markers, cytokines and periopathogens. Interestingly, edentulous patients without active periodontal inflammation displayed slower cognitive deterioration rates compared with dentate individuals with severe disease progression. Moreover, dissemination of red complex bacteria, induce microglia activation and amyloid-beta accumulation within the brain and as a result further exacerbating neurodegeneration.

Conclusions: There is a bidirectional association between the two diseases. Integrating meticulous, specialized periodontal care into standard Alzheimer's management protocols should be highly prioritized as it can profoundly attenuate the progression of neurodegenerative symptoms on a global scale.

POSTER PRESENTATION

PP.178

PREVENTION AND TREATMENT MODALITIES OF PERIODONTAL DISEASES IN PHYSICALLY DISABLED PATIENTS

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Introduction: Physical disabilities, ranging from congenital conditions like cerebral palsy to acquired impairments such as spinal cord injuries, present unique challenges in the maintenance of oral hygiene. Available studies show that physically disabled patients, lacking proper oral hygiene education, are more prone to periodontal diseases and exhibit higher DMF-T scores, compared to non-disabled individuals.

Objective: To investigate the frequency and severity of Periodontitis when it coexists with physical disabilities and to develop a more effective approach for the treatment of such patients.

Materials and Methods: A comprehensive review and analysis was conducted by evaluating clinical trials published on PubMed database (2020-2026).

Results: Recent evidence supports that patients with physical disabilities exhibit significantly higher baseline scores for Plaque and Gingival Indices (PI and GI respectively) combined with more frequent carious lesions and missing teeth, as a result of poor plaque control, lack of maintenance care and behavioral education. The most significant improvements in periodontal health were related with personal training in oral hygiene practices by caregivers. This emphasizes the importance of daily assisted biofilm control in combination with professional periodontal treatment. Moreover, in immobile patients, a stable healthy periodontium status was correlated with reduced incidence of secondary infections, such as Aspiration Pneumonia.

Conclusions: There is evidence that conventional treatment strategies may not be sufficient for Periodontitis patients with physical disabilities thus it must shift to a triadic system that involves the clinician, the patient and the trained caregiver. While mechanical debridement has short-term results, long-term success depends on daily biofilm control.

POSTER PRESENTATION

PP.179

ORAL HEALTH AND DENTAL ANXIETY IN CHILDREN WITH ADHD: A STATE-OF-THE-ART REVIEW OF CURRENT CHALLENGES

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Introduction: Dental anxiety is a major concern in pediatric dentistry, particularly for neurodivergent populations. Children with Attention Deficit Hyperactivity Disorder (ADHD) often struggle with executive functions, leading to neglected oral hygiene.

Objective: To review current literature on oral health status and dental phobia in ADHD patients to identify specialized care needs.

Materials and Methods: A narrative review was conducted focusing on the correlation between ADHD symptoms and dental outcomes using indices like DMFT and the Children's Fear Survey Schedule – Dental Subscale (CFSS–DS).

Results: Current evidence indicates that ADHD symptoms—inattention and impulsivity—act as barriers to consistent brushing. High comorbidity with anxiety disorders increases the prevalence of dental phobia, which often results in avoided treatments and deteriorated oral health. Standardized tools like the CFSS–DS (Greek version α=0.85) are essential for quantifying this distress.

Conclusions: ADHD patients represent a high-risk group requiring multidisciplinary monitoring. Integrating behavioral management with precise diagnostic tools is vital to enhance their quality of life.

POSTER PRESENTATION

PP.180

ASSESSING ORAL HEALTH AND DENTAL FEAR IN ADHD PEDIATRIC PATIENTS: RESEARCH PROTOCOL AND PILOT ANALYSIS

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Introduction: Pediatric patients with ADHD exhibit higher susceptibility to dental caries due to hygiene neglect and comorbid anxiety.

Objective: To present the research protocol and initial pilot findings regarding the correlation between ADHD, dental fear, and oral health status.

Materials and Methods: This comparative study involves children aged 6–15 years. The ADHD group and neurotypical controls are assessed for dental fear using the CFSS–DS (15-item Likert scale) and for caries experience using DMFT and the sensitive D3-6MFT indices.

Results: Pilot data collection from the initial cohort indicates that the D3-6MFT index provides a more accurate reflection of clinically significant dentinal lesions compared to the standard DMFT. Initial CFSS–DS scores suggest higher levels of fear related to dental instruments and unknown clinical environments in the ADHD group.

Conclusions: The protocol effectively distinguishes between superficial and significant dental decay while quantifying psychological barriers. Preliminary results support the hypothesis that ADHD patients experience greater dental distress, necessitating adapted clinical approaches to ensure treatment compliance.

POSTER PRESENTATION

PP.181

CLINICAL HISTOPATHOLOGICAL AND PROSTHETIC MANAGEMENT OF EROSIVE ORAL LICHEN PLANUS A FOLLOW UP CASE REPORT

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Introduction: Molar–incisor hypomineralization (MIH) is a developmental enamel defect that affects permanent first molars and frequently incisors. MIH-affected teeth are more susceptible to rapid caries progression, hypersensitivity, and structural breakdown, which may complicate dental treatment in pediatric patients.

Objective: To describe the diagnosis and clinical management of MIH in a pediatric patient and to demonstrate the effectiveness of different treatment modalities, including regenerative endodontic treatment, pulpotomy, stainless steel crown restoration, and extraction.

Materials and Methods: Dental treatments were performed in sequential appointments scheduled at one-week intervals. Regenerative endodontic treatment was carried out on tooth 36, followed by restoration with a stainless steel crown. Pulpotomy treatments were performed on teeth 26 and 46, followed by restoration with stainless steel crowns. Tooth 16 was extracted due to extensive structural loss and was deemed non-restorable.

Results: All planned dental treatments were successfully completed, and the patient was recalled for clinical follow-up examinations at 1 week, 6 months, and 15 months. During control visits, the patient was asymptomatic, and normal oral function was restored.

Conclusions: MIH-affected teeth exhibit heightened susceptibility to rapid caries progression and structural compromise. Early diagnosis, coupled with timely restorative and endodontic interventions, is essential to preserve function and alleviate symptoms in pediatric patients.

POSTER PRESENTATION

PP.182

MANAGEMENT OF REFRACTORY MECHANICAL TRAUMA IN AN IRRADIATED ORAL CANCER PATIENT

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Introduction: This case report describes the management of refractory pain caused by mechanical trauma in a 78-year old patient with squamous cell carcinoma of the maxillary tuberosity undergoing concurrent chemoradiotherapy.

Objective: The study aims to highlight the distinction between radiation-induced mucositis and superimposed mechanical injury.

Materials and Methods: The patient presented with severe pain in the right buccal mucosa that was disproportionate to the clinical appearance of mucositis and unresponsive to standard biomodulation therapy. Clinical examination identified the cause as repetitive cheek biting due to post-radiation edema and tissue herniation into an edentulous space. Management involved fabricating a custom protective shield. A provisional silicone spacer was used for immediate relief, followed by a definitive polymethyl methacrylate (PMMA) prosthesis created using a digital intraoral scan to avoid painful impressions.

Results: While laser therapy effectively managed biological mucosal changes, it could not prevent mechanical trauma. The custom PMMA device successfully shielded the compromised tissue from dental contact. This intervention resolved the patient's intractable pain in a scenario where pharmacological and biostimulatory management alone had failed.

Conclusions: Advanced modalities like laser therapy address biological pathology but cannot correct mechanical complications. Effective management of oral cancer patients requires distinguishing between radiation toxicity and physical trauma. Post-radiation anatomical changes can lead to involuntary self-inflicted trauma that mimics refractory mucositis. Clinicians should adapt by utilizing digital dentistry to create bespoke, non-invasive shielding devices when conventional supportive care protocols do not provide relief.

POSTER PRESENTATION

PP.183

MODERN THERAPEUTIC APPROACHES WITH MONOCLONAL ANTIBODIES IN ORAL MUCOCUTANEOUS DISEASES

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Introduction: In recent decades, scientific research has increasingly turned to the use of monoclonal antibodies or immune-related treatments for the management of mucocutaneous diseases with manifestations in oral cavity.

Objective: To review the current literature about the use of monoclonal antibodies in oral mucocutaneous diseases and to evaluate how effective and safe they are.

Materials and Methods: A literature review was performed using the electronic database: PubMed, Scopus and Google Scholar from 2016 until 2026.

Results: Based on the current literature, IL (Interleukin) -17 and IL-23 inhibitors (secukinumab, ixekizumab and guselkumab) are beneficial in refractory lichen planus, while rituximab (anti-CD20) significantly improve the clinical outcome and reduces recurrences in pemphigus vulgaris. In mucous membrane pemphigoid, IVIG (Intravenus Immunoglobulin), rituximab and TNF-a (Tumor Necrosis Factor) inhibitors are effective. Anti-TNF mAbs have also shown promising outcomes in Adamantiades-Behcet's disease, especially when followed by maintenance immunosuppressive therapy. The most common adverse effects of chronic use of rituximab and ILs are increased risk of infection, (especially opportunistic), hyperglycemia, hypertencion, osteoporosis and gastrointestinal reaction. Patients on IVIG therapies were reported to have mild headaches and nausea. Finally, myalgia was the sole side effect observed in patients receiving TNF-a inhibitor therapy.

Conclusions: Dental management of patients on monoclonal antibodies for mucocutaneous diseases requires meticulous oral hygiene and avoidance of factors and habits that will irritate the mucosa. Also, targeted antibiotic prophylaxis is required for invasive procedures, especially under B-cell depletion (rituximab). Early diagnosis of adverse effects, such as opportunistic infections, lichenoid drug reactions and delayed healing, is crucial for differential diagnosis and by extension, treatment safety. Despite the growing use of mAbs in oral mucosal disorders, more studies need to be conducted for promising safety and efficacy.

POSTER PRESENTATION

PP.184

CENTRAL GIANT CELL GRANULOMA: A CASE REPORT

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Introduction: Central giant cell granuloma (CGCG) is an uncommon, locally invasive intraosseous lesion that occurs in the jaws, predominantly affecting adolescents and young adults. It most commonly presents as a painless swelling, although tenderness may be detected on palpation.

Objective: This case report presents the clinical and radiological findings of a patient diagnosed with CGCG. Typically occurs in younger individuals and anterior to the mandibular first molar, this case represents an uncommon presentation in terms of both age and lesion location.

Materials and Methods: A 55-year-old male patient presented with missing teeth. Intraoral examination revealed painless buccal and lingual expansion in the mandibular anterior region. Orthopantomography (OPG), cone-beam computed tomography (CBCT), and ultrasonography (USG) were performed for further evaluation.

Results: On OPG, a radiolucent lesion with indistinct internal septations was observed in the mandibular anterior region, involving the root of tooth 43. CBCT images revealed a unilocular radiolucent lesion measuring 48 × 22 × 20 mm at its greatest dimensions, accompanied by buccal and lingual cortical expansion with focal areas of cortical destruction. USG examination demonstrated a hypoechoic lesion with posterior acoustic enhancement, measuring approximately 2.04 cm in the buccolingual dimension. Histopathological examination of the biopsy specimen confirmed the diagnosis of central giant cell granuloma (CGCG).

Conclusions: This case highlights the atypical presentation of CGCG. USG, used in conjunction with CBCT, provided additional diagnostic value by demonstrating the lesion's soft tissue content and echogenic characteristics, especially in areas of cortical perforation.

POSTER PRESENTATION

PP.185

A DIAGNOSTIC DILEMMA BETWEEN ORAL LICHEN PLANUS AND AND LICHENOID LESIONS

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Introduction: Oral Lichen Planus (OLP) is a chronic, autoimmune, T-cell-mediated inflammatory disorder of unknown cause, usually presenting bilaterally with reticular white striae. In contrast, Oral Lichenoid Lesions (OLL) represent a reactive process, typically appearing as a delayed hypersensitivity response to exogenous triggers. Both entities are classified as oral potentially malignant disorders (OPMDs). Detailed analysis of their features is essential to ensure accurate diagnosis and appropriate clinical management.

Objective: The objective of this study is to delineate and clarify the clinical, etiological, and histopathological differences between OLP and OLL to facilitate accurate differential diagnosis and appropriate long-term management and monitoring protocols.

Materials and Methods: A comprehensive literature search was performed in PubMed, including articles published from 2021 to 2025, using the keywords “oral lichen planus” and “oral lichenoid lesions”.

Results: OLP and OLL share significant clinical and histopathological appearances; however, key differences aid in their distinction. OLP is idiopathic and autoimmune, typically bilateral and symmetrical, mostly asymptomatic, and persists chronically without correlation to external materials. OLL, on the other hand, is commonly unilateral and localized, associated with identifiable triggers such as dental restorations or medications, often causing burning or discomfort in close proximity to the implicated restoration. Symptoms may resolve following the elimination of the causative factor. Histopathology alone cannot reliably differentiate between them.

Conclusions: Despite clinical similarities, OLP is a persistent disorder requiring a long-term multifactorial approach. Conversely, OLL is highly reversible after the removal of the triggering material. Therefore, recognition of their distinct clinico-histopathological background is crucial for prognosis, management, and long-term follow-up.

POSTER PRESENTATION

PP.186

RHABDOMYOSARCOMA OF THE ORAL CAVITY IN PEDIATRIC PATIENTS: A CLINICAL AND PATHOLOGICAL ANALYSIS

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Introduction: Rhabdomyosarcoma (RMS) is the most common soft-tissue sarcoma in the pediatric population. The head and neck region is one of the most frequent sites of occurrence. Although oral involvement is relatively uncommon, early recognition is important due to the aggressive biological behavior and rapid progression of the tumor.

Objective: The aim of this study was to analyze the clinical characteristics, histopathological subtypes, and prognostic factors of oral and head-and-neck rhabdomyosarcoma in pediatric patients based on recent literature.

Materials and Methods: A literature search was conducted in the PubMed database for articles published between 2016 and 2026 using the keywords “oral rhabdomyosarcoma” and “pediatric patients.” Relevant articles describing pediatric cases of oral or head-and-neck rhabdomyosarcoma were included. Extracted data included patient age, tumor location, histological subtype, immunohistochemical findings, and treatment outcomes.

Results: Fourteen articles met the inclusion criteria. The main histological subtypes identified were embryonal and alveolar rhabdomyosarcoma. The embryonal subtype accounted for approximately 70% of reported cases and occurred predominantly in younger children, whereas the alveolar subtype was more frequently observed in older pediatric patients. Clinically, tumors presented as rapidly growing infiltrative masses in the oral and maxillofacial region. Immunohistochemical markers such as desmin, myogenin, MyoD1, vimentin, and muscle-specific actin were essential for confirming the diagnosis and subtype classification. Favorable prognostic factors included tumor size <5 cm, absence of metastasis, and multimodal treatment.

Conclusions: Oral rhabdomyosarcoma in pediatric patients is rare but aggressive. Immunohistochemical evaluation is essential for accurate diagnosis, subtype identification, and appropriate therapeutic planning.

POSTER PRESENTATION

PP.187

PLEOMORPHIC ADENOMA OF THE LOWER LIP: A DIAGNOSTIC DILEMMA

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Introduction: Pleomorphic adenoma is the most common benign tumor of the salivary glands, most frequently arising in the parotid gland. Tumors originating from minor salivary glands are less common, mostly occurring in the palate.

Objective: To present a rare case of pleomorphic adenoma of the lower lip and emphasize the importance of considering minor salivary gland tumors in the differential diagnosis of persistent lip nodules.

Materials and Methods: A 30-year-old Caucasian male presented with a slowly enlarging, painless swelling of the lower lip that had been present for several months. Clinical examination revealed a well-defined, firm submucosal nodule measuring approximately 1 cm in diameter with normal overlying mucosa projecting to the skin. The differential diagnosis included mucocele, sebaceous cyst, fibroma, and benign tumor of minor salivary gland origin. Complete surgical excision of the lesion was performed under local anesthesia, and the specimen was submitted for histopathological analysis.

Results: Histopathological analysis demonstrated a well-circumscribed neoplasm composed of epithelial and myoepithelial elements arranged in duct-like structures, a ductal component forming the inner layer of ducts and tubules, and myoepithelial cells as the outer layer of ducts and tubules,and a typical chondroid stromal component, consistent with a pleomorphic adenoma. The postoperative course was uneventful, and no clinical evidence of recurrence was observed during follow-up.

Conclusions: Although rare, pleomorphic adenoma should be considered in the differential diagnosis of persistent nodular lesions of the lower lip. Surgical excision and histopathological evaluation remain essential for establishing the diagnosis and ensuring appropriate management.

POSTER PRESENTATION

PP.188

ALDH1&2 EXPRESSION IN ORAL LICHEN PLANUS COMPARED TO ORAL SQUAMOUS CELL CARCINOMA. AN IMMUNOHISTOCHEMICAL STUDY.

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Introduction: Cancer stem cells (CSCs) are responsible for initiating the process of carcinogenesis de novo, as well as through the transformation of oral potential malignant disorders (OPMDs) to oral squamous cell carcinoma (OSCC).

Objective: The aim of our study was to detect the expression of ALDH1&2 in oral lichen planus (OLP) and OSCCs as well.

Materials and Methods: To monitor the expression profile of ALDH1&2, an immunohistochemical detection took place in 24 samples of OLP (10 reticular OLPs (ROLPs) and 14 erosive type OLPs (EOLPs) and in 21 OSCC samples of all degrees of differentiation.

Results: The statistical analysis showed statistically significantly higher expression in OSCC than in EOLP ($p= 0.019$) and in ROLP ($p< 0.001$). The rest of the comparisons yielded no statistically significant results.

Conclusions: ALDH1&2 expression is in accordance with the literature since its expression is expected to be higher in cancerous lesions than in lichenoid. In any case, the clinical use of cancer stem cells' biomarkers, as prognostic factors, requires further experimental evaluation in larger number of samples.

POSTER PRESENTATION

PP.189

CD147 EXPRESSION IN ORAL LICHEN PLANUS COMPARED TO ORAL SQUAMOUS CELL CARCINOMA. AN IMMUNOHISTOCHEMICAL STUDY.

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Introduction**:** Cancer stem cells (CSCs) are responsible for initiating the process of carcinogenesis de novo, as well as through the transformation of oral potential malignant disorders (OPMDs) to oral squamous cell carcinoma (OSCC).

Objective**:** The aim of our study was to detect the expression of CD147 in oral lichen planus (OLP) and OSCCs as well.

Materials and Methods: To monitor the expression profile of CD147, an immunohistochemical detection took place in 24 samples of OLP (10 reticular OLPs (ROLPs) and 14 erosive type OLPs (EOLPs) and in 21 OSCC samples of all degrees of differentiation.

Results**:** The statistical analysis showed statistically significantly higher expression in EOLP than in ROLP (p= 0.019). The rest of the comparisons yielded no statistically significant results.

Conclusions**:** The characteristic higher expression of CD147 in EOLP compared to ROLP, suggests the possible presence of neoplastic cells with certain CSC characteristics in erosive lichenoid lesions. However, the clinical application of cancer stem cells' biomarkers requires further experiments in larger number of samples.

POSTER PRESENTATION

PP.190

THE DIAGNOSIS OF ORAL CANCER BY THE DEVELOPMENT OF AN AI APPLICATION.

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Introduction: Artificial intelligence (AI) has emerged as a transformative tool in oral medicine, where it holds significant promise for enhancing the diagnosis, treatment, and management of oral cancer.

Objective: Our team aimed to develop a new tool, capable of diagnosing oral cancer utilizing the capabilities of AI.

Materials and Methods: We aim to solve from computer vision's perspective an object detection task. Specifically, we used 184 images of oral squamous cell carcinoma. We use 80% of the total amount of images for training purposes and 20% for validation (not seen during training), furthermore we generate synthetic images by applying data augmentation techniques such as rotation, scale and random noise injection. The model's architecture is based on YOLO11 a neural network architecture.

Results: The model's detections are accompanied by a confidence measure, which is used to filter out those with low confidence, one can choose a lower threshold for maximizing precision or a higher threshold for maximizing recall. Among images that correspond to oral cancer (oral squamous cell carcinoma), the model achieves 59% precision and 41% recall on the validation set.

Conclusions: AI-driven tools can assist in risk stratification, helping clinicians determine the best treatment plans by analyzing patient data and predicting the likelihood of recurrence or metastasis. AI's potential extends beyond diagnosis and treatment; it also contributes to monitoring patient outcomes. As research and technology evolve, AI's role in oral cancer is likely to become increasingly indispensable.

POSTER PRESENTATION

PP.191

DEVELOPMENT OF AN AI ASSISTED TOOL FOR THE PURPOSE OF DIAGNOSING ORAL LEUKOPLAKIA

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Introduction: Artificial intelligence (AI) has emerged as a powerful tool in oral medicine, particularly in the detection, diagnosis, and management of Oral Potentially Malignant Disorders (OPMDs) such as oral leukoplakia (OLs).

Objective: We aimed to develop a new tool, capable of diagnosing OLs utilizing the capabilities of AI.

Materials and Methods: We used 410 images of OLs. As per common practices, we utilized 80% of the total amount of images for training purposes and 20% for validation (not seen during training). To extend the data set's coverage, we generate synthetic images by applying data augmentation techniques such as rotation, scale and random noise injection. The model's architecture is based on YOLO11 which is a widely spread neural network architecture known for its balance between efficiency and performance.

Results: The model's detections are accompanied by a confidence measure, which is used to filter out those with low confidence and one can choose a lower threshold for maximizing precision or a higher threshold for maximizing recall, known as the precision-recall trade-off. We chose the threshold in such a way that balances the two metrics by maximizing the model's f1 score on the validation set. Among images that correspond to OLs, the model achieves 57% precision and 42% recall on the validation set.

Conclusions: The results suggest that image-based medical diagnosis of specific oral lesions using neural network architectures is possible and motivate further exploration. Future iterations will incorporate more sophisticated methodologies together with more image samples, to transition towards adoption in the clinical environment.

POSTER PRESENTATION

PP.192

THE DIAGNOSIS OF ORAL MUCOCUTANEOUS DISORDERS THROUGH THE DEVELOPMENT OF AN AI ASSISTED APPLICATION

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Introduction: Artificial intelligence (AI) is increasingly being utilized in the diagnosis and management of oral mucocutaneous disorders, which involve both the oral cavity and the skin.

Objective: We aim to develop a new tool, capable of diagnosing oral mucocutaneous disorders (OMDs) utilizing the capabilities of AI.

Materials and Methods: We used 816 images of OMDs. We utilized 80% of the total amount of images for training purposes and 20% for validation (not seen during training). To extend the data set's coverage, we generate synthetic images by applying data augmentation techniques such as rotation, scale and random noise injection. The model's architecture is based on YOLO11 a widely spread neural network architecture.

Results: The model's detections are accompanied by a confidence measure, which is used to filter out those with low confidence, one can choose a lower threshold for maximizing precision or a higher threshold for maximizing recall, known as the precision-recall trade-off. We chose the threshold in such a way that balances the two metrics by maximizing the model's f1 score on the validation set. Among images that correspond to OMDs, the model achieves 57% precision and 40% recall on the validation set.

Conclusions: AI systems have shown great promise in analyzing clinical images, histopathology slides, and patient data to aid in the diagnosis and monitoring of these conditions. AI's application in OMDs is an exciting frontier, with the potential to significantly improve diagnosis, treatment planning, and patient outcomes in oral medicine.

POSTER PRESENTATION

PP.193

ORAL AND OROFACIAL MANIFESTATIONS OF SCLERODERMA

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Introduction: Scleroderma is an autoimmune connective tissue disorder of unknown etiopathogenesis, characterized primarily by the progressive fibrosis of the skin. It is classified into localized scleroderma, which affects the skin exclusively, and systemic scleroderma, which involves multiple tissues and organs, including the oral cavity, presenting with a variety of intraoral and extraoral manifestations.

Objective: The aim of the present study is to review the most recent scientific evidence regarding scleroderma, supported by contemporary literature from the last decade.

Materials and Methods: A comprehensive literature search was performed in PubMed, including articles published from 2016 to 2026, using the

Keywords: “Scleroderma” and “oral manifestations”.

Results: The literature search revealed 41 publications discussing Scleroderma with oral manifestations and their management. The main oral clinical manifestations include fibrosis, microstomia, scleroglossus, frenum fibrosis, which may impair clear speech, xerostomia, frequently associated with Sjogren's syndrome, temporomandibular joint dysfunction, and trismus. In addition, periodontal disease, bone resorption, increased risk of dental caries, and recurrent oral ulcerations are frequently observed. Diagnosis is established by clinical evaluation and immunological investigations, with radiographic findings occasionally supporting the diagnosis.

Conclusions: Scleroderma significantly affects the orofacial region. Dentists should possess adequate knowledge to enable early diagnosis and effective management of the condition. Furthermore, an interdisciplinary approach to patient care is essential, with emphasis on individualized treatment planning and regular follow-up examinations.

POSTER PRESENTATION

PP.194

ORAL LICHEN PLANUS IN PAEDIATRIC PATIENTS

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Introduction**:** Oral Lichen Planus (OLP) is a chronic inflammatory mucocutaneous disorder that is well documented in adults but remains relatively uncommon in the pediatric population.

Objective**:** Our research aims to synthesize current knowledge regarding the epidemiology, etiology, clinical presentation, diagnosis, and management of OLP in children.

Materials and Methods**:** An electronic search of literature was conducted. We evaluated exclusively PubMed indexed publications from 2016 to 2026. The following keywords were applied: Oral Lichen Planus; children; pediatric; juvenile; infants. In total, 97 articles were extracted from this search.

Results**:** Pediatric OLP has a lower prevalence compared to adults, with possible geographic and genetic influences contributing to its occurrence. The condition is thought to involve immune-mediated mechanisms, although its exact pathogenesis remains unclear.Clinically, OLP in children may present in reticular, erosive, atrophic or plaque-like forms, with the reticular type being the most common. Lesions are frequently asymptomatic but can occasionally cause discomfort or burning sensations, particularly in erosive cases. Diagnosis is primarily based on clinical examination and is often supported by histopathological findings to differentiate OLP from other lichenoid or inflammatory conditions.

Conclusions**:** Despite its rarity, increased awareness among clinicians is essential for early diagnosis and appropriate management. Further research is needed to better understand its pathogenesis and optimize treatment protocols. Currently, management strategies in pediatric patients are conservative and focus on symptom relief, with topical corticosteroids being the first-line therapy.

POSTER PRESENTATION

PP.195

THE IMPACT OF POLYPHENOLS ON SALIVARY CARCINOEMBRYONIC ANTIGEN (CEA) LEVELS IN PATIENTS WITH ORAL LICHEN PLANUS

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Objective: To evaluate the effects of polyphenol supplementation on salivary protein concentration and CEA levels in patients with OLP.

Methods: The study included 40 patients diagnosed with OLP and 15 healthy controls (middle-aged women, 45–70 years). Clinical assessment of the oral mucosa was performed at baseline and after 28 days of treatment with A-LIXIR®400 PROTECT, a standardized oral solution of Aronia melanocarpa extract rich in polyphenols and anthocyanins. Salivary protein concentrations were measured using a BCA protein assay kit, while CEA levels were determined by an immunoradiometric assay.

Results: Patients with OLP demonstrated a reduction in the severity of inflammatory changes and partial or complete resolution of erosive lesions following treatment. The mean salivary protein concentration in healthy subjects was 1.05 mg/mL, compared to 1.5 mg/mL in OLP patients at baseline, decreasing to 1.2 mg/mL after therapy. Salivary CEA levels were significantly elevated in OLP patients compared to controls (612 ng/mL vs. 258 ng/mL) and decreased to 398 ng/mL after treatment.

Conclusions: Polyphenol-based supplementation with A-LIXIR®400 PROTECT may provide clinical benefits in patients with OLP, reflected by reductions in salivary protein concentration and CEA levels. Further randomized controlled trials with larger sample sizes are needed to confirm these findings and establish clinical efficacy and safety.

POSTER PRESENTATION

PP.196

POOR ORAL HEALTH: THE HIDDEN ENEMY OF BODY DEFENCE AGAINST CARCINOGENESIS

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Oral health is directly linked to overall physical health, and its absence leads to severe problems including cancer. The aim of this article is to highlight the mechanisms by which oral microorganisms lead to carcinogenesis specifically to the digestive system and the need for a holistic approach to patient care. Scientific publications were searched in the databases PubMed, MDPI, and NLM, by using the keywords; oral, bacteria, carcinogenesis, cancer, health and there was evidence linking poor oral health and oral microflora to multiple cancer forms. The contribution of oral bacteria to carcinogenesis involves multiple interconnected processes that collectively promote tumor initiation and progression. The main mechanisms include chronic inflammation, direct genotoxic effects, modulation of host immune surveillance and activation of oncogenic signaling pathways. Among oral bacteria, Porphyromonas gingivalis and Fusobacterium nucleatum induce carcinogenesis by activating Toll-like receptors on epithelial cells, leading to increased production of IL-6 who triggers phosphorylation of STAT3. This process activates the oncogenic mechanisms of oral squamous cell carcinoma, enhancing tumor growth and cellular invasion. Regarding the colon, P. gingivalis has been shown to facilitate colonization and tumor progression in the large intestine. Specifically, the UCHL3-GNG12 axis promotes colorectal cancer progression, as infection with P. gingivalis increases UCHL3 expression and stabilizes its substrate protein GNG12 through the NF-κB signaling pathway. Lastly, P. gingivalis and F. nucleatum also play a key role in the progression of stomach and pancreatic cancer through various mechanisms. Although further research is required, current findings indicate that poor oral health threatens overall health.

POSTER PRESENTATION

PP.197

ANALYSIS OF SALIVARY COMPONENTS IN PATIENTS WITH SJOGREN'S SYNDROME

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Objective: To examine the relationship between CEA concentrations in saliva in patients with SS and a control group.

Methods: A total of 58 samples of unstimulated saliva collected over a 10-minute period were analyzed and subsequently centrifuged. Forty samples were obtained from patients with SS, all female, with a mean age of 54.9 ± 13.6 years, whose diagnoses were established at the Institute of Rheumatology. The remaining 18 samples were obtained from healthy individuals, also female, with a mean age of 54.3 ± 8.3 years. Exclusion criteria included secondary SS, other autoimmune diseases, and malignancies. Isolation and measurement of CEA concentration in saliva were performed using an immunoradiometric assay with a commercial kit produced by INEP.

Results: An independent samples t-test in SPSS was used to compare mean CEA values between the two groups. The mean value was 2282.3 ng/mL for the SS group and 547.8 ng/mL for the control group. The alpha value of Levene's test for equality of variances was > 0.01, and the p-value for the conducted t-test was < 0.05 (0.037).

Conclusions: A statistically significant difference was observed between the mean CEA concentrations in patients with SS and the control group, with higher values recorded in the affected individuals.

POSTER PRESENTATION

PP.198

THE IMPACT OF MENOPAUSE ON SALIVARY FLOW RATE-A SCOPING REVIEW

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Introduction: Menopause is a phase which represents a physiological transition characterized by significant hormonal and psychological fluctuations, which profoundly impact general health. Oral health works as a key pillar of systemic health, with salivary flow acting as a primary determinant of its stability.

Objective: The objective of this study is to elucidate both the correlation and the extent to which hormonal shifts during menopause influence salivary flow rate and, consequently, impact oral health status.

Materials and Methods: This research utilizes data derived from databases specifically from Science Direct, PubMed, Scopus and Cochrane with the search conducted between February 16,2026, and March 17,2026. The search was performed using the following

Keywords: “menopause”, “menopausal”, “menopaused”, “menopauses”, “salivary”, “salivary secretion”, “flow rate”.

Results: Menopausal women tend to experience oral discomfort. Studies suggest that salivary glands within the oral cavity contain estrogen receptors that are sensitive to the hormonal fluctuations during menopause. Findings of clinical trials indicate a slight reduction of the salivary flow of the menopausal women participating. These changes influence oral mucosa tissues, leading to symptoms such as xerostomia.

Conclusions: Menopause-related salivary deficiency, compounded by the intense psychological burden often experienced during this transition, profoundly impacts salivary flow and overall oral health. Consequently, dental professionals treating menopausal patients must account for these physiological and emotional transitions to develop appropriate treatment and preventive strategies, aimed at mitigating pathological conditions secondary to reduced salivary flow.

POSTER PRESENTATION

PP.199

ORAL MANIFESTATIONS OF MALIGNANT ACANTHOSIS NIGRICANS

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Introduction: Malignant Acanthosis Nigricans (MAN) is a rare dermatological disorder that presents on both cutaneous and mucosal surfaces, including the oral mucosa. Oral manifestations are mostly characterized by papillomatous changes, which can be directly linked with underlying internal malignancy. The oral presentation can often precede the diagnosis of the primary tumor, making it an important early clinical indicator.

Objective: The objective of this presentation is to highlight the importance of early recognition of oral MAN as a potential marker for malignancy and its significance for timely diagnosis and appropriate management.

Materials and Methods: A comprehensive literature search was performed in PubMed, including articles published from 2016 to 2026, using the keywords: “Malignant Acanthosis Nigricans oral manifestations”.

Results: The literature search revealed 10 publications with oral manifestations of MAN. The initial lesions typically present as papillomatous or verrucous lesions, most commonly on the lips, hard palatal mucosa, buccal mucosa, and gingiva. The internal malignancy was recorded as 4 cases of gastric adenocarcinoma, 1 case of urothelial, pancreatic, urinary, hepatic, ovarian, and squamous cell lung carcinoma, respectively.

Conclusions: The majority of patients with malignant acanthosis nigricans typically present with oral lesions before the identification of the associated malignancy, underscoring the critical importance of a timely and thorough systemic evaluation. As oral manifestations of MAN may be first seen by dentists, awareness of its typical presentation is imperative for early detection. Suspicious oral findings should prompt further systemic evaluation to exclude potential internal malignancies.

POSTER PRESENTATION

PP.200

MULTI-OMICS APPROACHES IN THE EARLY DIAGNOSIS OF ORAL LEUKOPLAKIA AND ORAL SQUAMOUS CELL CARCINOMA: THE ROLE OF SALIVARY TRANSCRIPTOMICS, GENOMICS AND PROTEOMICS

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Introduction: Advances in genomics, transcriptomics, and proteomics provide molecular insights that may improve early diagnosis and risk stratification for Oral leukoplakia (OL) and Oral Squamous Cell Carcinoma (OSCC).

Objective: To summarize key genomic, transcriptomic, and proteomic biomarkers associated with OL and OSCC and to distinguish molecular alterations compare to normal.

Methods: A focused literature review of PubMed-indexed studies and transcriptomic datasets was performed. Studies using next-generation sequencing, RNA sequencing, microarray profiling, and mass spectrometry-based proteomics were analyzed, with emphasis on validated tissue and salivary biomarkers.

Results: In transcriptomic analyses, FN1 expression progressively increased from OL through early-to-late-OSCC as well as STAT1, COL2A1, and COL10A1. Proteomic profiling revealed EEF1D as the most upregulated biomarker in high-risk OL. LDHA, DEC1, IL-6, IL-8, and EGFR demonstrated a stepwise increase correlating with OL to OSCC progression. Conversely, Kininogen-1 was downregulated in high-risk OL, reflecting early malignant transformation. In OSCC, ARPC4 emerged as the most significantly upregulated protein compared to downregulation of Apolipoprotein E. Genomic analyses confirmed the presence of genomic instability in both OL-OSCC. TP53 emerged as the most reliable biomarker for detecting mutations. Additional genomic markers, including CDKN2A, FAT1, PIK3CA, and miR-31-5p, exhibited high sensitivity and specificity across OL-OSCC.

Conclusions: Integration of multi-omics data, including salivary biomarkers, holds significant potential for non-invasive early detection and personalized management of oral potentially malignant disorders.

POSTER PRESENTATION

PP.201

SALIVARY NON-INVASIVE SCREENING: DIAGNOSTIC POTENTIAL OF METABOLOMICS AND MICROBIOMICS IN ORAL CANCER

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Introduction: Early detection of oral potential malignant disorders (OPMD) Leukoplakia and its progression to oral squamous cell carcinoma (OSCC) remains a clinical challenge. In search of a non-invasive, effective biopsy method, metabolomics could provide a cellular activity snapshot and metabolomics could reveal the role of oral biofilm in carcinogenic states and premalignant lesions.
OBJECT: Saliva composition varies in different pathological states including malignant and premalignant conditions. This study identifies specific salivary microbial and metabolic signatures and their correlation to diagnosis, progression and response to treatment.

Materials and Methods: A comprehensive literature was studied across PubMed/Google/Scorpus/MDPI searching for relevant keywords including metbolomics, microbiomics, OSCC, oral dysplasia.

Results: Regarding microbiomics applications, OSCC was characterized by an enrichment of Fusobacterium nucleatum, Aggregatibacter Actinomycetemcomitans and Porphyromonas gingivalis, whereas Leukoplakia showed high Leptotrichia levels. As for metabolomics in both Leukoplakia and OSCC significant upregulation of L-Proline, lactic acid, N-acetylputrescine and Propionate and a marked downregulation of Urea and carnitine compared to controls, were found. In Leukoplakias only Ornithine and Choline were uniquely elevated, serving as primary biomarkers for initial screening. OSCC-Specific Markers significantly upregulated markers included L-Valine, 7-methylguanine, and Kynurenic acid. Overall, the integration of F. nucleatum abundance with the Valine/Ornithine ratio provided a great diagnostic sensitivity and specificity for identifying malignant transformation.

Conclusions: Although further validation is required for full clinical integration, with greater experimental samples and multi-omics formulas, utilizing some of the studied biomarkers could allow highly accurate, non-invasive platform for monitoring malignant transformation and improving early intervention in oral oncology, soon.

POSTER PRESENTATION

PP.202

DIABETES MELLITUS AND ORAL HEALTH

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Aim: Diabetes Mellitus (DM) represents a complex metabolic disorder with significant implications for oral health and systemic clinical management. Also, there are mechanisms that conceal oral complications and the impact of modern drug therapy, specifically dipeptidyl peptidase-4 (DPP-4) inhibitors (gliptins), which are increasingly associated with unfavorable oral effects.
Material &

Methods: A systematic review of current references and clinical instructions was directed, focusing on the frequency of oral indications and the influence of second-generation antihyperglycemic medications (2001-2023).

Results: Periodontitis remains the most frequent complication with diabetic patients exhibiting a greater risk (2,8-3,4 times higher). Research involving single-cell transcriptomics and hyperglycemia-enhanced Neutrophil Extracellular Traps (NETs) mechanisms such as: excessive production of pro-inflammatory cytokines (TNF-a, IL-6), oxidate stress leading to impaired neutrophil function and oral barrier disruption, and the accumulation of Advanced Glycation End-products (AGEs) altering collagen metabolism. Additionally, diabetes patients have salivary glands dysfunction 40-50% increased rate of candidiasis (25%), oral lichen planus (0,5-2,4%) and leukoplakia (6,2%). Antihyperglycemic Gliptins are significantly associated with autoimmune disturbance and bullous formation in oral mucosa presented as pemphigoid or pemphigus. Dental management requires compulsory chairside glucose monitoring, maintaining HbA1c<7% and recognizing symptoms of severe hypoglycemia.

Conclusions: An extensive understanding of the molecular and pharmacological sides of DM is crucial for the dental professional. Such knowledge ensures early diagnosis, safe clinical adjustments and enhanced metabolic control for the patient.

POSTER PRESENTATION

PP.203

PATIENTS AT RISK FOR MEDICATION-RELATED OSTEONECROSIS OF THE JAW: ENDODONTIC TREATMENT AS A PREVENTIVE APPROACH: A SINGLE-ARM SYSTEMATIC REVIEW

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Introduction: Medication-related osteonecrosis of the jaw (MRONJ) is a serious complication in patients receiving antiresorptive or antiangiogenic therapy, with tooth extraction consistently identified in the literature as the main local risk factor. Therefore, endodontic treatment (ET) has been proposed as a preventive alternative, potentially allowing tooth retention, while minimizing MRONJ occurrence.

Objective: This systematic review aims to assess ET as a preventive strategy for osteonecrosis in patients at risk of MRONJ.

Materials and Methods: A systematic search was conducted in PubMed, Scopus, and Cochrane Library, following PRISMA guidelines.

Results: The search yielded 194 results. After de-duplication and screening, 11 papers were included in our analysis, while 6 were identified through manual search. These 17 studies involved 482 patients at risk of MRONJ, who underwent ET, of whom 55 subsequently developed MRONJ, corresponding to an overall safety rate of 88.6%. ET failure was documented in 18 patients, all of whom were diagnosed with MRONJ. Surgical ET was reported in only 1 included study involving 14 patients, none of whom developed MRONJ.

Conclusions: Our systematic review suggests that ET may represent a viable preventive approach in patients at risk of MRONJ. However, further well-designed studies are needed to enhance the reliability of these findings.

POSTER PRESENTATION

PP.204

ADALIMUMAB-INDUCED ORAL ERYTHEMA MULTIFORME: A RARE CASE REPORT

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Introduction: Adalimumab is a monoclonal antibody targeting TNF-α and is widely used in the management of autoimmune inflammatory diseases such as psoriatic arthritis. Although biologic therapies have significantly improved disease control, a variety of mucocutaneous adverse reactions have been reported. Erythema multiforme (EM) is an acute immune-mediated hypersensitivity reaction most associated with infections, but may also occur as an adverse drug reaction.

Objective: To present a case of EM associated with adalimumab therapy and highlight the importance of recognizing drug-induced oral mucosal reactions in patients receiving biologic agents.

Materials and Methods: A 47-year-old female patient presented with an acute onset of painful oral lesions two days after administration of adalimumab for the treatment of psoriatic arthritis. Clinical examination revealed multiple irregular erosions and ulcerative lesions affecting the oral mucosa and the lips. No previous history of similar lesions was reported. Based on the clinical presentation and the temporal relationship with the initiation of biologic therapy, drug-induced oral EM was considered the most likely diagnosis.

Results: Adalimumab therapy was discontinued, and systemic corticosteroid treatment with methylprednisolone 48 mg/day was initiated. Mild clinical improvement was observed on the fourth day of treatment, and complete resolution by day ten. The corticosteroid dose was subsequently tapered gradually without recurrence.

Conclusions: Adalimumab-induced oral erythema multiforme represents a rare but clinically important adverse reaction. Awareness of such reactions is essential for clinicians managing patients receiving biologic therapies, enabling prompt diagnosis and appropriate treatment.

POSTER PRESENTATION

PP.205

ORAL ERYTHROPLAKIA IN CHILDREN: A REVIEW OF THE LITERATURE

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Introduction: Oral erythroplakia constitutes an oral potentially malignant disorder. It is marked by a clearly defined red, velvety patch, which often indicates a high rate of cellular changes and an increased risk of cancer in adults.

Objective: The aim of this literature review is to illustrate how often this condition occurs, its clinical features, histology, and outcomes.

Materials and Methods: We conducted an electronic search in PubMed (2010-2026) using the following terms: oral erythroplakia, erythroplakia, child, children, adolescent, pediatric, and young patients. We included case reports, case series, observational studies, and reviews that provided data on clinically relevant, histologically confirmed oral erythroplakia in individuals aged 18 or younger.

Results: There aren't many clear cases of oral erythroplakia in pre-pubertal or mid-adolescent patients. Large studies on potentially malignant disorders inchildren did not describe any definitive erythroplakia.

Conclusions: The available evidence indicates that oral erythroplakia is extremely rare in young age groups. It is relatively undocumented in patients aged 18 and younger. Nonetheless, any persistent red patch that looks like erythroplakia in a child oradolescent should be biopsied right away and monitored closely due to itsknown potential for cancer.

POSTER PRESENTATION

PP.206

LANGERHANS CELL HISTIOCYTOSIS ORAL LESIONS IN PEDIATRIC PATIENTS

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Introduction: Langerhans cell histiocytosis (LCH) is a rare disorder marked by abnormal proliferation of Langerhans cells infiltrating bone, skin, and other organs. It occurs predominantly in children, with estimated incidence varying by age and shows marked clinical heterogeneity.

Objective: The aim of this research is to evaluate the incidence of Langerhans cell histiocytosis in the pediatric population, with an emphasis on diagnosis and treatment.

Materials and Methods: An electronic search of the literature was conducted in the PubMed database using the keywords “oral Langerhans cell histiocytosis in pediatric patients” and “Langerhans cell histiocytosis oral lesions in pediatric patients”, covering the years 2010–2026. The inclusion criteria were: case reports, case series, patient age <18 years old, presence of oral mucosal lesions, and studies providing information regarding diagnosis and treatment. The initial search identified a total of 25 articles. Based on the predefined criteria, 5 articles were excluded after screening the titles, 8 from abstract and 3 from full text.

Results: A total of 9 cases were identified in the search, of which 6 were male and 3 were female. The age ranges from 2months old- 13years old. All cases presented lesions in oral cavity and the jaws, while 4 cases also demonstrated cutaneous lesions accompanied by other symptoms.

Conclusions: Langerhans cell histiocytosis in pediatric patients may frequently present with lesion involving oral cavity, sometimes accompanied by cutaneous or systemic manifestations. Early recognition of oral findings is crucial, as they represent a significant indicator of the disease.

POSTER PRESENTATION

PP.207

ORAL ULCERATION: WHEN IS IT NOT JUST AN APHTHA – A CLINICAL COMPARISON

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Introduction: Oral ulcerations are a common finding in daily dental practice and are most frequently diagnosed as Recurrent Aphthous Stomatitis. However, a variety of local and systemic conditions may present with similar clinical features, which can lead to misdiagnosis and inappropriate treatment.

Objective: To present a simple clinical comparison between aphthous ulcers and other oral ulcerations with a similar appearance, and to highlight key features useful in everyday practice.

Materials and Methods: Several clinical cases of patients presenting with oral ulcerations were evaluated based on medical history and detailed clinical examination. Special attention was given to duration, location, morphology, associated symptoms, and response to initial therapy.

Results: Typical aphthous ulcers were small, round, painful, and healed within 7–10 days. In contrast, some lesions showed atypical characteristics such as prolonged duration, irregular borders, unusual localization, and lack of response to standard treatment. These lesions were consistent with traumatic ulcers, erythematous forms of Oral Lichen Planus, and Oral Candidiasis.

Conclusions: Not all oral ulcerations are aphthous. Recognition of simple clinical differences and warning signs, such as persistence beyond two weeks, is essential for accurate diagnosis and appropriate patient management.

POSTER PRESENTATION

PP.208

ORAL MANIFESTATIONS OF GRAFT VERSUS HOST DISEASE IN PEDIATRIC PATIENTS

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Introduction: The graft versus host disease is a specific immune reaction generated by allogenic lymphocytes against the recipient which lacks antigens present in the donor.

Objective: This research aims to provide an overview of the clinical and histopathological characteristics of graft versus host disease in children, emphasizing the ones presented in the oral cavity.

Materials and Methods: An electronic search of the literature was conducted, by using the pubmeddatabase and the following

Keywords: graft versus host disease; graft versus host disease in children; pediatric patients and oral manifestations of graft versus host disease; clinical and histological oral characteristics in children of graft versus host disease. This way the clinical oral manifestations of graft versus host disease were identified and correlated with their appearance in patients that were children.

Results: Graft versus host disease is described as acute or chronic. According to the type of the disease, clinical manifestations in children involve systemic ones involving the gastrointestinal system, eyes, liver, lungs, integumentary system and immune system and local- oral ones some of them being xerostomia and painful oral ulcers as well as other areas covered by mucous membrane such as the genital area.

Conclusions: Overall, in graft versus host disease in children the clinical manifestations depend on the period it's presented -acute or chronic- with the ones involving the oral cavity seen mostly in the chronic phase, being symptomatic and leading to functional changes that cause several concerns regarding the correct management and treatment.

POSTER PRESENTATION

PP.209

RECURRENT ODONTOGENIC KERATOCYST OF THE MANDIBLE: A CASE REPORT WITH LONG TERM CLINICAL FOLLOW UP

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Introduction: Odontogenic keratocysts are non malignant but locally aggressive lesions of the jaws, characterized by a high recurrence rate. They are often detected incidentally during radiographic examinations and may remain asymptomatic or present with mild clinical signs such as pain or swelling. Their management remains challenging due to their tendency to recur.

Objective: To present a clinical case of a recurrent odontogenic keratocyst in the mandible and to highlight the importance of long-term monitoring, combining therapeutic methods.

Materials and Methods: A keratocyst located in the region of the lower left third molar (#38) was initially diagnosed in 2016 as a radiographic finding. The patient presented mild symptoms, including pain and swelling, and received antibiotic therapy. The following surgical management included enucleation of the cystic lesion along with extraction of the involved tooth. Histopathological examination confirmed the diagnosis. The patient failed to attend the scheduled 6-month follow-up.

Results: Eight years later (2024), the patient returned with pain in the same region. Radiographic evaluation revealed recurrence of the lesion. A second surgical intervention was performed, including decompression, saline irrigation, placement of drainage, and periodic iodoform gauze changes. Follow-up with CBCT imaging demonstrated significant reduction of the bone cavity. By 2025, clear regression of the lesion was observed, and in 2026, final surgical excision of residual tissue was carried out. Histological findings showed fibrous tissue with epithelial lining and mild inflammatory changes, without evidence of recurrence.

Conclusions: This case underscores the importance of long-term follow-up in patients with odontogenic keratocysts due to their high recurrence potential, as well as the effectiveness of combined conservative and surgical treatment approaches.

POSTER PRESENTATION

PP.210

IMPLANT-SUPPORTED OVERDENTURES ON TELESCOPIC BARS BEARING PRECISION ATTACHMENTS, CASE REPORT

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Introduction: One of the major complications general dentists face, when treating edentulous patients with dental implants, is alveolar atrophy. The present case demonstrates a patient with extreme alveolar atrophy that was rehabilitated through implant-supported telescopic bars and overdentures.

Objective: The present case report aims to highlight the use of telescopic bars to achieve passive fit of removable implant suprastructures.

Materials and Methods: A male patient, 60 years old, suffering from extensive resorption of the alveolar bone sought treatment for both the upper and the lower jaw. Four implants were placed in the maxilla (regions #13,14,23,24), while two were inserted in the mandible (regions #33 and 43). After successful osseointegration, digital impressions were taken to manufacture implant-supported telescopic-retained overdentures. The passive fit of the removable dentures was warranted through dental precision attachments (distal areas #15 and #25, as well as distal areas #34, #44).

Results: Two implant-supported removable overdentures were constructed to precisely fit onto the telescopic bars to rehabilitate our patient. The suprastructures were attached through telescopic bars as well as precision attachments onto the implants. The telescopic bars were milled using titanium alloy, grade V. The follow-up appointment revealed no biological or technical complications.

Conclusions: Extreme bone resorption is a common reason for denture-induced sore spots and pressure points. The combination of telescopic bars and precision attachments secures passive fit of the restoration onto the implants. The incorporation of such innovative protocols includes multiple benefits in every-day clinical practice and eliminates biological complications, such as sore spots.

POSTER PRESENTATION

PP.211

FLEXIBLE PROSTHETIC REHABILITATION OF A 16-YEAR-OLD ADOLESCENT LEUKEMIA PATIENT WITH MULTIPLE MISSING MAXILLARY TEETH: A CASE REPORT

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Introduction: Dental rehabilitation in medically compromised adolescents is challenging, especially when multiple anterior teeth fail to erupt because of impaction. Such conditions often lead to tooth loss and require prosthetic management.

Objective: To present the prosthetic rehabilitation of a 16-year-old adolescent leukemia patient with multiple missing maxillary teeth using a flexible removable prosthesis.

Materials and Methods: A 16-year-old adolescent patient with a history of leukemia and previous orthodontic treatment presented with missing maxillary teeth (#12, #13, #22, #23), which had been surgically extracted due to impaction prior to referral. Implant therapy was postponed because of ongoing medical considerations and skeletal growth. A flexible removable partial denture was fabricated to restore esthetics and function following standard clinical and laboratory procedures.

Results: The prosthesis provided satisfactory esthetics, acceptable retention, and functional improvement. The patient reported comfortable use and increased self-confidence. At the 6-month follow-up, no complications or soft tissue irritation were observed.

Conclusions: Flexible removable prostheses may serve as a conservative interim treatment option for medically compromised adolescents with delayed implant therapy, providing functional and esthetic rehabilitation while preserving oral tissues.

POSTER PRESENTATION

PP.212

FULLY DIGITAL RESTORATION OF MAXILLARY ANTERIOR TEETH WITH SEVERE CROWN DESTRUCTION USING MONOLITHIC ZIRCONIA: A CLINICAL CASE REPORT

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Introduction: Restoration of severely damaged anterior teeth in young patients presents functional and esthetic challenges, particularly when different restorative approaches are required within the same arch.

Objective: This case report aims to evaluate the clinical effectiveness of a fully digital workflow for restoring multiple maxillary anterior teeth with severe crown destruction using monolithic zirconia.

Materials and Methods: An 18-year-old female patient presented with severely damaged maxillary anterior teeth (12, 11, 21, 22). Teeth 12 and 21 required fiber post-core build-ups due to extensive crown loss. Tooth 11 had a previous fiber post and metal-ceramic crown, which was removed; remaining tooth structure was sufficient for restoration. Tooth 22 received conventional preparation. Digital impressions were obtained using an intraoral scanner (iTero Lumina, Align Technology, Tempe, AZ, USA). Restorations were designed with CAD software (exocad GmbH, Darmstadt, Germany) and fabricated using CAM milling (Redon Technology, Istanbul, Turkey). After provisional evaluation and esthetic adjustments, definitive monolithic zirconia (Straumann, Basel, Switzerland) restorations were cemented.

Results: Restorations demonstrated satisfactory marginal adaptation, functional occlusion, and improved esthetics.

Conclusions: A fully digital workflow offers a predictable and efficient approach for restoring severely damaged anterior teeth in young patients

POSTER PRESENTATION

PP.213

ARTIFICIAL INTELLIGENCE-BASED CROWN DESIGN COMPARED WITH HUMAN OR CONVENTIONAL CAD SYSTEMS: A SYSTEMATIC REVIEW

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Introduction: Artificial Intelligence (AI) has been recently integrated into digital crown design workflows in order to optimize tooth morphology and enhance clinical efficiency. The expanding application of these workflows in prosthodontics has generated interest regarding their reliability and performance consistency.

Objective: This systematic review evaluates the performance of AI-based crown design systems compared to conventional digital and human-based workflows.

Materials and Methods: An electronic search through Pubmed, Scopus and Web of Science databases was conducted on February 2026, limited to studies published within the last ten years and according to PRISMA guidelines, using the search terms: (artificial intelligence OR deep learning) AND (dental crown OR crown design) AND (Computer-Aided-Design) AND (accuracy OR surface deviation OR marginal fit OR workflow efficiency). Inclusion criteria included studies published in English and reporting at least one morphological, functional, mechanical or esthetic outcome.

Results: Eleven studies met the eligibility criteria and were included. External morphology and marginal adaptation of AI-designed crowns were generally comparable to technician and CAD design systems. Occlusal and proximal contact precision demonstrated variability, whereas internal fit appeared software-dependent. Mechanical performance was reported as comparable to conventional workflows, while esthetic outcomes were reported as clinically acceptable. Meta-analysis was not conducted due to heterogeneity in study designs and small sample sizes.

Conclusions: AI-integrated digital workflows demonstrate encouraging results, yet current evidence remains variable. Further clinical research and validation are required to examine their long-term clinical applicability.

POSTER PRESENTATION

PP.214

SINGLE WING LITHIUM DISILICATE MARYLAND BRIDGE WITH A PONTIC DERIVED STAMP TECHNIQUE FOR ANTERIOR SYMMETRY

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Introduction: Replacement of a congenitally missing maxillary lateral incisor with a contralateral conoid lateral is challenging in adolescents when implant therapy must be delayed.

Objective: To present a minimally invasive protocol combining a single-retainer lithium disilicate Maryland bridge with a pontic-derived digital stamp technique for symmetry correction.

Materials and Methods: A 13-year-old patient with congenital absence of the maxillary left lateral incisor and a peg-shaped contralateral lateral incisor was treated with a digitally designed lithium disilicate cantilever bonded to the adjacent central incisor after enamel-restricted preparation. The pontic contour was transferred to a thermoformed matrix on a printed model to guide composite reshaping of the conoid lateral.

Results: The restoration replaced the removable appliance and achieved satisfactory esthetics. At 6 months, no complications were observed.

Conclusions: Digital planning with adhesive prosthodontics enabled conservative tooth replacement and correction of conoid morphology in a single treatment sequence.

POSTER PRESENTATION

PP.215

FULL MOUTH FIXED PARTIAL DENTURES RESTORING THE MALPOSITIONED DENTAL IMPLANTS USING DIGITAL WORKFLOW: A CASE REPORT

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Introduction: Anatomical limitations, restricted mouth clearance, and sinus deviations may compromise the ideal implant positioning and resulted with implant malpositions creating prosthetic challenges during full-mouth rehabilitation. New treatment approaches with multi-unit or ti-based abutments will be helpful to solve these clinical issues using digital workflow.

Objective: This case report presented the prosthetic management of malpositioned implants using combined multiunit and Ti-based abutments within a digital workflow for full-mouth fixed partial denture rehabilitation.

Materials and Methods: A partially edentulous 55-year-old female patient was referred to our clinic with malpositioned maxillary implants, limited mouth clearance, low bone volume, and proximity to anatomical structures that prevented ideal implant placement. Screw-retained implant supported fixed partial dentures (ISFPD) has been desired to solve malposition implants path-of-insertion problems with the advantages of retrievability. The maxillary ISFPD has been consist of two segments that the long-span segment designed over the straight and °17 angled multi-unit prefabricated abutments and remaining part designed over ti-based abutments to enhance mechanical stability. The mandibular ISFPD was designed with ti-based abutments and remaining teeth also restored with FPDs. All impressions and occlusal records were obtained using a digital intra-oral scanner with scan-bodies and separated wax rim. After design, 3D printed try-in restorations were evaluated intraorally and permanent FPDs has been fabricated as veneered metal frameworks.

Results: Treatment was completed without complication and satisfactory functional and aesthetic outcomes has been observed during 6 months follow-up.

Conclusions: Combined multiunit and Ti-based abutments with digital workflow provide a predictable solution for rehabilitation of malpositioned implants.

Keywords: Malpositioned implants, digital workflow, multiunit abutment, Ti-based abutment, full-mouth fixed partial denture.

POSTER PRESENTATION

PP.216

CONVERSION OF AN IMMEDIATE COMPLETE DENTURE INTO A PROVISIONAL IMPLANT - SUPPORTED FIXED RESTORATION IN A PATIENT REHABILITATED USING THE ALL-ON-4® CONCEPT

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Objective: Patients rehabilitated using the All-on-4® concept require several months after implant placement before fabrication of the definitive restoration. During this healing period, a screw-retained provisional fixed restoration represents the standard treatment option. However, patients wearing immediate complete dentures may undergo a more cost-effective treatment approach. The aim of this report was to present the conversion of an existing immediate complete denture into a screw-retained provisional implant-supported fixed restoration in a patient rehabilitated using the All-on-4® concept.
Case Report: A 46-year-old male patient presented for provisional rehabilitation following implant placement using the All-on-4® concept. After tooth extraction, the patient had been wearing an immediate complete denture. Following implant placement, the existing denture was converted into a screw-retained provisional implant-supported fixed restoration. Temporary abutments were connected to the multi-unit abutments, perforations were created in the denture to allow abutment emergence through the openings, while soft tissues were isolated using a rubber dam. The space between the denture base and abutments was filled with autopolymerizing acrylic resin, with cotton pellets placed in the screw channels to prevent resin penetration. After polymerization, the prosthesis with abutments was removed, reduced by removing the palatal portion and teeth distal to the second premolars, followed by finishing and polishing. Despite esthetic limitations due to prior wear, this restorative solution provided satisfactory stability and comfort.

Conclusions: Conversion of an immediate complete denture into a screw-retained provisional implant-supported fixed restoration represents a cost-effective and functionally satisfactory treatment option in patients rehabilitated using the All-on-4® concept.

Keywords: All-on-4®, Immediate complete denture, Implants, Provisional restoration

POSTER PRESENTATION

PP.217

CORRECTION OF UNFAVORABLE IMPLANT ANGULATION BY FABRICATION OF A SCREW - RETAINED SINGLE CROWN ON AN ANGLED ABUTMENT

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Objective: Correct three-dimensional implant positioning is essential for achieving optimal esthetic outcomes in the anterior maxilla. However, unfavorable implant angulation may result in a screw access channel emerging on the vestibular surface, thereby compromising the final esthetics of the restoration. The aim of this report was to present a clinical solution for the fabrication of a screw-retained monolithic ceramic crown using an angled abutment in a case where the implant screw access would otherwise emerge vestibular.
Case Report: A 40-year-old female patient presented for prosthetic rehabilitation of a previously placed implant in the regio 23. Radiographic and clinical evaluation revealed that the implant had been positioned with excessive vestibular angulation, resulting in a screw access trajectory directed toward the vestibular surface. To correct the prosthetic axis and reposition the screw access palatal, an angled abutment was selected. A digital workflow was applied. After placement of a compatible IPD scan body for the Astra Tech OsseoSpeed implant system, the implant position was recorded using a Primescan (Dentsply Sirona) intraoral scanner. In the software, an IPD angled abutment was designed to compensate for the implant inclination. A screw-retained monolithic zirconia crown was then fabricated over the customized abutment. The restoration was characterized and glazed to achieve optimal esthetics and was subsequently delivered.

Conclusions: The use of an angled abutment combined with a screw-retained monolithic zirconia crown represents a favorable treatment approach in cases of unfavorable implant angulation in the anterior region, allowing preservation of both mechanical stability and natural appearance.

Keywords: Angled abutment, Digital workflow, Monolithic zirconia, Screw-retained crown

POSTER PRESENTATION

PP.218

REHABILITATION OF FRACTURED AND DISCOLORED MAXILLARY CENTRAL INCISORS USING CUT-BACK TECHNIQUE

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Objective: The primary goal of contemporary prosthodontics is to achieve an optimal balance between functional performance and esthetic outcomes of dental restorations, which is increasingly facilitated by advancements in dental materials and digital fabrication technologies. The aim of this report was to present a restorative approach for the rehabilitation of fractured and discolored maxillary central incisors using the cut-back technique, combining a zirconia substructure for mechanical stability with veneering feldspathic porcelain to achieve superior esthetics.
Case Report: A 20-year-old male patient presented for rehabilitation of both maxillary central incisors. Clinical and radiographic examinations revealed a coronal fracture of the left central incisor and discoloration of the right central incisor, with both teeth previously endodontically treated. A cast metal post and core was fabricated for the left incisor, while a fiber-reinforced composite post was selected for the right incisor. After cementation, both teeth were prepared according to ceramic restoration guidelines, followed by acquisition of a digital impression. The crowns were initially designed to full anatomical morphology, after which vestibular and incisal reduction was performed to create space for veneering material. Zirconia substructures were fabricated and evaluated during clinical try-in, then the final morphology and esthetics were achieved through layering of feldspathic porcelain. After verification of esthetics and occlusion, the restorations were glazed and cemented using a resin-modified glass-ionomer cement.

Conclusions: The cut-back fabrication technique, combining a mechanically stable zirconia substructure with esthetic feldspathic porcelain veneering, represents a predictable clinical solution for anterior rehabilitation, ensuring both functional and esthetic requirements.

Keywords: Central incisors, Cut-back technique, Esthetic restoration, Zirconia

POSTER PRESENTATION

PP.219

SINGLE-STAGE REHABILITATION WITH TOOTH- AND IMPLANT-SUPPORTED METAL–CERAMIC FIXED PROSTHESES IN PATIENTS WITH OCCLUSAL VERTICAL DIMENSION LOSS WITH OUT SIGNS OF TMD: TWO CASES

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Introduction: Loss of occlusal vertical dimension (OVD) is a complex clinical condition that may develop as a result of advanced tooth wear and posterior support loss, leading to functional and esthetic problems. In conventional prosthetic approaches, increasing the OVD is generally planned gradually using provisional restorations to minimize adaptation issues. However, in carefully selected patients without signs of temporomandibular disorders (TMD), a single-stage increase may represent an alternative treatment option, allowing rehabilitation in a shorter period.

Objective: The aim of this presentation is to report tooth- and implant-supported fixed prosthetic rehabilitation performed with a single-stage 3 mm increase in OVD in patients without signs of TMD. Case Report: Two middle-aged patients presenting with significant OVD loss were evaluated through comprehensive clinical and functional analyses, revealing approximately 3 mm of vertical dimension reduction. Based on centric relation records, a single-stage increase was planned. Posterior edentulous areas were restored with implant-supported prostheses, and necessary endodontic and conservative procedures were performed on salvageable teeth. Tooth- and implant-supported metal–ceramic fixed prostheses were delivered, and occlusal adjustment was completed to establish stable posterior contacts and controlled anterior guidance.

Results: During a six-month follow-up, no signs of TMD, muscle tenderness, or functional adaptation problems were observed. Improvements in esthetics and masticatory function were achieved in both cases.

Conclusions: With appropriate case selection and detailed occlusal analysis, a single-stage 3 mm increase in OVD may be a safe and predictable treatment approach in patients without TMD signs.

Keywords: Reduced occlusal vertical dimension; metal–ceramic restorations; implant-supported dental prostheses.

POSTER PRESENTATION

PP.220

EFFECTS OF BRUXISM ON DENTAL IMPLANT – SUPPORTED PROSTHESIS A LITERATURE REVIEW

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Introduction: In modern dentistry, dental implants are considered a reliable approach to restore the function and aesthetics of edentulous areas. Bruxism, on the other hand, is a well-known parafunctional activity that leads to increased occlusal loads and causes tooth wear. Given that there is a variety of contraindications limiting the use of implants, the question is raised whether bruxism consists one of them.

Objective: The purpose of this literature review was to discuss the effects of bruxism on dental implant - supported prosthesis.

Materials and Methods: Extensive research of the international literature was conducted using databases, such as PubMed, with the keywords “implants”, “bruxism”, “survival”, “indications” and “contraindications”.

Results: Bruxism is often considered a contraindication for implant treatment, although the evidence for this is usually based on clinical experience only. The main finding of the present review was that probable bruxers presented a significantly higher risk of mechanical complications of both dental implants and their supported prosthesis than non-bruxers. On the contrary, bruxism is unlikely to be a risk factor for biological complications around dental implants.

Conclusions: It is apparent that the real effect of bruxing habits on the osseointegration and survival of dental implants is still not well established. Specific protocols should be implemented that mitigate the harmful effects of bruxism and thus ensure longevity and success for the implant - supported prosthesis. A hard stabilization splint for nightly use contributes to optimally distributing and vertically redirecting forces that go with nocturnal teeth grinding and clenching.

POSTER PRESENTATION

PP.221

RESTORATION OF FUNCTION AND ESTHETICS WITH IMMEDIATE IMPLANT PLACEMENT AND LOADING: A CASE REPORT

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Introduction: Immediate implant placement and loading protocols are widely used in contemporary implant dentistry because they shorten treatment time and allow functional and esthetic demands to be addressed simultaneously. The success of this approach depends on proper patient selection, adequate bone volume, accurate surgical and prosthetic planning, and achievement of sufficient primary stability.

Objective: The aim of this case report is to present the surgical and prosthetic management of an immediate implant placement and loading protocol in full-arch rehabilitation.

Materials and Methods: A 51-year-old systemically healthy female patient was admitted to our clinic with functional and esthetic complaints in the maxilla and mandible. Clinical and radiographic examinations revealed that the existing teeth had a poor prognosis. Following atraumatic tooth extractions, immediate implants were placed in sites with sufficient bone volume. Because adequate primary stability was achieved, immediate loading was performed in the same session with provisional fixed implant-supported restorations. After a three-month healing period, osseointegration was confirmed clinically and radiographically. Definitive impressions were then made using an open-tray impression technique and addition silicone impression material, and metal-ceramic fixed prostheses were fabricated and delivered to the patient.

Conclusions: In this case, the immediate implant placement and loading protocol was successfully performed, and osseointegration was confirmed clinically and radiographically at the end of the healing period. With the delivery of the definitive prosthetic restorations, the patient's functional and esthetic needs were successfully met.
Discussion Immediate implant placement and loading is an effective treatment approach that can shorten treatment time and provide early restoration of function and esthetics in appropriately selected cases. However, the success of this protocol depends on achieving adequate primary stability, careful control of occlusal forces, and precise surgical-prosthetic planning. The present case demonstrates that, with proper case selection, immediate loading can be a successful option in full-arch rehabilitation.

POSTER PRESENTATION

PP.222

GUIDED IMPLANT SURGERY AND IMMEDIATE LOADING WITH A 3D-PRINTED PROVISIONAL CROWN IN THE MAXILLARY LATERAL INCISOR REGION

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Introduction: Implant positioning is critical for success of restoration in the anterior maxillary region where the alveolar bone is often thin. Guided implant surgery allows preoperative planning the position of the implant, crown, and screw access hole, thereby improving prosthetically driven implant placement. In the esthetic zone, healing after the implant placement without a provisional crown may present difficulties such as compromised soft-tissue contouring, esthetics and function. In this case report, gingival papilla preservation after the guided immediate implant placement followed by a digitally designed immediate loaded provisional restoration was presented.

Case Presentation: A 44-year-old female patient presented to the clinic with the complaint of mobile cast post-crown restoration on tooth #12. Remaining tooth structure was insufficient and extraction was planned. Alveolar bone was found suitable for implant placement after dental volumetric tomography (DVT) evaluation. Digital impression was obtained by TRIOS5 intraoral scanner (3Shape, Copenhagen, Denmark) and images were matched with DVT. Prior to extraction, a surgical guide and screw-retained provisional restoration with palatally positioned screw access channel was digitally designed by DentalCad software (exocad GmbH, Darmstadt, Germany). Provisional restoration was fabricated using ArmaResin temporary crown resin (ArmaDental, İstanbul, Türkiye) with Asiga Ultra 3D printer (Asiga, Sydney, Australia). Using the surgical guide, parallel implant (Nobel Biocare, Zurich, Switzerland) was placed in the region of tooth #12 immediately after the extraction. Primary stability was achieved with insertion torque of 30 N. The provisional restoration was screwed and successfully maintained the planned gingival architecture of the natural tooth. Occlusal contacts were completely eliminated to avoid functional loading during all excursive movements. Regular control sessions were done for 3 months. Final porcelain laminate veneers for #14, #13, #11-#23 and screw-retained porcelain fused zirconia crown for #12 were delivered to patient.

Conclusions: Guided implant surgery enables optimal implant positioning and allows for the fabrication of proper provisional restorations compatible with immediate loading protocols, preventing esthetic and functional problems following the extraction and preserving the gingival papilla.

Keywords: 3D-printing, guided implant placement, immediate implant loading, papilla preservation, provisional.

POSTER PRESENTATION

PP.223

POOR ORAL HYGIENE PATIENT'S REHABILITATION USING TORONTO BRIDGE: A CASE REPORT

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Introduction: Nowadays, implant-supported prostheses are increasingly used in both completely and partially edentulous patients. While implant-supported prosthesis planning provides better stability, retention, and function in others. Toronto bridges, in particular, offer successful results in achieving aesthetics in cases where the screw entry path poses an aesthetic problem due to the implant angle, in addition to the advantages of conventional implant-supported prostheses.

Case Report: A 55-year-old patient presented to our clinic with a diagnosis of poor oral hygiene, requiring the extraction of all upper and lower teeth. Periodontal treatment was performed. After extractions, three-month waiting period was observed for bone and soft tissue healing. Six implants were placed in the upper jaw, and one implant each in the lower jaw, positioned between the canine and lateral teeth. In the prosthetic phase, a hybrid prosthesis was planned due to resorption of the upper jaw bone and vertical and horizontal bone loss. Additionally, the angled placement of the implants meant that the screw entry pathway would be aesthetically unacceptable in the vestibule; therefore, a Toronto bridge was planned. Implant-supported removable full dentures were prepared for the lower jaw.

Discussion and Conclusion

The patient, who had periodontal bone loss and tooth loss due to poor oral hygiene, had their oral hygiene and aesthetic and functional needs met with implants.

Keywords: Toronto Bridge, Implant supported proshtesis, Poor Oral Hygiene

POSTER PRESENTATION

PP.224

DIGITAL WORKFLOWS IN OBTURATOR PROSTHESIS FABRICATION: FROM DATA ACQUISITION TO PROSTHESIS MANUFACTURING

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Introduction: Obturator prostheses play a critical role in restoring speech, swallowing, mastication, and facial support in patients with maxillary defects following tumor resection, trauma, or congenital anomalies. Conventional fabrication techniques remain technique-sensitive and require multiple clinical and laboratory stages. Advances in digital dentistry have introduced new possibilities for improving accuracy, reproducibility, and efficiency in maxillofacial prosthetic rehabilitation.

Objective: To map the current evidence on digital workflows used in obturator prosthesis fabrication and evaluate their clinical applications, benefits, and limitations.

Materials and Methods: A scoping review was conducted using PubMed, Cochrane, and Scopus databases. Search terms included “digital obturator”, “CAD/CAM obturator”, “3D printed obturator”, “digital maxillofacial prosthesis”, and “additive manufacturing obturator”. Clinical studies, technical reports, and case series describing digital fabrication of surgical, interim, and definitive obturator prostheses were included.

Results: The identified literature is predominantly composed of technical reports and case series, with limited prospective clinical studies. Most digital workflows follow three main stages: digital data acquisition through intraoral scanning and/or CBCT imaging, computer-aided design of the prosthesis and hollow bulb structures, and fabrication using additive manufacturing or milling procedures. Reported advantages include improved reproducibility, reduced chairside time, and the possibility of fabricating lightweight hollow obturators. Some studies also report improved patient comfort, speech outcomes, and overall satisfaction. However, the evidence remains heterogeneous, with small sample sizes, variable digital protocols, and limited long-term clinical outcome data.

Conclusions: Current evidence suggests that digital technologies can enhance efficiency and reproducibility in obturator prosthesis fabrication. Nevertheless, literature remains largely descriptive, and further controlled clinical studies are needed to validate long-term outcomes and establish standardized digital workflows in maxillofacial prosthodontics.

POSTER PRESENTATION

PP.225

CONSERVATIVE PROSTHETIC MANAGEMENT OF CONGENITAL CLEFT PALATE USING A MODIFIED COMPLETE DENTURE DESIGN: A CASE REPORT

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Introduction: Congenital cleft palate may cause functional problems including hypernasal speech, esthetic concerns and compromised oral function. Prosthetic rehabilitation traditionally involves obturator prostheses that extend into the palatal defect. However, in some adult patients who have functionally adapted to the defect and do not present nasal regurgitation, less invasive prosthetic approaches may provide satisfactory functional and esthetic outcomes.

Objective: To present the conservative prosthetic rehabilitation of an adult patient with congenital cleft palate using a modified complete denture design instead of a conventional obturator prosthesis.

Materials and Methods: A 40-year-old patient with congenital cleft palate presented for prosthetic rehabilitation. Clinical examination revealed an oroantral communication related to the cleft defect; however, the patient reported no nasal leakage of liquids or solids and had functionally adapted to the condition since childhood. Instead of fabricating a bulky obturator prosthesis extending deeply into the cleft, a modified maxillary complete denture was designed. The denture base was extended slightly into the cleft margins without excessive penetration into the defect to improve phonation, esthetics and prosthesis stability. Conventional border molding procedures were performed and a functional impression was obtained using light-body elastomeric impression material.

Results: The prosthetic design improved speech clarity, lip support and prosthesis stability. The patient reported improved comfort during mastication and communication. No nasal leakage or mucosal irritation was observed during follow-up.

Conclusions: In selected cleft palate patients with functional adaptation and absence of nasal regurgitation, a modified complete denture design may represent a conservative alternative to conventional obturator prostheses, improving phonation, esthetics and oral function.

POSTER PRESENTATION

PP.226

PROSTHETIC REHABILITATION OF AN IMPLANT WITH COMPROMISED INTERNAL HEX CONFIGURATION USING A CUSTOM CAST POST-CORE: A CASE REPORT

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Introduction: Mechanical complications involving dental implants may compromise the internal connection geometry and prevent proper engagement of prosthetic components despite maintained osseointegration.

Objective: This case report describes the management of a prosthetic complication associated with an unknown implant system in the mandibular left first molar region.

Case Presentation: The patient presented with mobility of the implant-supported restoration, while clinical and radiographic evaluation confirmed the absence of peri-implantitis and implant mobility. Following removal of the prosthesis, a fractured internal hex configuration of the implant was observed, preventing reattachment of the existing restoration. To enable prosthetic rehabilitation, an alternative restorative approach was performed. An impression was obtained using vinyl polysiloxane (VPS) impression material with putty and light-body consistency (Variotime Heavy Tray Dynamix and Variotime Light Flow, Kulzer, Germany). A custom cast metal post and core was fabricated for the implant and its fit was clinically evaluated and confirmed using periapical radiography before cementation with zinc polycarboxylate cement (Adhesor Carbofine, SpofaDental a.s., Czech Republic). Subsequently, a metal-ceramic crown was fabricated and delivered over the post-core. Additionally, the crown on tooth #35 was replaced due to inadequate marginal adaptation. At the 1-year follow-up, clinical evaluation revealed stable prosthetic components and healthy peri-implant soft tissues, with no biological or mechanical complications observed.

Conclusions: This approach may provide a conservative alternative for preserving implants with compromised internal configurations.

Keywords: Dental implant, Internal hex damage, Implant complications, Cast post-core, Prosthetic rehabilitation.

POSTER PRESENTATION

PP.227

INTEGRATION OF PREDICTIVE ARTIFICIAL INTELLIGENCE MODELS IN PROSTHODONTICS: ENHANCING DIAGNOSTIC ACCURACY AND CLINICAL PROGNOSIS

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Aim: To critically assess the clinical efficacy of AI-driven systems in enhancing the accuracy of marginal fit, occlusal scheme design, and long-term prognosis of implant-supported prostheses comparison with conventional digital workflows.

Methods: A systematic analytical review of clinical trials and comparative studies (2019–2026) was conducted. The analysis focused on Convolutional Neural Networks (CNNs) for bone density assessment, Generative Adversarial Networks (GANs) for tooth morphology, and Random Forest algorithms for predicting mechanical failures in zirconia and hybrid restorations.

Results: Evidence demonstrates that AI-assisted marginal line detection achieves a 25-30% higher consistency among operators. Furthermore, AI-driven virtual articulators show superior accuracy in dynamic occlusal mapping compared to manual digital settings. Predictive models for implant success rates showed an AUC (Area Under Curve) of 0.88, significantly improving risk stratification during the planning phase.

Conclusions: AI is no longer an emerging trend but a clinical necessity for achieving high-precision results in prosthodontics. By quantifying biological and technical risks, AI-driven planning ensures superior clinical outcomes and longevity of prosthetic rehabilitations.

Keywords: Artificial Intelligence, Prosthodontics, Digital Workflow, Treatment Planning, Predictive Analytics.

POSTER PRESENTATION

PP.228

AWARENESS AND MANAGEMENT OF RESPIRATORY ARREST IN DENTAL CLINICS: A PILOT STUDY

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Introduction: Medical emergencies in dental settings are uncommon but potentially life-threatening. Prompt recognition and immediate basic life support are critical determinants of patient survival in respiratory arrest.

Objective: To evaluate the level of awareness, knowledge, and preparedness of dentists regarding the recognition and initial management of respiratory arrest in dental clinics.

Materials and Methods: A pilot survey was conducted among dentists practicing in İstanbul. The questionnaire included demographic characteristics, previous Basic Life Support (BLS) training, prior experience with arrest emergencies, knowledge of respiratory arrest recognition/management, and self-confidence levels measured using a 5-point Likert scale.

Results: A total of 100 participants completed the survey. 55% correctly identified the early signs of respiratory arrest, while 91% correctly indicated airway management as the first intervention. The proportion of participants who had received prior BLS training was 88%. Correct response rates for key knowledge items varied, with 71% correctly identifying the compression-to-ventilation ratio, 59% the primary oxygenation method, and 48% the appropriate ventilation rate.
Despite this, only 20% of participants answered all core knowledge questions correctly.

Conclusions: The findings indicate that while basic emergency training is widely reported (88%), the percentage demonstrating comprehensive and integrated knowledge of respiratory arrest management remains significantly limited at 20%. This gap highlights that existing training may not translate into complete clinical competence. Therefore, structured, hands-on, and regularly updated training programs focusing on practical integration are strongly recommended.

POSTER PRESENTATION

PP.229

BORDER MOLDING WITH THERMOPLASTIC BEADS IN SEVERELY RESORBED MANDIBULAR RIDGES

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Introduction: Severely resorbed mandibular ridges present significant challenges in achieving optimal retention and stability in complete dentures.

Objective: To present a clinical approach using thermoplastic beads for border molding in a patient with advanced mandibular ridge resorption.

Materials and Methods: An 80-year-old patient with severe mandibular ridge resorption was treated with conventional complete denture therapy. Border molding was performed using thermoplastic bead material to enhance peripheral seal and improve functional impression accuracy. The material was adapted incrementally and refined intraorally under functional movements.

Results: The use of thermoplastic beads allowed precise recording of muscle attachments and functional depth of the vestibule. Clinically, improved denture retention and stability were observed.

Conclusions: Thermoplastic bead material may be a practical alternative for border molding in severely resorbed mandibular ridges, contributing to improved prosthetic outcomes.

POSTER PRESENTATION

PP.230

FULL-MOUTH OCCLUSAL REHABILITATION AND VERTICAL DIMENSION RECONSTRUCTION USING MULTILAYER ZIRCONIA RESTORATIONS

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Introduction: Severe tooth destruction, associated with occlusal discrepancies such as anterior tete-a-tete relationship, posterior cross-bite represents a demanding prosthodontic condition. The extreme bone resorption in the edentulous areas represents loss of posterior support and further compromise not just the esthetics, but also the function. Such cases, require a comprehensive full-mouth rehabilitation in order to reestablish functional balance and long-term stability.

Objective: Presenting prosthodontic management of a 55-year-old male patient with severely compromised teeth and occlusal disharmony, treated with full-mouth rehabilitation, using multilayer zirconia crowns.

Materials and Methods: Clinical and radiographic examination revealed structurally damaged teeth, occlusal discrepancies, tete-a-tete relationship in some of the anterior, cross-bite in some of the posterior teeth and bone resorption in edentulous areas. Non-restorable teeth were extracted, the structurally damaged teeth went under endodontic treatment, followed by fiber post placement and core build-ups, in order to improve structural stability. Teeth preparation was performed, followed by intraoral digital scanning. Due to their high strength and favorable esthetic properties, multilayer zirconia crowns were chosen for the final prosthetic phase. Adhesive cementation was performed with resin composite cement, which provides enhanced retention, long-term stability and marginal integrity.

Results: Achieving a stable and functional Angle Class I occlusal scheme, correcting occlusal discrepancies, improving masticatory function and esthetics.

Conclusions: Full-mouth rehabilitation using digital approach and multilayer zirconia restorations allows predictable success in correction of occlusal discrepancies and restoration of functional and esthetic balance in patients with severely compromised dentition.

Keywords: full-mouth rehabilitation; occlusal correction; Angle Class I; multilayer zirconia

POSTER PRESENTATION

PP.231

ADHESION PROTOCOLS FOR ZIRCONIA, LITHIUM DISILICATE, AND LEUCITE CERAMICS IN PROSTHODONTICS: LITERATURE REVIEW

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Introduction: Adhesive cementation is critical for the clinical longevity of ceramic restorations. Differences in crystalline composition and chemistry among zirconia, lithium disilicate, and leucite-reinforced ceramics necessitate material-specific bonding strategies.

Objective: To evaluate evidence-based adhesion protocols for zirconia, lithium disilicate, and leucite ceramics used in fixed prosthodontic restorations.

Materials and Methods: A narrative review was conducted, synthesizing data from thirty peer-reviewed experimental studies, systematic reviews, and meta-analyses. The analysis focused on various surface conditioning modalities, including airborne-particle abrasion, hydrofluoric acid etching, silane coupling agents, 10-methacryloyloxydecyl dihydrogen phosphate (10-MDP) primers, universal adhesives, and resin cement systems. To identify clinically reliable protocols, the primary outcomes evaluated were initial bond strength values and long-term bond durability following thermocycling or artificial aging protocols.

Results: Zirconia demonstrated optimal bonding when mechanical conditioning via airborne-particle abrasion was combined with 10-MDP–containing primers or resin cements, facilitating a stable chemical interaction with the zirconium oxide surface. In contrast, silica-based ceramics, specifically lithium disilicate and leucite-reinforced materials, yielded significantly higher bond strength following selective glass-phase dissolution via hydrofluoric acid etching and silanization prior to adhesive cementation. Aging protocols confirmed improved long-term stability when conditioning was matched to ceramic microstructure.

Conclusions: Adhesion protocols in prosthodontics must be material specific. MDP-based strategies are essential for zirconia, whereas hydrofluoric acid etching and silane application remain the gold standard for silica-based ceramics. Tailored protocols enhance retention, marginal integrity, and long-term clinical performance.

POSTER PRESENTATION

PP.232

PROSTHETIC COMPLICATIONS OF MONOLITHIC AND MICRO-VENEERED ZIRCONIA RESTORATIONS ON TITANIUM BASE ABUTMENTS

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Introduction**:** Zirconia is widely used in implant prosthodontics as it presents high strength, biocompatibility, and favorable esthetics. Titanium base abutments reported to provide stable implant–prosthesis interface; although, monolithic and micro-veneered Ti-base Zirconia restorations present high survival rate, data regarding technical complications remain limited.

Objective**:** To evaluate the frequency and the type of complications in monolithic and micro-veneered implant-supported Ti-base Zirconia restorations (follow-up time > 5 years).

Materials and Methods: Search in literature was conducted using key words (Ti- base abutments, Zr crowns, complications of Ti -base Zirconia restorations). Selected restorations were categorized as single-unit, partial-arch, and complete-arch prostheses (monolithic or micro-veneered Zirconia) and technical and biological complications were investigated.

Results**:** 112 titles were included, 58 abstracts were read and 7 studies were finally included. Technical complications recorded – within mean follow-up time around 72.35 months- included chipping, veneer delamination, implant crown debonding, material fracture, and screw loosening or fracture. Survival rate exceeded 95%. Monolithic Zirconia restorations demonstrated significantly fewer technical complications compared to micro-veneered restorations. The success rate reported was 90% and 86.7% in monolithic and veneered Zirconia Ti base restorations, respectively. The most frequent complication was veneer chipping or delamination in micro-veneered prostheses. Complete-arch prostheses showed increased mechanical complications both in monolithic and micro-veneered Ti-base Zirconia restorations. Minimal biological complications were reported.

Conclusions**:** Monolithic Ti-base Zirconia compared to micro-veneered Zirconia restorations showed reduced technical complications, especially in single or partial restorations, indicating that the selection of prosthodontic materials should be personalized.

POSTER PRESENTATION

PP.233

MANAGEMENT OF A NON-RETRIEVABLE PROSTHETIC SCREW IN A CEMENT-RETAINED IMPLANT RESTORATION: A CLINICAL CASE REPORT

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Introduction: Instrument separation during root canal treatment is a significant procedural complication that may compromise canal disinfection and negatively affect treatment outcomes, particularly in teeth associated with periapical pathology. The development of various retrieval techniques has enabled conservative management of such cases.

Objective: The aim of this study is to present the clinical management of two cases with separated instruments located at different levels of the root canal system using different retrieval approaches.

Materials and Methods: Two cases were evaluated. In the first case, a permanent maxillary central incisor (tooth #21) with a periapical lesion exhibited a separated instrument extending along the root canal with apical extrusion. The instrument was first removed using the Masserann kit, followed by EDTA-assisted activation. In the second case, a permanent tooth with a periapical lesion presented with a separated instrument located in the middle–apical third of the canal. After establishing a platform, ultrasonic tips were used, and EDTA activation facilitated successful removal of the instrument. In both cases, root canals were subsequently disinfected and obturated.

Results: In both cases, the separated instruments were successfully removed without procedural complications. Adequate canal disinfection and obturation were achieved, and the teeth remained asymptomatic during the follow-up period.

Conclusions: Successful removal of separated instruments depends not only on the clinician’s experience but also on the appropriate selection of retrieval techniques. Ongoing technological advancements and newly developed methods in dentistry contribute to predictable and successful outcomes in the management of such challenging cases.

Keywords: Separated instrument, Masserann kit, Ultrasonic technique, EDTA activation, Endodontics.

POSTER PRESENTATION

PP.234

PROSTHETIC REHABILITATION OF AN ARAMANY CLASS I MAXILLARY DEFECT FOLLOWING HEMIMAXILLECTOMY FOR FIBROUS DYSPLASIA WITH A DEFINITIVE OBTURATOR: A CASE REPORT

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Introduction: Fibrous dysplasia is a benign fibro-osseous disorder in which normal bone is replaced by fibrous tissue and immature woven bone. When it involves the maxillofacial region, surgical resection may create acquired maxillary defects associated with hypernasal speech, nasal regurgitation, impaired mastication, and esthetic compromise.

Case Description: A 32-year-old male patient was referred to the Department of Prosthodontics after right hemimaxillectomy performed for fibrous dysplasia involving the right maxilla and orbital floor. Clinical examination revealed a unilateral maxillary defect compatible with Aramany Class I. The remaining dentition included the maxillary left central incisor and all teeth on the left maxillary segment, while all mandibular teeth were present. The patient complained of difficulty in mastication, hypernasal speech, nasal leakage during swallowing, and reduced oral comfort.

Management: After clinical and radiographic evaluation, a definitive obturator prosthesis was planned to restore separation between the oral and nasal cavities, improve speech and swallowing, and provide adequate retention and stability. Impression procedures, jaw relation records, framework design based on Aramany Class I biomechanical principles, and prosthetic fabrication were completed. Special attention was paid to maximizing support from the remaining teeth and achieving cross-arch stabilization.

Keywords: and

Conclusions: Following insertion, the definitive obturator improved speech, swallowing, mastication, and overall comfort. Nasal regurgitation was reduced, and the patient reported satisfaction with function and prosthesis stability. Within the limitations of a single case, definitive obturator therapy appears to be an effective treatment option for prosthetic rehabilitation of Aramany Class I maxillary defects after hemimaxillectomy due to fibrous dysplasia.

fibrous dysplasia, hemimaxillectomy, obturator, Aramany Class I, maxillofacial prosthodontics

POSTER PRESENTATION

PP.235

ANALOG AND DIGITAL METHODS FOR FABRICATING MULTI-PIECE POST-AND-CORE RESTORATIONS

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Introduction: For the restoration of endodontically treated posterior teeth with extensive loss of tooth structure and divergent roots, the indirect technique of fabricating multi-unit post-and-core restorations is indicated.

Aim: The aim of this literature review is to present the analog and digital methods for the indirect fabrication of multi-piece post-and-core restorations.

Materials and Methods: A literature search was performed in PubMed and Scopus using the keywords “two-piece post and core” and “digitally fabricated post and core” to identify relevant studies.

Results: The indirect fabrication of multi-unit post-and-core restorations can be performed using either analog or digital methods. The analog technique involves conventional impression taking of the root canals, creation of a gypsum model, fabrication of the multiple segments of the core, casting, and their simultaneous intraoral cementation. With advances in digital technology, it is possible to directly scan the root canals with an intraoral scanner to depths of up to 8 mm, or to scan an analog impression for deeper canals using a laboratory extraoral scanner, followed by digital design of the post segments using specialized software. Based on this design, prototypes can be produced through milling or 3D printing from castable resin, which are then cast and cemented intraorally. Additionally, it is now possible to fabricate posts via CAD/CAM milling from alternative materials such as zirconia, PEEK, and composite resins.

Conclusions: Digital methods simplify and accelerate the fabrication process of multi-piece post-and-core restorations, but further studies are needed to validate their effectiveness.

POSTER PRESENTATION

PP.236

MAXILLARY FULL-ARCH IMPLANT-SUPPORTED ZIRCONIA RESTORATION WITH A TITANIUM BAR

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Introduction: Full-arch monolithic zirconia restorations offer a predictable solution for the rehabilitation of completely edentulous patients. However, in long-span applications, mechanical challenges may arise. The use of a titanium bar substructure has been proposed to enhance supportand increase the long-term reliability of these restorations.

Objective: This report describes the rehabilitation of a completely edentulous maxilla using a titanium bar combined with a monolithic zirconia superstructure for a full-arch implant-supported fixed restoration.

Materials and Methods: A 60-year-old completely edentulous female patient received four implants in positions #15, #13, #11, and #24 in the maxilla. After a six-month healing period, a provisional implant-supported prosthesis was delivered. Subsequently, intraoral digital impressions were obtained, and a titanium framework was designed and milled. The passive fit of the framework was clinically verified. An acrylic resin prototype was then fabricated to assess function, occlusion, and aesthetics. Following validation, a monolithic zirconia superstructure was milled and characterized using surface staining techniques. The restoration was tried intraorally to confirm fit and aesthetics. Finally, the zirconia superstructure was adhesively bonded to the titanium framework using a dual-cure resin cement, and the definitive prosthesis was delivered

Results: The patient reported high satisfaction with both the aesthetic and functional outcomes. No complications were observed during the one-year follow-up period.

Conclusions: Titanium-reinforced full-arch zirconia restorations constitute a reliable prosthetic solution, particularly in cases involving distal cantilevers, due to the enhanced mechanical support provided by the titanium framework. Nevertheless, further studies evaluating the long-term clinical performance of these restorations are required.

POSTER PRESENTATION

PP.237

POTENTIAL APPLICATIONS OF PLATELET-RICH FIBRIN (PRF) IN PROSTHODONTICS: A SYSTEMATIC REVIEW

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Introduction: Platelet-Rich Fibrin (PRF) is widely utilized in modern oral surgery, yet its specific efficacy in prosthodontic-driven workflows remains a subject of debate. A precise understanding of how PRF influences post-extraction tissue architecture is vital for optimizing long-term restorative outcomes.

Objective: To evaluate the clinical efficacy of PRF in extraction socket management compared to natural healing, specifically assessing alveolar dimensional stability, implications for pontic design, and success rates in immediate implant placement.

Materials and Methods: A comprehensive literature search was conducted by three independent researchers across PubMed, Embase, and Scopus databases using keywords including “PRF”, “socket”, “extractions”, “prosthodontics”, and “oral surgery”. A qualitative analysis was performed on data synthesized from relevant clinical trials .

Results: At 6 to 12 months post-extraction, PRF-treated sites showed no statistically significant reduction in alveolar bone resorption compared to natural healing. Consequently, PRF is not recommended for conventional bridge sites, where tissue shrinkage may compromise pontic esthetics and hygiene. In contrast, PRF provided significant clinical benefits during immediate implant placement, notably improving primary stability, the emergence profile, and the acceleration of both hard and soft tissue healing.

Conclusions: PRF demonstrates high clinical utility in immediate implant workflows and the preparation of "sticky bone”. However, it appears insufficient for long-term ridge preservation and is largely ineffective for optimizing sites for fixed partial dentures. Given the current scarcity of high-level evidence, these findings highlight the need for more robust, longitudinal randomized clinical trials to establish definitive protocols.

POSTER PRESENTATION

PP.238

EVALUATION OF SURFACE TOPOGRAPHY OF DIFFERENT DENTURE BASE MATERIALS AFTER LABORATORY AND CHAIRSIDE POLISHING: AN IN VITRO STUDY.

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Introduction: Contemporary manufacturing techniques including thermopolymerized PMMA (TP), CAD/CAM-milled PMMA (ML), and 3D-printed resin (3DP) produce surfaces with distinct morphological characteristics that may respond differently to polishing procedures.

Objective: To evaluate and compare the 3D-surface roughness of denture base materials fabricated using different manufacturing techniques and to investigate the effect of chairside, laboratory, and metallographic polishing protocols.

Materials and Methods: A total of 120 square specimens (15 × 15 × 5 mm) were fabricated: TP (Lucitone 199, Dentsply Sirona), 3DP (Formlabs Denture Base Resin), ML (Ivotion Base Disc, Ivoclar). Specimens were divided into four polishing subgroups (n=10): chairside rubber polishing (5 N, 5,000 rpm)(CH), laboratory polishing (pumice and paste)(LB), metallographic sequential SiC polishing (up to 4000grit)(ME) and untreated surface (UT). Surface roughness was evaluated using optical profilometry (Wyko NT1100,Veeco, Tuscon, AZ, USA,) measuring Sa, Sz, Sc, Sds, and Sdr parameters. A statistical analysis was performed using SigmaPlot 15.0, at a 95% confidence level (α = 0.05).

Results: All materials showed reduced surface roughness after polishing. The ranking in Sa parameter for all materials was (ME<LB<CH<UT), in Sz: for TP, 3DP: (LB<ME<CH<UT) and ML (ME<LB<CH<UT), in Sdr for TP:(LB<CH<ME<UT), 3DP:(LB<ME<CH<UT), ML:(ME<CH<LB<UT), in Sc for TP and 3DP:(LB<ME<CH<UT) and ML:(ME<LB<CH<UT), in Sds for TP:(CH<LB<ME<UT), 3DP:(LB<CH<UT<ME), ML:(ME<LB<CH<UT).

Conclusions: Both manufacturing technique and polishing protocol significantly influence surface roughness.

POSTER PRESENTATION

PP.239

ACTION OF CHLORHEXIDINE MOUTHWASH ON GINGIVAL HEALTH IN ORTHODONTIC PATIENTS WITH FIXED APPLIANCES

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Aim: The main objective of this study is to determine the impact of chlorhexidine on the condition of gingival tissue in patients with fixed orthodontic therapy.

Materials and Methods: The study was conducted on 40 healthy subjects, 13 to 18 years. They were divided into two groups, 20 subjects who brushed their teeth and rinsed their mouth with 0.09% chlorhexidine, twice a day and 20 subjects who only brushed their teeth. Index values were determined at baseline, 10 days and 20 days after the start of the study.

Conclusions: The results showed that chlorhexidine had a significant effect on periodontal condition.The index values of plaque, gingivorrhagia and inflammation 10 days and 20 days after the use of chlorhexidine are significantly reduced in the study group compared to the control groupThe decrease in indices was more pronounced 20 days after the start of the examination compared to their values in the period before the start and 10 days after the start of the examination.There are significant differences in the study group between all three periods, while in the control group these differences are insignificant.

POSTER PRESENTATION

PP.240

EVALUATION OF ORAL HYGIENE IN CHILDREN AND ADOLESCENTS WITH ORTHODONTIC APPLIANCES: A SURVEY-BASED STUDY

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Introduction: Orthodontic treatment with fixed and removable appliances is increasingly common among children and adolescents. The presence of orthodontic appliances creates plaque-retentive areas, increasing the risk of dental caries, gingivitis, and enamel demineralization (white spot lesions). Maintaining adequate oral hygiene during orthodontic treatment represents both a clinical and an educational challenge.

Objective: To evaluate the level of knowledge, attitudes, and oral hygiene practices among children and adolescents undergoing orthodontic treatment, and to analyze the relationship between oral hygiene habits and the occurrence of oral health problems.

Materials and Methods: This study was designed as a cross-sectional study. A total of 53 patients aged 10–18 years undergoing orthodontic treatment were included, comprising 36 females and 17 males. The mean age of the participants was 14.2 ± 2.3 years.
Data were collected using a structured questionnaire that included questions on toothbrushing frequency, use of auxiliary oral hygiene aids (interdental brushes, dental floss, fluoride mouthwash), routine dental visits, and the presence of gingival symptoms. Statistical analysis was performed using SPSS software (IBM Corp., Armonk, NY, USA). Descriptive statistics, the Chi-square test, and correlation analysis were applied, with the level of significance set at $p < 0.05$.

Results: A statistically significant association was observed between gender and oral hygiene status ($\chi^2(1)=6.48$, $p=0.01$). Good oral hygiene was reported in 26 out of 32 females (81.3%), compared to 10 out of 21 males (47.6%). Poor oral hygiene was more prevalent among males (52.4%) than females (18.7%).
These findings indicate that female patients demonstrated significantly better oral hygiene practices, including regular tooth brushing and use of interdental brushes, compared to male patients.

Conclusions: Although the majority of patients reported regular toothbrushing, the use of additional oral hygiene aids remains insufficient. Continuous education and professional monitoring are essential for improving oral health during orthodontic treatment.

Keywords: oral hygiene, orthodontic appliances, children, adolescents

POSTER PRESENTATION

PP.241

PRIMARY SCHOOL STAFF KNOWLEDGE OF DENTAL INJURIES

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Introductions: Sports-related dental injuries represent a significant health concern in children.

Objective: To assess primary school staff in Podgorica regarding their knowledge of dental injuries and readiness to provide appropriate first aid.

Materials and Methods: A cross-sectional study was conducted using an anonymous 12-item questionnaire. General questions collected demographic data (gender, age, education), while specific questions focused on first aid procedures for dental trauma. A total of 63 respondents participated. Data were analyzed descriptively (frequencies, percentages). Individual scores were summed and presented per item.

Results: Most respondents were female, held a university degree, and were aged 35–45 years. Only 12 respondents (19%) had formal first aid training. The majority recognized dental injuries as emergencies: 44 respondents (69.8%) were aware of the urgency, and 45 (71.4%) understood the importance of time for prognosis. Participants could generally distinguish between fractured and avulsed teeth. In crown fractures, 50 respondents (79.3%) would preserve the fragment. In tooth avulsion, 52 respondents (82.5%) would first control bleeding, while only 3 (4.7%) would search, rinse, and attempt immediate replantation. The avulsed tooth was transported in tissue or sterile gauze by 61 respondents (96.8%), and only 2 (3.2%) used milk. All believed replantation should be performed by a dentist, and 57 (90.4%) rated their knowledge as insufficient.

Conclusions: Primary school staff showed limited knowledge and low confidence in providing first aid for dental injuries. Targeted educational programs are needed to improve first aid response in dental trauma.

POSTER PRESENTATION

PP.242

GENDER DIFFERENCES IN THE PREVALENCE OF DENTAL ANOMALIES IN CHILDREN

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Dental anomalies represent an important aspect of oral health in children and may affect dental function, aesthetics, and the normal development of the stomatognathic system. Numerous studies have reported the prevalence of dental anomalies in different populations; however, the findings are often inconsistent due to differences in ethnicity, diagnostic criteria, and examination methods.

Aim: The aim of this study was to evaluate the prevalence of dental anomalies and to analyze possible gender differences in their occurrence among children.

Materials and Methods: The study included 155 participants of both genders (77 males and 78 females) aged 10–14 years who underwent systematic clinical examinations. The frequency of dental anomalies related to tooth shape, tooth size, tooth form, and tooth color was recorded according to the basic criteria for oral health assessment recommended by the World Health Organization (WHO). The obtained data were analyzed using descriptive statistical methods. The t-test was applied to evaluate statistical significance, while differences between groups were tested using the Pearson Chi-square (χ^2) test, with $p < 0.05$ considered statistically significant.

Results: The distribution of the examined sample showed an almost equal number of participants, with 77 (46.52%) males and 78 (48.48%) females presenting at least one of the investigated dental anomalies. Statistical analysis did not reveal significant differences between male and female participants ($p > 0.05$).

Conclusions: The results of this study highlight the importance of early dental examinations in children and emphasize the need for careful clinical assessment by dental professionals in order to ensure early detection and appropriate management of dental anomalies.

POSTER PRESENTATION

PP.243

MANAGEMENT STRATEGIES OF HYPERSENSITIVITY IN MIH TEETH

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Introduction: Molar incisor hypomineralization (MIH) is a developmental defect of enamel of systemic origin, affecting one or more first permanent molars and permanent incisors. The hypomineralized enamel is porous and fragile, and affected teeth often present with marked hypersensitivity, resulting in discomfort during function and oral hygiene procedures.

Objective: The objective of this review is to summarize and evaluate current evidence on the management of hypersensitivity in teeth affected by molar incisor hypomineralization.

Materials and Methods: A review of the international literature was conducted using the electronic databases PubMed, Google Scholar, and the Cochrane Library. Specific keywords were used.

Results: The methods for managing MIH-related hypersensitivity can be classified into preventive/remineralisation strategies (fluoride varnish, CPP-ACP, desensitising agents,), micro-invasive surface-sealing techniques (fissure sealants, dentin bonding agents, resin infiltration/ICON), restorative or protective coverage options (composite or glass-hybrid restorations and preformed metal crowns), and adjunctive pain-modulation therapies such as photobiomodulation and behavioural management. Silver diamine fluoride have shown approximately 20–55% reduction in hypersensitivity, while micro-invasive techniques including resin infiltration (ICON) and fissure sealants report about 40–70% and 30–60% symptom reduction, respectively. Preformed metal crowns provide the most predictable control, achieving up to 80–95% resolution of symptoms through full coverage. Combined therapeutic approaches have been reported to achieve high rates of hypersensitivity control, compared to single-modality treatment

Conclusions: In conclusion, multiple therapeutic approaches effectively reduce hypersensitivity in MIH-affected teeth. Treatment selection should be individualized, considering the severity of the hypomineralization, the patient comfort, and the clinical response. Combination strategies show promising enhanced outcomes.

POSTER PRESENTATION

PP.244

ASSESSMENT OF DENTAL STUDENTS' KNOWLEDGE LEVEL REGARDING THE RELATIONSHIP BETWEEN NUTRITION AND ORAL HEALTH

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Introduction: The nutrients have significant effects on both general health and oral health. Therefore, it is important for dentists to know the effects of nutrition and dietary habits on oral health.

Objective: This study aimed to evaluate the knowledge levels of students studying at Recep Tayyip Erdoğan University Faculty of Dentistry regarding the relationship between nutrition and oral health.

Materials and Methods: A 13-question questionnaire evaluating the relationship between nutrition and oral health was administered to 98 dental students in their 3rd, 4th, and 5th years. Data was collected online via Google Forms.

Results: Participants had the highest level of knowledge regarding the role of calcium in alveolar bone density (96.9%) and the relationship between high glycemic index food consumption and the increased risk of periodontal inflammation and tooth decay (91.8%). The highest rate of indecision was observed in questions regarding the effects of vegetarian diets (48%) and omega-3 fatty acids (51%) on oral health. The rate of correct answers to questions increased as the number of academic years progressed ($p<0.05$).

Conslusions: Our findings indicate that dental students at our faculty possess varying levels of knowledge regarding the relationship between diet and oral health. Given the role that dentists play in improving oral health and educating patients about the importance of nutrition, it is important to increase efforts to address gaps in this area within dental education. In this way, both patients and dentists will become more informed, contributing to better public health outcomes.

Keywords: dental students, knowledge level, nutrition, oral health

POSTER PRESENTATION

PP.245

BEYOND TRADITIONAL FLUORIDE: THE EXPANDING WORLD OF MODERN TOOTHPASTE TECHNOLOGIES

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Introduction: Developments in preventive dentistry have led to an extensive diversity of toothpaste formulations, driven by evolving technologies, bioactive compounds, and growing scientific interest in targeted prevention and personalized patient care.

Objective: The objective of this review is to summarize active ingredients in modern toothpastes and assess their clinical applications.

Materials and Methods: A review of the international literature was conducted using the electronic databases PubMed, Google Scholar, and the Cochrane Library. Specific keywords were used.

Results: Modern toothpastes can be classified according to their active ingredients. Fluoride-based toothpaste is the most commonly used for caries prevention, along with the recently developed CPP-ACP and hydroxyapatite formulations, enhancing mineral deposition and repair of early enamel lesions. Anti-plaque toothpaste formulas include zinc salts and/or stannous fluoride, inhibiting bacterial biofilm formation, while anti-calculus toothpastes contain pyrophosphates, which prevent mineralization of dental plaque. Desensitizing toothpastes use potassium nitrate and/or arginine to reduce dentin hypersensitivity through nerve desensitization or tubule occlusion respectively. Whitening toothpastes contain hydrated silica or blue covarine to remove stains and improve optical tooth appearance. Zinc compounds that neutralize the volatile sulfur compounds responsible for malodor are used in anti-halitosis toothpastes. There are also some natural formulations containing herbal or plant-derived agents with possible positive effects for the oral health.

Conclusions: The growing range of modern toothpaste formulations highlights the importance of understanding active ingredients and their mechanisms, enabling clinicians to make evidence-based decisions and deliver personalized, effective preventive oral care strategies.

POSTER PRESENTATION

PP.246

THE SYNERGISTIC EFFICACY OF SELF-ASSEMBLING PEPTIDES (P11-4) AND NANO-HYDROXY APATITE IN THE MANAGEMENT OF EARLY CARIOUS LESIONS

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Title: The Synergistic Efficacy of Self-Assembling Peptides (P11-4) and Nano-Hydroxyapatite in the Management of Early Carious Lesions

Introduction: As dentistry shifts towards minimally invasive treatments, treating White Spot Lesions often caused by orthodontic braces remains a challenge. Despite the historical prevalence of fluoride treatments, these act primarily superficially which often limits the ability to achieve deep structural remineralization of subsurface lesions. Consequently, Self-Assembling Peptides (P11-4) and Nano-hydroxyapatite (nHAp) emerge as a synergistic, cutting-edge solution for deep enamel restoration.

Objective: This literature review aims to evaluate the potential efficacy of Self-Assembling Peptides (primarily P11-4) used in conjunction with Nano-hydroxyapatite in treating carious lesions and restoring the mechanical and aesthetic characteristics of hard dental tissues.

Materials and Methods: An extensive search of the international literature was conducted using databases (PubMed, Scopus) with the key words self-assembling peptides, (nano)-hydroxyapatite which resulted in various in vitro and in vivo studies, randomized controlled trials and network meta-analyses that were examined.

Results: Contrary to the traditional fluoride approach, P11-4 promises a more integrated regeneration of hard tissues as it self-assembles within the acidic lesion into a 3D biomimetic scaffold, while nHAp provides the essential calcium-phosphate supply. Furthermore, this method may also reduce dentin sensitivity by filling dentin tubules, protecting the dentin hybrid layer and simultaneously offer a mild whitening effect.

Conclusions: The Peptide-HAp synergy demonstrates promising clinical potential compared to traditional fluoride treatments. By combining a biomimetic scaffold with a rich mineral source, it provides a non-invasive solution for treating carious lesions, particularly in orthodontic care. Nevertheless, future long-term clinical studies on high caries risk patients are necessary to establish standardized therapeutic protocols.

POSTER PRESENTATION

PP.247

ICON RESIN INFILTRATION FOR THE MANAGEMENT OF WHITE SPOT LESIONS IN ANTERIOR TEETH: A CASE SERIES

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Introduction: White spot lesions (WSLs) are subsurface enamel demineralizations that appear as milky-white opacities due to altered light refraction. Their etiology is multifactorial, commonly associated with poor oral hygiene during orthodontic treatment, fluorosis, or incipient caries. Icon Vestibular utilizes resin infiltration technology to arrest the progression of these lesions. By penetrating the enamel porosities with a low-viscosity resin, Icon Vestibular bridges the refractive index gap between the lesion and sound enamel, effectively masking the white spots.

Objective: The purpose of this study was to evaluate the clinical efficacy of combining home bleaching with the Icon Vestibular resin infiltration system for the management of white spot lesions and the overall aesthetic improvement of the smile after a two-week whitening period.

Materials and Methods: The study sample consisted of two patients with anterior teeth presenting white spot lesions. Initially, both patients underwent a 14-day home bleaching protocol using customized trays with 16% carbamide peroxide (Ultradent Opalescence PF 16% Carbamide Peroxide). Following the bleaching phase, patients returned to the clinic for a single session of Icon Vetibular (DMG, Hamburg, Germany) resin infiltration, applied specifically to the affected tooth surfaces.

Results: At the one-month follow-up, an improvement in the aesthetic appearance of the white spot lesions was observed. The lesions appeared less noticeable and showed better integration with the surrounding tooth structure. Patients also reported increased satisfaction with their smile.

Conclusions: The synergistic application of home bleaching and Icon Vestibular resin infiltration provides a highly effective, minimally invasive approach for eliminating white spot lesions and achieving a uniform, aesthetically pleasing smile.

POSTER PRESENTATION

PP.248

BREASTFEEDING: FRIEND OR ENEMY OF CARIES?

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Introduction: Early Childhood Caries(ECC) is considered a major global public health pathogenesis that affects the oral health of preschoolers. Although breastfeeding (BF) is acknowledged for its nutritional and immunological benefits, many studies indicate a correlation with dental caries.

Aim: This study aims to synthesize and review evidence from research that associates BF with ECC. In particular, this relationship is examined with respect to duration, timing, frequency of BF, and compared with bottle/formula feeding and other confounding factors. Methods and material: Information for this review was collected from PubMed and Google Scholar, including original articles, reviews, cohort studies, cross-sectional studies and meta-analyses. A total of 30 studies were selected, all published in English in the last decade.

Results: These findings indicate that BF during the first six months serves as a protective factor, decreasing ECC prevalence by nearly 50%. However, its protective effect is attenuated when its duration exceeds 12-18 months and the risk of cavitated lesions rises by 10% for each additional month. When frequent (=>3 times/day) night-time feeding is involved, BF also increases the risk of rampant caries, as with bottle/formula feeding. In addition, several studies suggest that various confounding factors (eg, sugar intake, fluoride exposure, poor hygiene, plaque deposition) may contribute to the development of ECC.

Conclusions: BF during the first year of life works in favor of or doesn't influence babies' overall health. Its continuation beyond this time limit is linked to ECC, making dental consultation necessary for parents/ caregivers about preventive feeding practices and oral hygiene measures.

POSTER PRESENTATION

PP.249

TRANSIENT LINGUAL PAPILLITIS IN A YOUNG FEMALE: A BENIGN AND SELF-LIMITING ORAL LESION

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Introduction: Transient lingual papillitis (TLP) is a benign, self-limiting inflammatory condition characterized by transient enlargement of the fungiform papillae of the tongue. While often associated with mild discomfort, asymptomatic cases are also observed, highlighting the variable clinical presentation of this common oral finding. Although benign, its sudden onset and localized discomfort may cause concern for patients, warranting careful clinical evaluation to rule out other oral pathologies.

Aim: The aim of this report is to present a case of a young female patient who developed transient lingual papillitis following bonding of orthodontic appliances, highlighting its possible reactive nature and benign clinical course.

RARITY OF CASE

Occurrence of transient lingual papillitis during orthodontic treatment is uncommon and such post-procedural presentations have been rarely documented in the literature.

KEY DETAILS

A 13-year-old, healthy female patient with no significant medical history presented with small, localized, non-painful papules on the anterior dorsum of the tongue that appeared shortly after bonding of orthodontic appliances. Lesions were asymptomatic, with no associated burning, dysgeusia or systemic manifestations. Clinical examination revealed transient enlargement of the fungiform papillae, consistent with a diagnosis of transient lingual papillitis, based on characteristic appearance and exclusion of other tongue pathologies.

Management: The condition was managed conservatively with reassurance, maintenance of oral hygiene and observation, leading to spontaneous resolution without need for specific treatment.

Conclusions: This case underscores the benign and self-limiting nature of transient lingual papillitis and emphasizes the importance of recognizing this condition to avoid unnecessary concern or intervention following dental procedures.

POSTER PRESENTATION

PP.250

VOLUMETRIC PROGRESSION OF UNTREATED ODONTOGENIC SINUSITIS: A LONGITUDINAL CBCT SEGMENTATION STUDY

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Introduction: Dental pathology originating from the posterior maxillary teeth, if left untreated, can progressively extend to the maxillary sinus, resulting in an inflammatory response characterized as odontogenic sinusitis. Further dissemination may involve the remaining paranasal sinuses, the orbital floor, and other critical anatomical structures beneath.

Objective: To represent the volumetric expansion in a clinical case of a two year untreated odontogenic sinusitis through comparative CBCT imaging.

Materials and Methods: A longitudinal CBCT segmentation study was performed using three CBCT scans acquired in three different timelines: initial stage, pre-operative stage, two years later, and post-operative, six months later.

Results: The initial CBCT examination revealed an odontogenic lesion associated with tooth #25, exhibiting necrotic pulp and localized mucosal thickening of the sinus. The pre-operative segmentation conducted two years subsequently demonstrated a substantial increase in lesion size, culminating in complete sinus opacification and orbital involvement. Subsequent to Caldwell-Luc surgery and orthograde root canal therapy of tooth #25, the follow-up CBCT imaging six months later confirmed the successful resolution of the pathological condition.

Conclusions: This case depicts the aggressive progression of an untreated odontogenic sinusitis and the potentially serious involvement of anatomical structures. CBCT imaging and segmentation can be considered as a useful tool for early diagnosis and proper treatment planning.

POSTER PRESENTATION

PP.251

RARE PRESENTATION OF AMELOBLASTIC FIBROMA IN THE POSTERIOR MANDIBLE: A CASE REPORT

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Introduction: Ameloblastic fibroma is a rare benign mixed odontogenic tumour composed of odontogenic epithelium and ectomesenchymal tissue. It typically presents as a well-defined radiolucent lesion in young individuals, most commonly in the posterior mandible.

Objective: The aim of this case report is to present the clinical, radiographic, and histopathological findings of an ameloblastic fibroma exhibiting cystic features.

Materials and Methods: A 21-year-old male patient presented with painless swelling in the right posterior mandibular region. Clinical examination demonstrated localized expansion in the right posterior mandibular region, accompanied by displacement of the mandibular third molar. Panoramic radiography revealed a well-defined unilocular radiolucent lesion in the right mandibular angle. Cone beam computed tomography (CBCT) imaging was performed to evaluate the spread of the lesion and its relationship with the cortical bone.

Results: CBCT revealed a well-defined radiolucent lesion in the right mandibular angle region, causing lingual cortical expansion with focal perforations. Following extraction of the mandibular third molar, the lesion was surgically enucleated. Histopathological examination revealed cystic structures and ameloblast-like epithelial islands within a myxoid stroma, findings consistent with ameloblastic fibroma.

Conclusions: When exhibiting cystic features, ameloblastic fibroma may closely resemble other odontogenic lesions and complicate differential diagnosis. Careful radiological evaluation combined with histopathological confirmation is essential for accurate diagnosis.

Keywords: Ameloblastic fibroma; odontogenic tumor; CBCT

POSTER PRESENTATION

PP.252

RADIATION-RELATED CARIES AFTER HEAD AND NECK RADIOTHERAPY: INCIDENCE, DOSE-RESPONSE FACTORS, AND PREVENTIVE STRATEGIES

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Introduction: Radiation-related caries is a frequent and aggressive late complication of head and neck radiotherapy, associated with hyposalivation, dietary changes, impaired oral hygiene, and direct damage to dental hard tissues. Although previous reviews have described its burden, recent evidence suggests that dose-related factors and preventive strategies require updated synthesis.

Objective: To systematically review current evidence on the incidence of radiation-related caries after head and neck radiotherapy, identify major dose-response and clinical risk factors, and summarize available preventive interventions.

Materials and Methods: A structured literature search was designed for PubMed, Scopus, and ScienceDirect using combinations of the terms “radiation-related caries,” “head and neck cancer,” “radiotherapy,” “dose,” “xerostomia,” and “prevention.” Clinical studies, prospective and retrospective cohorts, randomized trials, and systematic reviews published in English were considered. Evidence was narratively synthesized according to PRISMA principles.

Results: Available evidence confirms a substantial burden of post-radiotherapy caries. Previous systematic reviews report an incidence of approximately 29%, with higher rates observed within the first 2 years post-radiotherapy, although significant heterogeneity exists among studies. Newer studies indicate that higher radiation dose to teeth and salivary glands, xerostomia, gingival recession, and impaired oral self-care increase caries risk. Preventive evidence remains limited, but fluoride-based protocols show the most consistent benefit, while CPP-ACP and other adjunctive agents appear promising.

Conclusions: Radiation-related caries remains a major survivorship issue after head and neck radiotherapy. Current evidence supports a multifactorial, dose-sensitive etiology and reinforces the importance of individualized prevention, early dental surveillance, and rigorous fluoride-based care.

POSTER PRESENTATION

PP.253

DENTAL DEVELOPMENTAL ABNORMALITIES AFTER CHILDHOOD HEAD AND NECK RADIOTHERAPY: CLINICAL PATTERNS, RISK FACTORS, AND FOLLOW-UP NEEDS

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Introduction: Head and neck radiotherapy during childhood may disrupt odontogenesis and craniofacial growth, leading to permanent developmental abnormalities of the dentition. As survival rates in pediatric oncology continue to improve, recognition of late dental effects has become increasingly important for long-term oral health care.

Objective: To review the clinical patterns of dental developmental abnormalities observed after childhood head and neck radiotherapy, identify major treatment-related risk factors, and highlight follow-up needs relevant to dental clinicians.

Materials and Methods: A structured review of the literature was performed using PubMed, Scopus, and ScienceDirect, focusing on studies reporting dental developmental sequelae in children treated with head and neck radiotherapy for neoplastic disease. Emphasis was placed on developmental abnormalities, radiation dose, age at exposure, and long-term clinical implications.

Results: The available literature consistently reports tooth agenesis, microdontia, enamel defects, delayed eruption, and root developmental abnormalities, particularly root stunting, among survivors treated during active dental development. Higher radiation dose and younger age at treatment appear to be the most important risk factors, while combined multimodal oncologic therapy may further increase severity. These abnormalities may compromise function, esthetics, preventive care, and future restorative or orthodontic planning.

Conclusions: Childhood head and neck radiotherapy is associated with significant long-term dental developmental disturbances, especially when exposure occurs at younger ages and at higher doses. Early dental assessment, individualized recall protocols, and interdisciplinary long-term follow-up are essential to reduce complications and improve survivorship care.

POSTER PRESENTATION

PP.254

SKELETAL ANCHORAGE IN CLASS II MALOCCLUSION IN POST-PUBERTAL PATIENT

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Introduction: This paper describes the results of treatment of a Class II post-pubertal, 17 year-old patient, using a reinforced Herbst with a mandibular miniplate and miniscrews inserted in the anterior area of the palate as anchorage reinforcement.

Objective: of the treatment
The goals of the treatment were to improve chin projection and correction of skeletal Class II, improve the transverse dimension of the maxillary arch, align and level of upper and lower teeth, improve Class II canine and molar relationships, improve deep bite, flatten the lower curve of Spee, finish the occlusion and plan an appropriate retention.

Materials and Methods: Application of a hybrid maxillary expander, attached to two miniscrews inserted in the anterior palate and to first maxillary molars bands. The MiniScope Herbst appliance was attached to the hybrid palatal expander. In the mandibular symphysis, a customized miniplate, fabricated by selective laser sintering, was inserted. The Herbst appliance was attached to the lower miniplate.
Application of fixed multibrackets appliance with MBT prescription values in both arches.

Results: The full treatment lasted 28 months. The facial profile of the patient was improved and his smile's buccal corridors were reduced. Class II malocclusion correction, normal molar and canine occlusion was achieved, alignment in both arches and deep bite were corrected.

Conclusions: The undesirable side effects of Herbst therapy were successfully managed inserting miniscrews in the anterior area of the palate and a miniplate in the lower arch as reinforcement of anchorage.

POSTER PRESENTATION

PP.255

CLASS II SUBDIVISION MALOCCLUSION: A COMPARATIVE STUDY OF TWO ORTHODONTIC TECHNIQUES

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Introduction: Class II subdivision malocclusion is an asymmetric occlusal discrepancy in which a Class II molar relationship is observed on one side of the dental arch, while a Class I relationship is present on the contralateral side. This condition frequently poses considerable challenges in orthodontic treatment due to the complexity of achieving balanced occlusion and functional harmony.

Objective: The purpose of this retrospective cohort study was to compare the duration and retreatment rate of comprehensive fixed-appliance treatment when performed in conjuction with either asymmetric extractions or intermaxillary elastics in patients presenting borderline Class II subdivision.

Materials and Methods: A total of 16 patients treated with intermaxillary elastics and 16 patients who underwent three first premolars extractions, were matched based on their baseline characteristics and their malocclusion severity, implementing one-to-one (1:1) nearest-neighbor propensity score matching without replacement. Outcomes were compared using Wilcoxon signed-rank test and McNemar's test.

Results: In Group A, median treatment duration was 29 months (IQR:23.5, 36.2), while in Group B was also 29 months (IQR:24, 33.5), without reaching significance (P=0.41). Regarding retreatment, in both modalities a 6.25% retreatment rate was documented, with no significant difference detected (P>0.05).

Conclusions: Findings demonstrate that both approaches result in comparable outcomes, offering clinicians the flexibility to adjust treatment strategies according to the unique needs of each patient, alongside considerations of compliance and clinical expertise.

POSTER PRESENTATION

PP.256

A MULTIDISCIPLINARY APPROACH TO ORTHODONTIC–SURGICAL TREATMENT OF DENTOFACIAL DEFORMITIES IN ADULTS

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Introduction: Dentofacial deformities in adult patients often require a combined orthodontic–surgical approach, as orthodontic treatment alone cannot correct skeletal discrepancies after the completion of craniofacial growth. Interdisciplinary collaboration between orthodontists and maxillofacial surgeons is essential to achieve stable functional and aesthetic outcomes.

Objective: To evaluate the clinical characteristics, treatment protocols, and outcomes of combined orthodontic–orthognathic surgical treatment in adult patients with dentofacial deformities.

Materials and Methods: This retrospective observational descriptive and analytical study included 74 adult patients (mean age 21.5 ± 4.9 years) treated with combined orthodontic–surgical therapy between 2019 and 2024. Inclusion criteria comprised patients over 17 years of age with skeletal malocclusions who completed pre- and post-surgical orthodontic treatment and orthognathic surgery, with complete clinical and radiographic documentation. Evaluated parameters included skeletal malocclusion type, vertical skeletal pattern, facial symmetry, type of surgical procedure, treatment motivation, and patient satisfaction. Preoperative cephalometric measurements (SNA, SNB, ANB, SN–Mand, and Palat–Mand angles) were analyzed. Statistical analysis was performed using SPSS software (version 21), applying descriptive statistics, chi-square tests for categorical variables, and ANOVA for comparison of cephalometric parameters between skeletal and vertical pattern groups, with significance set at $p < 0.05$.

Results: Skeletal Class III malocclusion was the most prevalent diagnosis (approximately 78%). Aesthetic motivation was the primary reason for seeking treatment (71.6%), particularly among female patients, without statistically significant gender differences. Bimaxillary surgery was the most frequently performed procedure, mainly in Class III cases associated with open bite and facial asymmetry. Significant differences were observed in sagittal and vertical cephalometric parameters between groups ($p < 0.001$). High levels of functional and aesthetic improvement were reported, with minimal postoperative complications.

Conclusions: Combined orthodontic–surgical treatment is a safe and effective approach for managing dentofacial deformities in adult patients, providing predictable functional and aesthetic outcomes when supported by accurate diagnosis and multidisciplinary planning.

POSTER PRESENTATION

PP.257

CLASS II DIVISION 1 TREATMENT BY USING MINISCREW ASSISTED ORTHOPEDIC CLASS II ELASTICS: A CASE REPORT.

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Introduction: In treatmenf of skeletal Class II, functional and orthopedic devices have some disadvantages such as causing discomfort, difficulty in speaking, swollowing etc. Miniscrews have been widely used as an alternative treatment modality in different types of malocclusion.

Objective: The aim of this case report is to introduce a new treatment approach and evaluate the dentoskeletal effects of miniscrew assisted orthopedic intermaxillary elastics use in a growing Class II patient.

Materials and Methods: A 13-year old skeletal and dental Class II Division 1 male patient. At the start of treatment ANB and overjet was 6° and 9 mm respectively. 0.017x0.025 inch stainless steel archwire including increased curve of spee and 25-30 degrees incisor palatinal root torque was placed in the maxilla. Crimpable hooks were fixed on the archwire beside the mesial wing of maxillary lateral incisor brackets on both sides. In the same session, miniscrews were inserted bilaterally between the mandibular second premolars and first molars. 500 g Class II elastics were immediately applied between the miniscrews and the crimpable hooks on both sides.

Results: After 6 month orthopedic Class II elastic traction, SNB increased and SNA, ANB, mandibular plane angle decreased. Maxillary molar distalization and incisor retraction was achieved. Soft tissue profile was markedly improved.

Conclusions: This new treatment modality is efficient, less invasive, easily applied and well tolerated by the patient. With one stage orthodontic treatment strategy, duration of treatment time is reduced (14 month).

POSTER PRESENTATION

PP.258

MANDIBULAR MINISCREW AND MAXILLARY OPEN COIL MECHANICS FOR MAXILLARY MOLAR DISTALIZATION: A CASE REPORT.

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Introduction: Maxillary molar distalization is commonly performed using extra and intraoral mechanics or maxillary skeletal anchorage systems. Biomechanical approaches that enhance anchorage control while minimizing side effects remain clinically valuable.

Objective: The aim of this case report is to introduce a new distalization technique utilizing mandibular miniscrews combined with open coil mechanics and Class II elastics, for correction of Class II molar relationship associated with crowding and/or vestibularly positioned canines.

Materials and Methods: A 14-year old female patient with maxillary crowding, vestibularly displaced canines and Class II molar relationship. Miniscrews were placed bilaterally in the mandibular arch between 35–36 and 45–46 and ligated to the mandibular second premolars for anchorage reinforcement. In the maxillary arch, 300 g active open coil springs were applied bilaterally between the lateral incisors and first premolars to achieve maxillary molar distalization. In the same time, Kobayashi hooks were ligated bilaterally to the maxillary lateral incisors and 150 g Class II elastics were used between mandibular first molars and maxillary lateral incisors to keep the maxillary incisors stable.

Results: After 5 months, full distalization of the maxillary molars was achieved and molar relationship improved from Class II to Class I. Adequate space was obtained for canine alignment with no anchorage loss.

Conclusions: Mandibular miniscrew supported mechanics combined with open coil activation represents an effective alternative for maxillary molar distalization in Class II patients and may shorten the duration of treatment time.

POSTER PRESENTATION

PP.259

CORRELATION BETWEEN MANDIBULAR GROWTH AND CERVICAL VERTEBRAL MATURATION: A LONGITUDINAL STUDY IN GIRLS

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Introduction: Accurate timing of orthodontic treatment depends on identifying the pubertal growth spurt. Cervical vertebral maturation, assessable on routine lateral cephalometric radiographs, offers a non-invasive indicator of skeletal maturity. Its relationship with mandibular growth, however, has been insufficiently investigated in longitudinal samples.

Objective: The aim of the present study is to evaluate the correlation between cervical vertebral maturation stages and mandibular growth velocity longitudinally and to determine the cervical stage at which peak mandibular growth occurs.

Materials and Methods: This longitudinal study included 41 untreated girls whose lateral cephalometric radiographs were analyzed at annual intervals. 21 cervical vertebral and 8 dentofacial measurements were performed. Cervical maturation stages were determined using Lamparski and Hassel criteria. Mandibular displacement velocity was calculated at each annual interval. Correlation analysis and paired t-tests were applied.

Results: Mandibular displacement velocity in girls peaked between cervical stages S2 and S3 (mean 11.5 years, 3.7 mm/year), with a total forward and downward displacement of approximately 22 mm between ages 8 and 17. Stage S3 consistently corresponded with the maximum mandibular pubertal growth spurt, S2 with the pre-peak acceleration phase, and S4 with the onset of deceleration. Growth ceased at S6.

Conclusions: Cervical vertebral maturation is a reliable indicator of mandibular growth velocity. Stage S3 marks peak pubertal growth and represents the optimal window for functional and orthopedic orthodontic interventions. Stage S6 confirms growth completion. Cervical vertebrae visible on standard cephalograms provide sufficient information on mandibular growth, without additional radiographic exposure.

POSTER PRESENTATION

PP.260

DIAGNOSIS AND PREVALENCE OF POSTERIOR CROSSBITE IN DENTAL CLINICS IN TIRANA

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Objective: The present study aimed to analyze the prevalence and diagnostic practices of posterior crossbite among orthodontic patients in Tirana, based on the perceptions and reports of orthodontists through a self-administered questionnaire.

Materials and Methods: Data were collected from 69 orthodontists and included information on prevalence, gender distribution, clinical presentation, and diagnostic methods routinely employed in their practice. Results indicated that the most common clinical form was unilateral posterior crossbite, with an average prevalence of approximately 11.3%, while gender distribution was nearly equal, with about 48.7% males and 51.3% females. Most orthodontists relied on clinical examination, study models, and anteroposterior radiographs, whereas the use of digital technologies such as CBCT and intraoral scanners remained limited. The optimal age for intervention was identified as 7–9 years, highlighting the importance of early identification and intervention during the mixed dentition phase. The study also revealed gaps in local orthodontic practice, including the absence of standardized orthodontic practice and limited adoption of modern diagnostic technologies.

Conclusions: Based on these findings, it is recommended to adopt combined diagnostic methods, implement international classification standards, develop multidisciplinary protocols, and conduct longitudinal and national epidemiological studies to improve crossbite management in Albania. This study provides a comprehensive overview of current orthodontic practice and offers clear guidance for orthodontic practice and early-career practitioners.

Keywords: intervention, orthodontic practice, orthodontic practice, orthodontic practice.

POSTER PRESENTATION

PP.261

ORTHODONTIC TREATMENT IN ADULT PATIENTS WITH STABILIZED PERIODONTAL DISEASE

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Introduction: The increasing number of adult patients seeking orthodontic treatment has strengthened the association between orthodontics and periodontology. Periodontal disease can affect both function and aesthetics, raising concerns about the safety of tooth movement in patients with reduced periodontal support.

Objective: To evaluate the safety and clinical outcomes of orthodontic treatment in patients with stabilized periodontal disease.

Results: Orthodontic treatment can be performed cautiously once periodontal conditions are stabilized. Strict plaque control and inflammation management are critical for maintaining periodontal health during treatment.

Materials and Methods: Orthodontic therapy can correct pathological tooth migration and improve occlusal function and esthetic outcomes without negatively affecting periodontal parameters. Intrusive tooth movements are safe when light forces are applied, and teeth can be moved toward or away from previously regenerated intrabony defects, potentially enhancing bone formation and improving probing depth and clinical attachment levels.

Conclusions: Overall, orthodontic treatment in adults with a stabilized periodontium can be performed safely. When planned through coordination between dental specialists, it may provide additional functional, esthetic, and periodontal benefits. Careful monitoring and cooperation are essential to ensure positive outcomes for patients undergoing orthodontic therapy after periodontal stabilization.

POSTER PRESENTATION

PP.262

ORTHODONTIC MANAGEMENT OF CONGENITALLY MISSING PERMANENT TEETH

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Introduction: Dental agenesis is one of the most common developmental anomalies in humans. It occurs as part of a genetic syndrome or as an isolated sporadic or familial finding. The most frequently targeted teeth of the permanent dentition are third molars, second mandibular premolars and maxillary lateral incisors.

Objective: To investigate how orthodontics can contribute to the treatment plan of missing teeth cases.

Materials and Methods: Four independent authors researched PubMed, Medline and Google Scholar. The terms used in the search were “Tooth agenesis”,” congenitally missing teeth” and” hypodontia”.

Results: Space opening is in general indicated for the Angle Class I malocclusions or Class III cases with concave profiles. Uprighting the roots of the teeth adjacent to the edentulous space is extremely important and if so, the contribution of Orthodontics is valuable. After preparing the appropriate space a single tooth implant, resin-bonded prostheses or conventional fixed dental prostheses can be used. Space closure is indicated in cases of Angle Class II molar relationship or Angle Class I with severe crowding in the lower arch.

Conclusions: The final esthetic and functional result should resemble an intact natural dentition. In space closure procedures, it is necessary to extrude the canine and intrude the premolar to optimize gingival architecture.

POSTER PRESENTATION

PP.263

COMPLICATIONS ASSOCIATED WITH ORTHODONTIC PROCEDURES ON ENDODONTICALLY TREATED TEETH

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Introduction: Orthodontic movement of endodontically treated teeth (ETT) is frequently required in adult patients. Although the pulp has been removed, these teeth are subjected to the same orthodontic forces as vital teeth. This raises concerns about their biological response, particularly the risk of External Apical Root Resorption (EARR) and the long-term integrity of the root canal filling and periapical tissues.

Objective: This retrospective study aimed to compare the frequency and severity of EARR in endodontically treated teeth with their contralateral vital counterparts during active fixed orthodontic treatment.

Materials and Methods: A retrospective radiographic and clinical analysis was conducted on 45 adult patients (mean age 24.5 years) treated in a private orthodontic practice. The sample comprised 60 ETT and their contralateral vital teeth, all with available pre- and post-treatment periapical radiographs and Cone-Beam Computed Tomography (CBCT) scans. EARR was evaluated using a standardized linear measurement protocol, and periapical status was scored according to the Periapical Index (PAI).

Results: Endodontically treated teeth moved as vital teeth, with no significant differences in the rate or pattern of tooth movement. ETT demonstrated significantly lower mean EARR (1.1 ± 0.4 mm) than vital teeth (1.8 ± 0.6 mm). Minor asymptomatic exacerbations of pre-existing periapical lesions were observed in 4% of ETT.

Conclusions: Endodontically treated teeth appear less susceptible to apical root resorption than vital teeth during orthodontic movement. Outcome depend on adequate root canal obturation and the absence of active periapical pathology before treatment.

POSTER PRESENTATION

PP.264

GENETIC AND MOLECULAR MECHANISMS OF PRIMARY FAILURE OF ERUPTION: A CONTEMPORARY LITERATURE REVIEW

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Introduction: Primary failure of eruption (PFE) is a rare eruption disorder characterized by the failure of teeth to erupt due to an abnormal eruption mechanism in non-ankylosed teeth. It most frequently affects posterior teeth and may result in posterior open bite and significant functional and orthodontic complications. Increasing evidence suggests that genetic factors play a crucial role in the pathogenesis of this condition.

Objective: To review the physiological mechanisms of tooth eruption and analyze the current evidence regarding the genetic basis and molecular pathways involved in primary failure of eruption.

Materials and Methods: A literature review was conducted using electronic databases including PubMed, ScienceDirect and ResearchGate. Articles published between 2006 and 2025 were screened using keywords such as “primary failure of eruption”, “parathyroid hormone”, “genetics”, “KMT2C gene” and “TMEM119 gene”. Studies focusing on the eruption mechanism, genetic mutations, and molecular pathways associated with PFE were selected and analyzed.

Results: Tooth eruption is regulated by a complex interaction between bone resorption and bone formation. Genetic alterations affecting these processes have been linked to PFE. Mutations in genes such as PTH1R, TMEM119 and WDR72 are associated with impaired osteoblast function and reduced eruptive force, while alterations in genes such as KMT2C and FAM20A may increase resistance to eruption through defective osteoclastogenesis or pathological calcification of the dental follicle.

Conclusions: PFE represents a multifactorial condition with a strong genetic component involving pathways that regulate bone remodeling and eruption dynamics. Advances in molecular genetics may improve early diagnosis, enable differentiation from mechanical eruption disturbances and support the development of targeted therapeutic strategies.

POSTER PRESENTATION

PP.265

FORCED ORTHODONTIC EXTRUSION FOR PAPILLA AND RIDGE REGENERATION: SYSTEMATIC REVIEW AND CASE REPORT

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Introduction: Orthodontic forced eruption (OFE) is a controlled vertical tooth movement that applies tensile forces to periodontal fibers, stimulating coronal migration of alveolar bone and gingival tissues. OFE is used to regenerate interdental papillae and augment ridge height before restorative or implant therapy. While biologically plausible, reported clinical outcome vary considerably.

Objective: To systematically review literature (2005-2025) on alveolar bone and papilla regeneration after OFE, and to illustrate clinical application with a low-force anterior extrusion case.

Materials and Methods: A systematic search of PubMed, Scopus, and Science Direct was conducted using: ("orthodontic extrusion" OR "forced eruption" AND ("alveolar bone" OR "crestal bone" OR "bone remodeling" OR "bone migration"). Records identified (before deduplication): 374 after duplicate removal: 229. Titles/abstracts screened: 229; full-text articles assessed: 38;studies included: 15. Clinical case: A 47-year-old woman with maxillary anterior papilla loss underwent OFE of teeth 11 and 21 using 0.022 ceramic brackets: 0.016″ super-cable Ni-Ti (~0.25 mm/week) followed by 0.017 × 0.025″ Ni-Ti for a total 4 mm extrusion with monthly activations and palatal root torque. Retention: fxed retainer 9 months; provisional crowns for stabilization. Outcomes assessed clinically and radiographically.

Results: OFE consistently induced coronal migration of buccal alveolar bone and papilla, but magnitude varied by site, extrusion rate, retention, and periodontal phenotype. Prospective CBCT studies (Arsić et al., 2022) reported buccal bone gain 0.8–1.4 mm, mesial interdental septum ~1.35 mm, palatal changes inconsistent. In the clinical case, papilla fll reached ~80% of the pre-treatment deficit, achieving esthetic soft-tissue harmony.

Conclusions: Low-force OFE with stable retention can achieve meaningful papilla and ridge regeneration. Evidence demonstrates modest, variable gains, emphasizing careful case selection. Standardized prospective studies are needed to identify predictors of tissue response and inform evidence-based clinical guidelines.

POSTER PRESENTATION

PP.266

INFLUENCE OF MOLAR ABSENCE ON ANTEGONIAL NOTCH MORPHOLOGY IN HYPODONTIA

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Introduction The antegonial notch is a mandibular structure reflecting the lower margin of the mandibular body. Its morphology may be influenced by masticatory muscle activity, which can be reduced in patients with posterior tooth hypodontia, potentially altering notch shape and depth.

Objective This study aimed to evaluate how congenital absence of specific tooth groups in patients with hypodontia affects antegonial notch morphology.

Materials and Methods A retrospective study included 56 patients with hypodontia (23 males, 33 females), aged 8–22 years. Antegonial notch area was assessed on lateral cephalometric radiographs. Triangles were constructed from key notch points and classified as Type 1 — asymmetrical posterior, Type 2 — symmetrical, and Type 3 — asymmetrical anterior. Absent teeth were recorded from dental charts and panoramic radiographs and grouped as incisors, canines, premolars, and molars. Data were analyzed with the Kruskal–Wallis test and post-hoc Mann–Whitney U tests.

Results Most patients had Type 1 triangles (86.5%), while Types 2 and 3 were less frequent (7.7% and 5.8%). No differences were observed in age or sex. The number of missing molars differed significantly among patients with different triangle types ($p < 0.05$), with Type 1 patients missing up to 3 molars and Type 3 up to 1. No differences were found for incisors, canines, or premolars.

Conclusions Molar absence in hypodontia is significantly associated with antegonial notch morphology, suggesting that congenitally missing posterior teeth may influence mandibular structure and should be considered in orthodontic and orthognathic surgery treatment planning.

POSTER PRESENTATION

PP.267

ACCURACY AND EFFICIENCY OF ARTIFICIAL INTELLIGENCE IN AUTOMATED CEPHALOMETRIC ANALYSIS: A COMPREHENSIVE REVIEW OF CURRENT LITERATURE

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Introduction: Cephalometric analysis is a fundamental diagnostic tool in orthodontics. While manual tracing has long been the gold standard, it is labor-intensive and prone to variability between operators. Recently, deep learning algorithms using Convolutional Neural Networks (CNNs) have been developed for automated landmark detection.

Objective: This review discusses the current evidence on the diagnostic accuracy and time efficiency of AI-powered automated cephalometry compared to traditional manual tracing methods.

Materials and Methods: A thorough search was conducted in PubMed, Scopus and ScienceDirect for studies published up to 2026. The search used the keywords "automated cephalometry," "deep learning," and "artificial intelligence." Selection criteria included studies that quantitatively compared automated and manual tracing with respect to measurement accuracy and time efficiency.

Results: The data obtained indicate that AI algorithms achieve accuracy comparable to that of human experts, with average errors typically remaining within the clinically acceptable 2 mm threshold. AI also offers greater efficiency, often reducing analysis time by more than 90%. Nevertheless, landmark identification is less reliable on low-contrast structures, particularly in soft tissue areas, and accuracy can vary across platforms.

Conclusions: Artificial Intelligence serves as a useful diagnostic aid, providing significant time efficiency. However, clinician oversight and final confirmation are essential to ensure precision in treatment planning.

POSTER PRESENTATION

PP.268

MULTIDISCIPLINARY MANAGEMENT OF IMPACTED MANDIBULAR SECOND MOLARS WITH ROOT RESORPTION OF FIRST MOLARS: A TOOTH-PRESERVING APPROACH

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Introduction: Impacted teeth represent a common clinical challenge in dentistry, often associated with uncertain prognosis and complex treatment planning. Their unfavorable position may compromise adjacent structures, frequently leading to root resorption and loss of integrity of neighboring teeth. In such situations, preserving as many natural teeth as possible remains a primary therapeutic goal.

Objective: The aim of this case report is to demonstrate how a multidisciplinary approach enabled the successful preservation and eruption of impacted mandibular second molars.

Materials and Methods: A patient presented to the Clinic for Orthodontics, University of Belgrade, with impacted mandibular second molars. Detailed diagnostic analysis revealed that both second molars had caused resorption of the distal roots of the mandibular first molars. The treatment began with endodontic therapy of the affected first molars. This was followed by hemisection and removal of the distal roots. Orthodontic traction was initiated by bonding a chain to the occlusal surfaces of the impacted second molars. Mini-implants were placed bilaterally between the canines and first premolars to provide indirect anchorage. These were connected to the first molars using stainless steel wire. A TMA cantilever was applied on the first molars to achieve uprighting and extrusion of the second molars.

Results: Successful extrusion and alignment of the mandibular second molars into the dental arch were achieved.

Conclusions: A multidisciplinary approach allowed preservation of both second and third molars while utilizing the first molar as anchorage. This strategy facilitated future orthodontic treatment and contributed to overall tooth preservation.

POSTER PRESENTATION

PP.269

ACCELERATING ORTHODONTIC SPACE CLOSURE: THE EFFICACY OF PRF IN EXTRACTION SOCKETS

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Introduction: Prolonged orthodontic treatment duration remains a significant clinical challenge. Autologous platelet concentrates, notably platelet-rich fibrin (PRF) and its variants, are hypothesized to enhance alveolar bone remodeling through sustained growth factor release, thereby amplifying the regional acceleratory phenomenon (RAP) within extraction sockets.

Objective: To evaluate the efficacy of PRF in Extraction Sockets for Accelerated Orthodontic Tooth Movement (OTM) and Bone Regeneration.

Materials and Methods: An all-around analysis integrating recent randomized controlled trials, systematic reviews, and meta-analyses was conducted. The assessed literature investigated the localized application of L-PRF, i-PRF, and PRP during space closure. Primary variables analyzed included the rate of canine or en-masse retraction, expression of bone remodeling biomarkers (RANKL/OPG), and periodontal tissue preservation.

Results: Current literature demonstrates that applying PRF in extraction sockets yields a statistically significant acceleration in the rate of OTM, particularly during the initial months of retraction. Split-mouth trials confirm this acceleration correlates with an upregulated, transient expression of RANKL and OPG in the gingival crevicular fluid, indicating heightened localized bone turnover. Additionally, PRF supports bone regenerative strategies and tissue preservation. However, multiple systematic reviews note that this acceleratory effect is predominantly short-term, with the rate of tooth movement gradually normalizing in later stages.

Conclusions: The application of PRF is a safe, minimally invasive biologic adjunct that successfully accelerates the initial phases of orthodontic space closure following extractions. While its long-term acceleratory effects are limited, it provides localized biomechanical and regenerative benefits.

POSTER PRESENTATION

PP.270

ORTHODONTIC MANAGEMENT OF A GROWING PATIENT WITH CLASS III MALOCCLUSION AND IMPACTED MAXILLARY CANINE: A TWO-PHASE TREATMENT APPROACH

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Introduction: Class III malocclusion in growing patients may arise from maxillary retrusion, mandibular prognathism, or both. Early orthopedic intervention aims to modify skeletal relationships and improve occlusal development. Facemask therapy is widely used to promote maxillary protraction during the mixed dentition stage. However, continued craniofacial growth may affect long-term stability, often necessitating further orthodontic treatment. Additionally, impacted maxillary canines may complicate treatment and require a multidisciplinary approach.

Objective: To present the management of a growing patient with Class III malocclusion treated with a two-phase approach, complicated by recurrence and the presence of an impacted maxillary canine.

Materials and Methods: An 8-year-old patient presented with skeletal Class III malocclusion due to mandibular prognathism and maxillary retrusion. Phase I treatment involved facemask therapy to advance the maxilla and correct anterior crossbite, resulting in an edge-to-edge incisal relationship. During the permanent dentition stage, radiographic evaluation revealed an impacted maxillary canine and recurrence of Class III malocclusion. Phase II treatment included fixed appliances, surgical exposure and orthodontic traction of the impacted canine, and placement of retromolar temporary anchorage devices (TADs) for en-mass retraction of the mandibular dentition. Treatment duration was 2.5 years.

Results: Early orthopedic correction may be affected by residual mandibular growth. In this case, TADs provided effective anchorage for mandibular retraction, while combined surgical-orthodontic management enabled successful canine alignment.

Conclusions: The two-phase approach resulted in a stable Class I occlusion and functional outcome, highlighting the importance of growth monitoring and the role of skeletal anchorage in complex cases

POSTER PRESENTATION

PP.271

APPLIANCES FOR RAPID MAXILLARY EXPANSION: A LITERATURE REVIEW AND CASE REPORTS

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Introduction: Rapid maxillary expansion (RME) is considered the treatment of choice for growing patients with transverse maxillary deficiency, which is most commonly presented with unilateral or bilateral posterior crossbite. Orthopedic opening of the midpalatal suture represents the main effect of an RME procedure.

Objective: To present the two case reports treated with Hyrax and Hybrid Hyrax and to review the literature concerning the age limitations of RME and the effectiveness of Hybrid Hyrax for post-pubertal patients.

Materials and Methods: A female patient, 10 years old diagnosed with bilateral posterior crossbite due to high and narrow palate was treated with a tooth-borne Hyrax appliance, while a female patient, 23 years old diagnosed with bilateral posterior crossbite was treated utilizing a Hybrid-Hyrax appliance according to the Mini-implant Assisted Rapid Maxillary Expansion (MARPE) approach. A review of the literature was conducted in PubMed, Embase and Google Scholar for studies investigating the age-dependent effects of conventional RME and/or the indications and success rates of bone-borne RME.

Results: Both the conventional RME and the MARPE proved effective in addressing the underlying transverse maxillary skeletal discrepancy. No anchorage loss was observed during the maxillary expansion for the specific adult patient. Our findings agree with current literature.

Conclusions: Skeletally anchored maxillary expansion can overcome the limitations of conventional RME. In late adolescents, assessment of midpalatal suture maturation provides valuable guidance in clinical decision-making, contributing to the elimination of dentoalveoral compensation.

POSTER PRESENTATION

PP.272

CAN WE PREVENT IMPACTION OF UPPER SECOND PREMOLARS? 2 CASE REPORTS

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Introduction: Second premolars are second most commonly impacted upper teeth, right after canines, if we exclude third molars. Premolars can be impacted for various reasons- most common ones are lack of space or ankylosis of deciduous molars. Adequate diagnosis and timing of treatment are essential to prevent complications. Two case reports will be presented.

■ RARITY OF CASE

Female patient 12 years old, had impacted left upper 2nd premolar, observed on routine orthopantomography. Severely malpositioned tooth appeared in the oral cavity after 20 months, with no additional orthodontic or surgical treatment.

Male patient, 30 years old, wanted to start orthodontic treatment. No previous diagnosis of ankylosis of deciduous molars was made. Both decicuous 2nd molars on the left side were present in oral cavity. Both 2nd premolars on the left side (upper and lower) were impacted.

■ KEY DETAILS

In female patient impacted premolar in the upper jaw was confirmed with CBCT, with almost horizontal position. After 15 months small FoV CBCT was made, and tooth position was improved.

In male patient CBCT confirmed impacted 2nd premolars on the left.

MENAGING: In female patient extraction of deciduous molar was applied after CBCT, with active plate that was utilized to maintain space for eruption and prevent mesial movement od 1st molar.

In male patient, after extraction of deciduous teeth and space opening with fixed orthodontic appliance, upper second premolar appeared palatally and lower lingually.

POSTER PRESENTATION

PP.273

MANAGEMENT OF CLASS II MALOCCLUSION USING FIXED NON - COMPLIANCE FUNCTIONAL APPLIANCES: A TWO-CASE REPORT

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Introduction: The management of Class II malocclusion remains a significant challenge in orthodontics, particularly when treatment relies on patient compliance. Intermaxillary elastics are often associated with inconsistent outcomes due to poor adherence. Fixed functional appliances, such as the BioBite Corrector (BBC) and PowerScope (PS), offer a non-compliance alternative by delivering continuous orthopedic and dentoalveolar forces, enhancing treatment predictability and efficiency.

Objective: To present and compare two clinical approaches for the treatment of Class II malocclusion using fixed non-compliance functional appliances.

Materials and Methods: Two patients presenting with Class II malocclusion and increased overjet were treated using different fixed functional appliances. The first case involved a 9-year-old male in the mixed dentition stage, treated with a BioBite Corrector appliance to encourage mandibular advancement during growth. The second case involved a 14-year-old female in the permanent dentition stage, treated with a PowerScope appliance in combination with fixed orthodontic appliances. In both cases, treatment objectives included correction of sagittal discrepancy, reduction of overjet, and achievement of functional occlusion.

Results: Both treatment approaches resulted in successful correction of the Class II malocclusion, with significant reduction of overjet and improvement in molar and canine relationships toward Class I. Functional appliances contributed to favorable dentoalveolar changes and improved facial profile. Treatment outcomes were achieved without reliance on patient compliance.

Conclusions: Fixed non-compliance functional appliances, such as BBC and PowerScope, represent effective options for the correction of Class II malocclusion in both patients. Their use enhances treatment efficiency and predictability, minimizing the limitations associated with patient compliance.

POSTER PRESENTATION

PP.274

ASSESMENT OF ACCELERATION TECHNIQUES FOR ORTHODONTIC TREATMENT

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Introduction: The demand for faster orthodontic treatment has popularized various acceleration techniques (Surgically Facilitated Orthodontic Therapy – SFOT and non-invasive methods). These methods aim to expedite tooth movement by altering bone remodeling, primarily via the Regional Acceleratory Phenomenon.

Objective: To critically assess the effectiveness and potential drawbacks of surgical and non-invasive orthodontic acceleration modalities.

Materials and Methods: A selection of recent systematic reviews, meta-analyses, and literature reviews evaluating surgical (e.g., corticotomies, micro-osteoperforations) and non-surgical (e.g., photobiomodulation) interventions was analyzed.

Results: Surgical approaches, particularly corticotomies and periodontally accelerated osteogenic orthodontics, demonstrate significant efficacy in accelerating tooth movement (up to 130%). However, these procedures are invasive and carry potential adverse effects. Excessive acceleration and surgical trauma are associated with external root resorption. Furthermore, rapid expansion without adequate bone covering can provoke periodontal lesions, including recessions, fenestrations, and bony dehiscences. Although rarer, loss of pulp vitality due to disrupted blood supply is another recorded complication. Minimally invasive surgical variants, such as micro-osteoperforations, also enhance movement rates (ranging between 0-87%), but remain associated with drawbacks, such as root resorption. Conversely, non-invasive methods, such as photobiomodulation with low-level lasers, show the capacity to safely accelerate tooth movement by stimulating cellular activity (up to 24%), though their overall effectiveness compared to surgical interventions can vary.

Conclusions: Orthodontic acceleration techniques effectively reduce treatment duration. While surgical modalities offer robust acceleration, they present higher invasiveness and potential adverse effects. Non-invasive methods provide a safer alternative, but practitioners must carefully balance the chosen modality's clinical efficiency with its biological constraints.

POSTER PRESENTATION

PP.275

TREATMENT OF UNILATERAL POSTERIOR CROSSBITE WITH THE INVISALIGN PALATAL EXPANDER SYSTEM: A CASE REPORT

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Introduction: Posterior crossbites are significant malocclusions that require early intervention during the growth and development period. The Invisalign Palatal Expander (IPE) system, introduced as a digital alternative to traditional fixed expansion appliances, provides advantages in 3D planning and personalized biomechanics. The aim of this case report is to evaluate the correction of crossbite in a patient treated with the IPE system, the retention protocol applied, and the effects of the treatment on upper airway dimensions.

Case Presentation: A 13-year-old 4-month-old patient presented with a complaint of unilateral posterior crossbite. The Invisalign Palatal Expander system was utilized as part of the treatment plan, and a series of 42 aligners was applied. A protocol of wearing the aligners 24 hours a day was followed. A midline diastema, an indicator of skeletal expansion, was observed at the 10th aligner. Clinical records were photographed at the beginning (T0), the 20th aligner stage (interim record), and the end of treatment (T-final). Following the completion of the active expansion phase, retention was maintained for 3 months using Invisalign Palatal Holder appliances to preserve the achieved width. Additionally, cone-beam computed tomography (CBCT) images were obtained at the beginning and end of treatment to detect changes in upper airway volume.

Results: Posterior crossbite was successfully corrected following 42 aligners of active treatment and a 3-month passive retention period. Comparative analysis of initial and final CBCT data revealed significant increases in upper airway dimensions and volume.

Conclusions: The Invisalign Palatal Expander system is an effective, predictable, and high-patient-comfort treatment option for correcting posterior crossbite and increasing upper airway capacity. The 3-month use of Invisalign Palatal Holders following expansion provided sufficient clinical support for the stabilization of the achieved transverse increase.

POSTER PRESENTATION

PP.276

DENTINE AS A BIOINDICATOR IN FORENSIC TOXICOLOGY AND ITS INDICATIVE USE IN ENVIRONMENTAL POLLUTION EXPOSURE

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Introduction: Human biomonitoring with teeth can reveal past exposure to trace elements, toxicants, and environmental pollutants. Histopathological analysis suggests that the dentine of both permanent and deciduous teeth is a promising bioindicator.

Objective: To investigate whether dentine is sufficiently reliable as a bioindicator for assessing exposure to environmental pollutants and toxicants, particularly heavy metals.

Materials and Methods: Both manual and systematic searches of scientific databases, such as PubMed and Scopus, were conducted. Keywords such as “bioindicator,” “dentine,” and “pollution” were used in combination, and studies that did not meet the inclusion criteria were excluded.

Results: The accuracy of dentine in revealing a history of intoxication appears to be influenced by factors such as tooth type, prior restorations, pathological conditions, and previous orthodontic or periodontal treatments. Different concentrations of heavy metals may indicate patterns related to age or gender. Detectable elements in dentine, including Sn, Sb, Cu, Zn, As, Pb, and Hg, can be identified through ICP-MS analysis.

Conclusions: Further investigation is needed before dentine analysis can become a standard part of forensic clinical practice; nevertheless, it has already been employed in several cases. Although it is a relatively recent diagnostic tool, dentine analysis shows potential for revealing information about socioeconomic background and human activity patterns.

POSTER PRESENTATION

PP.277

EVALUATION OF THE ATTITUDES AND BEHAVIORS OF PATIENTS APPLYING TO THE FACULTY OF DENTISTRY TOWARDS FOREIGN HEALTHCARE PROFESSIONALS

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Introduction: In a globalized world, people seek healthcare not only for basic needs but also for many other reasons, leading to a shortage of healthcare professionals in the current system. This shortage results in flexible and long working hours, while also causing negative issues such as compulsory overtime and workplace bullying to become widespread. One solution to mitigate/eliminate these challenges is to increase the number of healthcare professionals. While integrating foreign professionals into the healthcare system is one strategy to achieve this, it can create problems related to communication, anxiety, and trust within the community.

Objective: In light of this information, the aim of this study is to evaluate the attitudes and behaviors of patients applying to the Faculty of Dentistry towards foreign healthcare professionals.

Materials and Methods: The study included 110 volunteer individuals aged 18-65 years who applied to the Faculty of Dentistry at Recep Tayyip Erdoğan University. A 27-item scale was administered to assess the participants' demographic information and their attitudes towards foreign healthcare professionals. The statistical significance level was set at $p<0.05$.

Results: When comparing individuals' responses according to age, significant differences were observed in the sub-factors of 'negative outlook, professional confidence, and acceptance' ($p<0.05$). Significant differences were also observed in the sub-factors of 'professional confidence and education policy' according to educational status ($p<0.05$).

Conclusions: Planning informative and awareness-raising training programs, especially targeting older age groups, to improve attitudes towards foreign healthcare professionals in society will contribute to the aim of this study.

Keywords: Dentistry, foreign national, healthcare worker

POSTER PRESENTATION

PP.278

COMPLICATIONS AND SURVIVAL OF IMPLANT-SUPPORTED CROWNS ON TITANIUM-BASE ABUTMENTS: A SYSTEMATIC REVIEW OF CLINICAL STUDIES

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POSTER PRESENTATION

PP.279

A MULTIDISCIPLINARY APPROACH TO ORTHODONTIC–SURGICAL TREATMENT OF DENTOFACIAL DEFORMITIES IN ADULTS

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Introduction: Dentofacial deformities in adult patients often require a combined orthodontic–surgical approach, as orthodontic treatment alone cannot correct skeletal discrepancies after the completion of craniofacial growth. Interdisciplinary collaboration between orthodontists and maxillofacial surgeons is essential to achieve stable functional and aesthetic outcomes.

Objective: To evaluate the clinical characteristics, treatment protocols, and outcomes of combined orthodontic–orthognathic surgical treatment in adult patients with dentofacial deformities.

Materials and Methods: This retrospective observational descriptive and analytical study included 74 adult patients (mean age 21.5 ± 4.9 years) treated with combined orthodontic–surgical therapy between 2019 and 2024. Inclusion criteria comprised patients over 17 years of age with skeletal malocclusions who completed pre- and post-surgical orthodontic treatment and orthognathic surgery, with complete clinical and radiographic documentation. Evaluated parameters included skeletal malocclusion type, vertical skeletal pattern, facial symmetry, type of surgical procedure, treatment motivation, and patient satisfaction. Preoperative cephalometric measurements (SNA, SNB, ANB, SN–Mand, and Palat–Mand angles) were analyzed. Statistical analysis was performed using SPSS software (version 21), applying descriptive statistics, chi-square tests for categorical variables, and ANOVA for comparison of cephalometric parameters between skeletal and vertical pattern groups, with significance set at $p < 0.05$.

Results: Skeletal Class III malocclusion was the most prevalent diagnosis (approximately 78%). Aesthetic motivation was the primary reason for seeking treatment (71.6%), particularly among female patients, without statistically significant gender differences. Bimaxillary surgery was the most frequently performed procedure, mainly in Class III cases associated with open bite and facial asymmetry. Significant differences were observed in sagittal and vertical cephalometric parameters between groups ($p < 0.001$). High levels of functional and aesthetic improvement were reported, with minimal postoperative complications.

Conclusions: Combined orthodontic–surgical treatment is a safe and effective approach for managing dentofacial deformities in adult patients, providing predictable functional and aesthetic outcomes when supported by accurate diagnosis and multidisciplinary planning.

POSTER PRESENTATION

PP.280

THE DUAL ROLE OF REACTIVE OXYGEN SPECIES (ROS) IN OSSEOINTEGRATION: A NARRATIVE REVIEW

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Introduction: Implant placement induces surgical trauma and an inflammatory response, which are associated with transient ROS production as part of normal wound healing. ROS are highly reactive oxygen-containing molecules that participate in intracellular signalling and regulation of gene expression. The generation of ROS could have a dual impact (positive or negative) on the success of implant osseointegration.

Objective: The present review focuses on analyzing the dual role of Reactive Oxygen Species in osseointegration. Physiological concentrations of ROS can be beneficial in normal cell signaling. Excessive levels disturb cellular function, stimulate bone resorption, and activate cellular death, including pathways such as the Wnt/β-Catenin and IRS-1 signalling pathways.

Materials and Methods: A literature search was conducted in PubMed, Semantic Scholar, and OpenAlex using the keywords “ROS”, “Osseointegration”, “Oxidative stress”, and “Dental implants”. Studies were selected based on their relevance to ROS and implant osseointegration, as well as their availability in full-text English. Only eleven studies were eligible for inclusion, evaluating the impact of Reactive Oxygen Species on dental implant osseointegration, encompassing clinical trials, systematic reviews, and experimental animal models that focused on metabolic stressors such as diabetes mellitus and hyperlipidemia.

Results: While initial levels are necessary for signaling, excessive ROS not only suppresses osteoblast function but also enhances osteoclastogenesis, interfering with bone remodeling and contributing to bone loss.

Conclusions: Successful osseointegration depends on controlled physiological ROS levels that avoid oxidative stress. Systemic conditions such as uncontrolled diabetes mellitus, obesity, and hyperlipidemia exacerbate the peri-implant oxidative environment. In these patients, the physiological ROS signaling required for healing is overwhelmed by pathological oxidative stress, which could potentially increase the risk of early implant failure. Further research is recommended to modulate the oxidative environment.

Keywords: ROS, Osseointegration, Dental Implants

POSTER PRESENTATION

PP.281

NON-SURGICAL TREATMENT OF PERI-IMPLANTITIS USING ER:YAG LASER AND PHOTOBIOMODULATION: A RANDOMIZED CONTROLLED CLINICAL TRIAL CLINICAL AND PATIENT REPORTED OUTCOMES

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Introduction: Peri-implantitis is a biofilm-driven inflammatory disease leading to progressive peri-implant tissue destruction. Mechanical debridement (MD) remains the standard non-surgical approach, yet clinical outcomes are often limited. Adjunctive laser-based therapies may enhance decontamination and improve treatment tolerance.

Objective: To compare clinical and patient-reported outcomes of Er:YAG laser combined with photobiomodulation (PBM) versus MD alone in non-surgical peri-implantitis therapy.

Materials and Methods: Forty-five patients with peri-implantitis were randomly allocated to a control group receiving MD with ultrasonic piezo tip under sterile saline irrigation (n=24) or a test group treated with Er:YAG laser followed by PBM (n=21). Clinical parameters (probing depth [PD], bleeding on probing [BoP], clinical attachment level [CAL], plaque index, recession, suppuration) and treatment endpoints success (PD≤5 mm, ≤1 BoP-positive site, no suppuration) were assessed at baseline and three months. Patient-reported outcome measures (postoperative pain, analgesic intake, satisfaction, willingness to recommend) were collected during the first postoperative week.

Results: Both groups showed significant intragroup improvements in PD, BoP, and CAL ($p<0.001$). The laser group demonstrated significantly greater reductions in PD (−2.30±0.65 mm vs −1.45±0.52 mm), BoP (−73.0% vs −42.4%), and CAL (−2.56±1.21 mm vs −1.47±0.78 mm) (all $p\leq0.004$). Treatment endpoints success was higher in the test group (81% vs 42%, $p=0.007$). Patients in the laser group reported lower pain scores, reduced analgesic consumption, and higher satisfaction ($p<0.05$).

Conclusions: Er:YAG laser and PBM enhanced the clinical effectiveness and patient experience of non-surgical peri-implantitis therapy, supporting their use as a minimally invasive and better-tolerated alternative or adjunct to MD.

POSTER PRESENTATION

PP.282

OSTEODENSIFICATION AS AN ALTERNATIVE TO RIDGE AUGMENTATION IN COMPROMISED SITES: CASE SERIES

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Introduction: Placement of dental implants in compromised ridge sites presents clinical challenges, often requiring additional bone augmentation procedures that increase treatment time and morbidity. Osteodensification has been proposed as a minimally invasive osteotomy protocol that promotes bone compaction and enhances implant stability.

Objective: To present clinical cases demonstrating the application of osteodensification for implant placement in compromised ridge sites and to evaluate its clinical effectiveness in achieving primary and secondary stability.

Materials and Methods: The patients presenting with ridge defects underwent implant placement using the osteodensification drilling protocol. Implants were placed in compromised sites requiring bone quality enhancement. Primary stability was assessed immediately after placement using resonance frequency analysis (ISQ), and secondary stability was evaluated during follow-up.

Results: The cases demonstrated satisfactory primary stability at implant placement and favorable secondary stability during healing. Implant positioning was achieved in sites requiring bone enhancement, reducing surgical complexity and overall treatment time.

Conclusions: Within the limitations of this case series, osteodensification appears to be a clinically effective and minimally invasive approach for implant placement in ridge sites requiring bone enhancement, providing reliable primary and secondary stability while reducing surgical invasiveness.

POSTER PRESENTATION

PP.283

ENHANCING PERI-IMPLANT THERAPY: THE ROLE OF ERYTHRITOL AIR- POLISHING

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Introduction: Peri-implantitis and peri-implant mucositis are commonly and clinically important complications of implant treatment, caused by the accumulation of microbial biofilm on implant surfaces. Effective non-surgical biofilm removal is essential to control inflammation and prevent disease progression. In the last decade, air-polishing systems such as erythritol have been proposed as an adjunct to conventional mechanical instrumentation, preserving implant surface characteristics while improving patient comfort.

Objective: The aim of this presentation is to evaluate the clinical effectiveness of erythritol in peri-implantitis treatment and compare this approach with surgical and other non-surgical intervention methods.

Materials and Methods: A focused literature review was performed using PubMed, Springer Nature, NIH, ScienceDirect, MDPI, DIVA, employing keywords such as “erythritol”, “peri-implantitis”, ”non-surgical treatment”, “air-polishing powders” and “peri-implant therapy”. Clinical trials, systematic reviews, and current clinical guidelines published between 2015 and 2026 were screened and analyzed to assess and identify clinically effective treatment strategies.

Results: Randomized clinical trials indicate that erythritol air-polishing provides outcomes comparable to standard mechanical debridement. Erythritol achieved higher rates of reduction on bleeding in probing and other inflammatory parameters and slightly improved short-term clinical response, although differences were not consistently statistically significant. Overall reductions in probing depth were modest, and complete resolution of peri-implant inflammation remained limited.

Conclusions: Erythritol air-polishing is a safe and effective non-surgical adjunct for biofilm control, leading to measurable anti-inflammatory effects. While it does not consistently outperform conventional therapy, it may enhance short-term soft tissue health and patient experience. However, further studies are needed to establish standardized treatment protocols.

POSTER PRESENTATION

PP.284

TREATMENT OF PERI-IMPLANTITIS WITH THE USE OF CHITOSAN BRUSHES: CASE SERIES

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Objective: The aim is to present four clinical cases with peri-implantitis that were treated with the use of chitosan brushes.

Materials and Methods: In all four cases the chitosan brush (Labrida BioClean®) was the primary treatment intervention. In addition, H202 solution was applied and in two out of four cases the site was grafted based on the presence of three-wall intrabony defect that was deep and narrow.

Results: After the 6 months follow-up, in all four cases a significant reduction in pocket depth and radiographic bone fill were observed.

Conclusions: The use of chitosan brushes can be beneficial in cases with peri-implantitis, leading to substantial clinical and radiographic results. Thus, it can be considered as an effective solution to the management of peri-implantitis.

POSTER PRESENTATION

PP.285

COMPARATIVE EVALUATION OF GRAFTING MATERIALS FOR HARD AND SOFT TISSUE STABILITY IN IMMEDIATE IMPLANT PLACEMENT IN AESTHETIC ZONE: A SYSTEMATIC REVIEW.

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Introduction: . The use of grafts during immediate implantation in the anterior region of the upper jaw offers significant advantages in terms of the horizontal dimension of the bone contour and the vertical preservation of soft tissues, especially when the gap between the implant and the buccal plate is greater than 1.5 mm.

Objective: . To evaluate the impact of graft materials on immediate implant placement in the aesthetic zone.

Materials and Methods: . An electronic search was conducted in PubMed, Web of Science, Cochrane databases, and manually up to 2025. Case series, randomized trials, and cohort studies on immediate implantation using grafts in the anterior maxilla were included. The review was conducted according to PRISMA guidelines.

Results: . The autologous graft resulted in 0.28–0.63 mm changes in the height of the buccal bone, bovine xenograft in bone thickness gave better results with 0.4–1.1 mm changes. DBBM reinforcement with collagen resulted better results in soft tissue height with 0.58–1.69 mm. The combination of xenograft and autograft, with 0.59–0.71 in soft tissue changes and 0.64–0.49 mm in height, appeared to have better stability in all three parameters. Allograft provided the greatest variability in soft tissue height, with 1.8-0.37 mm.

Conclusions: . There is no significant difference in the use of graft materials to fill the gap between the implant and the buccal plate, even when the latter is missing. There is a lack of homogeneity in the studies.

POSTER PRESENTATION

PP.286

DENTIST'S PERSPECTIVES REGARDING THE INFLUENCE OF PERIODONTAL DISEASE ON THE SUCCESS OF DENTAL IMPLANT THERAPY

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Introduction: .Dental implants are widely accepted for replacing missing natural teeth. The presence of healthy peri-implant soft tissue before implant placement is considered essential for long-term success. Mucosal thickness plays an important role in maintaining peri-implant marginal bone stability, while untreated periodontal disease may negatively influence treatment outcomes.

Objective: . The objective of this study was to evaluate dentists' perspectives regarding the impact of periodontal disease on the long-term success of dental implant therapy.
Material and method. A survey was conducted among 60 dentists who routinely place dental implants in clinical practice. An anonymous questionnaire was developed and distributed between July and September 2025. The questions focused on periodontal health, implant follow-up protocols, and the relationship between periodontitis and peri-implant complications.

Results: . Analysis of the collected data showed that 71.66% of respondents believed that implant removal is not necessary if periodontitis develops after placement. Concerning follow-up intervals, 46% of dentists scheduled patients one month after placement, 37% at six months, and 17% at three months. Regarding the association between periodontitis and peri-implantitis, 88% of respondents considered periodontitis a risk factor for peri-implantitis, while 12% did not perceive a significant relationship.

Conclusions: . In conclusion, most of the examined dentists do not consider implant removal mandatory in cases of periodontitis but acknowledge its role as a risk factor for peri-implantitis. The findings emphasize the importance of periodontal assessment and maintenance in ensuring long-term implant success.

POSTER PRESENTATION

PP.287

ENHANCING PERI-IMPLANT THERAPY: THE ROLE AND EFFICIENCY OF LOCAL DRUG DELIVERY

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Introduction: The increasing prevalence of dental implant placement has been accompanied by a rise in peri-implant diseases, challenging long-term implant stability. Although survival rates remain high, inflammatory implications are common. Sub-marginal instrumentation constitutes the foundation therapy. However, adjunctive strategies such as local drug delivery systems have been proposed in both non-surgical and surgical treatment protocols to enhance clinical outcomes while minimizing systemic drug exposure.

Objective: This review evaluates the clinical effectiveness of local drug delivery systems in peri-implant therapy and critically appraises their role considering contemporary clinical practice guidelines.

Materials and Methods: A focused literature review was conducted using PubMed, Scopus, Google Scholar, and Cochrane databases. The research included the terms: peri-implantitis, peri-implant mucositis, local drug delivery, local antimicrobials, and local antibiotic therapy. Clinical trials, systematic reviews, and current clinical guidelines published between 2012 and 2025 were screened. Emphasis was placed on clinical outcomes such as probing depth (PPD), bleeding on probing (BoP), clinical attachment level (CAL), and bone loss (BL).

Results: Evidence indicates that adjunctive local drug delivery systems improve clinical parameters, such as PPD and BoP when combined with professional mechanical debridement. Sustained-release biodegradable formulations allow targeted antimicrobial activity while limiting systemic exposure. Nevertheless, available evidence remains inconsistent as reflected in the 2023 EFP clinical practice guideline which does not recommend routine adjunctive use.

Conclusions: Local drug delivery systems may offer limited adjunctive benefits in selected cases but should not replace thorough mechanical biofilm removal. Further long-term trials are needed to establish standardized evidence-based protocols.

POSTER PRESENTATION

PP.288

IMMEDIATE IMPLANT PLACEMENT IN THE MAXILLARY FIRST PREMOLAR FOLLOWED BY GBR: A CLINICAL CASE REPORT

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Introduction: Immediate implant placement is a contemporary and predictable treatment modality for replacing non-restorable teeth. This approach involves placing a dental implant into the extraction socket at the time of tooth removal.

Objective: The aim of this presentation is to describe and review the surgical procedure of immediate implant placement through a clinical case report and to compare this approach with the conventional implant placement protocol.

Materials and Methods: The patient was a 70-year-old male, receiving anticoagulant therapy (acetylsalicylic acid, ASA). The preoperative diagnostic examination included Cone Beam Computed Tomography to exclude underlying pathology and to evaluate the dimensions of the alveolar ridge. During the same surgical session, following extraction of the maxillary first premolar, an implant was placed immediately at the palatal aspect of the socket. Guided Bone Regeneration was performed during implant placement, and an allograft was used to manage the osseous gap between the socket and the implant surface. A full-thickness pedicle connective tissue flap was elevated from the palate and stabilized at the recipient site. Follow-up visits were scheduled to monitor clinical outcomes.

Results: The main advantages of immediate implant placement are associated with more favorable soft tissue healing, preservation of peri-implant hard tissue, and reduced morbidity.

Conclusions: Immediate implant placement can be successfully performed in selected cases, with the implant positioned either in the palatal socket or within the furcation area. In the presence of osseous defects, bone grafts can be placed between the implant surface and the buccal bone to support hard tissue preservation.

POSTER PRESENTATION

PP.289

PROFESSIONAL PERSPECTIVES ON FACTORS INFLUENCING DENTAL IMPLANT SUCCESS AND FAILURE: A CROSS-SECTIONAL SURVEY STUDY

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Introduction: Dental implant success is influenced by multiple clinical and patient-related factors. Understanding professional perspectives on implant selection, success, and failure is essential for improving clinical outcomes.

Objective: The aim of this study was to assess the attitudes and clinical experiences of dental professionals in implantology, focusing on implant selection, factors influencing success and failure, and the impact of cost, implant class, and patient-related variables on treatment outcomes.

Materials and Methods: A cross-sectional survey was conducted among 30 dental professionals with experience in implantology. A structured questionnaire was used, and internal consistency was evaluated using Cronbach's alpha. Descriptive statistics were applied to analyze demographic characteristics, clinical experience, and professional opinions.

Results: The questionnaire showed high reliability (Cronbach's alpha = 0.903). The mean age of participants was 40.47±7.47 years, with an average of 8.20±3.63 years of experience. Most respondents (63.33%) used both high- and low-class implants, while 80% reported that implant cost significantly influences patient decisions. Professional experience was identified as the primary factor for implant success (60%), followed by implant surface (30%). Oral hygiene was the main factor in implant failure (53.33%), with 93.33% confirming its importance. Implant rejection occurred occasionally (56.67%) or rarely (40%). Most respondents (63.33%) stated that implant class does not significantly affect failure, whereas 56.67% associated implant surface with failure risk.

Conclusions: Professional experience and oral hygiene are key determinants of implant outcomes. Although cost influences patient choice, implant class appears less important than clinical and biological factors.

POSTER PRESENTATION

PP.290

SCREW-CEMENT-RETAINED RESTORATIONS: THE STRATEGIC BREAKTHROUGH IN MODERN IMPLANTOLOGY

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Introduction: Screw-cement-retained prostheses (SCRPs) represent a hybrid restorative approach in implant dentistry, designed to merge the clinical advantages of both screw- and cement-retained systems. By integrating retrievability, elimination of residual cement, and optimized passive fit, SCRPs aim to mitigate the inherent limitations of conventional retention protocols.

Objective: This systematic review aimed to evaluate the clinical success and survival rates of SCRPs, while assessing their biomechanical performance and comparative advantages over conventional retention protocols.

Materials and Methods: A systematic literature search was conducted across the PubMed and Google Scholar databases for English-language studies published between 2020 and 2026, adhering to PRISMA guidelines. Based on a PICO question, an initial pool of 29 articles was screened. Following the application of inclusion and exclusion criteria, 8 studies were selected for qualitative synthesis.

Results: SCRPs demonstrated exceptional clinical reliability, with survival (100%) and success (99%) rates matching cement-retained and outperforming conventional screw-retained designs. The intervening cement layer facilitated superior passive fit and optimized force distribution. Biologically, SCRPs effectively eliminated the risk of excess-cement-induced peri-implantitis, resulting in significantly lower marginal bone loss compared to cement-retained restorations. Mechanically, metal-ceramic SCRPs with press-ceramic layering exhibited higher fracture resistance than cement-retained counterparts, though veneered designs showed reduced mechanical values.

Conclusions: SCRPs serve as a strategic "middle ground," successfully addressing the primary biological and mechanical drawbacks of conventional retention. By optimizing passive fit and eliminating the risks associated with submucosal cement, SCRPs represent a highly reliable, and cost-effective clinical solution.

POSTER PRESENTATION

PP.291

IMMEDIATE IMPLANT PLACEMENT: A CASE REPORT

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Implant therapy demonstrates high esthetic and functional success when applied to patients under appropriate conditions. Immediate implant placement has become a predictable treatment modality due to its advantages, including shorter treatment time and preservation of bone and soft tissue architecture. This case report aims to present the outcomes of immediate implant placement following atraumatic tooth extraction. A 47 year old female patient presented to our clinic with the complaint of a single missing tooth on the left side. Anamnesis revealed no systemic disease and no history of smoking or alcohol consumption. Intraoral examination showed a fracture at the cemento-enamel junction of tooth 34. The tooth, which showed no periapical pathology on panoramic radiography, was extracted atraumatically under local anesthesia. Following socket debridement, an implant was placed immediately into the extraction socket with primary stability achieved at 35 Ncm insertion torque. The patient was prescribed amoxicillin + clavulanic acid (Klamoks 1000 mg, 2x1, 7 days), flurbiprofen (Majezik 100 mg 2x1) and 0.12% chlorhexidine gluconate and 0.15% benzydamine HCL (Kloroben 200 ml 2x1). The patient was recalled for weekly follow ups during the first month after treatment. No postoperative complications were observed during these control sessions. At the 3rd month follow up, successful osseointegration was confirmed clinically and radiographically, and a single unit monolithic zirconia prosthetic restoration was performed. The absence of periimplant bone loss was confirmed on the radiograph at the 18th month follow up. Immediate implant placement provides important clinical advantages in reducing surgical intervention and preserving alveolar structures.

POSTER PRESENTATION

PP.292

AN IMPLANT PRESERVING TREATMENT APPROACH TO INTERNAL HEXAGONAL CONFIGURATION DISTORTION

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Introduction: Abutment screw fracture accompanied by distortion of the internal implant walls and hexagonal configuration is a significant mechanical complication in implant dentistry. This condition compromises the engagement of new abutment components and often leaves clinicians with a dilemma between implant removal and conservative restorative alternatives.

Objective: This study aimed to present a conservative clinical approach for preserving an implant with an irretrievable abutment screw fracture and structurally compromised internal walls, and to evaluate its short-term clinical outcome.

Materials and Methods: A patient with two osseointegrated implants in the mandibular right posterior region (#46 and #47) presented with loss of crown retention. Clinical and radiographic evaluation revealed distortion of the internal hex and implant walls in #46. The internal portion of the implant was carefully prepared using a high-speed handpiece under water irrigation to remove the fractured segment and compromised walls.
An impression was taken using a metal strip technique and vinyl polysiloxane . A custom cast dowel post-and-core was fabricated and its fit was verified using GC FIT CHECKER ADVANCED, followed by cementation with zinc polycarboxylate cement. A digital impression was obtained using DEXIS IS 3800W, and a two-unit metal-ceramic fixed partial denture was fabricated.

Results: The proposed approach enabled successful conservative restoration without implant removal. The custom cast dowel-core demonstrated satisfactory marginal adaptation and internal fit. No mechanical or biological complications were observed, and one-year follow-up confirmed stable clinical performance.

Conclusions: When abutment screw fracture and internal structural damage prevent re-engagement of a conventional abutment, fabrication of a custom cast dowel-core may serve as a viable and conservative alternative, allowing preservation of osseointegrated implants with favorable clinical outcomes.

POSTER PRESENTATION

PP.293

EARLY IMPLANT PLACEMENT WITH IMMEDIATE LOADING IN THE CENTRAL INCISOR AREA USING GUIDED IMPLANT SURGERY: A CASE REPORT

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Guided implantology represents one of the highest levels of digital technology implementation in modern dentistry. Advances in digital planning software enable clinicians to utilize various tools to achieve optimal three-dimensional, prosthetically driven implant positioning.

A 22-year-old patient presented with pain and swelling in the region of the right maxillary central incisor. Radiographic examination revealed a periapical lesion measuring 7×7×6 mm. The treatment plan included tooth extraction, infection management, and subsequent early implant placement with immediate loading. For digital planning, R2Gate software was used to determine the ideal implant position and to design a virtual scan body, allowing the dental technician to fabricate a provisional crown prior to surgery. A MegaGen AnyRidge implant system was selected due to its ability to achieve high primary stability in compromised bone conditions. Insertion torque and ISQ values were satisfactory, enabling immediate placement of the prefabricated provisional crown following implant insertion.

After a four-month healing period, a definitive zirconia crown was fabricated. The combination of guided surgery and immediate provisionalization facilitated favorable soft and hard tissue healing, resulting in optimal esthetic and functional outcomes.

POSTER PRESENTATION

PP.294

SOFT TISSUE AUGMENTATION TECHNIQUES IN IMPLANT DENTISTRY

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Introduction: Adequate peri-implant soft tissue volume and the presence of keratinized mucosa are key components of a favorable peri-implant soft tissue phenotype, contributing to long-term implant stability, preservation of marginal bone levels, and optimal esthetic outcomes. Various soft tissue augmentation procedures have been proposed to improve peri-implant tissue clinical outcomes.

Objective: To summarize recent evidence regarding the effectiveness of soft tissue augmentation techniques in implant dentistry.

Materials and Methods: A literature search was performed using university textbooks, PubMed, and Google Scholar, including systematic reviews and meta-analyses published within the last five years.

Results: Soft tissue augmentation around dental implants can be achieved using several techniques, including free gingival grafts (FGGs), connective tissue grafts (CTGs), coronally advanced flaps (CAFs), as well as tunnel, pedicle, and roll flap techniques. CTG remains the gold standard for achieving predictable increases in soft tissue thickness and favorable esthetic outcomes. FGG increases the width of keratinized tissue but may result in color mismatch. CAF treats gingival recession when adequate tissue is present. Pedicle and roll flap techniques preserve blood supply and promote faster healing but are limited to localized defects. The tunnel technique represents a minimally invasive approach that preserves papillary integrity. Additionally, biomaterials such as acellular dermal matrices and collagen matrices have been proposed as alternatives and eliminate donor site morbidity.

Conclusions: CTG remain the most reliable technique for peri-implant soft tissue augmentation. Soft tissue substitutes represent promising alternatives; however, high-quality randomized controlled trials are needed to confirm their long-term stability and comparative effectiveness.

POSTER PRESENTATION

PP.295

SPLINTED OR INDIVIDUAL? THE BONE PRESERVATION DILEMA IN IMPLANT SUPPORTED RESTORATIONS

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Introduction: In the era of digital implantology, while aesthetics is often guaranteed, the true challenge remains unchanged: long-term hard tissue stability. The distribution of occlusal forces is the critical factor in maintaining bone homeostasis. The choice between individual crowns and splinting offering remains a central debate in prosthetic biomechanics.

Objective: This presentation aims to analyze current clinical evidence regarding peri-implant bone evolution in both scenarios, helping us tailor our prosthetic decisions.

Materials and Methods: For this study we have analyzed the case of one patient with 6 implant supported single crowns on the maxillary and 2 mandibular bridges, 4 implants were used for every bridge. Bone height was measured on CBCT images for all implants 2 years after loading.

Results: A significant disparity in peri-implant bone resorption was observed based on prosthetic design. In the bridge group, 6 out of 8 implants (75%) exhibited bone loss exceeding 3 mm. In contrast, the single-unit crowns on the maxilla, only 2 out of 6 implants (33%) showed similar levels of resorption.

Conclusions: This study highlights a correlation between prosthetic design and peri-implant bone evolution. Splinted restorations were associated with an increase in severe bone resorption compared to single-unit crowns. While splinting is often used to distribute occlusal stress, these results suggest that it may inadvertently complicate hygiene or create loading patterns that accelerate bone loss. Further research with larger sample sizes is needed to confirm these biomechanical trends. Peri-implant bone measurements

POSTER PRESENTATION

PP.296

LASER THERAPY AS AN ADJUNCT TREATMENT FOR PERI-IMPLANT MUCOSITIS

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Introduction: Peri-implant mucositis is a reversible inflammatory condition affecting gingival tissues around dental implants and is a precursor to peri-implantitis. Its rising prevalence has encouraged the use of adjunctive treatments as laser therapy. Due to antimicrobial, anti-inflammatory, and biostimulatory effects, laser therapy has been proposed to enhance non-surgical treatment outcomes compared to conventional mechanical debridement.

Objective: To compare the clinical outcomes of laser-assisted therapy with conventional mechanical treatment in patients with peri-implant mucositis.

Materials and Methods: An electronic search was conducted in the PubMed, Google Scholar and Scopus databases using the keywords “laser therapy” and “peri-implant mucositis” for the period 2015–2026. English-language articles involving randomized or controlled clinical trials were included. Reviews and case reports were excluded. A total of nine studies were included.

Results: Most studies were RCTs and evaluated different types of lasers as adjunctive therapy. A significant improvement in clinical parameters (BOP, PPD, PI) were observed in both groups. However, no statistically significant differences were recorded between laser and conventional therapy. Limited short-term benefits were reported, primarily in reducing inflammation, without consistent long-term maintenance.

Conclusions: Laser therapy appears to offer limited additional benefits as an adjunctive method, without clear superiority over conventional debridement. Further studies are needed to establish treatment protocols.

POSTER PRESENTATION

PP.297

MAPPING THE USE OF ARTIFICIAL INTELLIGENCE IN DENTAL IMPLANTOLOGY: A BIBLIOMETRIC ANALYSIS.

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Introduction: Artificial intelligence (AI) has significantly transformed dentistry, particularly dental implantology, by enhancing diagnostic accuracy, treatment planning, surgical precision, and overall efficiency in dental implant procedures.

Objective: The present bibliometric analysis aims to examine the scientific landscape, identify applications, and highlight research trends in AI in dental implantology.

Materials and Methods: A comprehensive literature search was conducted in the Scopus database on 18 March 2026, retrieving all publications related to AI and dental implantology. The selected articles were analyzed using Biblioshiny. The following data were extracted: publication titles and years, most productive authors, universities and countries, top-10 cited articles, co-citation networks, and keyword analysis.

Results: A total of 433 publications on AI in dental implantology, published between 1998 and March 2026, were identified across 171 sources. The field demonstrates steady growth, with an annual growth rate of 11.49%. A total of 1,752 authors contributed to the retrieved publications, with only 17 single-authored documents. International collaboration was also notable, accounting for 33.49% of publications. In terms of content, 882 author keywords and 1,918 Keywords Plus were identified, with the most frequent terms including “artificial intelligence,” “deep learning,” “dental implant,” and “accuracy”. The most productive countries were China, the United States of America, and South Korea, with significant contributions from leading academic institutions.

Conclusions: The application of artificial intelligence in dental implantology is rapidly expanding. Bibliometric analysis underscores its growing clinical relevance and its potential to improve diagnostic precision, enhance treatment outcomes, and support evidence-based clinical decision-making.

POSTER PRESENTATION

PP.298

WINDOW TO SUCCESS: MEMBRANE OR PERIOSTEUM COVERAGE AFTER LATERAL WINDOW SINUS AUGMENTATION?

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Introduction: The lateral window sinus lift remains one of the most utilized techniques to facilitate implant placement in the posterior maxilla. Management of the lateral window following graft placement plays a critical role in wound stability and regenerative success. While barrier membranes are traditionally employed to protect the grafted site, periosteum repositioning has emerged as a simplified, but rather successful alternative. Despite widespread clinical use of both approaches, consensus regarding their relative effectiveness is still lacking.

Objective: The objective was to critically evaluate and compare the clinical outcomes of membrane coverage and periosteum repositioning in lateral window sinus augmentation.

Materials and Methods: A comprehensive literature review of the literature was conducted, focusing on human comparative studies reporting clinically relevant outcomes, including bone regeneration, implant survival, and postoperative complications. Studies directly assessing both techniques were analyzed to identify trends in performance and predictability.

Results: Current evidence indicates that both membrane coverage and periosteum repositioning demonstrate comparable clinical outcomes. No consistent data can suggest a clear advantage of one technique over the other with respect to regenerative success, implant integration, or complication profile.

Conclusions: Both approaches represent reliable strategies with predictable results for lateral window sinus augmentation. In the absence of demonstrated superiority, technique selection should be guided by clinical judgment, case-specific considerations, and surgical experience.

POSTER PRESENTATION

PP.299

DIFFERENTIAL DIAGNOSIS OF NON-ODONTOGENIC PAIN: THE ROLE OF MASTICATORY MUSCLE TRIGGER POINTS

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Introduction: Dental pain is one of the most frequent chief complaints in clinical practice. While often odontogenic, such pain may frequently be non-odontogenic in origin, arising from myofascial trigger points (MTrPs) within the masticatory muscles. These hyper-irritable nodules within taut muscle bands can radiate pain locally or along predictable patterns. MTrPs can provoke referred pain that mimics dental pathology, leading to significant diagnostic confusion.

Objective: This study aims to evaluate the role of MTrPs in the masticatory muscles as a source of non-odontogenic pain and to emphasize their significance in the differential diagnosis of orofacial pain.

Materials and Methods: A narrative review was conducted via a systematic search of the PubMed database using various combinations of the terms: “dental pain”, “myofascial pain”, “non-odontogenic pain” “trigger points” and “masticatory muscles”. This was supplemented by a manual search of the seminal text, Travell and Simons’ “Myofascial Pain and Dysfunction: The Trigger Point Manual”.

Results: Pain of the masticatory muscles can precisely mimic odontogenic pain, complicating the diagnostic process. The literature indicates that systematic manual palpation, ultrasonic imaging, diagnostic MTrPs injections, and selective dental anesthesia are essential diagnostic adjuncts. These tools facilitate the differentiation between true dental pathology and referred myofascial pain, ensuring appropriate conservative management.

Conclusions: Despite advancements in orofacial pain research, a standardized diagnostic protocol for non-odontogenic pain remains elusive. A comprehensive evaluative approach is imperative for clinicians to accurately identify MTrPs. Mastering this differential diagnosis is essential to safeguard patients from unnecessary, irreversible interventions, such as endodontic treatments or extractions.

POSTER PRESENTATION

PP.300

THE IMPACT OF MASTICATION AND OCCLUSION ON COGNITIVE FUNCTION AND SKILLS

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Mastication and occlusion are connected mainly with the hippocampus, a region associated with cognitive functions. The purpose of this review was to investigate the effect of occlusion as a parameter on cognitive function.

Methods and Materials: Literature review was conducted through data bases (pubmed/webscience/googlescholar). Inclusion criteria were set (English language, studies investigating mastication efficacy, cognitive function and impaired occlusion related with mental implications). Studies' evaluation was conducted by two independent reviewers and when a disagreement occurred a third reviewer was involved to come up to an agreement.

Results: 18 titles and 18 abstracts were selected and finally 7 studies were included. Different methods evaluating mastication efficacy were reported. Occlusal contacts were measured through analog and digital protocols (T-Scan III), and cognitive function was documented using protocols such as Mini-Mental State Examination (MMSE). Parameters supported to affect mastication included number and position of teeth, value of occlusal forces, occlusal balance and prosthodontic rehabilitation. Twenty teeth (6-8-10 pairs of teeth) reported to be crucial for successful mastication. Number of the posterior teeth and molar occlusion had the most significant impact on cognitive mastication factor, indicating that the replacement of posterior teeth is of high importance. Most studies included people >60yeras old.

Conclusions: In conclusion, the positive correlation between the function of mastication and the maintenance of cognitive abilities is demonstrated. Natural dentition is reported to be more beneficial, followed by prosthodontic restorations, while edentulous posterior regions could increase the risk of implications in cognitive function.

POSTER PRESENTATION

PP.301

TMD PATIENTS TREATMENT WITH MAXILLARY STABILIZATION APPLIANCES

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Introduction: Occlusal splints are treatment approach in establishing neuromuscular functional balance between different parts of the stomatognathic system in patients with temporomandibular disorders (TMDs).

Materials and Methods: To show the effectiveness of the Maxillary stabilization appliances, also known as Michigan splint in management of various temporomandibular disorders.
Through this case report we present the occlusal splint use, as intermediate treatment, by repositioning the mandible in the central relation, as a physiologic treatment position, before starting the orthodontic therapy with fixed orthodontic appliances. Patient had presence of various temporomandibular disorders (TMD) symptoms, such as crepitations and subluxation of TMJ, headaches, myofascial pain, pain in the TMJ region and pain radiating to the neck and shoulders. After the complete clinical examination and digital T-Scan computerized occlusal analysis, we made the Michigan splint as a specific type of occlusal splint designed to reposition the jaw to a more optimal alignment, which works by gradually adjusting or stabilizing the position of the lower jaw to the most comfortable position to alleviate strain on the temporomandibular joint and surrounding muscles, thereby reducing symptoms such as jaw pain, clicking and limited movement.

Results: Occlusal splint therapy is useful for the diagnosis and management of various masticatory system disorders and considerably reduce TMD symptoms.

Keywords: Whenever rearrangement of the occlusion is required, use of splint therapy modifying the muscle hyperactivity and ensuring a stable relationship is essential.
Temporomandibular disorders, occlusal splints, digital T-Scan computerized occlusal analysis.

POSTER PRESENTATION

PP.302

TEMPOROMANDIBULAR DISORDERS IN WOMEN: EPIDEMIOLOGY AND THE ROLE OF SEX HORMONES

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Introduction: Temporomandibular disorders (TMD) refer to a group of conditions that affect the temporomandibular joint (TMJ), the chewing muscles and the surrounding structures and they are a leading source of orofacial pain. Research consistently shows a noticeable difference between sexes, with women accounting for about 70–80% of cases. This higher prevalence is especially evident during the reproductive years, typically between ages 20 and 40.

Objective: This review aims to explore the relationship between TMD and the female sex, with particular attention to epidemiological patterns and the biological mechanisms involved.

Materials and Methods: A narrow search of the literature was conducted using PubMed and Scopus databases using keywords such as “TMD”, “TMJ”, “female”, “estrogen” and “sex hormones”. Articles published between 2015 and 2025 were included.

Results: The greater occurrence of TMD in women appears to be largely influenced by biological and hormonal factors. Estrogen plays a key role in maintaining TMJ balance by interacting with specific receptors that regulate collagen turnover, bone changes, and inflammatory processes. It can also lower pain tolerance, making individuals more sensitive to discomfort. In addition, estrogen enhances the effects of relaxin, which increases the activity of enzymes that break down connective tissue, potentially leading to greater joint looseness and pain. Genetic factors, such as variations in estrogen receptor genes, along with psychosocial influences like stress, further contribute to the development of TMD.

Conclusions: TMD have a multifactorial etiology with a strong association with the female sex. Hormonal influences, especially estrogen, play a significant role, although the exact mechanisms remain unclear, highlighting the need for further research.

POSTER PRESENTATION

PP.303

CLINICAL EFFICACY OF PROLOTHERAPY FOR TEMPOROMANDIBULAR JOINT DISORDERS: A SYSTEMATIC REVIEW AND META-ANALYSIS

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Introduction: Temporomandibular disorders (TMDs) encompass a group of conditions characterized by anatomical, histological, and/or functional abnormalities that affect the muscular and/or articular components of the temporomandibular joint. Prolotherapy is an injectable treatment modality for chronic musculoskeletal pain that involves dextrose solution administration in the joint

Objective: To consider the existing quality of clinical evidence on the efficacy of prolotherapy versus placebo and other active comparators.
Materals and Methods A literature search in MEDLINE, Scopus, and Cochrane databases was performed.The maximal incisor opening (MIO), visual analogue score (VAS) for pain, and frequency of dislocations were analyzed as the outcomes.

Results: Six studies comparing prolotherapy to placebo were identified. Prolotherapy is uniformly more efficient in reducing the VAS for pain when compared to the placebo. Perceived jaw mobility was improved among prolotherapy patients, when compared to the placebo. A beneficial effect for prolotherapy with regard to MIO was not confirmed. Prolotherapy was found to be more effective in reducing pain, MIO, and clicking when compared to an occlusal splint in a single study. Conclusion Prolotherapy is also a promising modality for TMDs, despite the limited number of randomized clinical trials. Further research is needed to better describe the benefit of prolotherapy for other outcome

SPEAKERS INDEX

ORAL AND POSTER PRESENTATIONS

A

ACAR, Merve OP.107
ACHMET, Ramadan Chatzi PP.122
ACIPINAR, Sukran OP.156
AFRATI, Efstathia PP.213
AK, Onur Osman OP.033, PP.005
AKBULUT, Elif OP.173
AKINCI, Levent OP.122
AKSOY, Hulya PP.128
AKYILDIZ, Bugra OP.101
ALACAM, Aylin OP.052
ALEKSIC, Mihailo PP.217
ALEXIADOU, Emmanuela OP.142, PP.296
ALEXOUDI, Vaia-Aikaterini PP.104, PP.113
ALIFRAGKIS, Ioannis PP.220
ALTINBAS, Tugba OP.201
ALTINISIK, Yunus Emre OP.035
ALTUN, Emine Kubra Ceylan PP.184
ALTUNTAS, Merve Cennet OP.198
ANASTASIOU, Athanasia PP.053
ANCELKOVIC, Katarina PP.070
ANGELOS, Sfyrakis Velivasakis PP.177, PP.178
ANGELOVSKA, Aneta OP.203
ANNA, Tsalera Eleni PP.271
APOSTOLOSKI, Pavle PP.088
ARACHOVITI, Christina PP.119
ARGYRIOU, Glykeria PP.284
ARI, Melis PP.229
ARSLAN, Muhammet Batuhan OP.171
ARSOVA, Ana Gigovska OP.129
ARSOVSKI, Ljupka PP.289
ARVANITOPOULOU, Ioanna PP.176
ARZIK, Orhan OP.221
ASKIN, Selin Seda Caglar OP.099
ASTREIDIS, Ioannis OP.132
ATA, Zeynep OP.044
ATAY, Selin OP.065

B

BALCI, Irem Tosun OP.175
BANIAS, Dimitrios OP.140
BARA, Silvana PP.159
BARDAKCI, Enes OP.233
BARDAS, Lampros OP.012, OP.143, OP.166
BARIS, Sevda Durust OP.115, PP.071
BARMPOUNAKIS, Ilias OP.134, OP.136
BARUT, Guher OP.106
BASARAN, Elif Turkes OP.102
BASARAN, Hayrunnisa PP.016
BASARAN, Kubra PP.153
BASYIGIT, Guler OP.163
BATAS, Leonidas OP.176
BATDAL, Tutku Karakus OP.087
BATSKINI, Anna PP.264
BEDER, Melek PP.277
BENEKOU, Ioanna PP.077
BEQIRAJ, Sidrit PP.254
BIMBASHI, Anita Ismaili PP.098
BINLI, Ezgi PP.069
BITISIK, Irem Nur OP.241
BOJIC, Danka PP.144
BOTSIS, Filippos PP.028
BOUAKEL, Lara OP.146, PP.298
BOZKURT, Durmus OP.084
BRUSARSKA, Yoana PP.090
BULAK, Nihan OP.186

C

CAGLAYAN, Menevse OP.169
CAKAN, Kubra Nur OP.042
CAKAR, Dilay OP.224
CAKMAK, Berrak OP.048
CANA, Amella PP.239
CANDIR, Cerengul OP.079, PP.001
CANPOLAT, Berfin PP.149
CAPRAK, Ilker OP.027
CAULIER, Christine PP.231
CEKIC, Ezgi Can OP.085
CELEN, Burcu Latife OP.028, OP.032
CELIK, Merve Nur OP.250
CELIKEL, Peris OP.230
CELIKKOL, Berk OP.001
CELIKKOL, Ongun OP.002
CETIN, Emine Zehra Aydin PP.135
CETINER, Elif Begum Yigit OP.253
CHALVATZI, Konstantina Maria PP.283
CHARALAMPIDIS, Ioannis Marinos PP.052, PP.269, PP.274
CHARALAMPIDIS, Vasilis OP.184
CHARISI, Christina PP.192
CHATZILAMPROU, Eleni PP.076
CHRISTODOULOU, Panagiota PP.057, PP.235
CHRISTONI, Theofano PP.151
CHRYSOCHOOY, Georgios PP.115
CICEK, Ece PP.221
CIFTCI, Ceyda OP.216
CINCI, Maide OP.207
COLAK, Sefa OP.126
COLAK, Seyma PP.129
CORIC, Gorica PP.161
CVETIC, Nevena PP.035

D

DAG, Onur Dogan PP.223
DAMALAS, Alexandros F. PP.203
DANIIL, Louiza OP.210
DASDELEN, Mehmet Melih PP.275
DASDELEN, Rabia Kilicaslan OP.193
DEGIRMENCI, Alperen OP.109
DEGIRMENCI, Beyza Unalan OP.199, OP.200, OP.227
DELIVERSKA, Elitsa OP.013, PP.100
DEMIR, Helin PP.125
DEMIR, Meltem OP.090
DEMIREL, Beyza PP.228
DERAZ, Ahmed PP.214
DERELIOGLU, Sera Simsek OP.229
DIMARAKI, Maria PP.175
DIMITRA, Filippou OP.010
DIMITRIADI, Maria PP.091
DIMITRIJEVIC, Maja OP.098
DIMOVA, Cena PP.109
DINDAROGLU, Funda Cagirir OP.248
DIRI, Edanur PP.157
DJURDJEVIC, Milica PP.266
DOSSEVA-PANOVA, Velitchka OP.192
DRIZI, Vasiliki Maria PP.199
DROSOU, Despoina PP.110
DURICKOVIC, Mirjana PP.241
DZELETOVIC, Bojan PP.019, PP.020, PP.038, PP.039, PP.040, PP.041, PP.046

E

EFENDIOGLU, Busra OP.086
ELEZ, Jelena OP.131

EMINOGLU, Berfin PP.166
EMIR, Berrak Ulu OP.151
EMRAL, Emrah OP.053
ERDEVE, Gulmelis PP.014
ERDOGAN, Deniz OP.082
ERDOGAN, Hilal OP.113
ERGUNBAS, Bilge PP.051
ERKUL, Selen OP.223
EVIRGEN, Ozge Bilge OP.103
EVLICE, Derya Dogan OP.188

F

FASOULAS, Konstantinos PP.118
FILIPPOUSI, Karlota Ioanna PP.236
FILIZ, Eda Nur PP.031
FISEK, Bilge Yavuzcetin PP.257
FRAGKIADAKI, Eirini PP.124

G

GALIATSATOS, Panagiotis OP.189
GEDIK, Berk PP.292
GEORGOULI, Despoina OP.061, PP.074
GEYLANI, Asiye Nur OP.153
GIAKOUMI, Agni OP.130
GIANNAKEA, Aikaterini PP.056
GIANNAKOPOULOS, Zafeirios OP.191
GIANNITSIS, Panaggiotis OP.177
GIASEMI, Maria PP.127
GJUROVSKI, Sonja Rogoleva PP.117
GOCMEN, Damla Sinem OP.236
GOGCE, Seyma OP.254
GOGOLAS, George OP.161
GOKCE, Nazli Defne PP.085
GOKMEN, Elif Irmak OP.205
GONEN, Zehra Rabia OP.174
GOZETICI-CIL, Burcu OP.100
GUDUL, Kemal Furkan OP.062
GUL, Beyza PP.067, PP.068
GUL, Buse Cebi OP.185
GUL, Yagmur Sarac OP.168
GULER, Kubra OP.158
GULER, Melike OP.068
GULTEKIN, Pinar PP.171
GULTER, Guner Dilan OP.219
GUMUS, Berkay OP.081, PP.002
GUMUS, Rumeysa Betul OP.114
GUNES, Gulnihal PP.251
GUNES, Turkay OP.244
GUNGOR, Ars.gor.mevlut OP.117
GUR, Gurcag OP.071
GURBUZ, Duru PP.170
GURLER, Ayda PP.136
GURSES, Gokhan OP.037
GUVEN, Deren Gokce OP.069

H

HADJISOFOCLEOUS, Avra PP.186
HALICI, Nur OP.094
HALICI, Saniye Eren OP.059
HALIMI, Estela OP.175
HAN, Gamze Elif PP.013

I

ILIA, Athanasia PP.224
ISUFI, Algen PP.125
ISUFI, Irina PP.256, PP.279
ISUFI, Renato OP.128
IVANOVIC, Dina PP.173
IVANOVSKI, Dejan OP.121
IZGI, Ebru Kucukyilmaz OP.036, OP.243, OP.247, PP.140

J

JAKUPI, Jetmire Alimani PP.242
JUNCAR, Raluca PP.295

K

KACAN, Selcan OP.074
KALAFAT, Cagla Nur OP.195
KALAITZAKI, Georgia OP.164
KALEMAKI, Styliani PP.063
KALFIDIS, Ilias PP.263
KALLA, Anastasia PP.252
KALOGERAKOU, Filanthi PP.253
KAMBERI, Alba PP.240
KANCHEVA, Martina PP.133
KAPLAN, Elif Buse PP.132
KARABAGLI, Irem Celikyurek OP.214
KARACAM, Kubra OP.150
KARACHAUSHEVA, Bella PP.044
KARADIMITRIOU, Maria-Despoina OP.257
KARAGEORGIOU, Athanasios PP.065
KARAGIANNOPOULOU, Efthymia PP.206
KARAHAN, Meltem OP.231
KARAKUS, Eda OP.239
KARAMANI, Pelagia PP.276
KARANTOUMANI, Margarita PP.120
KARATAS, Bengisu PP.147
KARATAS, Emrehan OP.080
KARAYUREK, Fatih OP.016
KARCI, Bahar OP.218
KARDOULIA, Anna Maria PP.061
KARSTARLI, Beyza Sultan OP.057
KARSTARLI, Ozgur OP.076
KATERI, Maria OP.162
KATIFE, Anastasia PP.023
KATSAGKOLIS, Sterios PP.194
KATSIOU, Dimitra PP.082
KATZAGIANNAKI, Eirini PP.290
KAVAK, Ilayda OP.137
KAYA, Bengu Dogu PP.084
KAYA, Burak OP.170
KAYA, Ilhan OP.187
KAYATAS, Arin OP.175
KESER, Gaye OP.046
KESKIN, Sinem Ekiz OP.172
KHUDIYEVA, Leyla PP.156
KILIC, Umitcan OP.202
KILIC, Zuhal OP.006
KLAUDIA, Kalemi PP.036
KOCKANAT, Arzu OP.245
KOJIC, Durcina PP.092
KOKKAS, Andreas OP.120
KOKOLANTONAKIS, Nikolaos OP.018, OP.211
KOMURATES, Basak Burcu PP.225
KOMVOUTIS, Michail OP.022
KONTOGIANNI, Myrto Sofia PP.300
KONDYLIDOU, Athuna OP.014
KORAY, IMeltem OP.124
KORDOROUMPA, Sofia PP.185
KORKMAZ, Ekin PP.169
KOSE, Sevilay OP.072
KOSINTZI, Angeliki PP.179, PP.180
KOSTAKIS, Christos PP.250
KOSUTIC, Vukasin OP.251
KOUFODIMOU, Evmorfia PP.232
KOUKIA, Despoina PP.208
KOUKOULIDOU, Ariadni PP.248
KOUTROUMPA, Ermioni Konstantina PP.059
KOUTSONAS, Georgios PP.093
KOUTSOUPIA, Amalia PP.287
KRKOBABIC, Spiridon PP.168
KRTOLICA-GEORGIEV, Ana PP.072

KUBBE, Ahmet OP.066
KUCUKEKENCI, Funda Fundaoglu OP.116, PP.017
KUCUKOZ, Ayse Gul Uysal OP.030
KUCUKOZ, Ugur OP.119
KURT, Aysegul PP.083
KUTLU, Ilknur Usta OP.204

L

LACCOTRIPE, Maria PP.148
LIAPI, Filippa Areti PP.265
LIAPPIS, Evangelos OP.015
LOCA, Anil OP.021
LOUIZAKIS, Alexandros PP.101

M

MALISIOVAS, Konstantinos PP.073
MALKONDU, Selin PP.048
MANOLESAKI, Stamatia OP.019, PP.243
MARIA, Balampanidou PP.198
MARINAKIS, Emmanouil OP.138
MARINOS, Panagiotis OP.011
MARKOULI, Myrsini PP.261
MARKOVIC, Jovan PP.268
MASMAS, Dilara Sena OP.083
MAVRIDOU, Maria PP.262
MAYDA, Bekir PP.291
MERCAN, Mervenur OP.093
MERT, Selen Elif OP.105
MERTCAN, Nihan OP.226
METODIEVA-ALEKSANDROVA, Mila OP.077
MICHAILIDOU, Despoina PP.105, PP.106
MICHOU, Amalia PP.160
MIHAILOVIC, Milos Hadzi PP.197
MIHAJLO, Petrovski PP.286
MILANOVIC, Milena OP.020
MILITSI, Vasiliki PP.193
MILUTINOVIC-SMILJANIC, Sanja PP.086
MITREVSKA, Natasa Teovska OP.007
MITSAKI, Elpiniki PP.121, PP.209
MLADENOVSKI, Marko PP.207
MORSUMBUL, Hasan Melih OP.240
MOSCHONA, Nikoleta PP.081
MOULLAS, Angelos PP.267
MOUTZOUKI, Angeliki PP.139
MPLETSOS, Efstathios PP.246
MYLONAS, Themistoklis PP.285

N

NAIR, Esma PP.021
NANOS, Fotios OP.234
NASHKOVA, Sanja PP.134
NATASHA, Longurova PP.064
NAZLI, Tan PP.055
NEDELKOVSKA, Ivana PP.111
NEDIC, Strahinja PP.037
NEOPHYTOU, Chariklia PP.281
NIKOLIC, Marija OP.038
NIKOLOVSKI, Bruno PP.107
NIOTI, Angeliki PP.202
NTOVINOU, Foteini OP.043

O

OBRETKOVIC, Marija PP.142
OFLUOGLU, Duygu OP.008
OKUR, Zeynep OP.215
ONDER, Yasemin Beliz OP.154
OSTOJIC, Mihailo PP.097
OVALES, Thomas OP.149
OZ, Gizem PP.141
OZBIRTAN, Rifat OP.111
OZCAN, Ebru PP.033
OZCELIK, Irem PP.007
OZDAMAR, Asli Ege OP.167
OZDEMIR, Dilara PP.054
OZDEN, Kamer Billur Yucel OP.070
OZEL, Elif OP.060
OZEL, Zihni OP.041
OZTAN, Kenan OP.055
OZTURK, Seher PP.212

P

PAJOVIC, Danka OP.178
PALABIYIK, Ilker OP.063
PANAGIOTIDOU, Nikoleta - Maria PP.233
PANOUSIS, Themistoklis PP.116
PANTOS, Dimitrios PP.183
PAPADOPOULOS, Petros PP.191
PAPADOPOULOU, Anastasia PP.145
PAPADOPOULOU, Evangelia OP.123
PAPAIOANNOU, Elli PP.172
PAPAZOGLOU, Marianthi - Sofia PP.049
PAPOULIDOU, Ismini PP.075
PAPPA, Anastasia PP.164
PAPPA, Ourania PP.060
PARASKEVAS, Filippidis OP.159
PARASKEVI, Kestora PP.163
PARCHARIDIS, Evangelos PP.204
PASHOVA-TASSEVA, Zdravka PP.282
PEKINER, Filiz Namdar OP.009
PEKINER, Mert Yagiz PP.181
PELEMIS, Milos OP.182
PELIVANOVA, Ljubica Prosheva PP.227
PETALAS, Andrianos PP.078
PETRAKI, Georgia PP.280
PETRO, Enida PP.126
PETROVSKA, Jasna OP.054
PETROVSKI, Stojan OP.213
PHD, Enea Haxhiraj OP.181
PIEROVI, Nilsu PP.015
PIPEREVALIEV, Tome OP.180
PISKIN, Zelal Dicle PP.024, PP.138
POPOVIC, Jelena PP.066
POULOPOULOS, Konstantinos PP.187
POURSANIDOU, Konstantina PP.188

Q

QAFMOLLA, Alketa OP.049

R

RADENKOVIC, Galina OP.104
RADESKA, Elena PP.137
RALLIS, Dimitrios PP.087
RAPATZIKOU, Orsia PP.294
REKLITI, Maria Christina OP.045
RISTOVSKA, Tanja Pejkovska PP.230
ROMANOS, George N. PP.102
ROSSOS, Antonios OP.039

S

SAHIN, Alperen OP.220
SAHIN, Elyase Nur OP.092
SAHIN, Helin Serena PP.026
SAHIN, Yasemin Nur PP.032
SAHINER, Gurbet Alev Oztas OP.148
SALAMI, Vanda OP.095
SALIM, Anas Aaqel OP.067
SANDIC, Maja OP.003
SARAFIDOU, Katia PP.210
SARAMANTOS, Antonios PP.303
SARIASLAN, Merve OP.237
SAVAS, Selcuk OP.017, OP.242
SAVASCI, Merve PP.219
SAVIC-STANKOVIC, Tatjana PP.042
SEZEN, Egemen OP.208

SEZER, Meryem Coban PP.025
SHAHPASKA, Budima Pejkovska OP.196
SHOTAROVSKA, Vesna Jurukovska OP.110
SIGNAK, Huseyin OP.206
SILAHTARLIOGLU, Tugce PP.130
SIMIC, Aleksandra PP.080
SIMIC, Nemanja OP.091
SIMONI, Eriselda PP.095
SIRIN, Ahmet Fehmi OP.073
SLEZOVIC, Melis Ozgul OP.155
SMILJANIC, Durca PP.089
SOKMEN, Kevser OP.157
SOLOMOU, Maria Myrto PP.182
SONMEZ, Salih Volkan PP.018
SOTIRI, Venetia OP.025
SPANOUDI, Anna PP.302
SPASOVSKI, Spiro PP.096
SPRITINOUDIS, Theocharis OP.026
SPYRIDON, Bakratsis PP.150
STAMATIS, Spyridon PP.111, PP.112
STAMOULOPOULOS, Ioannis PP.094
STAMPOLIDIS, Konstantinos PP.245
STANIMIROVIC, Dragan PP.195
STANISAVLJEV, Bojana PP.218
STANKOVIC, Antonije OP.089
STASIC, Jovana N. PP.045
STAVREVA, Elena PP.152
STAVREVA, Natasha PP.058
STAVRIANAKOU, Anna OP.024
STAVROS, Taramonlis PP.200, PP.201
STEFANOU, Alexandra PP.247
STEFANOVIC, Marija PP.216
STERGIADOU, Effimia PP.205
STOILKOVIC, Ancela OP.004
STOJANOVA, Irena PP.099
SUTUVEN, Elifnaz Ozen PP.222
SUYADAL, Mert PP.167
SYLLAIDOPOULOU, Ioanna OP.235

T

TAK, Suheda PP.154
TANGILIS, David PP.270
TASKALDIRAN, Ezgi Sila OP.176
TASKAN, Busra Sahbenderoglu OP.139
TASKAYA, Betul OP.256
TEMIZYUREK, Saliha Dilruba OP.075
TERZIEVSKA, Aneta PP.165
TERZIOGLU, Seyfettin OP.112
THEODORIDIS, Georgios OP.023, PP.174
TILAVERIDOU, Sofia PP.103, PP.114
TIRIMOGULLARI, Merve PP.043
TODOROVIC, Milos OP.005
TOKER, Afra Nur PP.155
TORUN, Zeynep Melda OP.056
TOSUN, Metin Ali PP.234
TRAJCULESKI, Stavre OP.179
TRPEVSKA, Vesna OP.058, PP.301
TSAMI, Maria PP.108
TSAVDARI, Eleni-Antonia OP.135
TSIAFITSA, Maria OP.064
TSILIAKOU, Agni PP.288
TSIOUPRA, Eleni PP.047
TSIRELI, Despoina PP.297
TSIROGIANNIS, Georgios OP.141, OP.144, PP.237
TSOLAKIS, Ioannis A. PP.273
TSOUMARI, Eleni PP.196
TUNC, Beyza PP.006
TURGUT, Okan PP.003
TURKMEN, Atiye Tugba Kuzgun OP.194
TZAFERI, Eleni Ioanna OP.040
TZEKA, Maria PP.079
TZOUGANAKI, Simin PP.123

U

ULUSAL, Seda Yuksel PP.012
UNAL, Halil Tunahan OP.133
UNAL, Turkan OP.249, OP.252
URAZ, Sude PP.258
USLU, Gulsah PP.029
USTUN, Elifnur OP.118
UZUNER, Yasin PP.215

V

VAFEIADOU, Stavroula PP.050
VAKOU, Dimitra PP.238
VALAMVANOS, Theodoros-Filippos PP.158
VARELA, Maria OP.145
VAROL, Osman Bugra OP.165, PP.162
VASOVIC, Dina PP.272
VELJKOVIC, Lidija PP.293
VIDOURA, Nikoleta PP.299

X

XHEMNICA, Rozela PP.260

Y

YAHSI, Efe PP.226
YALCIN, Elif Sude PP.010
YANIK, Ali Bugra OP.152, PP.004
YAPISOGLU, Tugce OP.160
YAVSAN, Zeynep Seyda OP.258
YAZAR, Ipek OP.217
YAZICI, Tugce OP.125
YEMENOGLU, Hatice PP.244
YENIPINAR, Ayse Ebrar PP.027
YILDIRIM, Baris OP.190
YILDIRIM, Gamze OP.050
YILDIRIM, Gonca OP.051
YILDIRIM, Leyla PP.259
YILDIRIM, Nilay OP.096
YILDIRIM, Nursena PP.022
YILDIZ, Dervis OP.034, PP.008
YILMAZ, Burcu PP.131
YILMAZ, Duygu PP.211
YILMAZ, Ummugulsum OP.127
YUCEL, Gokay PP.034
YUKSEL, Kursat Fatih OP.246
YURTSEVEN, Busra Nur OP.029
YURTTAS, Melike OP.047

Z

ZAGANIDOU, Chara OP.225
ZAMPARA, Eirini PP.278
ZEYBEK, Simge OP.209
ZIAKAS, Ioannis PP.146
ZISIS, Stefanos PP.189
ZISIS, Vasileios PP.190
ZIVKOVIC, Marko OP.078
ZIVKOVIC, Nikola OP.108
ZIVKOVIC, Rade OP.212
ZOGAKIS, Ioannis P. PP.249, PP.255