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# 26th Congress of the BaSS

**11-14 May 2023, Skopje**
**Republic of North Macedonia**

# CURRENT TRENDS AND ADVANCES IN DENTISTRY

# ABSTRACT BOOK

**FIRST EDITION**

*The second edition with correction of all unintentional, technical errors and deficiencies will be available by 09.09.2023


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# 26th Congress of the BaSS 11-14 May 2023
# Skopje, Republic of North Macedonia

## "CURRENT TRENDS AND ADVANCES IN DENTISTRY"

ABSTRACTS BOOK
26th Congress of Balkan Stomatological Society (BaSS)
11-14 May 2023, Skopje
Republic of North Macedonia
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# PRESIDENTS'S MESSAGES

*Dear Distinguished Colleagues,*

*It gives me great pleasure to announce that the forthcoming 26th BaSS annual congress will be held in Skopje, North Macedonia, between 11th and 14th May 2023, continuing the tradition that began in Thessaloniki in 1996.*

*There is no doubt that this Congress of the Balkan Stomatological Society will contributes to promoting further professional cooperation and provide opportunities for mutual exchange of experience regarding modern dentistry. Its objectives include improving dental health services and dental medicine researches, as well as strengthening friendship among dental professionals who are committed to enhance their knowledge and skills.*

*After ten years, the City of Skopje will have the opportunity to host dentists not only from the Balkan region but also from countries around the world, and once again, they will have a chance to experience the impressive attractions and historic splendors in the country.*

*It is certain that this event with its conferences, round tables, scientific works, dental exhibitions and social programs will provide you with an experience that will be treasured for a lifetime.*

*I do really hope that you will join us on 11 May in Skopje, to share and gain insights about the up-to-date aspects of dental medicine currently being practiced worldwide.*

*Prof. Dr. ANA MINOVSKA*
*President of the Balkan Stomatological Society (BaSS)*

*Dear friends, esteemed colleagues,*

*It is my utmost pleasure to invite you to the 26th Congress of the Balkan Stomatological Society (BaSS), which will take place in Skopje, Republic of North Macedonia, from 11th to 13th of May, 2023.*
*The Congress will be a wonderful opportunity to exchange knowledge, know-how and experience between colleagues not only from the Balkan countries, but, from Europe and across the globe, as well.*

*The congress program will be comprised of a plethora of lectures from distinguished speakers from around the world, oral and poster presentations of the newest research findings, round tables and courses that give the participants opportunity to learn new clinical methods and modalities. Additionally, an exhibition of the most renowned companies in dentistry will give you an opportunity to be in touch with the newest advances in dental technology.*

*Last, but not least, I would sincerely like to invite you to our beautiful country, the Republic of North Macedonia, and its capital, Skopje, where you are going to be able to experience the wonderful Macedonian hospitality, cuisine and sights, while meeting old colleagues and friends and establishing new ones.*

*We are more than happy and looking forward to being your hosts in Skopje,*

*Yours sincerely,*
*Prof. Elizabeta Gjorgievska,*
*President of the 26th BaSS Congress*

*Dear Colleagues members and followers of the Balkan Stomatological Society (BaSS)*

*It is a great privilege to welcome you to the 26th BaSS Congress to be held in Skopje, North Macedonia from 11 to 14 of May 2023 from the position of Honorary President of the Congress.*

*For this honorable appointment I would like to express my sincere thanks to my dear friend Professor Ana Minovska, President of the Balkan Stomatological Society (BaSS) and Professor Elizabeta Gjorgievska, President of the 26th Bass Congress.*

*This BaSS Congress following the tradition of all previous BaSS Congresses will bring again together Dentists and Dental Students from all the Balkan Countries, in this post COVID-19 pandemic new beginning of face-to-face Meetings following the start we did in Sarajevo, Bosnia and Herzegovina last May.*

*Once again, we will be able to share scientific knowledge amongst colleagues and friends and enjoy the opportunities for social entertaining in the hospitable environment that our colleagues in North Macedonia are preparing.*

*With these few words I would like to invite you to make plans to join us in this 26th Congress of BaSS in Skopje next May. I look forward in seeing you there!*

*Professor Argirios Pissiotis DMD, MS, PhD, FICD*
*Honorary President 26th BaSS Congress*

TİKA

ПРОМЕДИКА
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# PLENARY

## SPEAKERS


**FIRST EDITION**
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FUTURA DENTAL 3shape TRIOS

## INTRAORALNI SKENER

TRIOS 5

TRIOS 4
WIRELESS

TRIOS 3

## LAB SKENERI

E2

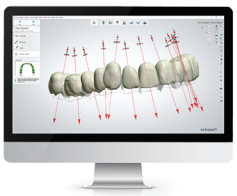
E3

E4

F8

## SOFTWARE STUDIO

IMPLANT STUDIO



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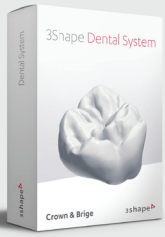
TRIOS DESIGN
STUDIO

## LAB SOFTWARE

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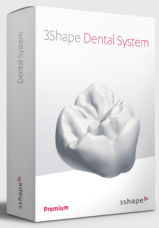


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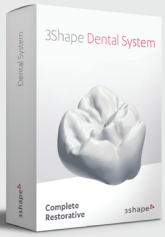


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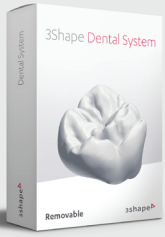


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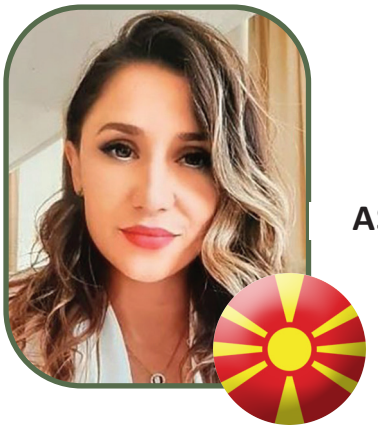

**ASS. PROF. DR. JULIJA ZARKOVA ATANASOVA DDM, MSC, PHD**

**PS01**

## INTRAORAL SCANNING – GUIDANCE FOR PREDICTABLE SUCCESS

Currently we are leaving in era of digital dentistry that has transformed our dental practices and continues to revolutionize the field of dentistry. In the past several years intraoral scanning is widely applied in prosthodontics as an alternative to the conventional impression taking. Digital impressions provide an array of advantages for dentists as well as patients. But what do we need to acquire a perfect and predictable scan and 3D model? In this lecture we will discuss how to overcome the challenges of intraoral scanning, how to fast master the skill, handling the scanner, retraction, and tissue isolation. We need to remember that all the scanners are different but if we follow some basics guidance our scanning speed and efficiency will increase, we can easy overcome the challenges and we will always get consistent clinical success.

**PROF. DR. KENAN FERATI DDM, MSC, PHD**

**PS02**

## REHABILITATION OF THE EXTREME ATROPHIC JAWS

The implant-prosthetic rehabilitation is a current practice in clinic dentistry and is characterized by safe and predictable results in the long term . However, in order to obtain the success of implant therapy, in the preliminary stages it is essential to assess and classify the amount of available bone. In fact, this evaluation is fundamental for the correct implant placement, according to the principles of modern prosthetically driven implant placement. In this presentation we will share our experience an several alternatives for the full arch rehabilitation of the jaws with different degrees of resorption. The main goals are to avoid complex regeneration procedures, to avoid zigomatic surgery and to still be able to perform the most compromised scenarios.

**PROF. DR. DANICA POPOVICH MONEVSKA DMD, PHD**

**PS03**

## MEDICATION-RELATED OSTEONECROSIS OF THE JAWS – MRONJ

Based on a growing number of case reports and institutional reviews, antiresorptive medications including bisphosphonates may cause exposed and necrotic bone that is isolated to the jaw. Medical professionals, surgeons, oncologist, dentist must be aware of potential risk for developing BRONJ in patient with bisphosphonate therapy. Therefore, before starting intravenous bisphosphonate therapy for a cancer patient, a detailed examination and panoramic x-ray of the oral cavity should be completed and patients should by educated on the benefits of prophylactic dental care avoiding later extractions. We suggest that surgical treatment on patients taking BPs is necessary because it improves and accelerates the healing process, hermetic closure of the muco-periosteal flap and the use of systemic antibiotic therapy. In conclusion, our data on the use of antibiotic therapy together with surgical debridement indicate positive results regarding the surgical treatment of BRONJ.

**PROF. DR. DANIELA VELEVSKA STEFKOVSKA**

**PS04**

## OSTEOIMMUNOLOGY AND MICROBAL LOAD OF DENTAL IMPLANTS

The search of a link between the cytokine levels and the specific bacterial pathogens is the subject of new studies in osteoimmunology. Bacteria impact similar responses to the host, causing the characteristic effects of signaling pathways associated with a series of proinflammatory cytokines. Two weeks after setting the prosthesis suprastructure by using the swab method, a part of the supragingival plaque was collected. A sample of the subgingival plaque was adsorbed on sterile dry paper strips. One year after the functional loading of implants clinical examinations were carried out to evaluate the fitness of the peri-implant tissues. Using radiographic findings the status of the alveolar bone was evaluated and the bone support was monitored. With the help of microbiological tests the implants microorganisms loading was determined. In the evaluation of the immune status (proinflammatory and anti-inflammatory cytokine profile) and the loading with oral microorganisms on the peri-implant tissues, a statistically highly significant relationship was concluded in terms of the given time dimension of the study ("time dependent status"). In determining the correlation between immunological and microbiological status and the clinical condition of the peri-implant tissues, we determined statistically significant relationships with all the analyzed categories of parameters. The analysis of cytokine profile contributes to the detection of early metabolic and biochemical lesions of the peri-implant tissue and monitoring the osseointegration process and the bone response to the prosthetic loading. These facts are the base of the development of future diagnostic biomarkers that will allow monitoring of the condition of the peri-implant tissues that simultaneously participate in creating strategies for early prevention and / or treatment of initial lesions of the same.

**ASSOC.PROF. SABETIM CHERKEZI**

**PS05**

## IMPACTED MAXILLARY CANINE AND THEIR MANAGEMENT

Impacted teeth are teeth that are formed in the bone, but for some reasons they did not erupt in their place or in any other place of the dental arch or elsewhere. Maxillary canines are often impacted and they take the second place immediately after the third molar. In this case, maxillary canines have special place who with their morphology and function are the only teeth in orofacial region. Aesthetics of the frontal teeth is in the interest of the patient and also of the dentist. Frontal healthy teeth are not aesthetic enough prerequisite, the teeth need to be well-aligned, the relationship between the gingiva and the teeth should also be acceptable. From the etiologic point of view, the anomaly is related to the lack of space for tooth eruptions and genetic predisposition. Impacted canines do not erupt in time by staying in the jaw. The possibility of pulling these teeth requires interdisciplinary collaboration of orthodontists, oral surgeons, periodontist, pedodontists and dentists. Clinical examination in the dentition of the deciduous teeth should find the symptoms of possible impacts, the lack of buccal rising in the gingival space over the crown of primary canine. Differential diagnosis should be done through orthopantomogram or CTBC capture. Only CBCT presents the entire area three-dimensionally, and can show the best abnormalities in the wrong direction, or impacted teeth, as well as ratios of the surrounding tissue and tooth. Surgery-Orthodontic Therapy consists in the approach to display the canine crown, the gradual pulling of the tooth in its dental arch space. For successful treatment is understood the placement of canine in its place without losing the surrounding bone and the harmonious relationship of the gingiva and dental arch in the aesthetic frontal area.

**ASSOC. PROF. DR. MIJOSKA ANETA DDS, PHD**

**ASS. PROF. DR. PETKOV MARIJAN DDS, MSC, PHD**

**PS06**

## MANAGEMENT OF PAIN IN PATIENTS WITH TEMPOROMANDIBULAR DISORDER (TMD): CHALLENGES AND SOLUTIONS

Temporomandibular disorders (TMD) comprise a variety of conditions affecting the anatomy and functional characteristics of the temporomandibular joint, masticatory muscles and surrounding structures. Common factors contributing to TMD are related to occlusion, trauma, anxiety and behavioral causes that frequently provoke symptoms of muscular, articular, and periarticular pain. Orofacial pain is defined as pain manifested in the face or oral cavity, including disorders as TMD that are major cause of non-odontogenic chronic pain. TMD has considerable prevalence, with a significant impact on physical and psychosocial wellbeing. Its prevalence has been reported to be between 3.7% and 12% and is three to five times more frequent in women. The so-called parafunctional behavior and conditions such as bruxism are some of the most important causes of TMD. By far, muscular dysfunction or hyperactivity is the most frequent cause of TMD. Treating the dysfunction can be particularly challenging, and a suitable therapeutic approach should be aimed at alleviating the main signs and symptoms of this condition. The vast majority of TMD symptoms subside spontaneously, and a large proportion of patients respond to conservative therapy. When injected into a muscle Botulinum toxin-type A (BoNT) blocks the release of acetylcholine - neurotransmitter that induces muscle contraction, blocks exocytosis and reduces the ability of the muscle to contract. Despite the limited research on chronic orofacial pain, the preliminary reports of efficacy are promising and offer the potential to improve pain relief in patient's refractory to conventional treatments. However, BoNT should only be used when those therapies have failed. The global approach to TMD and bruxism should be multidisciplinary.

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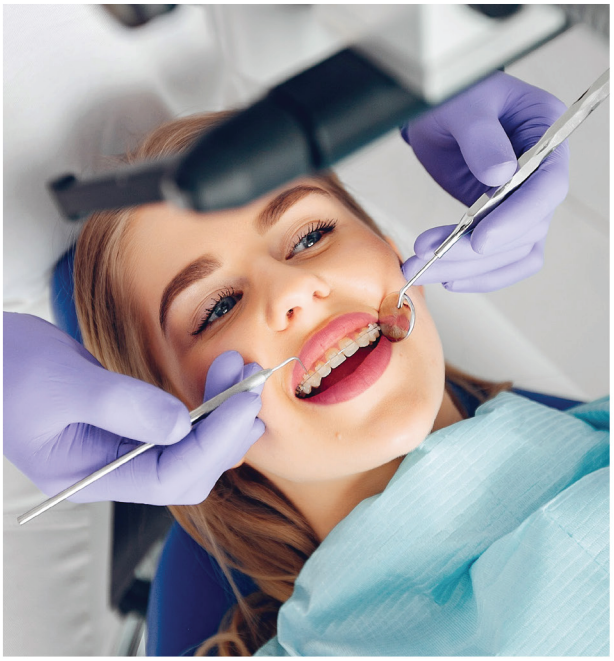

**PROF. DR. XHINA MULO DDM, PHD**

**PS07**

## EARLY TREATMENT OF CLASS 2 MALOCCLUSSION

Class II malocclusion is one of the most common malocclusions in children. Various dental and skeletal deviations may result in a Class II malocclusion. The purpose of this lecture is to report the effectiveness of early treatment with many treatment options available (headgear/functional appliances, etc.) for patients with Class II malocclusion. Pronounced overjet and incomplete lip closure has been shown to increase the risk for dental trauma. Early treatment with functional appliances has achieved significant reduction in the incidence of incisal trauma. Early versus late orthodontic treatment has some priority. Early intervention is easy to perform, there is better use of growth potential, the extent of treatment in the permanent dentition is reduced and there should be less damage to teeth and tissues. Furthermore, early treatment of Class II malocclusion has also claimed to have positive influence on self-esteem.

**DR. MILOŠ LJUBIČIĆ DMD**

**PS08**

## DIGITAL DENTISTRY

Digital Dentistry using 3D printer, chair side is a rapidly emerging field that utilizes 3D printing technology to manufacture dental prosthetics, such as crowns, bridges, and dentures, in a quick and cost-effective manner. This approach to dentistry eliminates the need for traditional dental impressions, reduces patient wait times, and improves accuracy in the creation of dental restorations. In this lecture, attendees will learn about the various types of 3D printers and materials used in digital dentistry, as well as the software used to create digital models. Additionally, the benefits and limitations of digital dentistry will be discussed, along with the potential impact on the dental industry as a whole. Case studies and demonstrations will be presented to illustrate the process of creating dental restorations using 3D printing technology, and attendees will have the opportunity to ask questions and engage in discussion with the lecturer. Overall, this lecture will provide valuable insights into the exciting advancements in digital dentistry and how the use of 3D printing technology is revolutionizing the field, providing patients with high-quality dental restorations in a more efficient and convenient manner.

**PROF. DR KAAN ORHAN DDS, MSC, MHM, PHD**

**PS09**

## ARTIFICIAL İNTELLIGENCE AND DEEP LEARNING IN DENTISTRY

Being familiar with anatomy and pathology of maxillofacial region especially in conjunction of different pathologies and systemic conditions would help professions to discover occult diseases and maxillofacial pathology cases esp. that has refereed pain earlier. Treatment planning for maxillofacial pathologies involves gathering as much information as possible. Key tools to successful treatment planning are the appropriate radiographic techniques, allowing visualization of a site in all three dimensional aspects with less ionizing radiation as possible. AI in healthcare is the use of algorithms and software to approximate human cognition in the analysis of complex medical data. Specifically, AI is the ability for computer algorithms to approximate conclusions without direct human input. What distinguishes AI technology from traditional technologies in health care is the ability to gain information, process it and give a well-defined output to the end-user. AI does this through machine learning algorithms, which can recognize patterns in behavior and create its own logic.

**PROF. DR. ATHANASIOS POULOPOULOS DDS, MSC, PHD**

**PS10**

## INTRA-ORAL MALIGNANCY : MYTHS AND FACTS. WHAT THE DENTIST MUST BE AWARE

Cancer of the oral cavity is one of the most common malignancies, especially in developing countries, but also in the developed world. Intraoral malignancy includes squamous cell carcinomas, cancer of the minor salivary glands, lymphomas ,sarcomas, leukemias with intraoral manifestations, melanomas and metastatic tumors. Although early diagnosis is relatively easy, presentation with advanced disease is not uncommon. Despite easy self-examination and physical examination, patients often present with advanced stage disease. Visual inspection and palpation allow an accurate impression of the extent of the disease, the third dimension of tumor, the presence of bone invasion, or skin breakdown. Approximately a third of patients treated relapse, and locoregional recurrence is the most common pattern of failure. Significant histopathologic predictors of outcome include depth of invasion of the primary tumor, positive margins of surgical resection, perineural invasion and major extracapsular nodal extension. Early diagnosis of intra-oral malignancy requires better knowledge of the biological malignant behavior and improved awareness and tools for the effective management.

**PROF. DR. FILIZ PEKINER DDS,PHD**

**PS11**

## FROM PRECANCEROUS LESIONS TO CANCER IN ORAL MUCOSAL CASES

Oral cancers have a very high morbidity and mortality rate. It is among the eight deadliest cancer types identified by the World Health Organization (WHO). It is seen that the incidence of oral cancers increases with age and more than 95% of the patients are over 40 years old, and it is twice as high in men as in women. More than 90% of malignancies in this region are squamous cell carcinomas arising from the surface epithelium of the mucosa. Despite the advances in the diagnosis and treatment approaches of oral cancers, half of the patients die in the first five years. The risk of developing oral cancers increases with advancing age; however, it has been reported in recent years that squamous cell carcinoma is frequently detected in patients younger than 40 years of age. It is thought that this frequency increases due to the spread of the habits that constitute the etiological factors equally in women and men in developed societies. One of the most important features of the mouth is that it has the opportunity to examine by “direct vision”, which is not possible in any body cavity. Considering that approximately 90% of oral-perioral and oro-pharyngeal malignancies originate from the epithelium, it becomes even more important not to miss the changes in the entire oral cavity during the examination. Dentists are primarily responsible for the early diagnosis of oral cancers due to the area of study and the “frequency of seeing the patient” due to long-term treatments. In this presentation, precancerous and oral cancer cases with typical/atypical clinical findings will be evaluated with the latest information for early diagnosis in the clinic.

**PROF.DR. NIKOLAOS G. NIKITAKIS MD, DDS, PHD**

**PS12**

## ORAL POTENTIALLY MALIGNANT DISORDERS (PMDS): THE GREAT PROMISE OF MOLECULAR MARKERS AND TARGETS

Oral potentially malignant disorders (OPMDs) are characterized by an increased risk of transformation to oral squamous cell carcinoma (OSCC). Among them, leukoplakia is the most common, while erythroplakia and proliferative verrucous leukoplakia, although more rare, are associated with a higher incidence of malignant transformation (MT). Considering the guarded prognosis of OSCC, as well as the physical, psychological and financial burden and the significant side effects of its treatment, there is a quest for significant improvements in detection, diagnosis, prognostication and management of OPMDs. Although biopsy and histopathologic examination remain the gold standard for OPMD diagnosis, the goal of accurately defining the risk of MT of any given OPMD, which is a prerequisite for selecting the best treatment option, remains elusive. In addition, the current management of these lesions is challenging and, to a large extent, suboptimal. Nonetheless, continuing research efforts worldwide generate optimism that the ongoing investigation of OPMDs will ameliorate both their diagnosis and management in the near future. In recent years, increasing emphasis has been given to research efforts aiming at a better understanding of the molecular mechanisms underlying OPMD and OSCC development and progression. Specifically, discovering and validating novel diagnostic, prognostic and predictive markers, at the microscopic and/or molecular level, hold great promise for more successful prevention and management of oral premalignancy and cancer. In addition, some of the studied molecules may also serve as innovative treatment targets, increasing our therapeutic armamentarium.In this lecture, the focus will be on molecular markers and targets that have been studied in the context of OPMDs. Selected markers shown to correlate with the presence and grade of epithelial dysplasia and the likelihood of recurrence or MT, as well as targets showing promise for chemoprevention of OPMDs, will be briefly discussed. The challenges and opportunities for future research and the potential for clinical applications will be highlight

**ASS. PROF. DR LASZLO PARKANYI DMD**

**PS13**

## BONE AUGMENTATION WITH STATE OF THE ART BIOMATERILAS – POSSIBILITIES AND LIMITATIONS

Several bone augmentation techniqes have been described in the literature for the past decades. Starting from highly invasive procedures using solely autogenous bone, today we have far more opportunities with the use of evidence based biomaterilas. Patients demands are today for less number of surgical procedures, shorter overall healing time, and definitely less invasiveness! Can we achive that without compromising high predictability? When and how do state of the art biomaterilas let us achieve these goals, and where might still be there limitations? How can we make a 2 stage bone augmentation procedure into 1 stage? This lecture and hands-on course will cover some of the techniqes for bone augmentation in advanced horizontal bone resorption situatiuons and will provide answer on the questions above.

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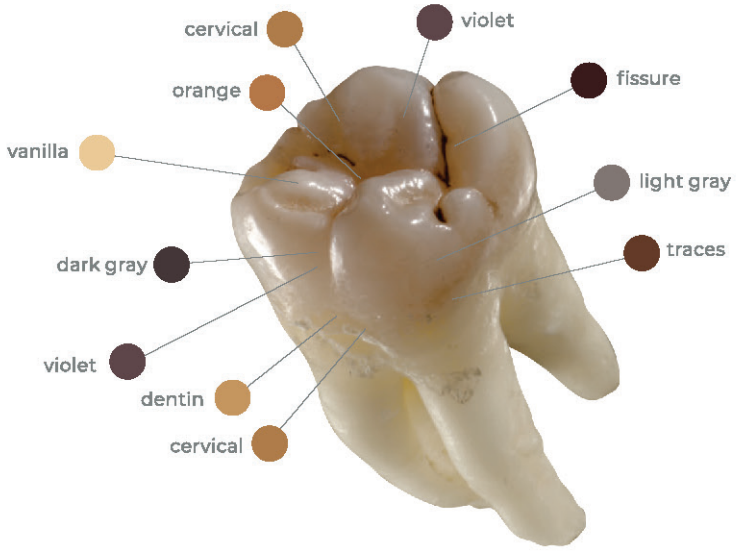


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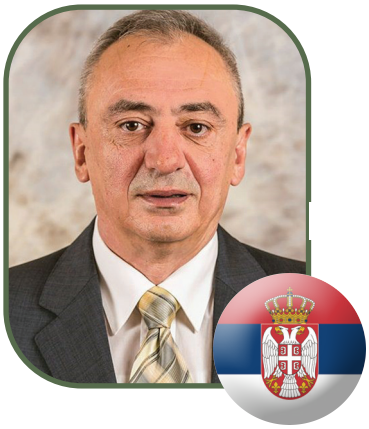
**PROF. DR. JOHN W. NICHOLSON PHD, DSC**

**PS14**

## THE BIOACTIVITY OF GLASS-IONOMER CEMENTS

This presentation will review the evidence for the bioactivity of glass-ionomer dental cements. There is currently considerable interest in the possibility of improving the bioactivity of these materials, most typically by including bioactive glass as an additional filler. Such an approach usually assumes that glass-ionomers lack any inherent bioactivity of their own but, as will be discussed, this is not true. The first artificial material to be described as “bioactive” was the so-called “Bioglass” invented in the USA by Professor Larry Hench in 1969.

It was called “bioactive” because it formed a mechanically strong bond to living bone. This characteristic became the defining feature of a bioactive material, i.e. the ability to form a mechanically strong bond to living tissue. For many years, it has been known that glass-ionomers will form such a bond to vital dentine. However, the significance of this behaviour has been largely overlooked. Nonetheless, it is behaviour that is analogous to that of Bioglass and as such should be taken as evidence that glass-ionomers, too, are bioactive. Bioglass has two other features that are considered important in making it bioactive, namely that it releases biologically beneficial ions and alters slightly the local pH around the implant. Published studies show that these two behaviours are also displayed by glass-ionomer cements. These materials release ions such as Ca2+ (or Sr2+), Na+, silicate and phosphate, all of which are beneficial biologically. These ions are released in addition to fluoride, a species which also has an active biological role in promoting remineralisation of dentine and enamel. Overall, by reconsidering much that is known about glass-ionomers, it is clear that they should be considered bioactive, and that this is significant in their clinical role. As more emphasis is placed on bioactivity in dental restorative materials, it is important to recognise this advantage of glass-ionomer cements, and to promote their use in circumstances where this feature is particularly desirab.



**PROF. DR. ALEKSA MARKOVIC**

**PS15**

## IMPLANT THERAPY OF HYPODONTIA - SURGICAL ASPECTS

Hypodontia, or tooth agenesis, has multifactorial aetiology that includes genetic regulation and environmental factors. The prevalence of hypodontia in permanent dentition ranges from 1.6% to 36.5%, depending on the population tested, and usually involves mandibular second premolars unilaterally or maxillary lateral incisors bilaterally. Considering clinical characteristics of the hypodontia, implant therapy in these patients requires a multidisciplinary approach to ensure aesthetically and functionally successful outcome. A sufficient space for implant placement is often necessary to provide by applying orthodontic therapy. Patients with congenitally missing teeth may present with undeveloped alveolar bone morphology, and ridge augmentation might be required in order to provide bone volume for adequate prosthetically driven implant positioning. Careful selection of dimensions and macro design of implants is important for the aesthetic success of the treatment, since they are performed mainly in the aesthetic zone. Implant treatment significantly improves oral health related quality of life in young patients with hypodontia. Clinicians should choose the appropriate time for implant treatment , understanding the risk associated with infraocclusion whan placing implants who heal ankylotic in jaws that are still growing and developing.

**PROF. DR. ZORAN LAZIC**

**PS16**

## POSSIBILITIES OF IMPLANT-PROSTHETIC TREATMENT OF TOOTHLESS PATIENTS

Modern implantology today needs to respond to the patient's demands from the functional and aesthetic aspect and to make a compromise between the patient's wishes, medical indication and the therapist's training. The patient's wishes play a large role in the choice of treatment when there is more than one possible option. However, based on the analysis of the CBCT image and the clinical examination, we get a relatively clear idea of the therapeutic options and the optimal solution for the patient. It should be borne in mind that after tooth extraction, bone and soft tissue morphological changes occur, so several therapeutic options will be shown depending on the amount of available bone. We will analyze situations when we have the possibility of installing the maximum number of implants, but also situations when it is necessary to perform augmentation procedures and a sinus lift in order to create the conditions for implant installation. Cases will also be presented when zygomatic implants are installed due to a lack of bone tissue and, accordingly, adequate prosthetic solutions.

**ADJUNCT PROF. DR. DANIEL S.OH BS, MS, PHD**

**PS17**

## THE RAISING STANDARD IN BONE REGENERATION

To secure implants placement for full denture rehabilitation, a solid bone is essential. When a prompt and uniform blood circulation follows on implanted bone grafts, there is a high expectation for healthy bone regeneration. Current methods for bone regeneration display a shortcoming for greater fluid absorption and healthier bone generation and recovery. InRoad® allows for the formation of stronger and healthier solid bones with implant placements, and projects a novel and efficient way of doing so. The aim is to introduce membrane-free bone reconstruction techniques using synthetic bone grafts, which has a superior sucking property via a macro-micro-nano engineered structure mixed with homologous fibrin glue (HFG). The unique structure of novel synthetic bone grafts induced capillary action during mixing and grafting, resulting in enhanced bone regeneration. Implanted grafts were well-positioned and maintained at the defected sites even without membrane coverage. No pain or swelling was reported. 2-3 weeks following surgery, a pink mucosa covered the surgical area without inflammation. X-ray examination revealed a progressive increase in bone density. Bone density became similar to that of the adjacent healthy bone at 5–6 months. Implant insertion torques were measured up to 70 Ncm. A few fibrils and mononuclear cells and no visible inflammatory cells were confirmed by histology.

**ASS. PROF. DR. ZORAN SHUSHAK DDS,DDM, PHD IN OMFS**

**PS18**

## MANAGEMENT OF COMPLICATIONS OF MAXILLARY SINUS AUGMENTATIONS

Maxillary sinus floor elevation procedures are becoming more popular prior to placement of dental implants in maxillae that have suffered severe bone loss due to sinus pneumatization, alveolar bone atrophy, or trauma. It has been proven that the lateral approach of maxillary sinus augmentation is a safe and long-term procedure in partially or totally edentulous maxilla. The most common sinus lift complications are: perforation of sinus membrane in 19.5% of cases, postoperative graft infection in 2.9%, graft loss leading to impossibility of implant placement in 1.9% of cases, and loss of the implants placed on the augmented sites at a rate of 3.5% per year.

**PROF. DR. AHMED A. ELWAHED SHAABAN BDS, MDSC,DDSC, PHD**

**PS19**

## NON METALLIC IMPLANTS THE NEW ERA

Regarding the great improvement and digitalization in the field of dentistry especially the implantology sector most of the recent techniques in manufacturing of dental implants starting to change the main strategies especially that concerned with the material to be used for manufacturing dental implants because the classic metal titanium have some questionable reactions with human tissues and with rising of non metallic substitutes for dental implants manufacturing like PEEK (poly-ether-ether-Keton) and PEK(poly-ether-ketone) and zirconium and the great modifications on their properties to be efficiently used as dental implant materials and that leads us to an important conclusion that we need to change our clinical strategies regarding using non metallic implants

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**ASSOC. PROF. DR. JAMES TSOI BSC, PHD**

**PS20**

## MECHANICAL AND BIOLOGICAL ASPECTS OF DENTAL CAD/CAM CERAMICS

Modern dental CAD/CAM ceramics have enabled prosthetic dentistry towards an aesthetic and functional era. These materials may be different and should be used and evaluated in different ways. However, for materials “advocated” with the same chemical entity, do they the same? In addition, how to let laboratory-based research and data become valuable information to clinical or dental technician practices? This lecture will try to address these questions by assessing the mechanical and biological aspects of modern dental CAD/CAM ceramics.

**PROF. DR. EBRU KARABECE ÇAL**

**PS21**

## AN INSIGHT INTO UP-TO-DATE IMPLANT ABUTMENT SELECTION

Dental implant therapy is an often preferred treatment option to restore oral functions and aesthetics in patients with missing teeth. The restorative procedure of implant dentistry has become increasingly sophisticated in recent years due to the constant increase of patient demands for dental esthetics. Abutments for implant supported restorations are among the components that undergo frequent updates due to above necessities. Several abutment options have been introduced to dental market that makes the selection more complex and complicated for the clinicians. Correct abutment selection is critical for the long-term mechanical, biological and aesthetic success of implant treatment. This decision is even more vital especially if the implant placement has been challenging or compromised. Correct choice of the abutment does not only help to achieve a mechanical stability but esthetically pleasing restorations as well. It is important to know the details of available abutment materials, their shapes, the type, and design of the implant-abutment connection to select an appropriate abutment in any clinical situation. This presentation aims to enlighten evolution of implant abutments and provide current abutment solutions, thus helping the clinician to simplify a confusing decision.

**ASS.PROF. DR. BRUNO NIKOLOVSKI DDM, OMS, PHD**

**PS22**

## SURGICAL OPTIONS FOR ORO-ANTRAL COMMUNICATIONS CLOSURE

An oro-antral communication is defined as a permanent pathological connection between the maxillary sinus and the septic oral cavity. This unfavorable event is usually associated with odontogenic maxillary sinusitis that can be caused by tooth extractions, infection, osteomyelitis, trauma, failed maxillary sinus lifts, bone grafts, poor positioning of dental implant fixtures and other iatrogenic complications. Oroantral fistula (OAF) often develops after extraction of posterior maxillary teeth and requires surgical closure. Nevertheless, even gentle extraction does not always guarantee against OAF formation, so a surgeon should be capable of treating this complication. This lecture considers main concepts and methods of plastic surgery directed to reconstruct tightness of mouth. Moreover, the advantages and disadvantages of presented methods among themselves and appreciated long-term results and aftermath of different ways of surgical technics. The purpose of this lecture is to introduce the approach algorithm for the treatment of OAF; and review the fundamental surgical techniques for fistula closure, a comparative analysis of various methods for the plastic correction of the oroantral fistula with the use of the mucosal flap (buccal flap, palatal flap, combination techniques), buccal fat pad, tooth replantation and the osteoplastic materials based on the data from the literature and on-line publications. The characteristics of an ideal material for the plastic correction ot the oroantral fistula and the conditions for carrying out this surgery will be presented.

**ASS. PROF. DR. JELENA JULOSKI DMD, PHD**

**PS23**

## ORAL MANIFESTATIONS OF SYSTEMIC DISEASES IN CHILDREN

Oral cavity is the unique environment that represents a mirror of general health or disease. Many systemic diseases in children can present with various signs and symptoms in the oral cavity. Oral manifestations may appear as the first, or even the only sign of a systemic disease, or they accompany signs and symptoms of diseases primarily affecting other parts of the body. Comprehensive and meticulous examination of the oral cavity together with the thorough medical and dental history play a crucial role in the early diagnosis and prompt treatment of a systemic disease. Oral manifestations are often seen in children with gastrointestinal diseases, hematologic diseases, autoimmune diseases, endocrine and metabolic diseases, viral and bacterial diseases, nutritional disorders, and vitamin deficiencies. Oral signs and symptoms can be specific for a certain disease, but much more often they are non-specific and could be seen in various diseases or even healthy children. All oral and perioral structures of head and neck may be affected by a systemic disease - oral mucosa, periodontal tissues, teeth, bone of upper and lower jaw, tongue, lips, perioral skin, salivary glands, and lymph nodes of head and neck. Oral signs and symptoms such as mucosal inflammation, aphthous ulcerations, pallor of oral mucosa, lips and skin, lip swelling, angular cheilitis, gingival hyperplasia, gingival bleeding, petechiae and ecchymoses on oral mucosa, glossitis, burning sensations, oral pain, xerostomia, defects in tooth structure, delayed or premature eruption of teeth, and many others may be indicative of a systemic condition. Both physicians and dentists should have adequate knowledge and skills in recognizing abnormal oral features and placing them in the context of a systemic disease.

**PROF. DR. DEJAN MARKOVIC**

**PS24**

## ENDODONTIC TREATMENT IN CHILDREN: A CHALLENGE THAT IS HARD TO RESIST

Pulp pathology caused by dental caries or dental trauma is among the most frequent urgent conditions in children. Treatment of pulp disease depends not only on diagnosis, but also on child's cooperation, clinical picture, root development, etc. Endodontic treatment of immature permanent teeth is demanding, long lasting and often with uncertain prognosis. Preservation of frontal teeth with pulp pathology is of great importance for a child for esthetic, functional, and socio-psychological reasons. Improvement of endodontic treatment methods represents a continuous challenge for both researchers and clinicians. Development of diagnostic procedures, endodontic materials, instruments and techniques significantly contributed to the treatment efficacy and improved prognosis of pulp pathology in children.

**PROF.DR. NIKOLA ANGELOV DDS, MS, PHD**

**PS25**

## GUIDED BONE REGENERATION-TOOL FOR PROSTHETICALLY DRIVEN IMPLANT PLACEMENT

Different approaches, surgical techniques and materials have been employed to induce an optimal cellular response in guided bone regeneration (GBR) in periodontology. Guided bone regeneration commonly refers to alveolar ridge augmentation or bone regenerative procedures, in modern days mostly performed for optimal site development for placement of dental implants . The techniques are based on cell differentiation, cell propagation and initiation and/or transfer of tissue construction. Today, dental implants are well-known alternatives for replacing missing teeth. Tooth loss can lead to alveolar resorption and bone insufficiency can alter proper positioning of dental implants. Implants should be placed according to prosthetic needs and treatment planning, with adequate soft and hard tissue in order to obtain natural looking result. We will present several treatment modalities to augment the soft and hard tissues in order to obtain proper insertion of implants according to prosthetic needs and patient satisfaction.

**AFFILIATE ASS. PROF. DR. JIM JANAKIEVSKI DDS, MSD**

**PS26**

## THE VALUE OF A TOOTH FOR ALVEOLAR RIDGE MANAGEMENT

It is recognized that retention and treatment of natural teeth will often result in better aesthetic outcomes when compared to dental implant strategies alone. From this perspective, the value of a tooth to maintain the supporting bone and gingival tissues will be examined in the context of dental trauma or tooth loss. In both our adult and growing patients, dental trauma can result in tooth loss, a compromised periodontium and bone atrophy. The presentation will discuss protocols for tooth replantation, ridge maintenance, ankylosed teeth and bone stabilization with tooth autotransplantation aimed at providing natural functional teeth and delaying dental implant placement.

**PROF. DR. RADE PARAVINA DDS, MS, PHD**

**PS27**

**COLOR IN DENTISTRY**

Color and appearance are very pertinent to dental practice for the esthetic outcome and the natural replication of biomimetic restorations. This lecture will provide an overview of the most recent scientific developments combined with their clinical application. Examples and practical suggestions associated with enhanced esthetics in both the dental office and the dental laboratory will be covered. This includes, but is not limited to, the nature of color, evidence-based interpretation of clinical results, materials selection and quality control, computer modelling for “white”, “pink”, and relevance of translucency. You will learn traditional and advanced approaches aimed to address drawbacks and provoke a paradigm shift.

**PROF. DR. SASO IVANOVSKI PHD, MDSC**

**PS28**

## BIOENGINEERING ADVANCES FOR CLINICAL REGENERATION

A variety of bioengineering approaches have been proposed for oral tissue regeneration, involving a combination of different cell types, bio-scaffolds and biologically active molecules. Notwithstanding a large volume of research on tissue engineering research, translation to the clinic has been generally lacking. The use of medical grade biomaterials is showing significant translational potential for the regeneration of alveolar bone and periodontal regeneration trough a 'Scaffold Guided Tissue Regeneration (S-GTR)' approach. This lecture will describe novel techniques using additive biomanufacturing for the fabrication of custom scaffolds suitable for clinical translation. The feasibility of combining these approaches with established surgical techniques will be explored, and their potential for clinical utilisation will be critically evaluated.

**ASS. PROF. BORIS SIMONČIČ DDS, PHD**

**PS29**

## STEM CELLS IN REGENERATIVE DENTISTRY

The use of Mesenchymal Stem Cells (MSC) and MSC identycal Dental Pulp Stem Cells (DPSC) became one of the most interesting tools in regenereative dentistry. These are pluripotent cells which could differentiate in all tissue cells, axcept embrional. We can use them for regenerative therapies in endodontology, periodontology, maxillofacial and orall surgery as well. Our »in vitro« experiences about their differential capabilities show on possible use in bone tissue ingeneering, culturing of dental pulp like tissues, angiogenesis etc. The abilities of these cells for proliferation and differentiation are outstanding. We have evaluated the potential differentiation of adipose derived MSC's into adipose and bone lines as well. Tissue and Cell banks enhance biodeposit in part of cell processing and create a basement for developing different methodes of therapies in dentistry. All processed cells and tissues are, according to EU legislation, treated as Advanced Therapy Medicinal Product (ATMP). To follow these directions, our group has developed special protocols for collecting and storing the dental and adipose tissues for processing, cultivation and therapy purposes. Collected tissues undergo cryopreservation, thoroughly overwiuved by EU inspection organs, for further use in regenerative dental therapies. Adipose derived MSC and DPSC show a signifficant potential for tissue regeneration and several chronical diseases treatment as well. Specific MSC show higher success rate in therapy results as all collected MSC. However, further clinical research is needed in this field of regenerative dentistry.

**PROF. DR. IVANA MILETIĆ DDS, PHD**

**PS30**

## HOW TO OPTIMALLY RESTORE THE TOOTH IN POST AMALGAM ERA?

The main role of placing a restoration when treating cavitated lesions is firstly to help the patient in plaque biofilm control, but also to protect the dentine-pulp complex and to restore the function, form and aesthetics of the tooth. Minamata convention urged the need for a material which would be an alternative to amalgam. Due to economical reasons, composite materials, which are most commonly used for direct restorations, are not a feasible option. New restorative concept based on glass hybrid technology, which combines different sizes of filler particles and nano filled composite resin coat, is a promising option. In general, they are biointeractive materials with a benefit of a strong chemical adhesion to hard dental tissues which, due to the recent aforementioned developments, can be one of the options for long-term aesthetic restorations, even in the posterior region. The choice of the materials should be guided by the caries risk of the patient, location and extent of the lesion, lesion activity and, of course, special demands placed on the restoration.

**DR. GIANFRANCO POLITANO DDM, MSC**

**PS31**

## DIRECT RESTORATION IN POSTERIOR REGION

When we have to restore posterior, we have to face a lot of problems, not only chained with esthetic , but often related with mechanical problems. The aim of this lecture will be to clarify a lot of biomechanics aspect of the restorations in posterior region and to show a new way to layering based on a new hist-anatomic model, able to save precious time during the restorative therapies. We will see which materials are effective and simple to use to make fast the layering of the missing part of the tooth, and, at the end we will close the lecture with some advices to improve and make fast all the steps of conturing, finishing and glossing. The aim of all is to improve the quality of the restorations saving and optimizing our daily clinical time, without creating problem for the operator and for the patients.

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**PROF. DR. STEFANO PARMA BENEFENATI MD, DDS, MSCD**

**PS32**

## PERI-IMPLANTITIS: SURGICAL THERAPEUTIC APPROACHES BASED ON DEFECT DIAGNOSIS

The appropiate diagnosis will facilitate pre-operative selection of soft and hard tissue techniques for the corrections of Peri-Implantitis defects. The primary objective of surgical treatment in peri-implantitis lesions is to get access to the exposed implant surface to optimize the removal of bacterial contaminants and decontamination or conditioning, resolving the inflammatory lesion. Additionally, it is highly recommended to reconstruct the lost soft and hard periodontal tissues. Several peri-implantitis cases with survival follow up, strategies, clinical protocol, techniques and furthermore clinical outcomes

**DR. MATEJ KULIS DMD - MATEJ KULIŠ, DR.MED.DENT., SPEC., PROSTHODONTIST**

**PS33**

## PROSTHETIC DRIVEN SOFT TISSUE MANAGEMENT CONCEPT: GUIDED TISSUE HEALING PROTOCOL

Nowadays patients have become more demanding about aesthetic results when replacing missing teeth with implants. The current trend is shifting from merely restoring the loss of function to complete restoration to achieve a natural appearance of restorations on implants. Gingival architecture referred to as pink aesthetics is of grate importance for a health of an implant-supported restoration and complete success in a restorative dental treatment. However loss of tooth is often accompanied by significant damage to the facial tissues at the implant emergence site when compared to natural teeth, which usually results in an incongruous gingival profile, plaque retentive restorationsc and compromised aesthetics. Many different reconstructive surgical procedures have been developed to attain better results however it is challenging to manage surgical and prosthetic procedures to achieve an optimal EP with acceptable quantity and quality of peri-implant soft tissue. The aim of this lecture is, therefore, to provide an overview of how to prosthetically manage with soft tissue in different implant placement protocols to enable good quality and natural appearance of peri-implant soft tissue.

**PROF. DR. ENDER KAZAZOGLU DDS, PHD**

**PS34**

## SUCCESS OF IMMEDIATE LOADING

Indeed, we have a great achievement for implant treatments of fully or partially edentate patients using Prof. Branemark protocol (1974). We are living a world that everything is going so fast. Therefore, as a dentist we also change our treatment protocols almost in every fields according these new trends. Such as today, we are encouraged to replace the restorations immediately after the implant surgery by implant manufacturers and patients. However, this type of treatments needs certain type of experience and knowledge. I am going to discuss to find out answer of the following two topics: Immediate loading is it applicable treatment for everyone and is passive impression play a key role at the immediate loading. I will also present results of 72 patients' complications we faced and success we achieved in average 38 months later.

PROF. DR. DIMITRA SAKELLARI DDS, PHD

ASS. PROF. DR. AIKATERINI- ELISAVET DOUFEX DDS, MSC, PHD

ASS.PROF. DR. LEONIDAS BATAS DDS, MSC, PHD

**PS35**

## CURRENT GUIDELINES FOR NON-SURGICAL AND SURGICAL PERIODONTAL TREATMENT

This panel will focus on current approaches for non-surgical and surgical periodontal treatment, based on the latest guidelines as published by the European Federation of Periodontology (EFP)in 2020. The latest classification (2018) of periodontal diseases which includes four stages and three grades of periodontitis will be presented and compared with the previous one (1999). According to the guidelines, four sequential steps are included in treatment of Periodontitis stages I-III. The first step comprises of the control of local factors for dental plaque retention and the professional removal of dental plaque and supragingival calculus, as well as control of systemic factors affecting the disease. The second step is meticulous root scaling and planning in non-responding sites with the potential supplementary use of antiseptics or antibiotics or other adjunctive procedures . The third step comprises the first and second step and moreover the surgical therapy in active periodontal pockets. Finally, the most important step is the maintenance step of periodontal treatment which should be adjusted for every different case and lasts throughout life.

**PROF. DR. ANETA ATANASOVSKA STOJANOVSKA DDS MS PHD**

**PS36**

## CROWN LENGTHENING PROCEDURE IN ACCORDANCE WITH BIOLOGICAL PECULIARITIES OF DENTAL TISSUES

Procedures for clinical extension of crowns are becoming more common and requested in modern dentistry as a result of increased aesthetic requirements, with the aim of maximally improving the created smile. Although the functional characteristics depend of biological ones are imperative, the aesthetic requirements, as an important segment of the dental work, require a precise diagnosis of the relationship between the soft and hard dental tissues, in order to make the definitive restorative parameters as satisfactory as possible. That is why a clinically relevant plan for the assessment of “red-white” aesthetics and a surgical protocol for obtaining appropriate relations is of exceptional importance for achieving successful results. The purpose of this presentation is to outline the classification and treatment planning protocol for aesthetic crown lengthening procedures, as well as to explain the biological structures involved.

**PROF. DR. PETROS KOIDIS DDS, MS, PHD**

**PS37**

## TITLE: THE SIGNIFICANCE OF "TIME" IN PROSTHODONTICS

"Time" is an extremely significant variable defining options and limits in Prosthodontics. It affects the decision-making process both by the dentist and the patient, as is related with a great number of factors and conditions, like the longevity and survival of treatment modalities and structures (crown, bridges, removable prostheses, vital and endodontic treated teeth, implants, tissues, periodontal or peri-implant tissues), the handling and behavior of materials in long-term and/or dynamic function (ageing, loading, destruction) in regular or special conditions, the safety of restorative stages on tissues which are in post-therapeutic phases (wound healing from extraction, completion of endo- or periodontal therapy, clinical crown lengthening, osseointegration), the recall protocols, the precision in several cases of diagnosis, the integrity and soundness of differential diagnosis even the esthetics.

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## ТЕЧНОСТ ЗА ИСПИРАЊЕ НА УСТА КОЈА КЛИНИЧКИ ДОКАЖАНО НУДИ ПОДОБРА ЗАШТИТА

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**PROF. DR. ARGIRIOS PISSIOTIS DMD, MS, PHD**

**PS38**

## "ESTHETIC CONSIDERATIONS IN THE EDENTULOUS STATE"

The loss of natural teeth is associated with moderate to severe changes which affect the facial esthetics of patients. The resorption of the alveolar process takes place immediately after tooth extraction and continues until it reaches basal bone. This results in loss of the vertical dimension of occlusion, loss of soft tissue support and moderate to severe alteration of the lower third of the face. Although restoring the functional aspects of tooth loss has been addressed in the dental literature with multiple publications little attention has been given to the restoration of the appearance of the edentulous patient. It seems that function was thought by dentists to be the primary concern of the edentulous patients despite that when patients were asked, they considered the esthetic appearance as a predominant factor in Complete Denture success. Historically the earliest dental restorations were created for esthetic purposes disregarding function but as a more scientific approach was introduced for denture fabrication more consideration was given to rehabilitate the function and the esthetic appearance was left to dentist driven norms. Nowadays Complete Denture fabrication is based in anthropocentric principles and thus success is measured with patient satisfaction. This makes the esthetic appearance a basic factor in complete denture success. The basic esthetic principles will be reviewed and their incorporation in Complete Denture fabrication will discussed with the aim of satisfying the edentulous patient's needs.

**PROF. DR. ANDRIJA PETAR BOSNJAK DDM, MSC, PHD**

**PS39**

## ALL THINGS MICRO – THE ROLE OF MICRONUTRIENTS IN PERIODONTAL TREATMENT

There is a growing sense of importance of micronutrients (vitamins and minerals) in the homeostasis and health of the human organism, but there is little data on which micronutrients are important for the oral homeostasis. This lecture will present an in-depth insight to the roles of some of the micronutrients in the oral ecosystem, but shall also discover which are the potential sources of micronutrients beneficial to the oral health. Special attention will be given to a field of dentistry and medicine that is called nutrigenomics, a growing field of research that is discovering how the polymorphism of some genes might influence the efficacy of the nutritive transport, and the enzymes that adapt the vitamins in order to optimize their use in the metabolism. Since many, if not all, micronutrients show an independent correlation to the prevalence of periodontitis, it seems they might have an important role in the prevention and treatment of the periodontal disease.

**DR. UGUR ERGIN DMD**

**PS40**

## DIGITAL TECHNOLOGIES FOR EVERY DAY DENTISTRY

Digital technologies in everywhere for today's modern dentistry. Digital technology has given dental professionals the ability to diagnose and treatment plan our patients more accurately and efficiently. Digital workflow can improve communication within your treatment team to accomplish the most predictable clinical results while reducing chair time, resulting in increased efficiency and profitability. The greatest risk to the embracement of digital technology is associated with the selection of the wrong technology. This lecture contains the effective use of 3D imaging systems, digital intra oral scanners and 3D printers with correct workflows. Also Advantages and disadvantages of the different materials used for CAD/CAM processing will be discussed.

**DR. MATO PALJETAK DDM**

**PS41**

## BACKWARD PLANNING PROTOCOL

This lecture will be based on the Backward planning protocol - a completely digital protocol in prosthetics and implantology. The author will show the everyday clinical application of a Trios intraoral scanner, the application of a digital protocol in a variety of clinical situations and how it makes our everyday practice and the patients experience much simpler and more predicta

**DOC. DR. DEJAN MARKOVIC DM**

**PS42**

## NITROGEN OXIDE IN DENTAL PRACTICE

The use of nitrous oxide dates back to the 19th century when it was used at parties in England to ensure a good mood. After that, in the United States of America, it was successfully used in dentistry in tens of thousands of patients without special monitoring and without reported side effects. Today, in the USA and around the world, the largest number of dental offices have devices for the administration of nitrous oxide. Its application allows increasing the patient's comfort during the intervention, and partly also as a supplement to the analgesic therapy. Preparing the patient for dental intervention with the administration of nitrous oxide involves a preoperative examination and a conversation with the patient in order to learn about possible comorbidities and the therapy the patient is taking. In patients who have had eye surgery in the last 3 months, the use of nitrous oxide is contraindicated, since it is more soluble than air, so there may be an increase in the gas embolus trapped after the operation. For the same reason, its use is contraindicated in patients with ileus and pneumothorax (although it is very unlikely that people with these acute diseases will come for dental intervention). Its use is also contraindicated in people with a deficiency of the enzyme Methylenetetrahydrofolate reductase, in people on bleomycin therapy (due to the possibility of ARDS development with the use of oxygen, which must be administered together with nitrous oxide), in the first trimester of pregnancy, and increased caution is required in patients with severe obstructive pulmonary disease, pulmonary hypertension and cardiomyopathy when a consultative examination by a pulmonologist or cardiologist is required. A person who is planning to use azotoxidul can have his last light meal at least 2 hours before the intervention. It is necessary to explain to the patient the technique of applying nitrous oxide, the benefits of its application and to provide written consent to the intervention. Nitrous oxide is administered in a mixture of gases exclusively with oxygen through special nasal cannulas or masks. After stopping its administration, the patient is allowed to breathe pure oxygen, and due to its high solubility, nitrous oxide is completely eliminated after 3-5 minutes and there is no residual effect. Before the intervention, it is necessary to measure the arterial pressure of the patient, as well as the oxygen saturation of the arterial blood. These are exactly the two things that are monitored with continuous monitoring of the state of consciousness, communication skills of the patient, the appearance of the patient's face due to the observation of any unwanted effects.

**DR. IHDE STEFAN, KLAUS, ALFRED DMD**

**PS43**

## GOOD BYE OSSEOINTEGRATION

**DR. DIME SAPUNDJIEV DMD, DDS**

**PS44**

## PIEZOSURGERY - EXPANDING THE FRONTIERS IN ORAL SURGERY

Oral surgical procedures in modern days are not imaginable without the use of piezosurgery. Stress that is experienced by the patients during using conventional hand pieces due to generating vibration can be eliminated by the peaceful and vibration free piezoelectric device. In our every day practice we are often challenged to work near important anatomical structures that makes our quest very demanding. Avoiding damage of important blood vessels near our operating field is curtail for performing safe surgery and lowering post operative bleeding and other postoperative complications. Performing separation of tooth roots near inferior alveolar nerve by the use of piezoelectric device lowers postoperative sensitivity disturbances and other nerve damage that can reflect with unnecessary medico legal consequences. Performing exact retrograde preparation after tooth root resection during periapical surgery for adequate retrograde filling is impossible without the use of piezoelectric device. Preparing the bony window during lateral window sinus elevation technique in the sites with thick bony walls by using piezoelectric device lowers the chance for sinus membrane perforation. Its precis ion cutting ability makes it unique device for elevating bone blocks during autogeneos bone harvesting procedures for bone augmentation in implantology. Using the implosion effect of the water bubbles at the end of the hand pice due to its vibration beside antibacterial effect clears the operative field from debris and provides local haemostasis. All these advantages of the piezoelectric device makes the piezosurgery very predictable, reliable and must use tool in every oral surgery setting.

**PROF. DR. FORNA NORINA CONSUELA PHD, MD**

**PS45**

## MANAGEMENT OF COMPLEX ORAL REHABILITATION OF PATIENTS FROM THE BALKAN AREA

Complex oral rehabilitation of patients in Balkan Area need to adapt to the specific features of edentation and oral health behavior. To overpass the limit of the traditional diagnostic methods and treatment, digital applications are recommended to assess the clinical and biological indices of the prosthetic field, to project the future positioning of the dental implants and their relation to anatomic elements of the prosthetic field as well as the design of the future implant-supported prosthetic restoration. Also, surgical guides planned and manufactured by CAD-CAM technique support increased accuracy of the positioning of the dental implants. Analysis of the soft and hard prosthetic support, planning of proimplant and implant stages in relation to the design of the implant-supported prosthetic fixed/removable restoration can be performed by digital applications such as Implant 3D (Univers, SUA), NobleGuide (Nobel Biocare, SUA), Digital Smile Design (DSD), SimPlant (Materialize Dental), Virtual Implant Placement (BioHorizons, Anglia), ImplantMaster (iDent, SUA), Implant 3D (Media Lab, Italia), EasyGuide (Keystone Dental). The blending of the traditional and digital diagnostic and treatment techniques will increase the survival and the prosthetic success rate of the implant-supported prosthetic reconstructions in partial extended and total edentulousness for patients candidates to implants.

**PROF. DR. FRANCESCO SAVERIO DE PONTE MD, DDS**

**PS46**

## NEW DIAGNOSTIC APPROACH TO EAGLE SYNDROME

Eagle Syndrome is a rare symptomatic condition generally caused by abnormal elongation of the styloid process or calcification of stylo-hyoid ligament. Eagle Syndrome is easily misdiagnosed due to its vague symptoms of cervico-facial pain, able to mimic other possible causes such as temporomandibular joint disease, migraine headaches, and cranial nerves neuralgias. The anatomical relationship between the Styloid Process and muscular, vascular and neural structures with which Styloid Process can take contact, differs between different head and neck movements. Tilting, Flexo-Extension and Rotation analysis allowed us to define the Eagle Syndrome as a “Dynamic-Positional” condition. Any tool, among those suggested in literature, from Angio-CT to Trans-Oral Carotid Artery Ultrasonography, have to be performed according to the dynamic/positional pathogenesis of the Syndrome. We believe that a change of paradigm in the study of neck structures shifting our approach from a static to a dynamic mode is needed.

**DR. MILE CHURLINOV**

**PS47**

## SINGLE SESSION TREATMENT - PATIENT CENTRED APPROACH

Single-visit root canal treatment, very well accepted by the patients as being cost and time effective is a real patient-centred approach (Maddalena Manfredi et al. 2016). Single- visit treatment reduces the risk of inter- appointment infection and resulted in fewer flare-ups (Yingying Su et al. 2011). It is however a technique andinstruments-sensitive concept and it depends of clinician ability to isolate the working field, shape, clean andobturatethe rootcanalspace in a singlevisit. If possible, restoration should be finished in the samesession, providing complete treatment. Although two-visit protocol with an inter-appointment medication with calcium hydroxide resulted in improvedmicrobiological status of the root canal system when compared with a single-visit protocol(Jorge Vera et al. 2012 ), it still remains a controversial issue as some studies revealed that it has limited effectiveness in eliminatingbacteria from the root canal human teeth when assessed by culture techniques (Sathorn et al. 2007) and does noteliminate the entire spectrum of microorganisms (de Souza et al. 2005). Finally, there is no strong scientific evidence to favour the single-visit or the multiple-visit root canal treatment, neither one can prevent 100% of short- and long-term complications (Figini Lara et al. 2008), therefore, it is a critical to rationalize and prioritize evidence when comparing the single and multiple-visit treatment to make feasible evidence-based decision for day-to-day practice. This means that the clinician needs to be aware of howto develop an evidence-based rationale to shape the clinical decision- making process (De-Deus et al. 2016).

**DR. RISTE PANAJOTU DDM**

**PS48**

## C-SHAPED ROOT CANAL SYSTEM

The anatomy and the morphology of the root canal system is very complex. A lot of studies confirm that the canal system is a complexity of canals, lateral and accessory canals with a lot of anastomosis between them. The anatomy and morphology of the root canal system is studied a lot. We all know the precise anatomy of certain group of tooth. We should be aware that always there are exceptions and we are challenged to differentiate and classify them. One of the exceptions are the c-shaped root canal systems. This lecture will explain the etiology epidemiology, diagnosis and the clinical aspects of instrumentation and obturation of this kind of root canal systems.

**PROF. DR. ALEŠ FIDLER DMD, PHD**

**PS49**

## ROOT CANAL TRANSPORTATION: FROM UNDERSTANDING TO PREVENTION

Most root canals are curved, whereas endodontic instruments are manufactured from straight metal blanks, resulting in root canal transportation. This may result in unprepared areas of the root canal wall and several distinct preparation errors (i.e., zip, elbow, ledging, perforation, strip perforation, outer widening, apical blockage, or damage to the apical foramen) that affects the treatment outcome. The importance of root canal transportation is well illustrated by the number of publications evaluating the transportation of various instrumentation techniques with several experimental models using simulated canals or extracted teeth. In clinical practice, root canal transportation can be minimized or avoided by understanding anatomy, adequate of X ray imaging, access cavity preparation and proper instrument selection and shaping technique. In the lecture, the methods of transportation evaluation will be briefly outlined, followed by the clinical steps to minimize transportation, supported with clinical cases.

**DR. KONSTANTINOS KALOGEROPOULOS DDM, MSC**

**PS50**

## CBCT AIDED CASE SELECTION IN PERIAPICAL SURGERY. DOES IT IMPROVE OUR SUCCESS RATES?

The introduction and wide use of three-dimensional radiological imaging has changed the way we practice dentistry. Implantology and surgical procedures can be planned and performed with safety and better understanding of the relation between anatomical structures. In Endodontics, CBCT has been used, along other techniques, to help diagnose and execute treatments with a whole new perspective. The same applies to the field of periapical microsurgery. However, despite the use of modern technology, the success rate hasn't significantly improved over the last years. The aim of this lecture is to identify the reasons behind this and show how careful case selection based on CBCT imaging can help us increase healing rate.

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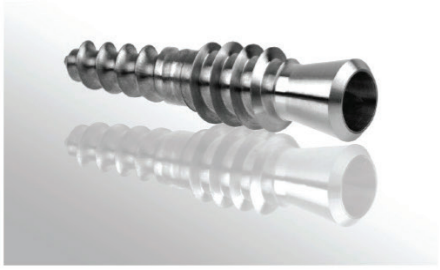

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**DR. STEVAN KOPANJA DDM**

**PS51**

## MTA - THE LAST RESORT FOR TOOTH, PATIENT AND DENTIST !

In daily endodontic and restorative treatements dentists face a lot of problems treating and keeping the pulp vital, open apices, but also teeth with iatrogenics.

One of the materials that can be used for all these treatements is Mineral Trioxide Aggregate (MTA). During my lecture I will present step by step full protocol (photo, video and radiograph documentation with follow up) for all clinical indication for use of MTA (pulpotomy of primary and permanent teeth, direct pulp capping, perforation in furcarion and cervical/middle/apical third of the root, ortograde and retrograde obturation, apical and cervical resorption, revitalisation). The unique structure of novel synthetic bone grafts induced capillary action during mixing and grafting, resulting in enhanced bone regeneration. Implanted grafts were well-positioned and maintained at the defected sites even without membrane coverage. No pain or swelling was reported. 2-3 weeks following surgery, a pink mucosa covered the surgical area without inflammation. X-ray examination revealed a progressive increase in bone density. Bone density became similar to that of the adjacent healthy bone at 5–6 months. Implant insertion torques were measured up to 70 Ncm. A few fibrils and mononuclear cells and no visible inflammatory cells were confirmed by histology.

**PROF.DR.AYŞE DILJIN KEÇECI DMD, PHD**

**PS52**

## DIFFERENT WAYS TO ACCESS THE ROOT CANAL SYSTEM

Non-surgical root canal treatment is a crucial treatment modality for preserving the natural dentition. Studies reported that the endodontically-treated teeth (ETT) have similar survival rates to the implant-supported crowns, while the survival of ETT reported superior to the fixed dental prostheses. The access cavity is one of the key steps towards successful non-surgical root canal treatment. An adequately prepared access cavity improves the performance of following steps of this treatment, including the detection of the canal orifices, chemomechanical debridement, obturation of the root canals. One of the requirements of a traditional endodontic access cavity (TEC) is to allow for a straight-line introduction of the endodontic instruments into the canals without interference. removing the entire roof of the pulp chamber. An excessive loss of sound tooth structure may cause a significant decrease in the fracture resistance and increased cuspal flexure of endodontically treated teeth under functional loading.y elderly population. In the last decade, several access cavity designs alternative to TEC with minimal removal of tooth tissue have been described. Minimally invasive endodontic access cavities (MIECs) have been described as openings to gain access to the root canal system, smaller than the traditional cavities targeting the preservation of the sound tooth structure. Different types of them are called (i) contracted access, (ii) “ninja” access, and (iii) “truss” access. Advocates of these approaches believe that MIEC would help maintain the long-term survival of the ETT trough preventing tooth fracture. Proper training and armamentarium such as Dental Operating Microscope and heat-treated NiTi instruments and thermoplastic obturation techniques may be prerequisites of clinical application. The MIECs are still discussed in terms of risks of some issues such as chemomechanical debridement, obturation quality and procedural errors. The studies investigating the benefits and drawbacks of the different ways to access the root canals will be reviewed and discussed in this lecture.

**DR. ARNALDO CASTELLUCCI MD, DDS**

**PS53**

## LATEST DEVELOPMENTS IN MICRO SURGICAL ENDODONTICS

In the last 15-20 years several important developments have been introduced in surgical endodontics: the surgical operating microscope, the ultrasonic root end preparation, new biocompatible materials and the CBCT.

The introduction of the surgical operating microscope represents a revolutionary development in this specialty, which now is called “micro surgical endodontics”, and it has several advantages:

a) better visualization of the surgical field
b) better evaluation of the surgical technique
c) better accuracy during the entire procedure
d) better predictability of longterm results

The introduction of the ultrasonic root end preparation made possible to obtain what is defined as the ideal retropreparation: a class 1 cavity at least 3 mm deep into the root dentin with walls parallel to and coincident with the anatomic outline of the pulpal space. In order to do this, special ultrasonic tips were developed to enable the clinician to reach every root in all clinical situations. As far as the new materials is concerned, recently the Mineral Trioxide Aggregate and other bioceramic materials became available. These are revolutionary materials, extremely biocompatible, hydrophilic and capable of stimulating the healing processes and osteogenesis. Finally, with the use of the CBCT, dentistry started moving away from “radiographic interpretation” into “disease visualization” and it couldn’t have come at a better time. Thanks to all these revolutionary progresses, the long-term success rate of micro surgical endodontics is higher and endodontic therapy today is more predictable and even more fun!

**PROF. DR. PAULA PERLEA DDS, PHD**

**PS54**

## COMMON IATROGENIC ERRORS THROUGH ENDODONTIC TREATMENT- CAN THEY BE AVOIDED?

Errors in access cavity preparation, errors in measuring or accurately maintaining the working length, errors in cleaning and shaping of the root canal system (missed canals, perforations, ledge formation, uncentered preparations, not continuous or progressive taper, apical transportation, instrument separation), lack of disinfection, errors in root canal filling (overfill, underfill, voids, not homogenous obturation, gaps, microleakage), errors in the post endodontic treatment planning are the main reasons for poor outcome of the endodontic treatment. An over- or underextended access cavity, not complying with the current principle of being as small as practically possible, in relation with a inadequate chemo-mechanical root canal preparation can have negative consequences such as the creation of ledges, false paths, perforations, missed canals or fractured instruments or undermining the strength of the tooth with the risk of vertical root fractures. Studies show that 20-60% of endodontically treated teeth show periapical modifications at the follow-up, requiring endodontic retreatment to result in a functional, asymptomatic tooth with no apical pathology. The resumption of endodontic treatment is also indicated in the absence of apical pathology when a new prosthodontic restoration is required. The technological advance of endodontic equipment and materials, such as the dental operating microscope, the new rotary Ni-Ti instruments made of heat-treated alloys, CBCT, ultrasound, but also bioceramic materials, allow conservative treatments even in difficult cases. Endodontic treatment outcome becomes more predictable. Our presentation aims to show the most frequent errors during endodontic treatment, the management and follow-up of such iatrogenies, with examples of original, carefully documented clinical cases.

**ASSISTANT PROFESSOR IVICA PELIVAN, DMD, PHD**

**PS55**

## USAGE OF DIODE LASERS IN ORAL SURGERY AND DENTAL IMPLANTOLOGY

Laser devices have gained in importance since the eighties and they are often claimed to be omni-use instruments. Though many applications turned out to be impracticable, an unwaning interest in this technique has remained to date. The broad spectrum of applications for the diode laser means that it is now the most widely used device in laser dentistry. Diode lasers offer an interesting – but not unlimited – field of application in modern dentistry including periodontology, endodontics and soft tissue treatment.

LLLT (Low Level Laser Therapy) is the application of red and near infra-red light over injuries or lesions to improve wound and soft tissue healing, reduce inflammation and give relief for both acute and chronic pain. LLLT is used to increase the speed, quality and tensile strength of tissue repair; resolve inflammation and relieve pain (analgesia). The effects of LLLT are photochemical (like photosynthesis in plants). When the correct intensity and treatment times are used, red and near infrared light reduces oxidative stress and increases ATP. This improves cell metabolism and reduce inflammation. Low level laser therapy effects are biochemical and not thermal and cannot cause heating and thereby damage to living tissue.

**PROF. FRANCESCO INCHINGOLO MD, DMD, MPH, OMFS**

**DR GIANNA DIPALMA DDS, MD, INTERNATIONAL PHD**

**PS56**

## MRONJ TREATMENT STRATEGIES - USE OF GROWTH FACTORS UN THE MANAGEMENT OF HIGH RISK HEMORRHAGIC PATIENTS AND OF PATIENTS WITH BONE NEOPLASMS AFTER BISPHOSPHONATES ANF MONOCLONAL

MRONJ is a serious drug-related side effect that is most common in people using antiresorptive and/or angiogenic medications. Therapy options for this condition include conservative treatments, surgical procedures with varied degrees of invasiveness, and adjuvant therapies.
The aim of the present study is to identify the most successful and promising therapy alternatives available to clinicians. PubMed, Cochrane, Scopus, Web of Science, and Embase were searched for works on our topic published between 8 January 2006 and 8 January 2023. The search was restricted to randomized clinical trials, retrospective studies, clinical studies, and case series involving human subjects with at least five cases and no age restriction on participants. A total of 2657 was found.
After the selection process, the review included 32 publications for qualitative analysis. Although conservative treatments (pharmacological, laser, and minimally invasive surgery) are effective in the early stages of MRONJs or as a supplement to traditional surgical resection therapy, most studies emphasize the importance of surgical treatment for the resolution or downstaging of advanced lesions.
Fluorescence-guided surgery, PRP, PRF, CGF, piezosurgery, VEGF, hyaluronic acid, and ozone therapy all show significant potential for improving treatment outcomes.
Keywords: MRONJ; osteonecrosis; denosumab; DRONJ; concentrated growth factor; platelet-rich plasma; platelet-rich fibrin; bone resection; oral surgery; BRONJ


PROMEDIKA

„Competence in ESTHETICS“ е најголемиот едукативен настан за стоматолози и забни техничари годинава и претставува неповторлива можност од прва рака да се запознаете со најновите трендови во стоматологијата и забната техника, иновативни достигнувања во светот на денталната медицина и одлична можност за вмрежување.

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**OP - BA01**

## THE ASSOCIATION OF -799C/T AND -381A/G MATRIX METALLOPROTEINASE-8 (MMP-8) GENE POLYMORPHISMS WITH PERIODONTITIS AND ACTIVE MMP-8 LEVELS IN THE ORAL CAVITY

**Ioannis Fragkioudakis, Antonis Ntolkeras, Christina Kottaridi, Andreas Grigoriadis, Dimitra Sakellari**
Aristotle University of Thessaloniki

**AIM:** To investigate the relationship of the -799C/T (rs11225395) and -381A/G (rs1320632) matrix metalloproteinase 8 (MMP-8) gene polymorphisms with periodontitis and the levels of active MMP-8 (aMMP-8) in an oral rinse.
**MATERIALS AND METHODS:** Eighty subjects contributed with an oral rinse sample collected before full-mouth periodontal clinical assessments. In addition, aMMP-8 levels in an oral rinse were quantified with a chairside point of care (PoC) test (PerioSafe), and the accompanying digital reader (OraLyzerÒ). After DNA extraction, the samples were amplified with a Polymerase Chain Reaction using specific primers. The amplified DNA samples were analyzed with a sequencing assay.
**RESULTS:** All of the patients were homozygous for the -381A/A genotype while 21.2% of the subjects were homozygous for the -799T/T genotype. No significant association was found between the -799T/T and periodontal disease, however, the presence of the specific genotype was significantly associated with the stage of periodontitis and the levels of aMMP-8 in the oral cavity.
**CONCLUSIONS:** The results of the current study of 80 Greek subjects indicated that the presence of the rs11225395 (-799 T/T) genotype may be correlated with the severity of the periodontal disease. In addition, patients homozygous for the T/T genotype had higher levels of aMMP-8.
**Key words:** MMP-8 gene, Oral rinse, Periodontitis, Polymorphisms

**OP-BA02**

## COMPARISON OF THE INFLUENCE OF ER: YAG LASER AND ETCHING METHODS ON DENTAL ANXIETY IN CHILDREN

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**BACKGROUND:** Compared to traditional treatment methods, laser systems find more use in pediatric dentistry as negative effects such as pressure, vibration, and sound that may cause fear in the pediatric patient are minimized.
**AIM:** The aim of this study is to compare the differences in the subjective stress parameters of the Er: YAG laser and the traditional method of etching in children during the surface preparation stage before fissure sealant application in pediatric patients.
**MATERIALS AND METHODS:** Sixty children aged 6-12 years with fully erupted permanent molars were included in this study. The patients were randomly divided into two groups. The occlusal surface of the molar teeth was etched with (Gr1) Er: YAG laser (2940nm) and (Gr2) acid etching and then fissure sealant was applied to both groups. Subjective stress parameters were recorded before and after the procedure.
**RESULTS:** There was no difference in stress levels in both groups before dental treatment. In both groups, a significant decrease was found in the stress level between the measurements at the beginning and end of the treatment. At the end of the dental visit dental stress parameters show a significant decrease in Group 1.
**CONCLUSIONS:** The use of Er: YAG laser positively affects cooperation in pediatric patients.

**OP-BA03**

## DENTOSKELETAL CHANGES IN THE TRANSVERSE DIMENSION USING TOOTH BONE-BORNE VS. BONE-BORNE EXPANSION APPLIANCES: A PROSPECTIVE, RANDOMIZED, DOUBLE-BLIND CLINICAL STUDY WITH CONE-BEAM COMPUTED TOMOGRAPHY

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**OBJECTIVE:** To investigate the skeletal, dentoalveolar, and periodontal changes of one tooth bone-borne (TBB) and one bone-borne (BB) appliance with the same mini-screw placement positions using cone-beam computed tomography in the post-pubertal growth spurt stage.
**Materials and Methods:** The study included 18 patients divided into two groups, the TBB group (n=9, age 16.11±0.59) and the BB group (n=9, age 15.33±1.22). CBCT scans were obtained before and after 3 months of expansion. Transverse skeletal and dental expansion, alveolar and tooth inclination, buccal alveolar bone thickness were evaluated on maxillary first premolars and molars. Paired t tests and independent t tests were used in statistical analysis.
**RESULT:** Skeletal expansion was similar in both groups, but the TBB group produced greater dental expansion (p<0, 05). The amount of tipping increased from molar to premolar in the TBB group. The skeletal expansion of the total transverse dental width increase in the TBB group accounted for 42% in the first molars, 46% in the first premolar level, while in the BB group it was 75% and 82%, respectively. Buccal alveolar bone thickness changes were greater in the TBB group (p <0.05).
**CONCLUSIONS:** TBB and BB rapid palatal expansions are effective methods for the treatment of maxillary constriction in the postpubertal growth spurt stage. The BB appliance is recommended for patients with missing posterior teeth, transverse discrepancies that are not resolved by dental compensation, and poor periodontal support due to its positive effects on the teeth and surrounding tissues.

**OP-BA04**

## ACCELERATION OF TOOTH MOVEMENT DURING ORTHODONTIC TREATMENT WITH VIBRATION APPLICATION AND EFFECT OF MANUAL AND ELECTRIC TOOTHBRUSH ON WHITE SPOT LESION: A PROSPECTIVE, RANDOMIZED, DOUBLE-BLIND, CLINICAL STUDY

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**PURPOSE:** The aim of this study is to determine the changes in the treatment course by transmitting the vibration produced by the electric toothbrush to the teeth with the plaque. It is also to examine the effects of vibration with/without electric toothbrushes and manual toothbrushes on the formation of white spot lesions.
**MATERIALS AND METHODS:** Thirty patients were randomly divided into 3 groups; Group 1, patients providing oral hygiene with a manual toothbrush (control group); oral hygiene was provided to group 2 with an electric toothbrush; Oral hygiene was provided to Group 3 with an electric toothbrush and the teeth were vibrated by applying plaque to the brush head of the electric toothbrush. Oral model recordings for Little index measurements were obtained from all patients at the beginning of the treatment, at the 6th, 12th, 16th weeks, and at the end of the treatment. QLF recordings were obtained from all groups to assess the occurrence of white spot lesions.
**RESULTS:** The results revealed a significant difference in Little Index values between Groups 1 and 3 at the mandible T3 period (p=0.01). Additionally, the treatment duration for Group 3 was significantly shorter than that for Group 1(p<0.05). QLF analysis indicated a statistically significant improvement in white spot lesions for Groups 2 and 3 using an electric toothbrush.
**CONCLUSION:** Vibration application with electric toothbrush and plaque combination shortens the duration of treatment by accelerating tooth movement. The use of an electric toothbrush is more successful in preventing the formation of white spot lesions

**OP-BA05**

## ARTIFICIAL INTELLIGENCE APPLICATION AND PERFORMANCE IN FORENSIC AGE ESTIMATION WITH MANDIBULAR THIRD MOLARS ON PANORAMIC RADIOGRAPHS

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**INTRODUCTION:** Age estimation is of great importance due to legal requirements. Artificial intelligence based programs, one of the most current and popular topics in recent years, are becoming more and more important in dental studies.
**AIM:** This study aims to measure the performance of deep learning in forensic age estimation from mandibular third molars using panoramic radiographs.
**MATERIALS AND METHODS:** In our study, panoramic radiographs of male and female patients between the ages of 16-26 years were used. The pixel-based Convolutional Neural Networks (CNN) method, one of the types of artificial neural networks, was applied. The high performance ResNeXt-101 model and Adamax algorithm were selected. The learning rate was set to 0.001.The dataset was labeled with the DentiAssist platform and randomly divided into 80% training and 20% testing.1296 data under 18 and 1036 data over 18 were used. Dropout method was applied in case of over memorization. In the last step of the hidden layer, a linear two-class prediction was obtained using a structured fully connected layer.
**RESULTS:** The performance metrics for the ResNeXt neural network were 4.36% accuracy, 83.95% precision, 84.56% recall, 84.56% F1-score and 84.14% F1-score(80% confidence interval) when adequate training was provided.
**CONCLUSION:** Artificial intelligence, which eliminates the subjective margin of error compared to conventional methods and rapidly processes a large amount of data, has achieved promising results in forensic age estimation.
**Keywords:** artificial intelligence, age estimation, mandibular third molar, Orthopantomography

**OP-BA06**

## OPTICAL COHERENCE TOMOGRAPHY IMAGING OF ORAL BENIGN LESIONS AND COMPARISON OF HISTOPATHOLOGICAL EXAMINATION

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**OBJECTIVES:** Optical coherence tomography (OCT) is an optical imaging method used in the examination of superficial tissues in ophthalmology, cardiology, dermatology and dentistry. It can provide high resolution microscopic images and uses infrared light. OCT was used as an auxiliary diagnostic imaging method in this study.
**MATERIALS AND METHODS:** Ex vivo samples of arteriovenous malformation, odontogenic keratocyst, peripheral giant cell granuloma, pyogenic granuloma, irritation fibroma were evaluated with Swept-source OCT. The following features of altered layers were identified from OCT images: (1) irregularity, (2) fragmentation, (3) rupture, (4) interruption, (5) depression, (6) elevation, (7) thinning, (8) thickening, (9) homogeneity (10) hyperreflectivity, (11) continuity of the layers. 3D images were observed both horizontal and vertical planes. Histopathological features were compared.
**RESULTS:** The OCT examination of the tissues allowed to establish clear identification of the stratified

squamous epithelium, lamina propria (LP) and basement membrane boundary. The darker appearance of the epithelium is directly related to its lower optical density and scattering properties, which, in turn, result in lower signal intensity. Lamina propria was observed as an hyperreflective layer and appears brighter. Continuity of the layers were well observed.
**CONCLUSIONS:** OCT is a non-invasive and promising modality which can be used as an additional method to evaluate the characteristics of surface layers and dysplastic features of the intraoral lesions.
**Keywords:** arteriovenous malformation, odontogenic keratocyst, optic coherence tomography, peripheral giant cell granuloma

**OP-BA07**
**A DIGITAL AND CONVENTIONAL APPROACH TO THE REHABILITATION OF COMPLETE EDENTULOUS WITH A TORONTO INFRASTRUCTURE-DESIGNED HYBRID PROSTHESIS**

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**INTRODUCTION:** This case describes the prosthetic treatment of a completely edentulous patient treated with the “Toronto Bridge” technique which is a type of implant-supported (all-on-four/all-on-five) hybrid prosthesis.
**CASE REPORT:** A 42-year-old male patient applied to our clinic for aesthetic and functional problems. After clinical and radiographic examination, it was planned to all-on-five treatment concept for the edentulous maxilla and an all-on-four treatment concept for the edentulous mandible. In the maxilla, two distal implants were placed at an angle of 30-45°. Three straight implants were placed in the anterior region of the maxilla. In the mandible, two distal implants were positioned at the anterior to mental foramina at an angle of 30-45°. Two straight implants were placed in the anterior region of the mandible. The digital impressions were taken, and the frameworks and veneers were designed according to the “Toronto Bridge” protocol. The frameworks and veneers were fabricated by milling zirconium blocks and fixed. The occlusion was rechecked for any interferences.
**RESULTS:** The results of this case report showed success and no complications for all-on-four/five treatment concept “Toronto bridge” prostheses at the six-month follow-up.
**CONCLUSION:** After the clinical and radiographic examination in the control appointment, it was observed that the patient was satisfied with the prosthesis, the patient’s quality of life increased, and there was no problem in the care of the prosthesis.


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**OP-1**
**PERIAPICAL AND ENDODONTIC STATUS OF PATIENTS WITH TYPE 2 DIABETES MELLITUS: A CASE-CONTROL STUDY**

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**INTRODUCTION:** The aim of this study was to investigate radiographically the prevalence of apical periodontitis (AP) and endodontic treatment in a sample of Type 2 Diabetes mellitus patients and healthy control group.
**MATERIALS AND METHOD:** In this retrospective study the radiographic records of 176 adult patients were examined. Our study group (SG) included 78 subjects with two subgroups: 39 Type 2 DM patients prescribed insulin (SGa), and 39 Type 2 DM patients prescribed with other oral diabetics (SGb). In control group (CG) we examined 78 healthy subjects. Panoramic radiographs of 176 subjects were analyzed and apical periodontitis was diagnosed as radiolucent periapical lesions, using the periapical index score. (Orstavik et al 1986) Student's t test and x2 test were used in statistical analysis.
**RESULTS:** The average number of teeth per patient in the SGa, SGb and control group was 20.82, 19.84 and 25.03. In control group (CG); only 44 subjects (%56.41) had at least one tooth with AP, whilst in the SGa they were 35 (%89, 74) and SGb were 27(%69, 23).
Among all diabetic patients with root-filled teeth (SGa and SGb), 45 teeth (%46, 39) had AP. In control group; percentage of AP in root filled teeth was only %27.9. (36 among 129 teeth)
**CONCLUSIONS:** The results showed that, in adult patients, type 2 DM is significantly associated with an increased prevalence of AP and endodontic treatment.

**OP-2**
**IATROGENIC TRAUMA; NECROSIS OF MASTICATORY MUCOSA FOLLOWING MAXILLARY EXPANSION; CLINICAL PRESENTATION AND MANAGEMENT-CASE REPORT**

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**INTRODUCTION**: Injuries to oral soft-tissues can occur due to accidental, iatrogenic, and factitious traumas. Traumatic lesions, whether chemical, physical, or thermal in nature, are among the most common in the mouth. They may present as gingival recession, burns, ulcerations, and necrosis. A type of physical injury to the oral soft tissues is iatrogenic trauma. Iatrogenic trauma is an intrinsic risk of all dental procedures. Only few reports in literature discussed necrosis of palatal mucosa from the Hyrax used in maxillary expansion.
**AIM:** The purpose of this case report was to illustrate the destructive nature of the orthodontic appliance and to describe the successful treatment.
**MATERIALS AND METHODS:** A 17-year-old girl with severe pain and burning sensation in the maxillary region, which was interfering with normal eating, swallowing and speaking, was admitted to our clinic. Upon questioning, the patient admitted traumatizing her palatal mucosa caused by orthodontic appliance after placement within two weeks. Treatment consisted of oral hygiene instruction, resection of soft-tissue necrosis, polishing and grinding of appliance, and guidance of patient.
**RESULTS:** Four weeks after surgery healing was occurred and three months later area of the lesion appeared completely normal as clinical.
**CONCLUSIONS:** The traumatic lesions in the oral cavity can occur at dental offices and homes. The skill, experience, and up-to-date knowledge of dentists are the main factors to prevent possible iatrogenic traumas.
**Key Words:** necrosis, oral injuries, oral rapid palatal expansion, ulcer

**OP-3**
**EVALUATION OF THE RELATIONSHIP BETWEEN MAXILLARY PALATAL IMPACTED CANINE TEETH AND SELLA TURCICA WITH CBCT**

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**INTRODUCTION:** The relationship between maxillary palatal impacted canines and sella turcica (ST) is based on common embryological origin of neural crest cells. Because of similar genetic origin, variations in ST can cause dental anomalies.
**AIM:** The aim of this study is to examine dimensions and shape of ST by cone beam computed tomography (CBCT) according to gender and maxillary palatal impacted canine tooth status.
**METHODS AND MATERIALS:** CBCT of 120 patients were included in the study. The patients examined were classified as bilateral impacted canines (Class-1), unilateral right impacted canines (Class-2), unilateral left impacted canines (Class-3), and the control group with erupted canines (Class-4).In CBCT examinations, the dimensions (width, depth, diameter) and shape (circular, oval, flattened) of ST were examined and these variables were compared according to gender and patient groups. To compare the groups, parametric tests were used in those with normal distribution, nonparametric tests were used in those without normal distribution. RESULTS: The width (p: 0.025) and depth (p: 0.036) of ST show statistically significant differences between men and women, and these values are higher in women. The ST shape is statistically different between male and female(r: 0.249), ST shape is more flattened in males. The diameter of ST doesn't differ statistically between male and female. (p: 0.638)
**CONCLUSIONS:** Morphological changes in sellar fossa structure according to gender should be evaluated.
**Keywords:** CBCT, Impacted canine, impacted teeth, Maxilla, Sella turcica.

**OP-4**
**EVALUATION OF MARGINAL AND INTERNAL FIT OF 4-DIGITAL SCANNERS: AN IN-VITRO STUDY ANALYSIS BY MICRO-CT**

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**INTRODUCTION:** It is essential to assess the accuracy of digital scanners since the marginal and internal fit of inlay restorations are the main factors of clinical success.
**AIMS:** The aim of this study was to evaluate the marginal and internal fit of inlay restorations produced by three intraoral scanners and one desktop scanner using micro-CT.
**MATERIALS AND METHODS:** In this study, 40 artificial teeth (n=10) were prepared as a class II mesio-occlusal inlay cavity. Teeth were scanned using 3 intraoral scanners (iTero; Cadent, EmeraldS; Planmeca, Trios4; 3Shape) and 1 desktop scanner (Solutionix C500; MEDIT). Inlay restorations were fabricated with hybrid ceramic blocks (Vita Enamic; VITA Zahnfabrik, Germany). Each tooth was scanned by micro-CT to evaluate the marginal and internal fit. The data were analyzed with One-way ANOVA and the Tukey HSD test.
**RESULTS:** In terms of the coronal and sagittal averages, there was a statistically significant difference between the groups ($p<0.05$). The desktop scanner group's coronal and sagittal averages were significantly lower than those of the Emerald S and iTero groups ($p<0.05$). The marginal and internal fit of inlay restorations manufactured with the desktop scanner was significantly higher than that of the Emerald S and iTero groups ($p<0.05$).
**CONCLUSIONS:** There was no significant difference in marginal and internal fit between the intraoral scanners. Future studies are required to improve intraoral scanners.
**Keywords:** inlay restorations, internal and marginal fit, intraoral scanner, micro-computed tomography

**OP-5**

## MARGINAL AND INTERNAL FIT OF CAD-CAM INLAY RESTORATIONS PRODUCED BY CONVENTIONAL AND DIGITAL TECHNIQUES

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**INTRODUCTION:** Accuracy of fit is the characteristic most closely related to the longevity of an inlay restoration.
**AIMS:** The aim of this study was to compare the marginal and internal adaptation of inlay restorations produced by conventional and digital impression techniques using micro-computed tomography (micro-CT).
**MATERIALS AND METHODS:** 60 typodont mandibular first molars were prepared as a class II mesio-occlusal inlay cavity. Inlay restorations were fabricated with three different materials (Celtra Duo, Dentsply DeTrey, Germany; Shofu Block HC, Shofu, Kyoto, Japan; VITA Enamic, VITA Zahnfabrik, Germany) using the conventional impression technique (Variotime, Kulzer, Germany) and an intraoral scanner (Trios4, 3Shape, Denmark). The data were analyzed using Kruskal Wallis, Dunn's, and Whitney U tests.
**RESULTS:** Although there was no significant difference between the conventional and digital impression groups using Celtra Duo and Shofu Block HC, the mean of marginal fit of the digital impression group using the VITA Enamic was significantly lower than that of the conventional impression. While there was no significant difference in internal fit between the conventional and digital impression groups using Celtra Duo and VITA Enamic, the mean of the digital impression group using Shofu Block HC was significantly higher than the conventional impression.
**CONCLUSIONS:** The material type and impression method can affect the internal and marginal fits of the inlay restorations.
**Keywords:** Digital impression, inlays, internal and marginal fit, micro-computed tomography

**OP-6**

## CBCT IMAGES OF PROXIMITY OF THE ROOT APICES TO THE INFERIOR ALVEOLAR CANAL AND ANATOMIC LANDMARKS IN THE POSTERIOR MANDIBLE IN A SAMPLE OF TURKISH POPULATION

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**BACKGROUND:** Cone-beam computed tomography (CBCT) is a new technology for imaging the dentomaxillofacial region that provides accurate, submillimetre-resolution images with low radiation dose.
**AIM:** To evaluate of the proximity of the apex of first and second molars to the mandibular canal, the incidence of bifid mandibular canals (BMCs), and accessory mental foramens (AMFs).
**MATERIALS AND METHODS:** A total of 200 CBCT images, were evaluated to analyze the proximity of the right mandibular canal to the root apices of first and second molar teeth. BMC and AMF was examined and recorded according to age and gender information. The data were performed with the SPSS Version 24 program. The significance level was determined as 0.05. Two-way analysis of variance and post-hoc Tamhane's T2 test were used for analysis.
**RESULTS:** There was a significant difference between the age groups ($p<0.05$). A significant difference was found between the distances of the roots to the mandibular canal ($p<0.05$). BMCs were found in 42.81%, and AMFs in 14.53%.
**CONCLUSION:** It was determined that the distance between the manbibular canal and the roots increased in patients older than 49 years. It was observed that the roots of the second molar teeth were closer to the mandibular canal than the roots of the first molar teeth.
**Keywords:** Accessory mental foramen, Bifid mandibular canal, Cone beam CT, Root apex

**OP-7**
**EVALUATION OF RADIOPAQUE LESIONS SEEN IN THE JAW BONES ON DIGITAL PANORAMIC RADIOGRAPHY**

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[2]Marmara University Faculty of Dentistry, İstanbul, Turkey

**INTRODUCTION:** Studies on lesions of jaw bones are important for clinicians' diagnosis and treatment planning. Panoramic radiography is one of the most basic diagnostic tools.
**AIMS:** The aim of this study was to evaluate radiopaque lesions in the jaw bones using digital panoramic radiography images.
**MATERIALS AND METHODS:** Digital panoramic radiographs of 1108 patients were analyzed. In this study, the frequency of idiopathic osteosclerosis, condensing osteitis, odontoma, soft tissue calcification, cementoblastoma, cementoblastoma, hypersementosis, supernumerary tooth, osseous dysplasia and fibrous dysplasia as well as age, gender and localization of radiopaque lesions were evaluated. Values of $p<0.05$ were interpreted as significant.
**RESULTS:** In this study, 85 (7.7%) of 1108 patients had radiopaque lesions. Of these lesions, 44 (7.2%) were found in women and 41 (8.2%) in men. Osteosclerosis 44 (4.0%), condensing osteitis 13 (1.2%), soft tissue calcification 12 (1.1%), hypersementosis 4 (0.4%), fluorid osseous dysplasia 3 (0. 3%), periapical osseous dysplasia 3 (0.3%), odontoma 2 (0.2%), supernumerary tooth 2 (0.2%), fibrous dysplasia 1 (0.01%) and sinus pathology 1 (0.01%).
**CONCLUSIONS:** Evaluation of the demographic distribution of these lesions and their associated radiological features is important for the radiological approach. In this investigation, cementoblastoma was not observed in any patient, and idiopathic osteosclerosis was the most frequent radiopaque lesion.
**Key words:** Condensing osteitis, odontoma, osteosclerosis, panoramic radiography, radiopaque lesion

**OP-8**
**EVALUATION OF THE EFFECT OF GENDER ON NASOPALATINE CANAL MORPHOLOGY AND DIMENSIONS WITH CBCT**

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Ankara Yıldırım Beyazıt University, Dentistry Faculty

**INTRODUCTION:** The nasopalatine canal is an important anatomical structure located in the premaxillary region.
**AIM:** The aim of this study was to evaluate the gender differences in the nasopalatine canal morphology and dimensions by cone beam computed tomography (CBCT) in the Turkish subpopulation.
**MATERIALS AND METHODS:** CBCT images of a total of 80 patients, 40 women and 40 men, were scanned retrospectively. The height and diameter of the nasopalatine canal were measured in sagittal section. Besides, nasopalatine canal morphology was evaluated in coronal sections. Independent sample t-test, Mann Whitney U test and chi-square test were used for statistical analysis.
**RESULTS:** The mean diameter and height of the nasopalatine canal were $4.00 \pm 0.66$ and $12.43 \pm 2.62$ respectively; and statistically significant difference was determined between the genders. ($p<0.05$) While the most common canal shape is Y type; the least common canal shape was found as a single canal in both genders. The classification of nasopalatine canal morphology did not differ significantly between men and women. ($p>0.05$)
**CONCLUSIONS:** The results showed that gender had no effect on the morphology of the nasopalatine canal, while the dimensions of the canal were higher in men.
**Keywords:** Nasopalatine canal, Cone Beam Computed Tomography, Morphology, Gender

**OP-9**
**MORPHOMETRIC EVALUATION OF THE MAXILLARY ARCH USING CONE BEAM COMPUTED TOMOGRAPHY**

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**INTRODUCTION:** Dental arch is an anatomical formation resulting from the positioning natural teeth on the alveolar bone.
**AIMS:** The aim of this study is to determine the prevalence of different maxillary arch forms and evaluate them morphologically by CBCT.
**MATERIALS AND METHODS:** This retrospective study was performed using total of 200 randomly selected maxillary CBCT images belonging to patients in the age range of 18-65. Measurements were interpreted in the different planes.
**RESULTS:** In cases over 45 years of age, the mean canine-palate mean was significantly higher than the 18-25 age group and the first molar mean was significantly higher than the other age groups. It was determined that the hard palate-anterior mean of the cases in the 18-25 age group was significantly higher than the 25-35 age group. There is a statistically significant difference between the maxilla shapes according to the canine-palate mean. The mean canine-palate of Class II cases was significantly higher than the Class I and Class III groups, and the canine-palate mean of Class III cases was significantly higher than the Class I group. The mean of first molar-palate and canine-anterior mean of Class II cases were found to be significantly higher than Class I and Class III groups. Canine -canine mean of Class I cases was significantly higher than Class II and Class III groups.
**CONCLUSION:** This study guides specialists with the process of diagnosis and treatment and the importance of understanding morphologic measurements as they facilitate practice.
**Keywords:** Maxillary Arch Dimension, Morphometric analysis, CBCT

**OP-10**
**THE INCIDENCE OF ARTIFACTS IN CONE-BEAM COMPUTED TOMOGRAPHY IMAGES: A RETROSPECTIVE STUDY**

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**INTRODUCTION:** Cone beam computed tomography (CBCT) has been a useful imaging technology for a variety of applications in the maxillofacial area. One of the major problems of this technology is image artifacts which may seriously degrade the image quality.
**AIMS:** To evaluate the incidence of artifacts in the CBCT images and to investigate the relationship between artifacts and FOV.
**MATERIALS AN METHODS:** CBCT images in the archive of our faculty were used in the present study. The images of 310 patients (173 females and 137 males) aged between 7 and 80 (mean age=45.27±16.6) were evaluated for the presence of 8 different artifact types. In addition, age, gender, FOV and the reasons for CBCT examinations were recorded. The statistical analysis were performed with descriptive statistics and chi-squared test.
**RESULTS AND CONCLUSIONS:** The incidence of artifacts in the examined images were; noise (4.8%), cupping (44.5%), dark bands/streaks (86.5%), partial volume (11%), metal (51.9%), motion (12.9%), ring (0%) and aliasing artifacts (37.7%). The relationship between FOV and aliasing artifacts was statistically significant (p=0.000). The most frequent reasons for CBCT examinations were implant planning (58.1%), pathologies (17.1%), impacted teeth (16.1%) and others (8.7%) respectively. The results of the present study showed that the presence of artifacts in CBCT is an important and common problem. Dark bands/streaks artifact due to the beam hardening was the most prominent one.
**Keywords:** Artifacts, Beam Hardening, Cone-Beam Computed Tomography, Motion Artifacts.

**OP-11**
**RESTORATION LONGEVITY FACTORS WITH REGARD TO THE TOOTH NOTATION IN THE ORAL CAVITY**

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**INTRODUCTION:** Several materials are currently available for dental hard tissue restorations. However, each of them appears to have different clinical indications, contra-indications, characteristics and longevity expectancies.
**AIMS:** The present study aims to discuss a variety of factors affecting time to re-intervention or extraction in accordance to the tooth notation.
**MATERIALS AND METHODS:** The conclusions shared in the research derive from a conjunction of the findings of a series of publications entitled "The ultimate guide to restoration longevity in England and Wales", and aspects drawn by everyday clinical practice. It is a retrospective view over dental records, concerning 11 million patients treated in United Kingdom.
**RESULTS:** The most common restorative materials are amalgam, composite resin and glass-ionomer. Common treatment also involves crown restorations. The present research retrospectively estimates longevity for both the restoration and the tooth, with regard not only to which tooth has been treated, but also patients' and dentists' age and gender. Those proved to affect behavior of restorations. Also, payments of private coverage rather than National Health Service, and the conservation of tooth vitality contribute to greater restoration and tooth longevity.
**CONCLUSIONS:** Throughout the research, it is obvious that maxillary and mandibular molar restorations survive longer, while at the same time restored mandibular molars are less commonly extracted. Upper canines and their restorations present with the shortest longevity. Finally, crowns in molars are comparatively the best long-term choice of treatment on the restoration side, and lead to less molar extractions in patients over 40 years old.
**Key words:** extraction, restoration longevity, tooth notation, tooth vitality

**OP-12**
**CLINICAL EVALUATION OF THE EFFECT OF A CALCIUM PHOSPHATE-CONTAINING DESENSITISING AGENT ON POSTOPERATIVE SENSITIVITY**

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**INTRODUCTION:** Postoperative sensitivity (POS) after composite restorations remains to be a challenge for clinicians. Despite the known effect of reduction of dentin hypersensitivity, there is limited knowledge about the effectiveness of calcium phosphate-containing desensitizers on POS.
**AIMS:** The aim was to evaluate the effectiveness of a calcium phosphate-containing TD (Teethmate-Desensitiser, Kuraray-Noritake, Tokyo, Japan), caries type, age and preoperative hypersensitivity on POS after composite restorations on deep cavities.
**MATERIALS AND METHODS:** Fifty subjects, with two carious teeth, participated in this study. TD was applied randomly to one tooth of each patient before composite restorations. POS was evaluated according to NRS (numerical rating scale) and VAS (visual analogue scale) after one week and, considering patients' reports after six weeks. For analyses, the Shapiro-Wilk test, Pearson's chi-squared test, Mann-Whitney U and the Wilcoxon Signed-Rank test were used, and the effect sizes (ES) were calculated ($\alpha$= 0.05). Results: Forty-seven of the participants completed the study. The small ES noted for TD for NRS and VAS (ES<0.30). Also, there was a small ES between POS and age, caries type and preoperative sensitivity after first week (ES>0.
**CONCLUSIONS:** TD has small effect on POS with respect to caries type, age, and existence of preoperative sensitivity. TD application before restorations could demonstrate a small relieving effect on POS in deep

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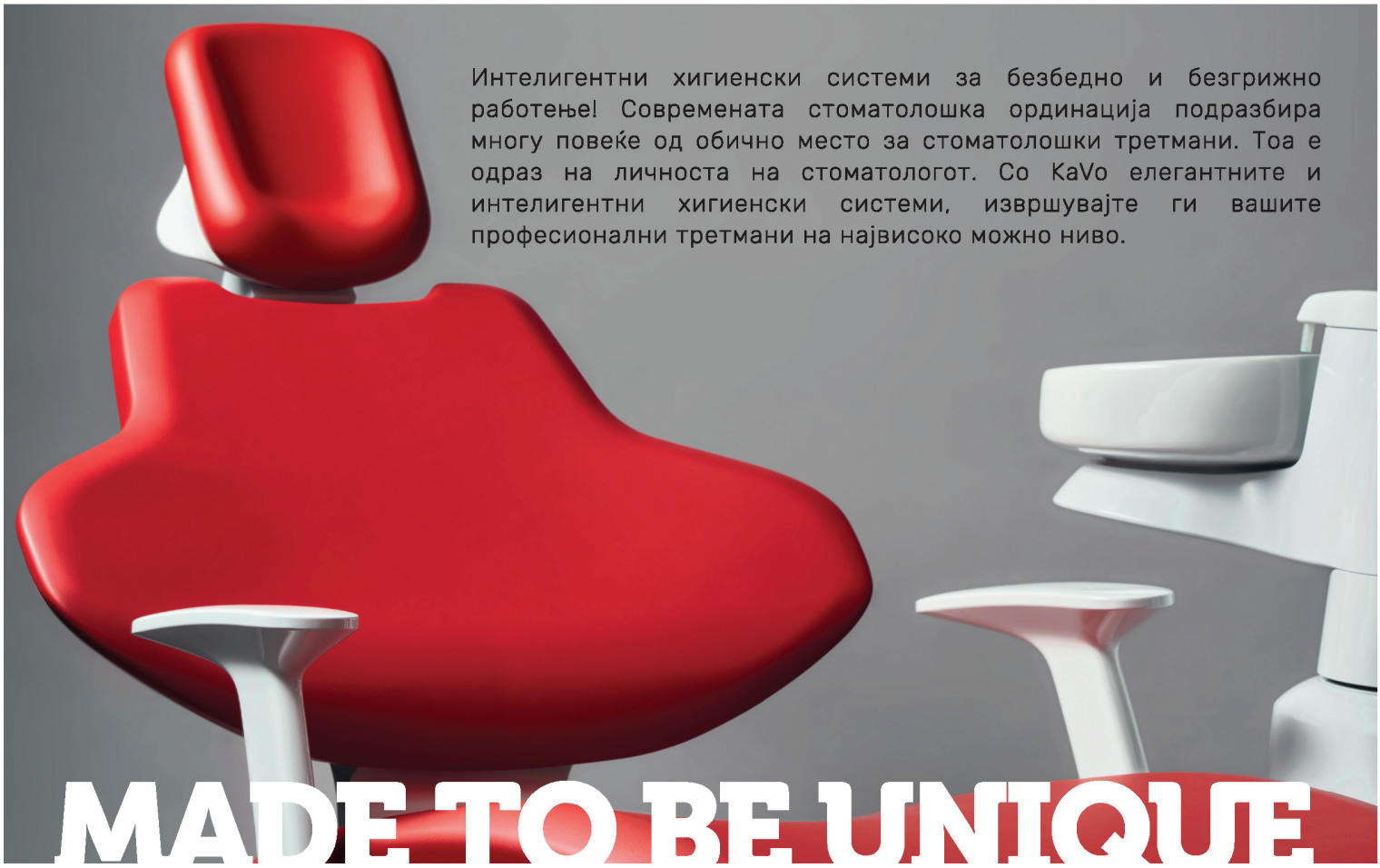


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cavities.
**Keywords:** calcium phosphates, dental caries, postoperative sensitivity, randomized controlled trial

**OP-13**
**THE EFFECT OF REPEATED PREHEATING ON MONOMER ELUTION FROM BULK FILL RESIN COMPOSITES**

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**INTRODUCTION:** Same composite syringe can clinically undergo numerous preheating cycles before completely consumed and studies analyzing the effect of repeated preheating cycles are limited.
**AIMS:** The aim of this study was to analyze the effect of preheating and repeated preheating procedure on the amount of monomer elution released from bulk fill composites. Materials and
**MATERIALS AND METHODS:** One group was polymerized at room temperature as control group, whereas in the other groups composites were polymerized after 1, 10, and 20 preheating cycles to temperature of 55°C. Elution of UDMA and BisGMA were measured with HPLC after 1 and 30 days. The obtained data were analyzed with One-way ANOVA and post hoc Tukey tests. The dependency of elution on time were analyzed with Paired Samples T tests.
**RESULTS:** In both time periods, the greatest amount of released BisGMA and UDMA were obtained from control group, while the least from 10 preheating cycles. Group with 20 preheating cycles showed greater amount of elution compared to 1 and 10 cycles, and this was statistically significant ($p<0.05$). The amount of elution on Day30 was statistically significantly higher than on Day1 ($p<0.01$).
**CONCLUSIONS:** Preheating of bulk fill composite was shown to be valuable in reducing monomer elution. However the effects of different repeat preheating cycles are also different. Monomer elution adversely affected after highly repeated preheating cycles of 20. This study was supported by Scientific Research Project Unit of Ordu University with the project number B-2102.
**Keywords:** Monomer elution, bulk fill, preheating, HPLC.

**OP-14**
**RETROSPECTIVE INVESTIGATION OF STYLOHYOID COMPLEX CALCIFICATION AND TYPES BY AGE AND GENDER BY CBCT**

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Selçuk University Faculty of Dentistry

**INTRODUCTION:** The stylohyoid complex forms the stylohyoid process, stylohyoid ligament (SL), and cornu minus of the hyoid bone. The stylohyoid process over 30 mm is considered to be an elongated stylohyoid process or calcification of the stylohyoid ligament. The cases in without any trauma and surgical procedure are called stylohyoid complex syndrome, while calcifications resulting from trauma and surgery are called Eagle Syndrome. It may be accompanied by clinical symptoms.
**AIMS:** The aim of this study is to retrospectively investigate the relationship of stylohyoid ligament calcification and its types with age and gender in CBCT in Turkish population.
**MATERIALS AND METHODS:** CBCT images of stylohyoid complex of 300 patients (female: 157 male: 143 mean age: 43, 79) were evaluated. Elongated SL 1; pseudo articulated SL 2, segmented SL 3, and normal-length SL 4 were coded. SPSS was used for statistical analysis. **RESULTS:** In right and left SL, type 1 was seen the most and type 2 was seen least. While the length and type distribution of the right SL does not differ between men and women (p: 0.234), the length and type distribution of the left SL differs between men and women (p: 0.000). Right (p: 0.037) and left (p: 0.000) SL length and type distribution were statistically different according to age.
**CONCLUSIONS:** Differentiation of SL calcification and associated clinical symptoms from other pain complaints is important for diagnosis. SL calcification can be easily diagnosed thanks to the 3D image with CBCT.
**Keywords:** CBCT, Eagle Syndrome, Stylohyoid Complex, Stylohyoid Ligament Calcification

**OP-15**

## SHEAR BOND STRENGTH EVALUATION OF BIODENTINE IN DIFFERENT CONDITIONS WITH DIFFERENT SELF-ADHERING FLOWABLE COMPOSITES

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**INTRODUCTION:** Bond strength between Biodentine and composite material have significant impact on the longevity of the restoration.
**AIMS:** To evaluate the shear bond strength between biodentine with different self-adhering flowable composites (SAFC) at different conditions.
**MATERIALS AND METHODS:** 220 cylindrical acrylic blocks with a hole(4mm diameter and 2mm height)were prepared with Biodentine and assigned to two aging periods:12min and 24h.Then they were subdivided into 3groups:no adhesive, etch-and-rinse and universal adhesive systems.3different SAFC groups (Vertise Flow, Constict and Fusio Liquid Dentin) and 1control group (Nexcomp Flow Composite) were created(n=10). After then, SBS were measured using a universal testing machine at a crosshead speed of 1mm/min and fractured surfaces were examined. Data were analyzed using SPSS 22.0 version. Two-way ANOVA with the Tukey post hoc test was applied for statistical analysis at $p<0.05$.
**RESULTS:** There were significant differences among the groups. The highest values were detected in F-24B group, despite that the lower values were detected in V-12A group.
**CONCLUSIONS:** Within the limitations of this study in 12min curing time F-A and V-B, besides in 24h curing time F-B, V-A and C-B applications can be concluded as the most favorable clinical options. Furthermore 24h curing time and etch less self-etch bonding application can be preferred.
**Key words:** Biodentine; Etch-and-Rinse; Self-Adhering Flowable Composite; Shear Bond Strength; Self-Etch Adhesive.

**OP-16**

## EFFECT OF DİFFERENT DISINFECTION SOLUTIONS ON RESIDUAL MONOMER RELEASED FROM RESIN NANOCERAMIC CAD-CAM BLOCKS

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**INTRODUCTION:** Computer-aided design and computer-aided manufacturing technology (CAD-CAM) is common used in the field of restorative dentistry. However, they have some disadvantages such as residual monomers.
**AIM:** The aim of this study is to evaluate the effect of 3 different disinfection solutions on the amount of monomer released from resin nanoceramic CAD-CAM Blocks using high performance liquid chromatography (HPLC).
**MATERIALS AND METHODS:** Forty resin nanoceramic CAD/CAM (Cerasmart, GC, Japan) samples (12x14x2 mm) were divided into 4 groups and disinfected by different solutions (Group 1: No Disinfection; Group 2: 70% Ethanol; Group 3: 2% Glutaraldehyde and Group 4: 1% Sodium hypochlorite) for 5 minutes. The analysis of amount of residual monomers (UDMA and Bis-EMA) was performed on an HPLC instrument (Dionex Ultimate 3000, Thermo Fisher Scientific).
**RESULTS:** A total of 14.54 ppm of monomers for Group 1; 9.28 ppm of monomers for Group 2; 10.60 ppm of monomers for Group 3, and 2.76 ppm of monomers from Group 4 were found after 30 days. The least amount of monomers released was found in Group 4. ($p<0.001$).
**CONCLUSIONS:** Disinfection of indirect restorations prior to cementation can reduce the amount of residual monomer remaining from the resin nanoceramic CAD-CAM Blocks.
**Keywords:** CAD/CAM; High Pressure Liquid Chromatography; Monomers; Disinfection
This study was supported by the Scientific Research Projects Department of Ordu University (A-2135)

**OP-17**

## EVALUATION OF DIFFERENT IRRIGATION SOLUTIONS ON THE REMOVAL OF CALCIUM HYDROXIDE PASTE FROM THE ROOT CANALS

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**INTRODUCTION:** The presence of calcium hydroxide on the root canal walls before root canal filling adversely affects the success of root canal treatment.
**AIM:** To evaluate the efficacy of different irrigation solutions on the removal of calcium hydroxide paste from single rooted teeth.
**MATERIALS AND METHODS:** Forty two single root canals were prepared with ProTaperNext x4 files. Calcium hydroxide (Kalsin, İzmir, Turkey) paste was placed into each root canals, and packed to the working length and the canal orifices and coronal parts of the roots were sealed with Cavit. Specimens were stored in distilled water for 21 days at 37°C. After 21 days the samples were randomly divided into three experimental groups (Irritrol, Sodium Hypochlorite, Chlorhexidine, n=14) according to the final irrigation solutions for calcium hydroxide paste removal. The roots were split longitudinally into halves and the amount of remaining calcium hydroxide paste in the canal walls were measured under a stereomicroscope at x20 magnification. The data were statistically analyzed using Kruskal-Wallis tests at a significance level of $p<0.05$.
**RESULTS:** There was no statistically significant difference between the groups in the apical part of the canals (p=0,411, p>0.05).In the coronal parts of the root canals Irritrol was found statistically more significant than CHX (p=0.001), there was no statistically significant difference between Irritrol and NaOCl groups (p=0.401)
**CONCLUSION:** Irrıtrol irrigation solutions was more effective in removing $Ca(OH)_2$ from canals than CHX irrigation solutions in the coronal parts of the root canals.

**OP-18**

## COMPARATIVE EVALUATION OF MECHANICAL PROPERTIES OF GLASS IONOMER BASED RESTORATIVE MATERIALS

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**BACKGROUND:** The aim of this study was to evaluate and compare the compressive strength and surface microhardness of the different glass ionomer based restorative materials.
**MATERIALS AND METHODS:** A total of 60 specimens were prepared for microhardness and compressive strength evaluation of bioactive restorative material (Group1: Cention N, Group 2: Equia Forte, Group 3: Fuji II LC). The specimens were stored in distilled water at room temperature for 24 hours before Vickers microhardness test and compressive strength test. One-Way ANOVA test, Bonferroni test and the Games-Howell test was used for data analysis. The significance level was accepted as 0.05 in all analyzes.
**RESULTS:** The mean surface microhardness values of the 3 material groups were statistically significantly different (F=118,094, p=0.000). Accordingly, the average microhardness value of the Cention N group (53.28) is higher than the average of the Equia Forte group (39.25) and the average of the Fuji II LC group (27.54). The microhardness value average of the Equia Forte group is also significantly higher than the average of the Fuji II LC group. Compressive strength values differ statistically between materials (F=8,862, p=0.000). According to the results of the post hoc analysis, the average compressive strength values of the Cention N group (327, 03) are higher than the average of the Fuji II LC group (230, 62). No significant difference was found between other groups (p>0.05).
**CONCLUSION:** Cention N presented with high mechanical strength and can be a good alternative to Fuji II LC for restoration of deciduous teeth.

**OP-19**
**SHEAR BOND STRENGHT EVALUATION OF BIODENTINE WITH DIFFERENT BULK-FILL COMPOSITES IN DIFFERENT CONDITIONS**

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Ordu University Faculty of Dentistry, Department of Restorative Dentistry

**INTRODUCTION:** Biodentine is a promising biomaterial. The bond strength of materials have important effect on the quality of restorations.
**AIMS:** Was to evaluate the shear bond strength (SBS) between biodentine and several bulk-fill composites, in different conditions with different time intervals.
**MATERIALS AND METHODS:** 160 cylindrical acrylic blocks with a hole (4mm diameter and 2mm height) were prepared. 3 BFCRs (Tetric N-Ceram Bulk Fill, Filtek Bulk Fill 3M ESPE and SDR) and 1 conventional composite (OptiShade™ Universal) were evaluated along with 1-step self-etch bonding (Clearfil S3 Bond Universal). There were 2 surface conditioning groups: 1-step self-etch adhesive (B) system and etch-and-rinse adhesive (A) system. Each was divided into 2 subgroups as 12min and 24h curing times. SBS measurements were performed by universal testing machine. Adhesive failure modes were examined. Kolmogorov-Smirnov, ANOVA, Tukey HSD and Independent Samples t-tests were done.
**RESULTS:** Significant differences were detected for all evaluated groups. The more valuable SBS results obtained in SDR-12B group, while 3M-12A group showed the lower.T-12A, 3M-12B, T-24A groups showed comparable results with SDR-12B. There were no differences in 24B groups.
**CONCLUSION:** Within the limitations of this study, it can be concluded that SDR is the most favorable material among the BFCRs restorations in the presence of biodentine. More studies are required about additional acid etching of biodentine when 1-step self-etch bonding used.
**Keywords:** Biodentine; Bulk-Fill Composite; Shear Bond Strength; Self-Etch Adhesive

**OP-20**
**EVALUATION OF THE ASSOCIATION BETWEEN THIRD MOLAR TOOTH MINERALIZATION AND CHRONOLOGICAL AGE**

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**INTRODUCTION**: Dental age determination is one of the most reliable chronological age estimation methods in forensic science and dentistry.
**AIMS:** The aim of this study is to evaluate the relationship between third molar tooth mineralization stages and chronological age in individuals aged 13-23 years.
**MATERIALS AND METHODS:** A retrospective study was performed on panoramic radiographs of 453 subjects (221 Female, 232 Male). According to the Demirjian method, the mineralization stages of the left mandibular third molars were classified between A-H. The relationship between chronological age and mineralization stages was evaluated by Chi-square test and Spearman correlation analysis.

**RESULTS:** The correlation between third molar tooth mineralization stages and chronological age was found to be high (r2=0.67). A statistically significant correlation was found between tooth mineralization stages and chronological age ($p<0.05$). Looking at the level of intra-examiner agreement, excellent agreement was observed ($\kappa=0.91$). The earliest completion of root development was observed at 17 years of age in males and at 18 years in females.
**CONCLUSIONS:** The results of this study will be useful in the field of forensic dentistry, as there is a positive and significant relationship between the chronological age of the third molar tooth mineralization stages in the determination of dental age in individuals aged 13-23 in the Turkish population.
**Keywords:** Dental Age Determination, Demirjian Method, Forensic Dentistry, Third Molar

**OP-21**

## RESTORATION OF MULTIPLE EDENTULOUS SITES IN THE CASE OF LIMITED MESIODISTAL SPACE USING FULLY GUIDED SURGERY

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This case presentation is to study the management of tooth agenesis using implant-supported restorations in case of limited mesiodistal space for implant placement. The edentulous sites demonstrated insufficient crestal bone in the mesiodistal dimension. This posed a significant challenge in placing a free-hand implant. Thus, a carefully planned, fully guided implant placement protocol with simultaneous Guided Bone Regeneration (GBR) was followed. Tooth agenesis is the congenital absence of teeth due to genetic or environmental factors. However, the edentulous sites may be dealt with tooth replacement options such as implant-supported restoration or a fixed bridge. The patient presented with multiple edentulous sites with deficient bone. The missing teeth were 14, 12, and 22 compromising the esthetics. The patient was advised to replace missing teeth with fixed rehabilitation using implants to achieve an ideal form and esthetics. Implant prosthesis alternates the natural tooth form and function and offers an esthetic superiority. The treatment followed was carefully planned guided implant placement at the three edentulous sites. Implant planning demands a thorough clinical and radiographic evaluation. However, radiographic evaluation using a CBCT stated that a significant bone loss in the mesiodistal direction necessitated guided surgery for accurate implant placement.

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**OP-22**
**EFFECT OF SALİVA CONTAMİNATİON ON IMMEDİATE DENTAL SEALİNG**

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**INTRODUCTION:** It is recommended to seal freshly cut dentin surfaces with a dentin bonding agent (DBA) between sessions of indirect restorations (IDS).Contamination of saliva to the freshly cut dentin surface may have caused changes that would affect the bond strength of DBA to dentin.
**AIM:** The aim of this study was to evaluate the effect of saliva contamination to the dentin to be IDS on the bond strength of the indirect restoration to dentin.
**MATERIAL AND METHOD:** Decay-free molar teeth were cut from the enamel-cement margin to form dentin surfaces and divided into 4 groups according to the dentin treatment before temporary restoration: Group1: Contamination with saliva (SC)+IDS, Group2:IDS Group3:Non-treatment Group4:SC. (IDSs were made with a universal adhesive system in self-etch mode)Then, all dentin surfaces were closed with light-cured temporary filling material. After 1 day, the temporary filling material was removed and composite blocks with a radius of 1 mm were adhered to the dentin with a self-adhesive resin cement. Teeth were subjected to shear breaking test. Data were analyzed by one-way Anova analysis and multiple comparison Post Hoc (Tukey) tests ($p < 0.05$).
**RESULT:** The highest bond strength values were obtained in the IDS applied group (1-2). However, while the IDS group showed higher bond strength in the non-SC groups, there was no difference between the IDS and non-IDS groups in the SC groups.
**CONCLUSION:** IDS on dentin without saliva significantly improved the bond strength of indirect restorations, but IDS on dentin contaminated with saliva had no effect on bond strength.

**OP-23**
**IN-VITRO INVESTIGATION OF SURFACE AND MECHANICAL PROPERTIES OF SINGLE-SHADE AND CONVENTIONAL COMPOSITE RESIN MATERIALS**

**Elif Gul Aydin, Neslihan Yilmaz**
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**INTRODUCTION:** In clinical practice, single-shade universal resin composites are preferred to avoid the shade selection process and provide acceptable aesthetic results. In addition to their aesthetic qualities, composite materials ought to have excellent mechanical strength.
**AIM:** To compare single-shade and conventional composite resin (CR) materials' nanohardness and surface roughness values.
**MATERIALS AND METHODS:** In this study, disc-shaped specimens of two single-shade CRs, Estelite®(Sigma Quick Tokuyama Dental, Tokyo, Japan) and Omnichroma (Tokuyama Dental, Tokyo, Japan) and Vittra APS Unique (FGM Dental, Brasilia, Brazil) conventional CRs were made(n=20,per group). Samples were tested for surface roughness and nanohardness after polishing and finishing. IBM SPSS V23 was used to evaluate the data. Depending on the data distribution of the investigated parameter, intragroup comparisons were carried out either using the parametric one-way ANOVA or the non-parametric Kruskal-Wallis test.
**RESULTS:** While the surface roughness of Vittra APS was statistically significantly higher than Estelite® (P=0.002), no statistically significant difference was found in comparisons between other groups. The comparison between groups for nanohardness values determined that the Vittra APS Unique showed statistically significantly higher nanohardness values than Estelite® (P=0.0004).There were no statistically significant differences between the other group comparisons.
**CONCLUSIONS:** Within the limitations of the current study, Omnichroma and Estelite® demonstrated similar mechanical properties.

**OP-24**
**EFFECTS OF SOLVENT REMOVAL METHODS TO REDUCE AEROSOL GENERATION DURING RESIN BONDING ON ENAMEL BOND STRENGTH**

**Muhammet Ayar, Sinem Guler, Onder Yesil**
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**INTRODUCTION:** As long as the COVID-19 pandemic continues, it has almost made it mandatory to apply aerosol-free procedures in dentistry. In order to reduce the amount of aerosol during the use of dental adhesives, which are widely used in minimally invasive procedures, the effects of air stream-free solvent removal methods on the enamel bond strength of resin adhesive systems were evaluated.
**MATERIALS AND METHODS:** The four solvent removal methods used were an air-stream, a micro-applicator, a cotton pellet and an absorbent paper. Adhesive systems were Single Bond Universal and Optibond All-in-one. The group in which the adhesive was not dried served as the negative control group. Enamel shear bond strength was performed with a universal tester with a crosshead speed of 1 mm/min (n=12). A two-way analysis of variance and the Tukey post-hoc tests were used for analysis of the SBS data.
**RESULTS:** For both adhesives, solvent removal with cotton pellet or micro-applicator provided SBS mean values similar to air-stream drying, while statistically significantly lower SBS mean values were observed in the negative control group and in the absorbent paper-dry group compared to the air-drying group.
**CONCLUSIONS:** Solvent removal with micro-applicator or cotton pellets creates less aerosol and thus can be used in the COVID-19 pandemic as it provides enamel bonding strength similar to compressed air stream.

**OP-25**
**EVALUATION OF FACTORS AFFECTING THE SURVIVAL AND FAILURE OF POSTERIOR COMPOSITE RESTORATIONS**

**Sultan Gizem Ülkü, Nimet Ünlü**
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**INTRODUCTION:** Composite resin is a viable material for direct restorations, showing high survival rates and acceptable clinical performance in long-term studies.
**AIM:** This retrospective study aims to analyze factors affecting clinical success and failure of composite restorations in posterior teeth.
**MATERIALS AND METHODS:** 54 patients with 189 posterior composite restorations were analyzed using Modified USPHS criteria. The study analyzed: DMFT, age, gender, systemic disease, drug use, smoking status, presence of plaque according to O'Leary index and gingival index reviews, eating habits, brushing and flossing, and bruxism. The study also collected information on tooth restoration, tooth type, and root canal treatment, and analyzed the data using SPSS-26.0.
**RESULTS:** The study found that restoration success decreases with age, as indicated by higher average DMFT and failure rates in patients over fifty. Secondary caries are caused by deterioration in the marginal adaptation and anatomical form of restorations, and plaque scores are linked to secondary caries in multi-surface restorations. The presence of plaque is a determining factor in the average survival of restorations, and individual factors over time can increase failure rates for Class-V restorations with high rates of secondary caries. Negative consequences in other parameters over time were observed due to a problem in one of the Modified-USPHS criteria, and the criteria examined are related to each other.
**CONCLUSION:** Studies on patient follow-up and evaluation of risk variables can guide preventive treatments.

**OP-26**
**EIGHTEEN-MONTHS FOLLOW-UP FOR NECROTIC IMMATURE TEETH TREATED WİTH REGENERATIVE ENDODONTICS: 4 CASE REPORTS**

**Elif Nur Taşgın, Gül Tosun, Esra Ulucaköy, Cemil Sayın**
Selçuk University Faculty of Dentistry

**INTRODUCTION:** Immature teeth may become necrotic due to caries or trauma. Root development stops in necrotic teeth, resulting in thin root walls and open apex. It becomes difficult to provide hermetic filling. Apexification can't ensure continuation of root development, teeth are prone to breakage. After this reason, regenerative endodontics has become popular.
**AIM:** The aim of this presentation is to evaluate root development and responses to vitality tests after eighteen-mouths follow-up of regenerative endodontics applied in necrotic immature teeth.
**MATERIALS AND METHODS:** Case-1 and 2, two male who 8-years-old had history of traumatic injury in teeth 11-21 of one and in tooth 21 of other, resulting in pulp necrosis of coronal fragment. Case-3, female who 9-years-old had spontaneous pain in tooth 35. Case-4, male who 12-years-old had intense pain in tooth 27. Firstly, all teeth were treated with regenerative endodontics, which included procedures for determining working lengths, irrigation with NaOCl-serum-EDTA, application of calcium hydroxide, secondly, irrigation with EDTA-serum, induction of periapical bleeding into canal cavity, coronal Mineral Trioxide Aggregate (MTA) plugging. Patients were brought in for follow-up once every three months.
**RESULTS:** After regenerative endodontics, clinical symptoms decreased, it was observed maturation of root development and apical closure in all teeth. Conclusion: Regenerative endodontics may be alternative to be used in treatment of immature teeth that can't be treated with root canal treatment.
**Keywords:** Immature, MTA, Regeneration, Root development

**OP–27**
**EVALUATION OF THE EFFECT OF CHITOSAN IN DIFFERENT SIZES AS AN IRRIGATION SOLUTION ON ENTEROCOCCUS FAECALIS BIOFILM IN THE ROOT CANAL SYSTEM, IN VITRO STUDY**

**Bekir Sarıhan, Fatih Çakıcı, Mustafa Kerem Çalgın, Hasan İlhan**
Ordu University Faculty of Dentistry, Ordu, Turkey

**AIM:** The purpose of this study is to evaluate the antibacterial activity of different sizes of chitosan.
**MATERIALS AND METHODS:** In our study, %0.2 chitosan, %0.2 chitosan nanoparticle, %0.2 chitosan carbondots and %2.5 sodium hypochlorite were tested. Dentin samples with comtamined E. faecalis for two weeks. After the contamination processes, irrigation solutions were applied to the dentin discs. After irrigation procedures, twelve dentin samples in each group were evaluated by colony counting and ten dentin samples were evaluated by confocal laser scanning electron microscopy
**RESULTS:** Although some of the results of the two different methods of measuring bacterial elimination do not match, in general, neither the irrigation solution can achieve % 100 elimination in both the colony counting method and the confocal laser scanning electron microscopy. As the particle size of chitosan decreases, its antibacterial activity decreases with both evaluation methods. According to both assessment tools, the sodium hypochlorite group showed better antibacterial effects than other irrigation solutions, but this difference was not significant for the chitosan group
**CONCLUSIONS:** According to the results of our study, sodium hypochlorite showed the best antibacterial effect. In our study, in which different sizes of chitosan were evaluated, it was observed that the effectiveness of chitosan decreased as the particle size decreased. It should be noted that different results may be obtained with different concentrations and different synthesis methods.
**Key words:** chitosan, carbondots, E. faecalis, nanoparticle

**OP-28**
**REHABILITATION OF AN EXTENSIVELY DAMAGED MAXILLARY FIRST MOLAR USING ENDOCROWN - CASE REPORT**

**Ilnur Usta Kutlu, Melike Karadena**
Gaziosmanpaya University/ Faculty of Dentistry

**INTRODUCTION:** The endocrown is a monoblock restoration that combines the core and crown in a single structure. This restoration is beneficial for endodontically treated teeth where conventional crown preparation may be difficult due to extensive loss of coronal tooth structure, limited interocclusal space, reduced root portions, and dilacerations. Compared to traditional single crowns with posts and cores it is easy, and quick to perform.
**AIMS:** Through this work, we discuss the indication and use of endocrown to replace single crowns with severe coronal destruction and present a clinical case report of an endocrown-type restoration.
**MATERIALS AND METHODS**: A twenty-one-year-old female patient attended to the clinic for the prosthetic restoration of the left maxillary first molar following the root canal treatment. Clinical examination revealed extensive hard tissue loss in the mesial and palatal walls of the coronal tooth.
**RESULTS:** The preparation was performed by preserving the furcation area, and the remaining tooth structure. Zirconia endocrown was fabricated by a CAD/CAM system and cemented with resin cement.
**CONCLUSION:** Endocrown restorations based on the minimally invasive approach can be applied as an alternative prosthetic treatment option to traditional post-core restorations. Endocrown restorations can be completed in a much shorter time compared to conventional solutions. Good aesthetics and high mechanical performance are the other advantages of endocrowns.
**Keywords:** CAD/CAM, Endocrown, Resin cement, Zirconia

**OP-29**
**EVALUATION OF TOOTH/RESTORATION FRACTURES AND RESTORATION LOSS OF COMPOSITE RESIN-BASED RESTORATIONS IN PERMANENT TEET**

**Sinem Özdemir, Nimet Ünlü**
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The aim of this study is to evaluate tooth/restoration fractures and restoration losses in resin-based restorations of permanent teeth and to examine them according to clinical factors at Selcuk University Faculty of Dentistry. Clinical examinations and radiological records of 795 patients were evaluated through the Patient Information Management System of the faculty. After excluding primary teeth, teeth prepared for crown-bridge, fillings for diastema closure, and patients without radiological recording, a total of 113 patients (58 females, 55 males) were evaluated for gender, age, presence of bruxism, filling and diagnosis dates, filling/cavity type, teeth numbers and root canal treatment using IBM SPSS-27.0. Patients whose restorations were made in faculty clinics and whose regular records were kept were included in the study. Statistical analysis revealed that molars were the most frequently affected teeth (63.7%). Class-II cavity types accounted for the majority of tooth/restoration fractures and restoration loss (70.8%). Restoration losses were observed more frequently in earlier periods, while tooth fractures were observed more frequently in later periods. Tooth fractures were more prevalent in endodontically treated teeth and in individuals aged 12-25, while restoration fractures and losses were more common in vital teeth and in the 36-81 age group. Bruxism increased with age, but there was no statistically significant difference by gender ($p>0.05$). One of the main limitations of this study is that the evaluations were based solely on clinical examinations.

**OP-30**
**THE EFFECT OF COFFEE AND DETOX DRINK ON THE COLOR STABILITY OF DIFFERENT RESIN COMPOSITES**

**Selin Seda Çağlar, Ali Rıza Çetin, Ali Kamuran Özkan,**
Selcuk University Faculty of Dentistry, Turkey

**AIM:** This study aimed to evaluate the effect of detox drinks and coffee on the color stability of four types of resin composites - two universal and two bulk fill.
**MATERIALS AND METHODS:** A total of 64 disc-shaped specimens (8mm diameter, 2mm thickness) were fabricated from four different resin composites: OptiShade Universal (OU), Essentia Universal (EU), 3M Filtek One Bulk Fill (FOBF), and EverX Posterior Bulk Fill (exP). The samples were polished with aluminium oxide discs (SHOFU Super Snap Rainbow) and then immersed in distilled water at 37°C for 24 hours. Color values were measured using a spectrophotometer (VITA EasyShade) based on the Commission Internationale d'Eclairage (CIE) Lab* system. Each resin composite group was divided into two subgroups (n=8), and each subgroup was immersed in distilled water, coffee, and detox drink (containing cucumber, apple, spinach, lettuce, mint, and Elite Detox Skinny) for 48 hours. Color values were remeasured, and color change (ΔE) was calculated. The results were analyzed using SPSS.
**RESULTS:** The study showed that different composites had different color changes, with the lowest change observed in the detox drink group. After 48 hours, all groups showed significant changes. OU had the most color change in coffee, while exP had the least.
**CONCLUSION:** The different types of composites used in this study showed statistically significant color changes, with the least color change occurring in the EverX bulk fill composite and the most color change in OU samples kept in coffee.

**OP-31**
**INTERIM RESTORATION OF A MISSING ANTERIOR TOOTH WITHOUT ANY REDUCTION: MARYLAND BRIDGE - CASE REPORT**

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Gaziosmanpaşa Üniversitesi Diş Hekimliği Fakültesi Protetik, Turkey

**INTRODUCTION:** The endocrown is a monoblock restoration that combines the core and crown in a single structure. This restoration is beneficial for endodontically treated teeth where conventional crown preparation may be difficult due to extensive loss of coronal tooth structure, limited interocclusal space, reduced root portions, and dilacerations. Compared to traditional single crowns with posts and cores it is easy, and quick to perform.
**AIM:** Through this work, we discuss the indication and use of endocrown to replace single crowns with severe coronal destruction and present a clinical case report of an endocrown-type restoration.
**MATERIALS AND METHODS:** A twenty-one-year-old female patient attended to the clinic for the prosthetic restoration of the left maxillary first molar following the root canal treatment. Clinical examination revealed extensive hard tissue loss in the mesial and palatal walls of the coronal tooth. The preparation was performed by preserving the furcation area, and the remaining tooth structure. Zirconia endocrown was fabricated by a CAD/CAM system and cemented with resin cement.
**CONCLUSION:** Endocrown restorations based on the minimally invasive approach can be applied as an alternative prosthetic treatment option to traditional post-core restorations. Endocrown restorations can be completed in a much shorter time compared to conventional solutions. Good aesthetics and high mechanical performance are the other advantages of endocrowns.
**Keywords:** CAD/CAM, Endocrown, Resin cement, Zirconia

**OP-32**
**MANAGEMENT OF BLEEDING FROM THE MANDIBULAR CANAL AS A RESULT OF CHRONIC APICAL PERIODONTITIS – CLINICAL CASE**

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[1]Qendra Klinike Universitare e Kosoves, Prishtina, Kosovo
[2]University of Prishtina, Kosovo

**INTRODUCTION:** After necrosis of the dental pulp, the infection can spread to the periapical space and cause pathological changes. Failure to heal the root of the tooth or poor healing can lead to the activation of the periapex which usually comes from periodontopathogenic bacteria: Porphyromonas gingivalis, Tannerella forsythensis, Treponema denticola, Prevotella intermedia, Aggregatibacter actinomycetemcomitans. Hemorrhage occurs as a result of involvement of blood vessels in inflammation and damage to their structure.
**PURPOSE:** To present the complications of chronic apical periodontitis in the lower jaw, its diagnosis and bleeding management.
**MATERIAL AND METHODS:** This paper is a clinical research on a patient with complications after tooth extraction carried out in December 2022
**RESULTS:** As a result of chronic apical periodontitis in the second mandibular molar on the right side, the upper wall of the mandibular canal was destroyed and as a result of the infection, the process also affected the inferior alveolar vein. During tooth extraction, massive venous hemorrhage occurred. Bleeding was stopped with Gelatamp local hemostatic, digital mechanical pressure and suturing of the wound.
**CONCLUSIONS AND DISCUSSIONS:** Chronic apical periodontitis can lead to bone resorption without showing clinical signs or symptoms in the patient until the infection involves large structures and overcomes the host's immune defenses. When the infection involves the mandibular canal, it can cause damage to the contents of the structures found inside it.
**Key words:** Hemorrhage, chronic apical

**OP-33**
**INDIVIDUALS APPROACHES TO DENTAL IMPLANT TREATMENTS**

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**INTRODUCTION:** Dental implant applications are a treatment method that we will show that it is now quite common in the loss of teeth of individuals.
**AIM:** This purpose of use is to examine the approach to dental implants in patients who have not undergone dental implant surgery.
**MATERIALS AND METHODS:** In this prospective study, in January 2023, people living in various cities of the country, consisting of male and female individuals aged 18-79 who have never had implant treatment before, were asked to fill out the online questionnaires. Apart from demographic characteristics such as age, gender, education level, monthly income, patients were asked to fill out a questionnaire including questions about dental implant treatment.
**RESULTS:** 49% of the patients were female and 51% were male. The highest number of patients was in the 30-40 age group. It was seen that the individuals participating in the survey were mostly at the undergraduate level, their monthly income was mostly around 6000-15000, they heard about dental implant treatment mostly from dentists and they saw themselves as partially competent. Individuals were more likely to prefer specialist dentists.
**CONCLUSIONS:** Implant treatment is a successful, effective and predictable form of treatment. The factors affecting the implant choices of individuals are important in terms of meeting patient expectations.
**Keywords:** Awareness, Dental implant, İnformation, Questionnaire

**OP-34**
**BILATERAL CORONOID HYPERPLASIA: REPORT OF A CASES**

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**OBJECTIVE:** Bilateral hyperplasia of the coronoid process of the mandible is defined as the abnormal extension of the coronoid process, which is histologically composed of normal bone. The main clinical finding is painless difficulty in opening the mouth due to contact with the temporal surface of the zygomatic bone or the medial surface of the zygomatic arch. In this case report, it is aimed to present the treatment of a patient with bilateral coronoid process hyperplasia.
**CASE REPORT:** A 15-year-old patient with a mouth opening of 8 mm and diagnosed with bilateral coronoid process hyperplasia as a result of clinical and radiographic examination applied to our clinic. Intraoral bilateral coronoidectomy was performed under general anesthesia. One week after surgery, rehabilitation was initiated using Therabite® for 10 minutes at least 5 times a day for a period of four months. After 4 months of rehabilitation, the patient's mouth opening reached 30 mm, temporal muscle botox treatment was applied and 3 weeks later, the patient's mouth opening was measured as 38 mm.
**CONCLUSIONS:** In the correct treatment of a patient with limited mouth opening as a result of bilateral coronoid process hyperplasia, it would be beneficial to benefit from intraoral bilateral coronoidectomy as well as early postoperative physiotherapy and botox treatment.

**OP-35**
**FOCAL REACTIVE LESIONS IN THE ORAL MUCOSA: 25 CASE REPORTS AND REVIEW OF THE LITERATURE**

**Ugur Dolunay, Hasan Küçükkolbaşi, Gökhan Gürses, Ahmet Akti, Abdullah Kalayci**
Selcuk University, Faculty of Dentistry, Konya, Turkey

**INTRODUCTION:** Oral mucosa has the capacity to form lesions ranging from developmental, reactive and inflammatory lesions to neoplastic lesions depending on internal and external stimuli.
**AIM:** In this case series, we aimed to present focal reactive lesions in the oral mucosa with the literature over 6 different entities in 25 different cases.
**MATERIALS AND METHODS:** 25 patients the lesions in the oral cavity applied to Selcuk University, Department of Oral and Maxillofacial Surgery between May and November 2022. Intraoral photos were taken and tracked the changes in the lesions were for 14 days. The excisional biopsy was performed after no changes were observed. The patients were seen on the 3rd-7th day and 1st-3rd month follow-up appointments.
**RESULTS:** The age range of the patients is between15-64. Histopathological results of biopsies showed eight pyogenic granulomas, eight fibromas, four epulis fissuratum, two fibroepithelial polyps, two peripheral ossifying fibromas and one peripheral giant cell granuloma. No postoperative complications were observed during the follow-up period but recurrences were observed after 3rd week and after 2nd month in two peripheral ossifying fibroma cases and one of the epulis fissuratum cases after 1st month.
**CONCLUSION:** The correct diagnosis and treatment of focal reactive lesions in the oral mucosa are important due to the appearance of rare neoplastic growths. Therefore, patients should be followed regularly.
**Keywords:** epulis, fibroepithelial polyp, fibroma, pyogenic granuloma

**OP-36**
**EVALUATION OF THE RELATIONSHIP OF HEMATOLOGIC BIOMARKERS WITH POSTOPERATIVE PAIN, EDEMA, AND QUALITY OF LIFE IN INDIVIDUALS WHO UNDERWENT THIRD MOLAR SURGERY**

**Birkan Eyup Yilmaz, Mehmet Melih Omezli, Damla Torul**
University of Ordu, Faculty of Dentistry, Turkey

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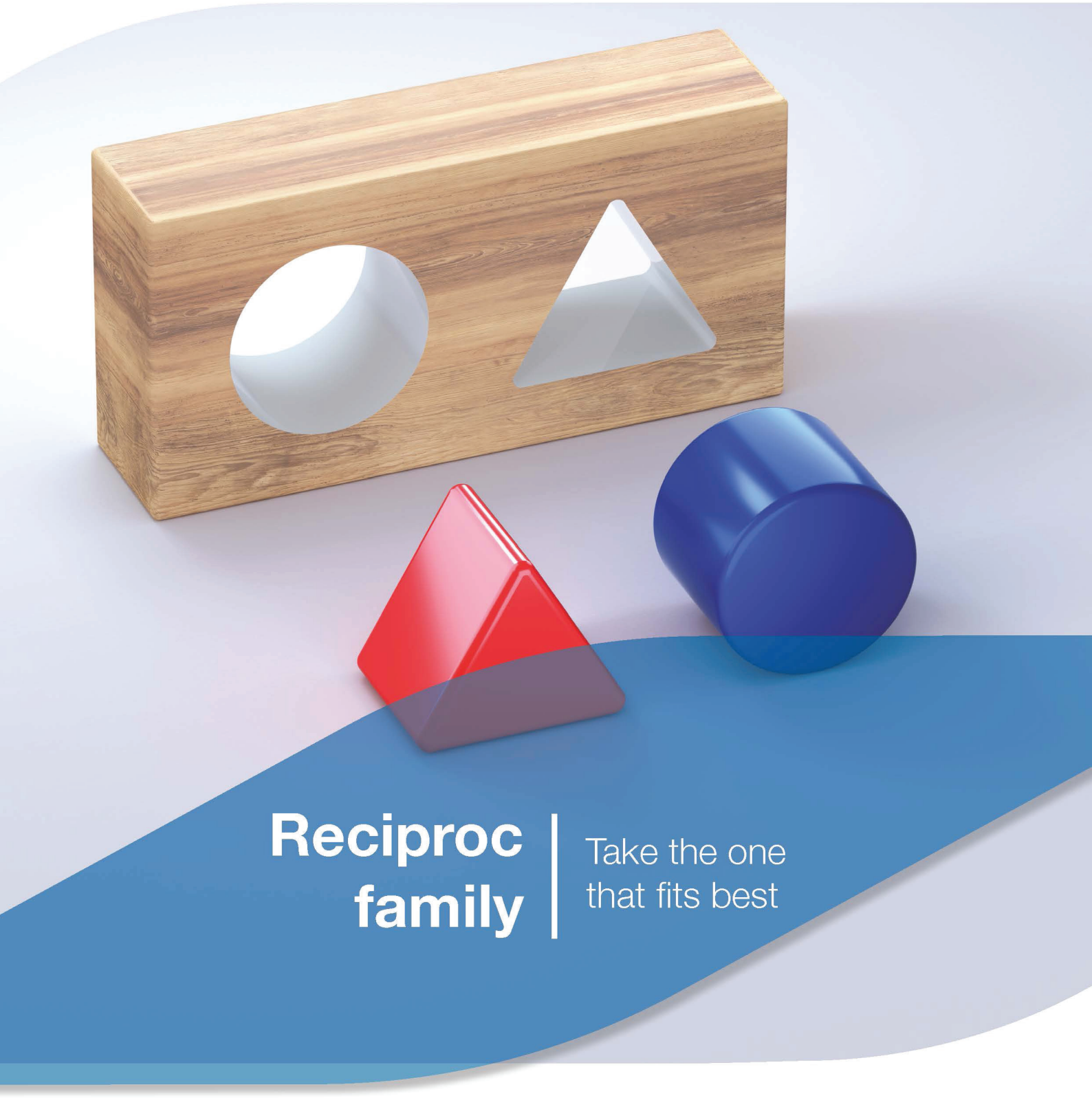

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**AIM:** This study explores the relation of the hematological inflammatory biomarkers with postoperative complications and quality of life in individuals who underwent third molar surgery.
**MATERIAL AND METHOD:** The Neutrophil-Lymphocyte Ratio (NLR), Platelet-Lymphocyte Ratio (PLR), and C - reactive protein (CRP) values of the patients who applied for impacted lower third molar tooth extraction were obtained from the routine blood test of the last 3 months. Trismus, edema, pain, analgesic consumption (AC), and quality of life were evaluated after surgery.
**RESULTS:** 46 patients (13 male, 33 female) were included. A significant correlation was found between the VAS scores and NLR and CRP levels except for the 7th postoperative day ($p<0.05$). A significant correlation was observed between PLR and VAS scores only on the 1st, 2nd, 3rd, and 4th days ($p<0.05$). A significant correlation was found between AC and NLR and CRP on all follow-up days while was found between AC and PLR on only the 3rd and 4th days ($p<0.05$).
**CONCLUSION:** According to the results obtained from the study, NLR, CRP, and partly PLR are found to be effective markers regarding the prediction of postoperative pain and AC. However, these results need to be confirmed with further studies.
**Keywords:** Neutrophil, Lymphocyte, Platelet, Inflammation, Third molar

**OP-37**
## APPROACHES IN HYBRID SCREWMENTABLE IMPLANT-SUPPORTED-FULL-ARCH RESTORATIONS USING CAD/CAM

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**INTRODUCTION:** Traditionally, implant-supported restorations are either cement- or screw-retained. However, a hybrid design that combines advantages of both previous categories has been adopted. In addition, the incorporation of CAD/CAM, seem to improve restorations in terms of aesthetic appearance, strength and accuracy of fabrication.
**AIMS:** Aim of the present case series is to illustrate two restoration approaches in edentulous patients, both fabricated using CAD/CAM technology.
**MATERIALS AND METHODS:** Case 1 describes a traditional approach of a full-upper-arch-screwmentable restoration. Prior to the final zirconia restorations, bilateral sinus lift augmentation was conducted and temporary ones were placed under immediate loading to secure bone augmentation, implant osseointegration, protection of the oral tissues and aesthetic appearance. Case 2 displays an upper-jaw rehabilitation, including a screwmentable metal implant bar together with a zirconia-cemented superstructure.
**RESULTS:** The fabrication of the final prostheses in Case 1 combine digital and conventional methods in design, including smile design, face scan, facebow record and use of transfer plates, while Case 2 is an all-on-four compromised solution, with a different, from the original protocols, anterior- posterior implant spread.
**CONCLUSIONS:** The hybrid screwmentable design is a promising solution for implant-supported restorations by providing passive fit, retrievability, and excess cement control, while, with the integration of CAD/CAM, a customized, reliable and predictable workflow is attained
**Keywords:** all-on-four concept, CAD/CAM, full-arch restoration, hybrid prosthesis, screwmentable prosthesis

**OP-38**
## WHITE LESIONS OF ORAL MUCOSA: 5 CASE REPORTS

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Selçuk University, Faculty of Dentistry, Turkey

**INTRODUCTION:** White lesions of the oral mucosa are characterized by a thickened keratin layer, epithelial hyperplasia, and changes in the mucosal surface such as epithelial edema and/or decreased vascularity of

the underlying connective tissue. Oral mucosal lesions may be the precursors of infectious, autoimmune, premalignant-malignant lesions, or they may occur as secondary oral involvement of one of the present systemic diseases.
**OBJECTIVE:** In this case series; it is aimed to review the white lesions in the oral mucosa over 5 different cases.
**MATERIAL AND METHOD:** 5 patients were applied to Selcuk University, Oral and Maxillofacial Surgery Department between July and December 2022 because of intraoral white lesions. Intraoral photos were taken and the changes in the lesions were followed up for 14 days. When no change was observed, excisional biopsy was performed in 3 cases and incisional biopsy was performed in 2 cases. Patients were seen on the 3rd day, 7th day, 1st month, and 3rd month.
**RESULTS:** The age range of the patients is between 18 and 62.Histopathological results of biopsies showed two lichen planus, two oral squamous papillomas, and one oral verruca vulgaris. No postoperative complications were observed during the follow-up period.
**CONCLUSION**: White lesions on the oral mucosa; early diagnosis and treatment is important because it can transform into premalignant and malignant lesions. For this, patient follow-up should be done continuously.
**Keywords:** Lichen planus, oral mucosa, squamous papilloma, white lesions

**OP-39**
**MANAGEMENT OF INTRACANAL SEPARATED INSTRUMENTS WITH BYPASS TECHNIQUE: CASE SERIES**

**Edanur Maraş,**
Recep Tayyip Erdoğan University, Faculty of Dentistry, Turkey

**INTRODUCTION:** Separated instruments cause incomplete cleaning and shaping, leading to treatment failure.
**AIM:** The aim of this case series is to present the endodontic treatments of five different separated root canal instruments found in four clinical cases using the bypass technique without causing excessive material loss.
**MATERIALS AND METHODS:** 2 female and 2 male patients aged between 20-32 were included in the case series. In 2 cases, iatrogenic instrument fracture occurred in the inclined mesiobuccal root canals of the maxillary first molar and mandibular second molars diagnosed with irreversible pulpitis, during the preparation stage of the endodontic treatment. The separated instruments in the mesiobuccal canals were bypassed after two 2 sessions and the treatments were completed. In the other 2 cases, the endodontic treatment of mandibular molar teeth with periapical lesions, which had 3 separated instruments in their mesial roots, and which were indicated for retreatment, were completed with the bypass technique at the end of the second session.
**RESULTS:** In these cases, the separated instruments were effectively bypassed and endodontic treatments were completed without excessive loss of tooth structure. At follow-ups ranging from 13-17 months, the patients were asymptomatic. Significant healing was observed in large periapical lesions in 2 cases.
**CONCLUSIONS:** The teeth which have separated instrument may be successfully treated with bypass technique and the teeth can maintain their functions.
**Keywords:** bypass, endodontic treatment, iatrogenic, separated instrument

**OP-40**
**BIOLOGIC WIDTH AROUND IMPLANT**

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Klinike dentare Marjola Davidhi, Albania

**INTRODUCTION:** White lesions of the oral mucosa are characterized by a thickened keratin layer, epithelial hyperplasia, and changes in the mucosal surface such as epithelial edema and/or decreased vascularity of the underlying connective tissue. Oral mucosal lesions may be the precursors of infectious, autoimmune, premalignant-malignant lesions, or they may occur as secondary oral involvement of one of the present

systemic diseases.
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**CONCLUSION:** White lesions on the oral mucosa; early diagnosis and treatment is important because it can transform into premalignant and malignant lesions. For this, patient follow-up should be done continuously.
**Keywords:** Lichen planus, oral mucosa, squamous papilloma, white lesions

**OP-41**
**SOLVING THE ANODONTIA OF THE LATERAL INCISORS**

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**INTRODUCTION:** Patient A.Š. came to the dental office to solve the congenital anodontia of the lateral incisors. The central incisors and canines are intact. It is not enough space to solve the problem with crowns.
**AIMS:** Make the plan of therapy to get space for lateral incisors. First orthodontics therapy to make space and after orthodontically treatment get space place the implants.
**MATERIALS AND METHODS:** In orthodontics therapy are used aligners. The number of aligners that patient use during the therapy is 21. When spaces are makes place the implants and get retainer aligner with 'fake' lateral incisors that is use 2 months. After that period make a temporary crowns to management of soft tissue. It is stay for 3 weeks. On the end it makes metal ceramic crowns.
**RESULTS:** Patient got lateral incisors, nice smile and more confidence.
**CONCLUSIONS:** Some therapies require more time and patience to get the best results. It is very important to explain to the patient why some therapy will be done and to have full cooperation.
**Keywords:** aligner, anodontia, crown, incisors, implant

**OP-42**
**BIOFILM DETECTION WITH DIFFERENT METHODS IN DENTAL UNIT WATER SYSTEMS AND COMPARISON OF THE EFFECTIVENESS OF VARIOUS DISINFECTION PROTOCOLS**

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[1]Selçuk University Faculty of Dentistry, Turkey
[2]Kapadokya University, Faculty of Dentistry

**OBJECTIVES:** To determine the total number of colonies in biofilm-forming microorganism in the dental unit water systems by two different methods (dipslide (DS) and conventional surface smear(CSS)) and to compare the antimicrobial activities of hypochlorous acid(HA) and chlorine dioxide(CD) applied for different times.
**MATERIALS AND METHOD:** On the samples taken from the water systems of six dental units, total microorganism colony counts (TMCC) were carried out by using the CSS and DS before (0th-min) and after applications HA and CD (1st, 5th, 10th, 20th, 30th-mins).
**RESULTS:** The means of the TMCC (self-control, 0.-min) were determined as 10.3x104 cfu/ml in the DS and 8.25x104 cfu/ml in the CSS. When DS and CSS methods are compared; it was observed that the DS method

was able to sensitively detect microbial growth even at higher exposure times to both solutions. While a value approaching 3% could be detected even at the 10th-min in the units applied HA when using the DS method, no growth was detected by the CSS method. In the units CD was applied, while no microbial growth was observed at the 10th-min by the DS method, it was determined that microbial growth which was observed in the first-min. by the CSS method, was not observed after the 5th-min.
**CONCLUSIONS:** The contamination control in unit maintenances could be practically made by using DS method and disinfection with HA or CD for at least 10-min in the unit water systems could be eliminated the risk of opportunistic infection.
**Key words:** Chlorine Dioxide, Hypochlorous Acid, Biofilm, Dental Unit Water Systems

**OP-43**
**THE EFFECT OF A-PRF ON HEALING AFTER PERIAPICAL SURGERY**

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Ordu University Faculty of Dentistry, Turkey

**INTRODUCTION:** Periapical surgery aims to eliminate periapical pathology in cases that cannot be treated with traditional endodontic approach. A-PRF is a platelet concentrate that accelerate healing via sustained release of growth factors. Fractal analysis (FA) is a method to assess fractal dimension (FD) which represents the complexity of the bone structure.
**AIM:** To explore the effect of A-PRF on healing after periapical surgery by evaluating the periapical bone structure with FA in early period of healing.
**MATERIALS AND METHODS:** Records of the patients who had undergone periapical surgery with and without A-PRF application at Maxillofacial Surgery Clinic were retrospectively reviewed. Periapical radiographs obtained immediately after surgery (T0) and in early healing period control (T1) were retrieved from the archive. FD analysis was performed with the box counting method.
**RESULTS:** Periapical radiographs of 13 patients (10 Female, 3 Male) with a mean age of 35±14.54 years included. Among 13 patients 8 had undergone periapical surgery with A-PRF application (A-PRF group) and 5 of them without (Conventional group). A significant increase was observed in FD values of A-PRF group at T1 compared to the T0 ($p<0.05$). No significant difference was observed between the FD values at T0 and T1 ($p>0.05$) in conventional group.
**CONCLUSION:** A-PRF application seems to be accelerating healing after periapical surgery in early period. However, these preliminary results need to be supported by further studies.
**Keywords:** Endodontic Surgery, Fractal dimension, Growth factors, PRF

**OP–44**
**EVALUATION OF THE EFFECTIVENESS OF CORTICOTOMY ASSISTED DIFFERENT MINIPLATE AND INTERMAXILLARY ELASTIC APPLICATIONS AFTER GROWTH SPURT IN INDIVIDUALS WITH SKELETAL CLASS III MALOCLUSION**

**Alara Bayraktar, Nizami Hashimli, Ahmet Yagci**
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**AIM:** This prospective randomized clinical study aimed to evaluate the effectiveness of maxillary protraction with different miniplate and Intermaxillary elastic applications after cortectomy in patients with skeletal Class III malocclusion.
**MATERIALS AND METHODS:** 20 patients aged between 13-15years were randomly divided into 3 groups. In Group 1 and Group 2, an acrylic splint containing hooks in the upper molar region was prepared and cemented. In Group 2, miniscrews were used in the palatal region for additional anchorage. All patients underwent general anesthesia, and an incomplete Le Fort 1 osteotomy was performed to free the maxilla. Miniplates were placed vertically between the lower canine and first premolar in all groups, and horizontally

under the osteotomy line in the maxillary molar region in Group 3. Class III elastics were applied 5 days after the surgery and treatment continued until a positive overjet was achieved.
**RESULTS:** Significant improvement was observed in the sagittal position of the maxilla in all groups. The change in upper incisor angles was significantly higher in Group 1. Control of changes in the vertical dimension was more successful in Group 3. Significant soft tissue changes following skeletal change were observed in all patients.
**CONCLUSION:** The results suggest that the use of miniplates and elastics in combination with cortectomy can achieve a significant improvement in skeletal and dental relationships, leading to a positive impact on facial esthetics and function.
**Funding:** This study was supported by Erciyes BAP (TDH-2022-11536).

**OP–45**
**EVALUATION OF SUBMANDIBULAR FOSSA DEPTH AND MANDIBULAR CANAL RELATIONSHIP WITH CONE BEAM COMPUTED TOMOGRAPHY**

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Ordu University, Department of Dentomaxillofacial Radiology, Turkey

**INTRODUCTION:** Odontomas are the most common odontogenic tumors in the oral cavity and are considered hamartomas, unlike true neoplasms. (1) Odontomas can be seen at any age range and regions of the dental arches. They are classified as compound and complex odontomas according to their radiographic and microscopic features. (2) Compound odontomas are more common than complex odontomas. (3) Although the etiology of odontomas are not known exactly, it is thought that trauma, infection and genetic factors may be effective. (4) Compound odontoma is presented in this case report.
**CASE REPORT:** An 18-year-old female patient without any systemic disease was admitted to our clinic with the complaint of crowding of her teeth. The panoramic radiograph showed that 35 number tooth was impacted; a lesion area with multiple radiopaque masses, surrounded by a radiolucent border, with regular borders, was detected between the roots of teeth 42 and 43. Based on the radiographic findings of the lesion, the patient was referred to the Oral and Maxillofacial Surgery clinic with a preliminary diagnosis of compound odontoma. After excisional biopsy, lesion was sent for histopathological examination which confirmed the diagnosis of compound odontoma
**CONCLUSION:** Compound odontoma is asymptomatic, painless and growing slowly. They may be detected by chance on a routine radiograph of a missing tooth.
**Keywords:** compound odontoma, asymptomatic, radiopaque

**OP–46**
**CONTENT ANALYSIS OF YOUTUBE VIDEOS RELATED TO MAXILLARY CENTRAL İNCİSOR TOOTH MANIPULATION**

**Nazli Nihal Saribacak, Nihal Özcan**
Kirikkale University, Turkey

**INTRODUCTION:** Today video sharing platforms on Internet has become an important source of information in many areas like health.
**AIM:** Studies purpose is to evaluate the suitability, usefulness, and quality of contents related to 'Maxillary Central Incisive Tooth Manipulation' used by dentistry students for first-year preclinical education.
**MATERIAL AND METHODS:** A scoring system consisting of 10 parameters was used to assess the video content quality. The viewership, likes, comments, reliability of information, global quality scores(GQS), and video duration were recorded for evaluation with parameters by two dentists according to the source(dentist, dentistry student, dental technician) and the information content (high, medium, poor quality). Group comparisons were analyzed using the Kruskal Wallis and post-hoc Tamhane's T2 test.

**RESULTS:** 20 relevant videos were classified as 55% high (GQS 4.7±0.6), 35% of medium (GQS 3.3±1.6), and 10% of considered poor quality (GQS 1.0±0). Evaluated according to their quality, no significant difference was found between the parameters except GQS (p=0.013). The videos are as follows, in order of their sources: dentists (n=6, 30%), dentistry students (n=11, 55%) and dental technicians (n=3, 15%).
**CONCLUSION:** While using internet attention should be paid to the video resource. Health academics and institutions should increase studies on useful and systematic 'preclinical course' videos posted to the internet.
**Key Words:** digital education, healthcare information on YouTube, internet, social media, tooth modelation

**OP–47**
**EVALUATION OF STRESS LEVEL OF THE DENTISTRY STUDENTS IN PERFORMING DENTAL TREATMENTS**

**Gülşah Tonga, Mesude Çitir**
Faculty of Dentistry, Tokat Gaziosmanpasa University, Turkey

**INTRODUCTION:** Dentistry is a profession associated with high levels of stress. Dentistry students are also under a lot of stress during their education.
**AIM:** This study aims to analyze the anxiety and self-reported levels of stress in different dental treatment procedures, complication possibility, and patient-related situations, in 4th and 5th grade dental students.
**MATERIALS AND METHODS:** The study was carried out on 68 4th and 63 5th grade dentistry students. To assess anxiety, a Turkish version of the State-Trait Anxiety Inventory (STAI) was used which was prepared and adapted by Spielberger et al. To assess stress, the participants were asked to rate on a scale from 0 (none) to 10 (high), the stress that they feel. A comparison of stress levels according to anxiety, gender, and grade was performed using the 3-way ANOVA test.
**RESULTS:** The STAI X-2 questionnaire showed that anxiety as a trait showed was low level at 16%, moderate at 76.3%, and high at 7.6%. The effect of anxiety on stress was statistically significant (p=0.000). The females showed a significantly higher level of stress compared to males (p=0.001). Endodontic treatment and complications were rated as the most stressful procedure. Performing dental treatment in patients with infectious diseases was the most stressful situation for the students.
**CONCLUSIONS:** Many factors can create high levels of stress for dental students. Conducting studies to reduce stress on students will provide a more efficient and healthy educational environment.
**Key Words:** anxiety, dental students, dental treatments, stress.

**OP–48**
**PRECLINICAL EDUCATION SELF ASSESMENT OF FİRST YEAR DENTAL STUDENTS: A QUESTİONAİRE STUDY**

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**INTRODUCTION:** The aim in dental education is to develop students in practical and theoretical applications. The concept of dental morphology is tried to be established in the prosthodontic 1st year preclinical course.
**AIM:** Evaluation of students' assessment with a questionnaire about preclinical workflow in dentistry 1st year prosthodontic course.
**MATERIAL AND METHODS:** A questionnaire was applied to 112 first-year students in order to evaluate their demographic data (gender, age, desire for the profession, reason for choosing profession, smoking and alcohol use, and doing sports), and the part that deals with preclinical ideas consists of 7(Q1-Q7) questions. Chi-square test used for statistical assessment. p= .05
**RESULTS:** In the paired comparisons, male and female students answers about getting feedback (Q4, p: .049) and their thoughts on the significance of the preclinical course (Q6, p: .002), and alcohol use rates differences are statistically important (p: .007).
**CONCLUSION:** The opinions of female and male students on some subjects differed. In general, they were satisfied with the application of the questionnaire.
Keywords: questionnaire, self-assessment, preclinical courses, prosthodontics

**OP-49**
**ARE FOR ORAL HEALTH SHOULD START AT PRE-CONCEPTION**

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**INTRODUCTION:** Considering the high prevalence of periodontal diseases and their tendency to increase during pregnancy, it is not surprising to encounter the consequences at the same rate. Changes in hormonal balance during pregnancy affect periodontal tissues and correspondingly, changes in periodontal status affect the pregnancy outcomes. Therefore, precautions and treatments before pregnancy could reduce this bilateral interaction to normal limits.
**AIMS:** The aim of this review is to emphasize the importance of achieving periodontal health at pre-conception and ensuring its continuity.
**MATERIALS AND METHODS:** After a detailed literature review, relevant articles were full-text-read and synthesized.
**RESULTS AND CONCLUSIONS**: It is important to prepare for the pregnancy during the pre-conception period for the baby's and the mother's health. Many studies show that the risk of preterm birth and low birth weight increase in expectant mothers with poor periodontal health. Similarly, it has been reported that the oral microbiota of the expectant mother affects the baby through vertical transmission. For the bone quality of the baby to be optimal, the mother should not reduce her calcium intake below the normal limits. In the long run, chewing sugar-free gum, eating a healthy diet, exercising, and not disrupting oral hygiene habits result in a healthy pregnancy and a healthy baby. It could be difficult to turn them into habits during a pregnancy which can be both mentally and physically tiring. Therefore, pre-conception is the most appropriate period to implement periodontal health.

**OP-50**
**ORAL SOFT TISSUE PATHOLOGY AMONG ADOLESCENTS WITH MENTAL DISORDERS**

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**BACKGROUND:** According to the WHO, there is an increasing prevalence of mental disorders among children and adolescents. Previous studies have shown that people with mental disorders have a higher prevalence of dental caries and periodontitis.
**AIM:** The aim of this study was to determine the oral soft tissue pathology among adolescents with mental disorders.
**METHODS AND MATERIALS:** The study was conducted as a cross-sectional study among two groups of participants. The study group comprised of 75 hospitalized adolescents with mental disorders (mean age 18.87 ± 3.05). The control group comprised of 75 mentally healthy adolescents (mean age 19.21 ± 3.15). All the participants were subjected to targeted dental examination in order to determine symptoms and signs of oral soft tissue disorders. The data related to mental disorders of the study group participants was obtained from the patient's medical records.
**RESULTS:** Majority of the study group patients were diagnosed with F20-F29, and they were treated with an average of 3.27 ± 0.83 psychiatric medications. Most of the study group patients smoked cigarettes, drunk alcoholic beverages and used narcotics. The mean value of the symptoms and signs of oral soft tissue disorders in the study group was 1.57 ± 1.36, which was almost significantly higher than in the control group (0.30 ± 0.65).
**CONCLUSION:** The results indicate a need for multidisciplinary approach in order to improve not only oral health, but also mental and general health of adolescents with mental disorders.
**Keywords:** adolescents, mental disorders, oral pathology

**OP-51**
**MANAGEMENT OF DENTAL TRAUMA OF LAST-YEAR MEDICAL STUDENTS ATTENDING MEDICAL SCHOOL**

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**INTRODUCTION:** Urgent interventions required in trauma situations are typically performed by medical doctors, but injuries to teeth and surrounding tissues are often overlooked due to the priority given to conditions threatening general health. Early treatment is vital for the prognosis of oral and dental injuries, highlighting the need to evaluate medical doctors' knowledge and awareness, as they are often the first to encounter trauma cases.
**AIMS:** This study aims to evaluate the knowledge levels and approaches of senior medical students regarding dental traumas in Tokat City, Turkey.
**MATERIALS AND METHODS:** For this prospective and cross-sectional study, a questionnaire consisting of 10 questions was used, which had been tested and used in previous studies on similar subjects. The obtained data were analyzed using the SPSS v23 (Chicago, IL, USA) software package program.
**RESULTS**: While 7.1% of the students stated that they would reimplant an avulsed tooth, 71.4% indicated that they would refer the patient to a dentist. 42.8% of the students preferred sterile saline solution for transporting an avulsed tooth. Furthermore, 85.7% of the students did not find the level of knowledge about oral and dental injuries sufficient, and 71.4% stated that they would like to participate in an educational program on this subject.
**CONCLUSIONS**: Last-year medical students have insufficient knowledge about traumatic dental injuries and training programs are needed to improve their awareness and knowledge on this topic.
**Keywords:** Dental trauma, medical students, dental emergencies, avulsion.

**OP-52**
**TREATMENT OF ANTERIOR DENTAL CROSSBITE IN THE EARLY MIXED DENTITION PERIOD WITH REMOVABLE ORTHODONTIC APPLIANCE**

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**INTRODUCTION:** Anterior dental crossbite is a form of malocclusion that can be defined by the mandibular anterior teeth positioned more buccally than the maxillary anterior teeth. If anterior dental crossbite is not treated, it can cause tooth abrasion, gingival recession, alveolar bone loss and mobility in teeth.
**AIM:** In this case report, it is aimed to present the treatment with removable orthodontic appliance of 3 patients who were diagnosed with anterior dental crossbite.
**MATERIALS AND METHODS:** Dental crossbite was detected in a single tooth in the anterior region or in the anterior group teeth in 3 children in the early mixed dentition period who applied to our clinic with dental complaints. These cases exhibited no mental disorders, good cooperation, no familial mandibular prognathia, symmetrical condylar growth, and a class I molar relationship. In these cases, skeletal malocclusion was not found in radiographic and clinical examination. Hawley plates with active springs that increase occlusion were used to treat anterior dental crossbite.
**RESULTS:** It was determined that anterior crossbite was treated in an average of 1.5-2 months for patients who received removable orthodontic appliances
**CONCLUSIONS:** Class III anomalies and functional disorders that may occur in the future are prevented by early treatment in the mixed dentition period. In this way, more difficult and costly treatments that will be required in the permanent dentition period can be avoided.
**Keywords:** anterior dental crossbite, malocclusion, mixed dentition, removable orthodontic appliance

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**OP-53**
**ASSESSMENT OF A PATIENT WITH DENTINOGENESIS IMPERFECTA AFTER MULTIDISCIPLINARY TREATMENT: A CASE REPORT**

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**INTRODUCTION:** Dentinogenesis imperfecta (DI) is an autosomal dominant genetic disease that affects both dentition. I type-II, present bulbous crowns, short and conical roots, marked cervical constriction, translucent enamel and amber dentin.
**AIMS:** The aim of this report is to share multidisciplinary treatment of a patient with DI type-II after 3 years of follow-up.
**MATERIALS AND METHODS:** 13-years old female patient applied to Erciyes University Faculty of Dentistry Department of Orthodontics, with a chief complaint of small teeth. Oral examination revealed that crown lengths were short, Angle Class-II molar relationship on the right side and Angle Class-I molar relationship on the left side. Maxillary canines were in supra-occlusion, incisors showed attrition and there was a mild crowding in mandibular dental arch. Radiological examination revealed that the roots of the teeth were short and thin. Patient was diagnosed with DI type-Infixed orthodontic treatment was applied. After orthodontic treatment, porcelain fused to metal crowns and fixed partial dentures were applied to prevent further attrition and to restore function and esthetic. After 3 years, patient was reassessed and it was seen the restorations were successfully functioning.
**RESULTS:** Amount of tooth movement was normal, and there was no signs of mobility or enamel cracks. Bonding achived successfully. Patient was satisfied with the treatments after three years.
**CONCLUSIONS:** Because DI can lead to the unrestorable deterioration of the dentition, resulting in edentulism at young age, early approach for restoration of teeth matters

**OP-54**
**INVESTIGATION OF THE EFFECTS OF NUTRITION AND ORAL HYGIENE HABITS ON ORAL HEALTH DURING PREGNANCY**

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**INTRODUCTION/AIM:** Some changes in gingival physiology and nutrition during pregnancy have negative effects on oral health, not only on the gums, but also on the teeth. The study aimed to examine the relationship between nutritional and oral health protection habits and oral health status among pregnant and non-pregnant women.
**MATERIALS AND METHODS:** The study, which was carried out with a total of 80 female participants, consists of 4 groups: non-pregnant healthy periodontium group (G1),non-pregnant gingivitis group (G2),pregnant healthy periodontium group (G3),pregnant gingivitis group (G4).Oral examinations of all participants including clinical periodontal parameters(PI, GI, BOP, CAL, PD) and DMFT index were performed. They were asked to answer the survey questions consisting of a total of 12 questions. The results obtained were analyzed using the SPSS program.
**RESULTS:** PI was statistically significantly lower in G1-G2 compared to G3-G4.GI and BOP were significantly lower in G1-G3 compared to G2-G4.CAL was significantly higher in G4 than in G1.PD was significantly higher in G3-G4 compared to G1.Decay value was significantly higher in G3-G4.According to the survey it was reported that G3-G4 eat more regularly than G1-G2, consume milk and dairy products more often, but brushing frequency and dental check-up are less ($p<0.05$).
**Conclusion:** Due to the changing nutritional and oral health habits during pregnancy, women who are pregnant or planning a pregnancy should be reminded of the importance of brushing their teeth and going

to the dentist.
**Keywords:** Decay, Gingivitis, Oral Health, Pregnancy

**OP-55**
**DIAGNOSTIC PROCEDURES IN PATIENTS WITH MEDICATED CONDITIONED XEROSTOMIA**

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**INTRODUCTION:** The term xerostomia is usually referred to as condition where the unstimulated saliva flow is reduced by about 50% of the normal value. Oral reactions to medicines are most commonly affecting the quality of life of patients.
**THE AIM:** To determine whether the use of β-adrenergic blockers leads to a real reduction in the amount and changes in the composition of the saliva**,** to determine at what level these changes occur in the creation and excretion of saliva**.**
**MATERIAL AND METHODS:** Patients were divided into two groups-examination group consisting of 40 patients and a control group composed of 40 patients. Criteria for inclusion in the examined group -patients not older than 65 years**, p**atients who receive beta blockers for more than 1 year
**RESULTS:** The patients showed a lower amount of saliva after stimulation over the first ten minutes. The more elderly are the patients and the longer they take the therapy the more symptoms are. The salivary scintigraphy revealed the problem's dryness. In these patients, the production and composition of proteins are not compromised, but the reactivity of the salivary glands to stimulation is slower, so the time of excretion is significantly longer and hence the feeling of dryness of the mouth.
**CONCLUSION:** The problem with medically conditioned dryness of the mouth is real. The evidence is therefore our results.
**Key words:** xerostomy, scintiography, medicaments, β adrenergic blockers

**OP-56**
**ARCH AND PALATAL AREA CHANGES ASSOCIATED WITH BONE-BORNE RAPID PALATAL EXPANSION**

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**AIM:** The aim of this study was to evaluate the maxillary dental arch, palatal area, and palatal volume changes before and after Bone-Borne Rapid Palatal Expansion (BBRPE) treatment using 3D Model Scans.
**MATERIALS AND METHODS**: In this study, Model Scans records of 17 patients (mean age 14.02±0.98) treated with BBRPE were selected from our clinical archive. The patients were evaluated pre-treatment (T1) and post-treatment (T2) of BBRPE. Maxillary dental arch widths, palatal area and palatal volume were measured in model scans. Results were analyzed with the intragroup comparisons Paired Sample T Test.
**RESULTS:** After treatment, inter-canine arch width increased 4.5 mm, inter-first premolar width increased 5.1 mm, inter-second premolar width increased 6.2 mm, intermolar width increased 6.9 mm. Palatal area enlarged by 277.4 $mm^2$, palatal volume increased by 1218.5 $mm^3$.These increases are statistically significant ($P<0.001$).
**CONCLUSIONS:** The findings of this study show a statistically significant increase in maxillary arch width, palatal area, and palatal volume from pretreatment to post-expansion, which is stable at the end of fixed mechanotherapy.
**Keywords:** rapid palatal expansion, maxillary dental arch, palatal volume, palatal area.

**OP-57**
**MAGNETIC RESONANCE IMAGING MRI IN THE EVALUATION OF THE ERUPTION POTENTIAL OF THE TEETH**

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**INTRODUCTION:** During the tooth eruption, intraosseous edema occurs around the follicle. This can be seen using Magnetic Resonance Imaging (MRI) prior to the development of calcium deficiency which is detectable by an X-ray. MRI is utilized in the analysis of soft tissue and intraosseous changes. MRI's advantages: no radiation, ability to determine tissue type. Therefore, we can analyze intraosseous edema, which is the basis for our research.
**OBJECTIVE:** The abilities of MRI in the assessment of tooth eruption and its advantages over the use of an X-ray.
**MATERIALS AND METHODS:** Retrospective research were conducted on MRI examinations of children aged 8-10, who underwent an MRI examination of their heads for unrelated reasons at the Clinical Centre of Montenegro. Triplanar scans of the dental region where analyzed in T1, T2 and IR (TIRM) sequences.
**RESULTS:** MRI is informative for the detection of fluid around the follicular sac of an unerupted tooth. Intraosseous edema around the follicular sacs is shown as hyper signal in T2 and IR (TIRM) sequences. Edema is greater around follicular sacs of teeth with greater eruptive potential, than other unerupted teeth.
**CONCLUSION:** The eruptive potential of teeth can be assessed based on the detection of perifollicular edema, using MRI. Due to the non-invasive nature of MRI examinations during mixed dentition, they are safe and applicable in the orthodontic monitoring and therapy.
**Key words:** Eruption, intraosseous edema, MRI, tooth embryo.

**OP-58**
**AGENESIS OF MAXIILLARY LATERAL INCISORS (CASE REPORT)**

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**INTRODUCTION:** Dental agenesis is an abnormality of the number of teeth, which can affect one or several teeth. Clinically, it appears with the absence of one or several teeth, their follicles, for various reasons, have not been formed. This anomaly is almost always associated with different types of malocclusion, masticatory function disorders and aesthetic problems. The absence of one or several teeth leads to malposition of the teeth present in the mouth, leading to the installation of a malocclusion and in some cases, as a result of the displacement of these teeth and the creation of obstacles for the normal eruption of other teeth.
**AIM:** Evaluation and diagnosis of dental agenesis, determining and following a treatment plan as early as possible in order to restore the patient's function and aesthetics.
**MATERIALS AND METHODS:** This study presents 2 clinical cases of patients with agenesis of maxillary lateral incisors, diagnosis, treatment stages and treatment results. They represent complex cases treated in collaboration between the orthodontist and the oral surgeon.
**CONCLUSIONS:** Clinical cases must be carefully evaluated and seen from every aspect to have good results. Multidisciplinary consultations and treatments should always be done. The psychological side of patients from aesthetic problems is also important. These patients often insist on keeping their deciduous teeth, when they are informed of the lack of permanent teeth, leading to permanent aesthetic disorders and occlusion disorders.
**Keywords:** Dental agenesis, maxillary lateral incisors, malocclusion

**OP-59**
**EVALUATION OF THE PHARYNGEAL AIRWAY IN PATIENTS WITH SKELETAL CLASS I, CLASS II AND CLASS III MALOCCLUSION**

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**AIM:** Pharyngeal airway has an important role in the morphology and development of the maxillofacial skeleton. We aimed to evaluate the pharyngeal airway dimensions on lateral cephalometric films of patients with skeletal Class I, Class II, and Class III malocclusions.
**MATERIALS AND METHOD:** Our retrospective study was performed on lateral cephalometric radiographs of 145 patients with a mean age of 15.10±2.02 years. Cephalometric radiographs were divided into three groups; Class1 (45 patients), Class II (45 patients), and Class III (45patients).Nasopharynx, oropharynx, hypopharynx and hyoid bone measurements were done and the data were analyzed with the SPSS 26 program.
**RESULTS:** There was no significant difference between classes depending on gender and age ($p < 0.05$). A significant difference was detected between classes in the measurements of lower airway ($p < 0.05$), and the highest measurement average was found in the Class III groups. A significant difference was found between the classes in the AD1-Ho measurement ($p < 0.05$), the lowest measurement average belonged to the Class II group. A significant difference was found between the classes in terms of Hy-A measurement ($p<0.05$), the highest measurement average belonged to the Class II group.
**CONCLUSION:** Only according to anteroposterior jaw position evaluation was performed in our study. We think that future airway studies considering the transversal-vertical dimensions of the cranial base, three-dimensional, longitudinal, and soft tissue evaluations will contribute to the literature.
**Keywords:** Airway, Cephalogram, Malocclusion, Pharynx

**OP-60**
**IMPACTED MAXILLARY CANINE AND TRACTION METHODS**

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**INTRODUCTION:** Teeth that are completely or partially prevented from erupting by another tooth or bone are called impacted teeth. If impaction isn't treated, it can cause complications such as aesthetic problems due to early loss of the existing primary tooth, odontogenic cyst and tumor formation, tooth resorption that may occur in the neighboring tooth.
**AIM:** We aimed to present the impacted maxillary canines' frequency, etiology of impaction, clinical and radiological diagnosis, prognosis, traction methods and possible complications.
**MATERIALS AND METHODS:** Clinical and radiological findings were evaluated for diagnosis. Among the traction methods, Ballista spring, K9 spring, Kilroy spring, elastic thread, auxiliary arch wire, temporary anchorage device, removable apparatus application methods and their effects are mentioned.
**RESULTS:** Maxillary canines are the most important teeth in dentition because of aesthetics, lip support and chewing. Patients should be thoroughly evaluated clinically and radiologically to correct malocclusion. The clinician should carefully consider various treatment options when treating a patient with an impacted canine tooth. The most appropriate treatment plan for the patient should be selected considering its advantages and disadvantages.
**CONCLUSIONS:** The fact that dental implants are a standard treatment option today makes the opinion that maintaining impacted teeth may be unnecessary. However, no treatment option can be like a natural tooth functioning in mouth.
**Keywords:** Canines, Impaction, Orthodontics, Traction Method

**OP-61**
**DO UNDERGRADUATE DENTISTRY STUDENTS HAVE SELF-CONFIDENCE IN RESTORATIVE TREATMENT METHODS?**

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**AIM:** To evaluate the self-confidence level of undergraduate dentistry students in restorative treatment approaches.
**METHODS:** The students (n=162) were asked to fill out a questionnaire about the degree of self-confidence in the restorative dentistry treatments. The differences between groups were analyzed using the Pearson's chi-square test. Monte Carlo Simulation was applied in cases where the expected values did not have sufficient volume. Statistical significance level was accepted as $p<0.05$.
**RESULT:** Approximately 61.8% of the responses were recieved. The average age of the students participating in the study was found as 23.It was determined that they were most confident in diagnosing occlusal caries in the diagnosis stage of the restorative treatment (92).The process with the highest level of self-confidence was found as Black I composite restoration (93%), meanwhile the lowest level of self-confidence was found as Black II amalgam restoration (67%).In material selection, they felt most confident in using composite material (97%).Students with first choice of dentistry were more self-confident in Black I composite restorations and in the diagnosis of caries. It was determined that males were less self-confident in restoration repair and direct pulp capping treatment ($p<0.05$).
**CONCLUSION:** It was found that students felt less self-confident in amalgam restoration and post-operative treatments. It may be necessary to include more such restorative treatments in the dental education program in the future. KEYWORDS dental curriculum, education, restorative procedure, confidence

**OP-62**
**RESTORATION LONGEVITY FACTORS WITH REGARD TO THE RESTORATIVE BIOMATERIAL**

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**INTRODUCTION:** During the last decades, significant development has been made in dental biomaterials, in order to improve efficiency on patients' therapeutic choices. These advancements were based on the experience, positive or negative, gained from clinical dental practice of the past.
**AIMS:** The aim of this study is to discuss factors affecting the survival of both restorations and the restored teeth, in correlation with restorative biomaterials.
**MATERIALS AND METHODS:** The research is based on the findings of a series of publications, titled "The ultimate guide to restoration longevity in England and Wales", and their accordance with conclusions drawn by everyday clinical practice. Sample size of these retrospective publications was as high as 11 million patients.
**RESULTS:** The biomaterials assessed in the research were amalgam, composite resin, glass-ionomer cement, and crowns. Various factors have been found to affect the longevity of both materials and the restored teeth. Those were related to patient, dentist, material properties and characteristics related to restored tooth. The difference between composite resin and crown restorations, with regard to patients' age and the coverage of payment, is statistically significant. However, patients' and dentists' gender does not influence the longevity of these materials. Additionally, endodontic treatment seems to affect longevity of both the tooth and restoration, which relates to restorative material.
**CONCLUSIONS:** Results of the research conclude that glass-ionomer restorations demonstrate the shortest longevity amongst other materials. Concurrently, it is evident that restorations' survival relates directly on the age of the patient.
**Key-words:** biomaterials, endodontic treatment, restoration longevity, tooth survival

**OP-63**
**THE SUCCESS OF DEEP LEARNİNG NETWORKS FOR CLASSIFICATION OF BUCCAL CORRIDOR WIDTH**

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**INTRODUCTION:** The buccal corridor space has a significant impact on the attractiveness of the smile. In recent years, deep learning -a type of artificial intelligence- has emerged as a powerful tool for improving medical diagnosis.
**AIMS:** This study compared the success of deep learning networks for classification of buccal corridor.
**MATERIAL AND METHODS:** 379 smile photos were saved using the internet image search engine (Google). The photos were cropped between subnasale and gnathion. The buccal corridor in the smile was then classified as narrow, medium, and wide. A random 30% of the photos in the dataset were assigned for validation, the remainder used for training. The deep learning networks trained were Xception, DarkNet-19, ResNet50 and MobileNet-v2. The learning rate was 0.01, the batch size was 32, and SGDM optimization was used. The dataset was processed 30 times for each network.
**RESULTS:** The accuracy of Xception deep learning network is 54.22%, DarkNet50's 42.17, ResNet-50's 49.4, and MobileNet-v2's 63.86%.
**CONCLUSIONS:** Although MobileNet-v2 is the most successful deep learning network, its success is relatively moderate. More improved deep-learning algorithms and high-quality and quantity datasets may be useful for buccal corridor classification in dental practice.
**Keywords:** artificial intelligence, deep learning, buccal corridor, dental esthetics

**OP-64**
**LAYER BY LAYER**

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**INTRODUCTION:** A beautiful smile is always the first wish that every patient expects after dental treatment. Like all areas of dentistry, the field of dental aesthetics changes and evolves after each period. Research and studies in this field seek mini-invasive solutions, with not very high costs but again aesthetic restorations. Over the years, many composite addition techniques have been presented. Some dental clinicians use monochromatic techniques when restoring a tooth in an aesthetic way, while others believe in the polychromatic approach, using shades, tints and opaques to create more vivid restorations. One of these methods for layering the composite was used by Dr. Lorenzo Vanini in 1995. The Vanini philosophy is based on mini-invasive procedures, results planning, imitating nature and prolonging restorations over time.
**PURPOSE:** Knowledge of the composite layering technique and the use of this technique during daily practice.
**CONCLUSIONS:** Polychromatic restorations made with the composite layering technique include advanced techniques in which different colors must be used for dentin and enamel to reconstruct the affected tooth structure. With the layering technique and knowledge of the 5 concepts established by Dr. Vanini, the clinician is able to control the color and shape of the final restoration. Regardless of the fact that knowledge is the key to this theory, practice perfects it.
**Key words:** layering technique, aesthetic restorations, the Vanini philosophy, color, shape

**OP-65**
**EVALUATION OF YOUTUBE VIDEOS ON POST-CORE**

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**INTRODUCTION:** Patient education is important in dental treatments. Getting online information about health is becoming increasingly popular, and YouTube is becoming the first source of reference. However, on this platform, videos are not produced according to any standards, the accuracy of the information raises doubts. So the usefulness of videos is being studied by researchers.
**AIMS:** The aim is to evaluate the YouTube 'post core 'videos.
**MATERIAL AND METHODS:** YouTube videos were searched with the word 'post core 'and the first 50 videos were examined. 31 of the first 50 videos were included, restriction was the language and video insufficiency. The reliability of videos were scored between 0-3 by two researchers. Observed criteria's were definition of post core, indications, information about the process, post cementation, crown preparation, impression and describing the tools. Videos were divided into three quality groups (low, medium, high) and 3 groups by the resource (heath personal, health institution, and other user).
**RESULTS:** According to the sources, it was seen that the most videos were uploaded by medical personnel. (n=15, 48, 38%) Videos distributed 22, 58% at low level, 74, 19% at medium level and 3,22% at high level according to quality groups. Significant differences were found in the crown preparation (p=0,042) and GQS values (p=0,015) of the videos between quality groups.
**CONCLUSION:** Most of the videos have been found to be moderately useful.
**Keywords:** internet, post core, social media, video.

**OP-66**
**BOTULINUM INJECTIONS FOR THE TREATMENT OF PAINFUL MASSETER HYPERTROPHY: ELECTROMYOGRAPHIC VARIATIONS IN 5 PATIENT**

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University of Milano-Bicocca, School of Medicine and Surgery, Italy

**INTRODUCTION:** Masseter muscle hypertrophy represents a benign, unilateral or bilateral, painless enlargement in the lower face; sometimes, this condition could be related to bruxism, a common problem in the adult population that can lead to pain and spasm in masticatory muscles, headache, neck pain, and functional limitation in mandible movements. Muscular surgical reduction was a common choice in the past but involve relevant risks such as injury of facial nerve, postoperative hemorrhage, edema, hematoma, infection and scars while bruxism frequently needs prolonged treatment with occlusal splints and/or drugs.
**AIM:** The aim of this study was to evaluate the efficacy of a less invasive and quicker management of masseter muscle hypertrophy using Botulinum A injections through electromyography.
**MATERIALS AND METHODS:** 5 patients suffering for masseter pain and hypertrophy were treated with Botulinum A injections; electromyography were realized at t0 (before Botulinum injections) and successively at one (t1), three (t2) and five months (t3) after injections.
**RESULTS:** In all patients, even if with inter-individual differences, a remarkable decrease in masseter muscle activity and pain was observed, already from t1 up to t3.
**CONCLUSIONS:** Our results are very interesting because underline the possibility to obtain a significative reduction of muscle pain avoiding invasive surgical procedures or prolonged treatments and simultaneously improving face aesthetic.
**Keywords:** botulinum injections, electromyography, bruxism, muscle pain, facial aesthetic

**OP-67**
**CORRESPONDENCE BETWEEN A FORCE-SENSING ORAL APPLIANCE AND ELECTROMYOGRAPHY IN THE DETECTION OF BRUXISM**

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**INTRODUCTION:** Oral appliances embedding sensors can be interesting tools for the assessment of sleep bruxism in a home environment.

**AIM:** This study aims to evaluate the efficacy of a force-sensing oral device in the assessment of bruxism, to increase comfort and address some of the usability limitations of the current devices used for diagnosis.
**MATERIALS AND METHODS:** 23 subjects were evaluated in a single session, and simulated bruxism events were measured simultaneously with the oral appliance and an electromyography (EMG). The device used (AesyBite Discover, Aesyra SA) is a night guard endowed with four pressure sensors, customized by low-temperature thermoforming directly on the upper dental arch of the user. EMG probes recording the temporalis and masseter muscles were placed bilaterally. The subjects were instructed to execute a sequence of 20 bruxism-related and 20 bruxism-unrelated events; the data were recorded to compare the two techniques. Moreover, occlusal balance of the oral appliance was evaluated, to determine the symmetry and barycenter of the muscular recruitment.
**RESULTS:** A strong correlation was found between the two methods in detecting events (r=0.89) and measuring their duration (r=0.88) and intensity (r=0.83).
**CONCLUSIONS:** The force-sensing oral appliance has the potential to detect sleep clenching and grinding events and could be more comfortable and easier to use than polysomnography which is, to date, the gold standard for the diagnosis of bruxism, albeit being expensive and complex.
**Key words:** Bruxism, Electromyography, Occlusion, Polysomnography

**OP-68**

## MANAGEMENT OF PATIENTS WITH DISC DISPLACEMENT WITHOUT REDUCTION OF THE TEMPOROMANDIBULAR JOINT BY ARTHROCENTESIS PLUS HYALURONIC ACID, PLUS PLATELET-RICH PLASMA, PLATELET-RICH PLASMA – HYALURONIC ACID

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Uskudar University Dentistry Faculty, Istanbul, Turkey

Disk displacement without reduction (DDwoR) is one of the most common temporomandibular joint disorders (TMDs). The aim of this study was to compare the efficacy of arthrocentesis followed by platelet-rich plasma, hyaluronic acid, platelet-rich plasma-hyaluronic acid. A prospective study was conducted between February 2020 and June 2020. The sample consisted of 45 adult patients (mean age: 30, 62±5, 91 years) with DDWoR, confirmed with magnetic resonance imaging (MRI). The patients were randomly divided into 3 groups according to the treatment technique applied: arthrocentesis with platelet-rich plasma (PRP) arthrocentesis with hyaluronic acid (HA); and arthrocentesis with HA plus platelet-rich plasma. The maximum mouth opening (MMO) as well as pain intensity on a visual analog scale (VAS) were measured at the time of diagnosis (baseline) and at 3-week , 3-month and 6-month,. The significance level was set at P value < 0.05. Joint pain VAS scores at 3 weeks (p=0.006), 3 months (p=0.003) and 6 months (p<0.001) measurements showed a significant difference between the groups. This difference was between Group-B and Group-C for the 3rd month (p=0.001), and between Group-B and Group-A for the 6th month. and Group-C (p<0.001; p<0.001, respectively). Mouth opening measurements at the 3rd week were higher in Group-B than in Group-A and Group-C. Mouth opening measurements at 3rd and 6th months were higher in Group-C than in Group-A and Group-B.) Injection of PRP+HA following arthrocentesis had significant efficacy regarding pain relief and mouth opening measurement

**OP-69**

## EFFICIACY OF STABILISATION SPLINT AND COMBINATION THERAPHY OF ARTHROCENTESIS WITH STABILISATION SPLINT ON NONREDUCING TEMPOROMANDIBULAR JOINT DISC DISPLACEMENT

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Disk displacement without reduction (DDwoR) is one of the most common temporomandibular joint disorders (TMDs). The aim of this study was to compare the efficacy of arthrocentesis followed by platelet-

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rich plasma, hyaluronic acid, platelet-rich plasma-hyaluronic acid. A prospective study was conducted between February 2020 and June 2020. The sample consisted of 45 adult patients (mean age: 30, 62±5, 91 years) with DDWoR, confirmed with magnetic resonance imaging (MRI). The patients were randomly divided into 3 groups according to the treatment technique applied: arthrocentesis with platelet-rich plasma (PRP) arthrocentesis with hyaluronic acid (HA); and arthrocentesis with HA plus platelet-rich plasma. The maximum mouth opening (MMO) as well as pain intensity on a visual analog scale (VAS) were measured at the time of diagnosis (baseline) and at 3-week , 3-month and 6-month,. The significance level was set at P value < 0.05. Joint pain VAS scores at 3 weeks (p=0.006), 3 months (p=0.003) and 6 months (p<0.001) measurements showed a significant difference between the groups. This difference was between Group-B and Group-C for the 3rd month (p=0.001), and between Group-B and Group-A for the 6th month and Group-C (p<0.001; p<0.001, respectively). Mouth opening measurements at the 3rd week were higher in Group-B than in Group-A and Group-C. Mouth opening measurements at 3rd and 6th months were higher in Group-C than in Group-A and Group-B.) Injection of PRP+HA following arthrocentesis had significant efficacy regarding pain relief and mouth opening measurement.

**OP-70**
**PREVALENCE OF CONGENITALLY MISSING PERMANENT TEETH IN CHILDREN**

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**INTRODUCTION**: Tooth agenesis is one of the most common anomalies of human dentition, characterized by the developmental absence of one or more teeth.
**AIMS**: The aim of this study was to determine the prevalence and distribution of the congenital deficiencies of permanent teeth in Turkish children.
**MATERIALS AND METHODS**: Panoramic radiographs of 1704 children (963 girls and 741 boys) aged 8-15 years who applied to Ankara Yıldırım Beyazıt University Faculty of Dentistry Hospital between July 2022 and January 2023 were analyzed retrospectively. The data of the study were analyzed using descriptive statistics and Chi-square test at a significance level of P<0.05.
**RESULTS**: The prevalence of hypodontia was found to be 2.8% among pediatric patients. There were no statistically significant difference between gender (p=0.56). The most common missing teeth were determined as the mandibular second premolar (74%), the maxillary lateral (9.9%), the maxillary second premolar (6.2%), the mandibular lateral (6.2%) and the mandibular first premolar (3.7%), respectively. Congenitally missing permanent teeth was found significantly higher in mandible than in maxilla (p=0.00).
**CONCLUSIONS**: The prevalence of congenital agenesis in the Turkish pediatric population is consistent with previous studies on the subject.
**Keywords**: Congenital, Hypodontia, Oligodontia, Tooth agenesis.

**OP-71**
**COMPARATIVE EVALUATION OF CARIES STATUS IN PRIMARY MOLARS USING CAST AND ICDAS II INDICES**

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[1]Altınbas University Dentistry Faculty, [1]Department of Pediatric Dentistry, [2]Istanbul University-Cerrahpaşa, Faculty of Dentistry

**INTRODUCTION**: In recent decades, a wide variety of new methods have been developed to measure caries in a population.
**AIMS**: The aim of this study was to evaluate the caries status in primary molars of 3-5 year old children by CAST and ICDAS II.
**MATERIALS AND METHODS:** A total of 400 primary molars of 50 children aged 3-5 years old children from İstanbul, Turkey, were assessed using the CAST and ICDAS II. The children were screened by two calibrated

pediatric dentists who brushed the children's teeth before they were examined. Data were statistically analyzed with Mc Nemar test and Pearson chi square test. The level of statistical significance was established at $p<0.05$.
**RESULTS**: A statistically significant difference was found between the caries rate of the CAST and ICDAS II ($p<0.05$). The rate of caries detected by ICDAS II (67.4%) is higher than the rate of caries determined by CAST (58.1%). A significant difference was also found between CAST and ICDAS II ($p=0.000$) with the regard to the comparison of caries stages. 70.2% of the teeth detected as enamel caries according to the CAST were also found to be caries in the ICDAS II. According to the CAST, 5.4% of the teeth detected as enamel caries were determined as dentin caries according to the ICDAS II.
**CONCLUSIONS** It was found that the rate of caries diagnosis made by ICDAS II was higher than that of the CAST. Therefore, the ICDAS II method was found more accurate for use in clinical studies and in individual evaluations of caries lesions.
**Keywords:** caries, CAST, ICDAS II, primary molar

**OP-72**
**ASSESSMENT OF PALATOSCOPY AMONG ADOLESCENTS OF SOUTH EAST KOSOVA AND THEIR REPRODUCITY IN STOMATOLOGY,**

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**INTRODUCTION:** Palatal rugae called "plicae palatinae", are unique structures, genetically determined, well-formed, asymmetrical, and irregular mucosal folds, suited in the anterior part of the hard palate. These transverse ridges, with periodic patterns, are present in mammals, but their biological significance is unknown, although they represent the most stable feature in the oral cavity. Palatoscopy is considered a simple, cost-effective, and highly sensitive technique that is primarily non-invasive.
**AIMS**: to establish the identity of the young Albanian population from the southeastern part of Kosovo, acquiring palatoloscopy.
**MATERIALS AND METHOD**: In this cross-sectional study, 100 adolescents aged 12 to 18 years, with an equal number of girls and boys, and divided into classes I, II, and III of malocclusion. Palatal impressions were taken with elastomers, C Silicone, and models of the upper jaw are poured into a dental cast of stone.
**RESULTS**: In all subjects, the straight shape of the plicae palatine was predominant. In female subjects, the straight shape was predominant, while in males, the wavy shape prevailed. Male subjects have a slightly higher probability of having Class I than females, while females have a slightly higher probability of having Class II and Class III than males.
**CONCLUSION:** Palatoscopy reveals a strong association with gender as well as with sagittal skeletal jaw ratio, thus predicting malocclusions that could be controlled early on by preventive and interceptive orthodontics.
**Keywords**: palatoscopy, malocclusions, forensic medicine.

**OP-73**
**EVALUATION OF KNOWLEDGE AND AWARENESS ABOUT ANAPHYLAXIS IN PEDIATRIC DENTISTRY AMONG TRAINEE DENTISTRY STUDENTS**

**Canan Bayraktar Nahir, Merve Tatar**
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**INTRODUCTION**: Anaphylaxis is defined as an acutely presenting and life-threatening systemic hypersensitivity

reaction. It can occur against many materials used during dental procedures in pediatric dentistry. Although anaphylaxis is not common in dentistry, poor anaphylaxis management can lead to mortality.
**AIMS**: The aim of this study was to evaluate the level of awareness and knowledge about anaphylaxis among trainee dentistry students in pediatric dentistry.
**MATERIALS AND METHODS**: The study was designed as an online survey. An online questionnaire was sent to trainee dentistry students. The questionnaire consists of 18 questions measuring students' anaphylaxis awareness and knowledge and their demographic data. Data were analyzed by performing descriptive statistics, chi-square, and 2-way ANOVA.
**RESULTS:** A total of 171 (%93) students responded to the survey. 57.2% of the students know that adrenaline is the drug of first choice in the treatment of anaphylaxis. 61% of the students know that intramuscular injection is the correct route of administration, but 30.8% know the body localization where adrenaline will be administered and 10.1% know the dose of adrenaline in children. While no effect of gender was observed on students' knowledge levels ($p>0.05$), the knowledge level of students who had anaphylaxis education before was statistically significantly higher ($p<0.05$).
**CONCLUSIONS**: This study showed the deficiencies in the diagnosis and treatment of anaphylaxis in trainee dentistry students. Students may encounter anaphylaxis at any time in the clinic. Therefore, education on anaphylaxis should be given to all students and should be updated periodically.
**Keywords**: anaphylaxis, adrenaline, pediatric dentistry, student.

**OP-74**
**MANAGEMENT AND TREATMENT OF LATE-PRESENTED DENTAL TRAUMA CASES TO THE PEDIATRIC DENTISTRY CLINIC**

**Burcu Bölükbaşı, Alem Coşgun**
Tokat Gaziosmanpaşa University, Faculty of Dentistry, Turkey

**INTRODUCTION**: Delayed treatment of dental traumas can result in functional, aesthetic, and psychological issues.
**AIMS**: The purpose of this case series is to present the management and treatment approaches for late-presented dental traumas in permanent teeth of children who visited the pediatric dentistry clinic.
**MATERIALS AND METHOD:** Case I: A 12-year-old girl visited the clinic 3 weeks after trauma with a complicated crown-root fracture in her maxillary right central incisor. The tooth was restored under rubber dam isolation followed by root canal treatment. Case II: A 10-year-old girl visited the clinic 3 months after the trauma with a complicated crown fracture in her mandibular bilateral central incisors. Root canal treatment was applied, and the restoration was performed using a fiber post. Case III: An 11-year-old boy visited the clinic 2 days after trauma with an uncomplicated crown fracture in his maxillary left central incisor. The tooth was restored with composite.
**RESULTS:** Successful treatments were achieved for all cases in accordance with the dental trauma guidelines of the International Association of Dental Traumatology, and patients were followed up.
**CONCLUSIONS:** Management and treatment of dental traumas require consideration of multiple factors, including the patient's age, type and severity of the trauma, and degree of root development. Additionally, the time elapsed since the trauma is an important factor to consider when planning treatment.
**Keywords:** Complicated crown fracture, complicated crown-root fracture, Delayed treatment, Dental trauma.

**OP-75**
**REMINERALIZATION AGENTS FREQUENTLY USED IN PEDIATRIC DENTISTRY**

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**INTRODUCTION**: Dental tissues are highly mineralized tissues containing hydroxyapatite crystals. Many times, during the day, minerals are lost from dental tissues due to organic acids formed by bacteria and

are then regained. However, when the mineral loss is greater than the gain, caries occur. Dentists can assist remineralization using a variety of agents.
**AIMS**: The aim of this review is to summarize remineralization agents frequently used in pediatric dentistry.
**MATERIALS AND METHODS:** Literature review was done, then the relevant articles were read and the results were synthesized.
**RESULTS AND CONCLUSIONS**: Remineralization is an important issue in caries management. There are different agents that can be used for this purpose. Fluoride is an effective agent that aids remineralization. It can be applied both individually and professionally in different concentrations. Many products containing fluoride are used for remineralization. Silver diamine fluoride is one of these products and despite some undesirable side effects, it is a very effective agent in caries control. Non-fluoride materials have also been produced for remineralization and caries management. Casein Phosphopeptide-Amorphous Calcium Phosphate is also an effective agent in caries management. They show a synergistic effect when used with fluoride. Various materials have been developed for remineralization. However, not all are equally effective. Remineralization agents are effective products in the recovery of oral health.
**Keywords**: Dental Caries, Dentistry, Oral Health, Tooth Remineralization.

## OP-76
## AGENESIS OF MAXIILLARY LATERAL INCISORS (CASE REPORT)

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**INTRODUCTION:** Dental agenesis is an abnormality of the number of teeth, which can affect one or several teeth. Clinically, it appears with the absence of one or several teeth, their follicles, for various reasons, have not been formed. This anomaly is almost always associated with different types of malocclusion, masticatory function disorders and aesthetic problems. The absence of one or several teeth leads to malposition of the teeth present in the mouth, leading to the installation of a malocclusion and in some cases, as a result of the displacement of these teeth and the creation of obstacles for the normal eruption of other teeth.
**AIM:** Evaluation and diagnosis of dental agenesis, determining and following a treatment plan as early as possible in order to restore the patient's function and aesthetics.
**MATERIALS AND METHODS:** This study presents 2 clinical cases of patients with agenesis of maxillary lateral incisors, diagnosis, treatment stages and treatment results. They represent complex cases treated in collaboration between the orthodontist and the oral surgeon.
**CONCLUSIONS:** Clinical cases must be carefully evaluated and seen from every aspect to have good results. Multidisciplinary consultations and treatments should always be done. The psychological side of patients from aesthetic problems is also important. These patients often insist on keeping their deciduous teeth, when they are informed of the lack of permanent teeth, leading to permanent aesthetic disorders and occlusion disorders.
**Keywords:** Dental agenesis, maxillary lateral incisors, malocclusion

## OP-77
## BOTTLE FEEDING AND EARLY CHILDHOOD CARIES IN SIX-YEAR-OLDS IN THE AREA OF THE CITY OF ŽIVINICE

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Public Health Center Živinice, Bosnia and Hercegovina

**INTRODUCTION:** Early childhood caries (ECC) is a frequent disease that develops early, especially in children who use bottle feeding that contains various ingredients. Children with these habits, combined with other factors such as poor oral hygiene are more prone to caries development.
**AIM:** To present the oral health status and frequency and impact of bottle feeding on the quality of oral health in six years old children in the area of the city Živinice.

**MATERIALS AND METHODS:** This research covered 50 respondents of age 6, which have undergone dental examination in the Public Health Center Živinice over the course of the year 2022.The parents of the children gave the answers to the survey questionnaire.
**RESULTS:** The research covered 25 boys and 25 girls. The dmft index for this population group of respondents is 12, 56.66% of children's parents confirmed that their children used feeding bottles.22% of the parents claimed that their child used a feeding bottle for more than 3 years.26% of the parents declared that their children used various juices in these feeding bottles.44.4% of the parents reported that their child used a feeding bottle occasionally during the day.
Conclusion: We could claim that the dmft index of six-year-olds in the area of the city of Živinice was high concerning the recommendations of the WHO.A large number of children used a feeding bottle, which favored caries development in combination with other factors. The oral health of six-year-olds in the city of Živinice was not at a satisfactory level.
**Keywords:** dmft index, six-year-olds, feeding bottle.

**OP-78**
**EVALUATION OF THE EFFECT OF VITAMIN D SUPPLEMENT ON THE LEVEL OF MMP-9 IN GINGIVAL CREVICULAR FLUID IN PERIODONTAL DISEASES**

**Ayla Öztürk, Vusal Gurbanov, Fatma Doğruel, Hatice Saraçoğlu, Cevat Yazıcı**

**THE AIM** of this study was to evaluate the effect of vitamin D supplementation on the levels of the gingival crevicular fluid (GCF) MMP-9,, among both patients with periodontal disease (gingivitis and periodontitis) and periodontally healthy individuals who have a vitamin D deficiency.
**MATERIAL AND METHODS.** This study is a follow-up to the research project that evaluated the relationship between serum vitamin D concentration and MMP-9 levels in gingival crevicular fluid in periodontal diseases. In this particular study, the impact of vitamin D supplementation was assessed by analyzing the levels of MMP-9 in the gingival crevicular fluid collected from the same dental sites of patients with vitamin D deficiency who received appropriate medical treatment and had been using vitamin D supplements for one month. The levels of MMP-9 were compared between the baseline of the study and after vitamin D supplementation. A total of 101 participants were included in this study, consisting of 34 with periodontitis, 34 with gingivitis, and 33 periodontally healthy individuals. The participants' periodontal status was evaluated radiographically and clinically by measuring probing depth, clinical attachment loss, gingival index, plaque index, and radiographic analysis. The levels of MMP-9 in the gingival crevicular fluid were analyzed using the enzyme-linked immunosorbent assay (ELISA) method."

**OP-79**
**SUBEPITHELIAL CONNECTİVE TISSUE GRAFT: A CASE REPORT**

**Mine Keskin, Reyhan Şenkal**
Recep Tayyip Erdogan University, Faculty of Dentistry

**İNTRODUCTION:** As a result of gingival recessions, the root surface is exposed, causing dentin sensitivity and aesthetic problems.
**AIMS:** The aim of this case report is to evaluate the clinical results of the treatment of gingival recession in the lower canine using the combined double papillary flap technique with subepithelial connective tissue graft.
**MATERIALS AND METHODS:** A 32-year-old female patient was applied to our clinic with complaints of esthetics and sensitivity in her canine tooth. In the intraoral examination, it was determined that there was gingival recession in the related tooth with a depth of 7 mm and a width of 3 mm. After the non-surgical periodontal treatment of the patient was completed, subepithelial connective tissue graft and double papillary flap surgery was performed on the relevant area.

**RESULTS**: In the follow-ups after 1, 3 and 6 months, it was observed that there was closure on the open root surface and the dentin sensitivity disappeared.
**CONCLUSIONS:** It was observed that double papillary flap applied together with subepithelial connective tissue graft provided a complete coverage on the root surface.
**Keywords:** Subepithelial connective tissue graft, double papillary flap, gingival recession

**OP-80**
**EVALUATION OF BRUXISM RATE, AWARENESS AND CLINICAL FINDINGS IN YOUNG ADULTS**

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**INTRODUCTION:** Bruxism is one of the most frequently observed parafunctional activities, which is most harmful to the stomatognathic system. Although it is not a life-threatening condition, it can affect the quality of human life with dental problems and pain in the orofacial region.
**AIMS:** The aim of this study is to measure the presence and awareness of bruxism in young adults and to evaluate the clinical findings of patients diagnosed with bruxism.
**MATERIALS AND METHODS:** A total of 247 university students aged 18-29 were asked to fill out questionnaires containing questions about bruxism. Intraoral findings of patients diagnosed with bruxism as a result of the questionnaire were evaluated by a single physician.
**RESULTS:** While the bruxism awareness rate in young people was found to be 7.3%, the presence of bruxism was found to be 22.67%. Abrasion on the incisal surfaces of the teeth in 9.1% of the students diagnosed with bruxism, indentations in the lateral edges of the tongue in 24.2%, tooth sensitivity in 24.2%, pain in the masticatory muscles in 24.2%, pain in the TMJ region in 51.5%, had hypertrophy of the masseter muscles 21.2%, and had headache 39.4%.
**CONCLUSIONS:** Presence and awareness of bruxism were found to be low in university students. The clinical findings of young patients with bruxism are mostly accompanied by pain in the TMJ region, followed by headache, pain in the chewing muscles, tooth sensitivity and indentation on the lateral edge of the tongue.
**Key words:** Bruxism, clinical findings, pain, young adults

**OP-81**
**EFFECT OF SAMBUCUS NIGRA BEVERAGE ON THE COLOR OF A DENTAL CAD/CAM CERAMIC**

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The aim of our study was to investigate the effect of a Sambucus Nigra beverage, whose consumption frequency increased during the Covid-19 pandemic, and the effect of home bleaching on the color of a dental ceramic produced with the CAD/CAM system. For this purpose, a total of 84 Cerec C fedspathic ceramic samples, rectangular in shape and 2 mm thick, were prepared in the Cerec Cirona milling unit. Four main groups were formed: (1) after removing it from the milling machine, (2) glazed according to manufacturer instructions, (3) abrade with a diamond bur to simulate abrasion inside the mouth, and (4) mechanical polishing with a ceramic polishing set. After the initial color measurements were taken, the samples were kept in distilled water, coffee and an immune-boosting drink with Sambucus Nigra. Color measurements were taken again after 3 and 14 days. After soaking in the solutions, all samples were bleached with a home bleaching agent containing 16% carbamide peroxide for 14 days and then color measurements were taken for the last time. Color measurements were made with a Vita Easyshade V digital spectrophotometer and a special measurement box was prepared to increase standardization and measurement accuracy. Delta E color change values obtained from L, a, b values were statistically evaluated by ANOVA and reinforcement test. The results were significant for the surface-solution-time interaction ($p<0.05$). Sambucus Nigra beverage, which is rarely tested in dental studies, was found to cause discoloration.
**Key Words**: Covid-19 Pandemic, Sambucus Nigra, Color, CAD/CAM Ceramic

**OP-82**
**MINIMALLY INVASIVE PROSTHODONTIC PROCEDURES FOR TREATMENT OF TOOTH WEAR**

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**INTRODUCTION:** Tooth wear is defined as nonbacterial loss of tooth substance, identified as a result of erosion, attrition, abrasion, and abfraction. In recent years, tooth wear becomes very common in all age groups and should be addressed with optimal treatment option. The latest trends in esthetic dentistry are hybrid materials that combine optimal properties of composite and ceramic materials. They have provide direct restorative solutions available for minimally invasive prosthodontics procedures, called MIPP concept.
**AIMS:** The aim of this clinical study was to present outcome of applying anterior and occlusal veneers in different clinical situation in patients with worn dentition caused by chemical process-erosion or mechanical-abrasion.
**MATERIALS AND METHODS:** Patients with signs of tooth wear were treated with pre-fabricated anterior end occlusal veneers (Edelweiss dentistry, Wolfurt, Austria). These veneers are made of hybrid material with composite core and inorganic glass surface, homogenous and smooth like a ceramic, manufactured by innovative laser sintered procedure.
**RESULTS:** 3-years observation period revealed satisfied patients, restorations were functional, without changes in esthetical appearance, with good gingival health, no discoloration or chipping were found. Only three restorations needed some minor intraoral corrections.
**CONCLUSION:** According to results it can be concluded that this type of treatment could be considered as a superior and reliable alternative for extensive teeth preparation and complex or full mouth prosthodontic rehabilitation.
**Key words:** Tooth wear, veneers, minimally invasive prosthodontic procedures.

**OP-83**
**DO UNDERGRADUATE DENTISTRY STUDENTS HAVE SELF-CONFIDENCE IN RESTORATIVE TREATMENT METHODS?**

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Recep Tayyip Erdogan University Faculty of Dentistry, Turkey

**AIM:** To evaluate the self-confidence level of undergraduate dentistry students in restorative treatment approaches.
**MATERIALS AND METHODS**: The students (n=162) were asked to fill out a questionnaire about the degree of self-confidence in the restorative dentistry treatments. The differences between groups were analyzed using the Pearson's chi-square test. Monte Carlo Simulation was applied in cases where the expected values did not have sufficient volume. Statistical significance level was accepted as $p<0.05$.
**RESULTS:** Approximately 61.8% of the responses were received. The average age of the students participating in the study was found as 23.It was determined that they were most confident in diagnosing occlusal caries in the diagnosis stage of the restorative treatment (92).The process with the highest level of self-confidence was found as Black I composite restoration (93%), meanwhile the lowest level of self-confidence was found as Black II amalgam restoration (67%).In material selection, they felt most confident in using composite material (97%).Students with first choice of dentistry were more self-confident in Black I composite restorations and in the diagnosis of caries. It was determined that males were less self-confident in restoration repair and direct pulp capping treatment ($p<0.05$).
**CONCLUSION:** It was found that students felt less self-confident in amalgam restoration and post-operative treatments. It may be necessary to include more such restorative treatments in the dental education program in the future.
**Keywords:** dental curriculum, education, restorative procedure, confidence

**OP-84**
**REVALENCE OF ROOT CANAL DILACERATION: SYSTEMATIC REVIEW AND META- ANALYSIS**

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**THE AIM** of this systematic review and meta-analysis was to determine the prevalence of root canal dilacerations.
**MATERIAL AND METHODS:** Our study was conducted following PRISMA statements. The research question was: What is the prevalence of root canal dilacerations in the adult population? The MeSH terms and keywords were used to search articles published in three electronic databases PubMed, Web of Science, and Scopus. The search strategy was limited to English and Turkish articles published before 12.12.2022. Data was collected according to inclusion and exclusion criteria. The included studies were assessed by two independent reviewers using Joanna Briggs Institute's critical appraisal checklist for the prevalence studies.
**RESULTS:** Thirty observational studies are included in this meta-analysis. 32935 patients and 46789 teeth were examined in these studies. The overall prevalence of root dilacerations was 8, 3% (95%, CI = 0,057-0,118) in patients and 2, 2% (95%, CI = 0,057-0,118) in teeth.
**CONCLUSIONS:** Within the limitations of this meta-analysis. The percentage of prevalence of root dilacerations was 8, 3%. Affected teeth do pose several diagnostic, management, and prognostic challenges to dental practitioners. Therefore, these teeth must be diagnosed, and treatment planning must be done carefully.

**OP-85**
**PREVALENCE OF DENS INVAGINATUS AND DENS EVAGINATUS: SYSTEMATIC REVIEW AND META-ANALYSIS**

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**AIM:** The purpose of this systematic review of meta-analysis was to determine prevalence of dens invaginatus and dens evaginatus.
**MATERIAL AND METHODS:** A search were performed in three electronic databases (Web of Science, PubMed, and Scopus). In addition, the bibliographic references of the qualifying papers were manually searched. Studies with missing or unclear data were excluded. The search strategy was limited to English and Turkish articles published before 12.12.2022. Data was collected according to inclusion and exclusion criteria. The included studies were assessed by two reviewers using Joanna Briggs Institute's critical appraisal checklist for the prevalence studies.
**RESULTS:** Twenty-one studies were included in meta-analysis of dens invaginatus. 822 patient and 21092 teeth were examined in these studies. The overall prevalence of dens invaginatus was 2, 2% (95% CI =0,012-0,039) in patients and 1, 7% in teeth. Sixteen investigations were employed in meta-analysis of dens evaginatus. 56005 patients were examined in these studies. The overall prevalence of dens evaginatus was 0, 8% (95% CI = 0,004-0,020) in patients.
**CONCLUSIONS:** Within the limitations of this meta-analysis. The percentage of dens invaginated and evaginated teeth in the population are 2, 2% and 0, 8%, respectively. Therefore, an early identification and correct management of affected teeth is essential for improving the prognosis of these teeth.

**OP-86**
**EFFICACY OF EDDY AND XP-ENDO FINISHER AGITATION ON ORGANIC TISSUE DISSOLUTION IN SIMULATED INTERNAL RESORPTION**

**Tansu Merve Besparmak, Dilek Hancerliogullari, Eray Ceylanoglu, Gamze Ebrar Uzunpinar, Ali Erdemir,**
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**BACKGROUND:** Irrigant agitation is suggested to remove the inflamed pulpal and granulation tissue at internally resorbed teeth because of the irregular areas.
**AIM:** To evaluate the effectiveness of 2.5 % and 5% NaOCl by EDDY and XP-endo Finisher on organic tissue removal from simulated internal root resorption cavities.
**MATERIALS AND METHODS:** The 90 instrumented teeth were split longitudinally, and semicircular cavities were prepared in the canal walls on each half of the roots. Samples obtained from ground bovine muscle tissue were weighed and adapted into the semicircular cavities. The root fragments were reassembled and divided into 3 main groups according to used irrigation solutions (distilled water, 2.5 % and 5% NaOCl) and 3 subgroups according to irrigation activation technique (conventional syringe irrigation, EDDY and XP-endo Finisher). The teeth were disassembled, and the remaining tissue was weighed again. The data were analysed statistically using Kruskal Wallis test with Bonferroni correction with a significance level of 0.05.
**RESULTS:** A statistically significant difference was observed in organic tissue dissolution with both used irrigation solution and activation method ($P<0.001$). The use of XP-endo Finisher with 5% NaOCl resulted in the greatest tissue weight loss compared to the other activation protocols ($P<0.001$).
**CONCLUSION:** The use of XP-endo Finisher with 5% NaOCl is the most effective irrigation regimen for removing organic tissues from artificial cavities.
**Keywords:** Sodium hypochlorite, tissue dissolution, activation, XP-endo Finisher, EDDY

**OP-87**
**YOUTUBE AS AN INFORMATION SOURCE FOR ROOT CANAL TREATMENT: CROSS-SECTIONAL STUDY**

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**BACKGROUND:** YouTube is a popular social media platform but the lack of a preliminary evaluation of the videos published on YouTube can be a disadvantage and they may not contain reliable and sufficient information.
**AIM:** To evaluate the content and quality of YouTube™ Turkish videos related to root canal treatment
**MATERIALS AND METHODS:** On January 27, 2023 between 21 PM and 23 PM, the online video YouTube was searched for Turkish videos using the search phrase “kanal tedavisi” (root canal treatment) after determining from the Google Trends application. The first 149 videos were viewed in the playlist and 98 videos were selected. Video content was scored based on reliability in terms of 3 categories (etiology, treatment, and prognosis) and based on video flow, quality, and educational usefulness using the Global Quality Score (GQS). Descriptive statistics were obtained, and the Fleiss kappa and Kruskal-Wallis test were used.
**RESULTS:** 30.61% of the videos were uploaded by dentists/specialists (n=30), 48.98% by hospitals/universities (n=48), 5.1% by commercial (n=5), and 15.3% by other sources (n=15). The highest mean GQS ($2.14 \pm 0.9$) and completeness scores ($1.73 \pm 1.29$) were obtained for videos published by hospitals/universities. The most commonly covered topic was “treatment procedures” by all uploaders ($p < 0.05$).
**CONCLUSION:** Videos for patients have incomplete and low-quality content. Specialists should post more videos focused on informative videos concerning etiology and prognosis.
**KEYWORDS:** Root canal treatment, internet, social media

**OP-88**
**YOUTUBE AS AN INFORMATION AND EDUCATION SOURCE FOR REGENERATIVE ENDODONTICS: CROSS-SECTIONAL STUDY**

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**BACKGROUND:** Regenerative endodontics (RE) is to assist in the formation of new tissue within the root

canal system and subsequently to induce root development. YouTube™ is a popular source of videos on all kinds of topics.
**AIM:** To evaluate the quality, content, and demographics of YouTube™ videos related to RE.
**MATERIALS AND METHODS:** On February 27, 2023, between 18 PM and 20 PM, the online video search was conducted on the YouTube™ platform using the search phrase "regenerative endodontics" determined from the Google Trends application. 42 videos determined according to criteria from the first 155 videos were selected for analysis. Video content was scored based on reliability in terms of 3 categories (etiology, treatment, and prognosis) and based on video flow, quality, and educational usefulness using the Global Quality Score (GQS). The Fleiss kappa and Kruskal-Wallis test were used for statistical analysis.
**RESULTS:** 52.38% of the videos were uploaded by dentists/specialists (n=22), 33.33% by hospitals/universities (n=14), and 14.29% by other sources (n=6). The highest mean completeness scores (4.63±1.67) and GQS (3.72±1.35) ($p<0.05$) were obtained for videos published by dentists/specialists. The most mentioned subject in the videos was treatment procedures (30/42) and etiology (28/42). Uploaders generally indicated blood clot as a scaffold, only 6 videos included the use of platelet concentrates.
**CONCLUSION:** Specialists should post more informative videos about long-term prognoses and potential complications.
**Keywords:** Regenerative endodontics, Internet, YouTube.

**OP-89**
**RADIOGRAPHIC EVALUATION OF THE QUALITY OF ROOT CANAL TREATMENTS PERFORMED BY 5TH GRADE DENTISTRY STUDENTS**

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**INTRODUCTION:** The technical quality of root canal treatment (RCT) may affect the treatment outcome.
**AIM:** To radiographically evaluate the technical quality of RCTs performed by undergraduate dentistry students in Turkey.
**MATERIALS AND METHODS:** The radiographs of 191 teeth (42 incisors, 59 premolars, 90 molars) underwent RCT by 5th-grade dentistry students were examined retrospectively. Root canal fillings with a uniform radio density and an obturation length ≤2 mm from the radiographic apex were considered successful. RCTs with a ledge, transportation, instrument separation, voids in the obturation, and under or overfilling were considered unsuccessful. The data were analyzed with chi-square test. The significance level was set at $p<0.05$.
**RESULTS:** The RCT of 46% of the teeth were successful. The success, length and density of obturation significantly differed among the tooth types ($p=0.009$, $p=0.000$, $p=0.014$). The success rate was the highest in mandibular incisors (69%) and lowest in maxillary molars (16%). 69% of the included teeth had an acceptable obturation length; 17% were under filled, and 14% were overfilled. The obscuration's radiodensity was adequate in 62% of the teeth. However, the maxillary (%63) and mandibular molars (%43) revealed poor obturation density and the most over or under fillings (%28, %31 and %22, %34, respectively).
**CONCLUSION:** RCT performed by 5th-grade students was adequate for only 46% of the examined teeth. Increasing students' practical training should be taken seriously.
**Keywords:** iatrogenic errors, root canal treatment, technical quality, undergraduate students

**OP-90**
**EFFECTS OF VITAMIN C SOLUTIONS ON COLOR STABILITY OF UNIVERSAL COMPOSITES**

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**INTRODUCTION:** With the Covid-19 pandemic, consumption of supplements has increased. The effects of supplements on the color stability of composite resins are not clear.

**AIM:** To evaluate the effects of vitamin containing solutions, suitable for daily consumption, on the color change of various universal composites.
**MATERIALS AND METHODS**: Three universal composites Estelite Sigma Quick (Tokuyama Dental, Japan), Essentia Universal (GC Corp., EU) and NeoSpectra (Dentsply, Germany) were tested on 90 discs shaped samples (2x10 mm),polished with discs (Soflex,3M ESPE,USA).The specimens were divided into 3 subgroups (n=10) and subjected to Redoxon vitamin C, Dynavit vitamin C and fresh orange juice. The samples were stored in distilled water at 37 °C for 24 hours, initial colors were measured by a spectrophotometer (Vita Easy Shade Advance 4.0).The recordings were repeated on 7th and 14th days. Color changes were calculated using CIEDE2000.The data were analyzed with ANOVA and Independent-Sample T-Tests. The significance was set to $p<0.05$.
**RESULTS:** After 7 days, Estelite revealed the lowest color change in Redoxon. In Dynavit, the difference was insignificant among the composites ($p>0.05$).In fresh orange juice group, Essentia demonstrated significantly less color change ($p=0.00$).After 14 days; in Redoxon and fresh orange juice, Essentia showed significantly higher color changes than the others ($p=0.01$).
**CONCLUSION:** Since the Essentia resulted in more discoloration at the end of 14 days; in patients using vitamin C other universal composites may be a better alternative.
**Keywords:** vitamin, composite, color, solution

**OP-91**
**USE OF HYALURONIC ACID IN PERIODONTAL DISEASE TREATMENT: A SYSTEMATIC REVIEW**

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**Aim:** The main purpose of the present study was to investigate the potential benefit of local use of hyaluronic acid as an adjunct to periodontal therapy, since commercial products of hyaluronic acid (HA), due to its anti-inflammatory and anti-bacterial actions and its significant role in wound repair, have been proposed as adjuncts to either nonsurgical or surgical periodontal therapy.
**MATERIALS AND METHODS:** A total of 19 electronic databases were searched and the appropriate studies were identified with the use of specific eligibility criteria, according to PRISMA guidelines. Two reviewers independently screened and selected the studies and made the data extraction and the assessment of risk of bias, by using the Cochrane risk of bias tool.
**RESULTS:** Out of 3,186 papers, 38 randomized clinical trials (8 related to gingivitis therapy, 20 related to nonsurgical periodontal therapy, and 10 related to surgical periodontal therapy) were finally included in the review.
**CONCLUSION:** The adjunct use of HA may lead in the reduction of the prescription of nonsteroidal anti-inflammatory drugs and achieve improved clinical parameters, including periodontal probing depth, periodontal inflammation, and clinical attachment level. Overall and despite the positive effects reported, further research is needed to define the ideal HA compound, formulation, and regimen characteristics for periodontal disease treatment.
**Keywords:** evidence-based dentistry, gingivitis, periodontal diseases, periodontal tissues, inflammation, treatment planning

**OP- 92**
**EFFICIENCY OF PLATELET CONCENTRATES ON QUALITY OF LIFE IN MANDIBULAR THIRD MOLAR SURGERY**

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**AIM:** The aim of this prospective study is to investigate the effects of injectable platelet-rich fibrin (iPRF) and concentrated growth factor (CGF) on postoperative pain, edema, trismus and quality of life in impacted mandibular third molar surgery.

**MATERIALS AND METHODS:** 66 patients with indication of extraction, asymptomatic, class II, position B and C according to Pell & Gregory classification third molar teeth were included in this study. The patients were divided into 3 groups: iPRF, CGF and control. Standard surgical protocol was followed in the control group, while iPRF and CGF were applied to the extraction socket submucosally in the iPRF group and locally in the CGF group. Postoperative pain, edema, trismus and changes in the quality of life of the patient were evaluated in the follow-ups.
**RESULTS:** CGF group had significantly lower analgesic consumption (p=0.113). Both CGF and iPRF groups were more effective in reducing edema on the 7th day compared to control. CGF was significantly successful in reducing trismus on the 2nd and 7th days. Quality of life was significantly better in CGF group than control (p: 0.026).
**CONCLUSION:** CGF is effective for reducing edema and trismus and improving quality of life, but has limited impact on postoperative pain. Compared to iPRF, CGF is a more selective option due to its significant results. Larger sample sizes and additional evaluation criteria are needed for more comprehensive results.
**Keywords:** CGF, iPRF, Third Molar, Inflammation

**OP-93**
**CREATING AN EMERGENCE PROFILE WITH DIFFERENT METHODS IN THE POSTERIOR REGION: CASE SERIES**

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**INTRODUCTION:** Implant emergence profile plays an important role in the formation of the gingival contour. Healing abutments assist the peri-implant soft tissues and define the gingival contour of the permanent restoration.
**AIMS:** This clinical report is to present case series of implant-supported prosthesis treated with custom healing abutments obtained by different methods to create an emergence profile in the posterior region.
**MATERIALS AND METHODS:** In this study, clinical cases which applied for implant treatment due to posterior single tooth deficiency are presented. In the first method custom healing abutment was obtained with composite, peek abutment and mold. In the second method, a custom healing abutment was obtained by using peek abutment, dental acrylic tooth and composite.
In the third method, digital impression was taken with an intraoral scanner with a scan body on the implant. Then, custom healing abutment was obtained by milling with polymethyl methacrylate block. After 3 months, the patients' final prostheses were made with ti-base abutment and monolithic zirconium crowns.
**RESULTS:** It was observed that the final prosthesis was suitable for the emergence profile and compatible with the tissue after the soft tissue conditioning performed with all methods.
**CONCLUSIONS:** Conventional prefabricated abutments are not suitable for all gingival emergence profiles due to individual differences. Custom healing abutments helps confirm reproducible gingival design, aesthetics, and contours in a permanent denture.
**Keywords:** Custom abutment, emergence profile, implant, soft tissue

**OP-94**
**EVALUATION OF THE EFFECT OF VITAMIN D SUPPLEMENT ON THE LEVEL OF MMP-9 IN GINGIVAL CREVICULAR FLUID IN PERIODONTAL DISEASES**

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**AIM:** The aim of this study was to evaluate the effect of vitamin D supplementation on the levels of the gingival crevicular fluid (GCF) MMP-9, among both patients with periodontal disease (gingivitis and periodontitis) and periodontal healthy individuals who have a vitamin D deficiency.

**MATERIAL AND METHODS:** This study is a follow-up to the research project that evaluated the relationship

between serum vitamin D concentration and MMP-9 levels in gingival crevicular fluid in periodontal diseases. In this particular study, the impact of vitamin D supplementation was assessed by analyzing the levels of MMP-9 in the gingival crevicular fluid collected from the same dental sites of patients with vitamin D deficiency who received appropriate medical treatment and had been using vitamin D supplements for one month. The levels of MMP-9 were compared between the baseline of the study and after vitamin D supplementation. A total of 101 participants were included in this study, consisting of 34 with periodontitis, 34 with gingivitis, and 33 periodontally healthy individuals. The participants' periodontal status was evaluated radiographically and clinically by measuring probing depth, clinical attachment loss, gingival index, plaque index, and radiographic analysis. The levels of MMP-9 in the gingival crevicular fluid were analyzed using the enzyme-linked immunosorbent assay (ELISA) method."
**RESULTS:** The results of our study suggest that the risk of periodontal disease may be elevated due to vitamin D deficiency, which could be attributed to the effect on MMP9 expression**.**
**CONCLUSIONS:** This study will provide a better understanding of the role of vitamin D in the pathogenesis of periodontitis and could lead to the development of new therapeutic approaches for the management of this chronic inflammatory periodontal diseases.

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**OP-95**

## ANALYSIS OF ARI INDEX AND ENAMEL MICROCRACKS AFTER REMOVAL OF ORTHODONTIC BRACKETS - IN VITRO STUDY

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**INTRODUCTION:** The debonding process aims to remove orthodontic attachments and all remaining adhesive material from the enamel and to restore the surface in its original state. Aim: The aim of this research is to determine the difference in the total amount of adhesive residue using different types of ortho-braces bonded with different adhesive system.
**MATERIAL AND METHOD:** A total of 40 premolars, all extracted for orthodontic are divided into 4 groups. In group 1 and 2, 10 metal and 10 porcelain were bonded with the adhesive system of GC Fuji ORTHO LC and GC Fuji Ortho Conditioner In group 3 and 4, there were 10 metal and 10 porcelain brackets bonded with the adhesive system of Ormco Enlight Light Cure Adhesive and etching gel. After 48 hours, all braces were debonded. Using an Apochromatic Stereo Microscope the total area of adhesive residue remaining on the tooth was calculated expressed in µm2.
**RESULTS:** Highest ARI index value was in Group 4: Ormco porcelain (78.45 ± 17.02), followed by Group 2: Fuji porcelain (59.33 ± 17.129), followed by Group 3: Ormco metal (54.54 ± 11.67), and the lowest value of the ARI index was obtained in Group 1: Fuji metal (44.81 ± 16, 86).
**CONCLUSION:** Porcelain brackets that were bonded with SMGJC Fuji resulted in a smaller value of the ARI index and enamel micro cracks compared to porcelain braces bonded with composite resin Ormco.

**OP-96**

## COMBINED LATERALLY CLOSED, CORONALLY ADVANCED TUNNEL FOR THE TREATMENT OF GINGIVAL RECESSIONS: SURGICAL TECHNIQUE AND CASE REPORT

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**INTRODUCTION:** Achieving predictable coverage of mandibular gingival recessions represents a challenge for the clinician. Tunnel techniques were proposed in order to avoid releasing and papilla incisions, decrease the

surgical trauma and are quite current when covering gingival recessions.
**AIM:** To present a case of treating mandibular gingival recessions by the combined laterally closed, coronally advanced tunnel and prevent further recession, provide root coverage and improve aesthetics.
**MATERIAL AND METHOD:** The patient we treated is a 24-year-old, female, non-smoker, without systemic diseases and with excellent oral hygiene. The diagnosis is type 1 recession of teeth 31 and 41 and a high frenal attachment. After completing the initial therapy and oral hygiene instructions, we approached the next step. We treated recessions using a combined laterally closed, coronary advanced tunnel, using connective tissue graft, Emdogain, and frenulectomy.
**RESULTS:** At 6 months, complete root coverage was obtained. Postoperative pain and discomfort were low and the healing was without any complications. The preclinical and clinical studies suggest that additional application of Emdogain favors periodontal wound healing and periodontal regeneration when covering gingival recessions.
**CONCLUSION:** The results of this case suggest that the described treatment approach may lead to predictable root coverage of mandibular RT1 gingival recessions.
**Keywords:** gingival recession; modified coronally advanced tunnel; laterally closed tunnel; connective tissue graft; Emdogain.

OP-97
COMPARISON OF CLINICAL, CYTOLOGICAL AND **HISTOLOGICAL RESULTS BETWEEN FGG AND MUCOGRAFT**

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**INTRODUCTION:** The main and basic function of the periodontal tissue is to attach and hold the tooth inside the dental alveolus, allowing the periodontal tissue to have a significant impact on the function of the whole masticatory system.
**AIM:** After the completed operative intervention, to follow the clinical effects in the donor lodge of the free tissue graft and to compare them with the patients in whom the collagen matrix is implanted. Also, to trace the healing process through cytological and histological verification in the region of the two types of grafts applied, and thereby draw an opinion and recommendation, which technique is the most appropriate in solving individual and multiple defects in terms of aesthetics, function and healing.
**MATHERIAL AND METHODS:** The patients were divided into two groups: 30 patients were treated with a free gingival graft, which was taken from the palatal side of the maxilla, and the remaining 30 patients were treated with a collagen matrix Mucograft.
**RESULTS AND DISCUSSION:** The clinical, cytological and histological results reveal that in Mucograft cells and tissues mature faster and in FGG all this is delayed.
**CONCLUSION:** The use of the Mucograft membrane is favorable for patients and according to the results it is similar to FGG
**Key words:** recession, periodontal pocket, clinical attachment, keratinized gingiva, gingival graft, surgical flap, Mucograft.

**OP-98**
**IMMEDIATE LOADING IN EDENTULOUS FULL-ARCH RESTORATIONS: RETROSPECTIVE STUDY**

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**AIM:** To describe the outcome of bimaxillar simultaneous immediate loading protocol with full-arch implant-supported fixed prostheses.
**MATERIAL AND METHODS**: In our study a case series of 18 patients who required full-arch rehabilitation were consecutively treated with full arch implant supported restoration with minimum of four dental implants. The inclusion criteria were patients who had compromised dental health and periodontal problems and required new concept of treatment. The surgical procedures were done between May 2021 and December 2022.
**RESULTS:** In our study we treated 18 patients (11 men and 7 women) with a mean age of 52.4 years. A total of 168 implants were placed, 68 in post extraction sockets. In a period of 7 months 4 prostheses fractured (3 maxillary and 1 mandibular); in 3 of these patients the opposing dentition was a full-arch, implant-supported restoration, and in one patient, it was natural dentition. All of them had bruxism.
**CONCLUSIONS:** Although this protocol achieves optimal results, some mechanical complications were encountered. A high implant survival rate is expected in the short term following this immediate loading protocol. The fracture of the provisional prosthesis is a relatively common mechanical complication but does not seem to jeopardize the final treatment result.
**Key words:** Implant-supported full-arch, provisional prosthesis fracture, bimaxillar rehabilitation, multiunit abutments.

**OP-99**
**TYPES OF SUTURING MATERIAL IN ORAL SURGICAL INTERVENTION**

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In everyday surgical practice, different types of suturing materials are available which have an important role in tissue healing, facilitate the process of hemostasis, and enable the reconstruction and reunification of tissue. The aim of this study is to examine the reaction of the tissue to different suturing materials, as well as to determine the speed of wound healing and the incidence of complications after their use, in order to prove which of them is most suitable for oral surgery procedure. These researches were done based on analyzes presented on “MEDLINE” and “PubMed” databases, from 1970 to 2018, using the following keywords: suture materials, flap, polyglucapron, polytetrafluoroethylene, polyglycolic acid, polylactic acid, silk. Tissue reactions to suturing materials vary depending on the surface properties and the adhesion properties of the bacteria to the material. Silk is the most commonly used suturing material in oral surgery. The application of silk sutures increases the risk of infections. Studies about tissue response to suturing material confirm the presence of inflammation when using silk and cotton threads, and minimal reaction in others (nylon, polyester, polytetrafluoroethylene, polyglycolic acid. In addition to the observance of surgical suturing techniques, and the proper maintenance of oral hygiene in the postoperative period, the choice of suturing material has a significant impact on tissue healing
**Key words:** oral-surgical interventions, suturing material, resorbable and non-resorbable sutures.

**OP-100**
**ADJUNCTIVE ORAL EXAMINATION TECHNOLOGY IN PROSTHODONTIC PATIENTS**

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**INTRODUCTION:** Early detection of oral mucosa diseases and potentially malignant disorders requires

careful examination because of high malignant transformation frequency. Almost 90% of oral cancers occur in patients older than 50 years. The aim of study was to determine the value of VELscope as adjunct to oral examination in geriatric prosthodontics patients.
**MATERIALS AND METHOD:** Clinical protocol for 300 patients over 60 years old was questionnaire with risk factors, clinical observation and VELscope mucosal tissue examination with scoring of the changes and dysplasia level. Tissue changes were classified as inflammatory, traumatic, dysplastic and other. Abnormal tissue was associated with auto fluorescence loss and dark appearance in contrast to the surrounding tissue.
**RESULTS:** In 21% of patients abnormal premalignant lesions were detected. Leukoplakia was the most common premalignant disorder 42 (12, 6%), 16 (4, 8%) had lichen planus, 6 (1, 8%) cheilitis actinica and 5 patients (1, 5%) were diagnosed with squamous cell carcinoma. We found 118 inflammatory lesions (35, 4%) where 58 (17, 4%) were denture stomatitis, 18 (5, 4%) angular cheilitis, traumatic lesions were found in 38 patients (11, 4%) and 4 (1, 2%) were diagnosed with epulis fissuratum. In 54 patients (16, 2%) we diagnosed infectious changes from which aphtous ulcerations and candidiasis were most common.
**CONCLUSION:** VELscope can be used as a part of diagnostic process to detect abnormal tissue and oral lesions that might have been overlooked. However surgical excision biopsy as the golden standard for the detection of the lesion's histology is obligated for final diagnose.
A validation of the study was carried out and it was approved by the ethics committee of the Faculty for dentistry "Ss Cyril and Methodius University" Skopje on 18.12.2018. No. 02-38363.

**OP-101**
**EPULIS FIBROMATOSUS, A CAUSE OF FAILEDOSSEOINTEGRATION OF AN IMPLANT – CASE REPORT**

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**INTRODUCTION:** The term epulis refers to reactive benign changes of the gingival tissue that occur as a consequence of certain chronic irritation. To date, the appearance of these soft tissue changes has been associated with chronic traumatic irritations in dentures, but never with implant-prosthetic therapy.
**AIMS:** To present a case of failed dental implant, due to soft tissue growth in the preparation alveolus.
**MATERIAL AND METHOD:** A 50-year-old patient who underwent delayed implantation in the upper jaw with a surgical guide, with flapless technique. The placed implants had satisfactory primary stability, were immediately loaded. Six months after the planned period for osseointegration, disintegration of the implant at position 26 occurred, contrary to the clinical and radiographic findings of the period, with the absence of clinical signs of peri-implant infection.
**RESULTS:** Soft tissue formation of 13 mm was obtained from the bone walls, which was sent for pathophysiological analysis. The microscopic finding indicates a soft tissue of benign nature - epulis fibromatosis.
**DISCUSSION:** The computer-guided implantation represents a particularly specific method of work, due to the reduced macroscopic visualization of the peri-implant tissues. Although the bone bed of the implant is almost ideally planned, this is not the case with the soft tissue. Working with punch drills, flapless and with reduced visibility, represents a rare, but real danger of creating pathological soft tissue changes that affects the osseointegration
**Keywords:** epulis, computer guided surgery**,** implants

**OP-102**
**MANAGEMENT OF THE PATIENT WITH CYSTIC FIBROSIS IN ORALAND MAXILLOFACIAL SURGERY**

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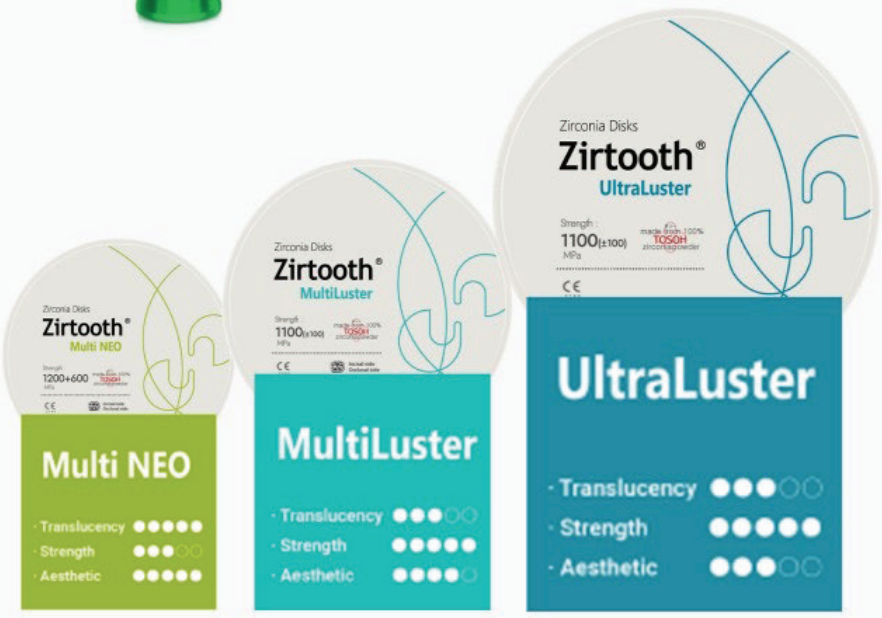


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Cystic fibrosis, an autosomal recessive disease, is considered to be the most lethal inherited trait among Caucasians. The median age for the CF patient has significantly increased over the past 60 years. This study will review diagnosis, pathophysiology, and eventual systemic complications of CF and discuss relevant information for management of the CF patient for the oral and maxillofacial surgeon. The aim of this study is to prove the connection between the cystic fibrosis and the oral health of the patient. For this study, five patients with cystic fibrosis were treated at the clinic of oral surgery. They were evaluated thoroughly to prevent future complications. In preoperative assessment, the pulmonary status, nutritional status and blood glucose levels were identified. The usual doses of antibiotics, cardio tonic drugs, bronchodilators etc. were considered where it was necessary into the preoperative period. Depending on the nature, duration, and complications of the surgical procedure, patients were taken care of in the postoperative period. Every patient in our study went through the treatment successfully without specific complications with the appropriate procedures and protocols. With preoperative preparation and premedication, timing of the surgery, monitoring during the intervention and special post-operative care is necessary for creating specific protocol for surgical interventions on patients with cystic fibrosis. Patients with cystic fibrosis require consistent, regular follow-up.
**Keywords:** Cystic fibrosis, premedication, protocol, surgery.

**OP- 103**
**ORAL HEALTH STATUS IN DIABETIC AND NON-DIABETICPATIENTS ON MAINTENANCE HEMODIALYSIS TREATMENT**

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**INTRODUCTION:** Uremic toxins and inflammation influence the oral health in patients on maintenance hemodialysis treatment. The presence of diabetes additionally aggravates the oral status.
**AIMS:** To compare the oral health status in diabetic and non-diabetic patients on dialysis modality treatment.
**MATERIALS AND METHODS:** Observational, cross-section, monocentric study was conducted in 72 hemodialysis (HD) patients divided into two groups regarding the presence of Diabetes mellitus (DM). Patients were examined by a dentist specialist scoring the oral hygiene index (OHI-S) by Greene Vermillion as good, fair and poor. Presence hyperkeratosis, erythema, erosions, pigmentations and fissured tongue were notified. Gingival hyperplasia (GH) was scored (0-3) with 3 for worst score.
**RESULTS AND CONCLUSIONS:** Diabetic patients were at 7 fold risk for erythema, 4 fold risk for pigmentations and 3 fold risk for manifestation of fissured tongue. The presence of hyperkeratosis, erosions, didn't differ between the groups. GH was more likely to be present in diabetic patients. Diabetics were found with higher percentage of bad oral hygiene index, but the overall comparison of OHI-S showed no significant difference. Oral health is significantly deteriorated in dialysis patients, especially in those with inflammation. Diabetic patients are at higher risk of developing changes in the oral health status.
**Keywords:** diabetic, health, hemodialysis, oral, patients.

**OP-104**
**THERAPEUTIC EFFECTS OF OZONE OLIVE OIL IN TNE TREATMENT OF ORAL LESIONS**

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**INTRODUCTION:** From the last century onwards, the use of ozone therapy has been proposed as an alternative therapeutic treatment for many acute and chronic diseases. Ozone therapy influences the oxy-reduction equilibrium through the mechanism of tissue reparation, involving many biochemical and cellular processes, initiated at the time of trauma or illness.

**AIM:** To explore the effectiveness of ozone olive oil on erosive and ulcerative oral lesions effected through its immunostimulatory, antihypoxic, analgetic, biosynthetic and antimicrobial activity.
**MATERIAL AND METHODS:** For realization of the set goal at the clinic for oral and periodontal diseases, University Dental Clinic "Ss. Pantelejmon", Skopje, 40 patients were detected with oral lesions (aphthae, herpetic lesions, traumatic and others).The lesions were treated by coating the changes with ozone oil with sterile cotton, while applying a gentle massage for one minute, two times a day, until the day of complete epithelialialization.
**RESULTS:** The process of the epithelizing lesions and their size (photographic documentation), as well as changes in the subjective sense of pain, noted through VAS (Visual Analoge Scale) have shown a high level of regenerative and analgetic power of the ozone oil.
**CONCLUSION**: The safe and simple application of the ozone oil, the return of integrity of oral mucosa for a short period of time, as well as releasing from pain speak clearly about the benefits of using the ozone oil for these frequent lesions in oral cavity.
**Key words:** illness, epithelization, ozone oil, oral lesions

**OP-105**
**WHITE CHANGES – DIAGNOSTIC DILEMMA (CASE REPORT)**

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Bright oral entities are commonly explained as white changes. These changes are not identical to each other and in different diseases they are the result of various pathological events. The distribution, frequency, difficulties in differential diagnosis, the possibility of malignant alteration require special attention and the need for precise classification. The presented cases are with white changes on the oral mucosa. One patient has a white change on the lateral side of the tongue, while the other has a bilateral white change on the corner of the lips. From both patients, the white changes are not removed from the substrate and last more than 2 weeks. For the treatment of these changes, the gold standard is the pathohistological finding that can vary from simple hyperkeratosis to varying degrees of epithelial dysplasia. A biopsy was taken from the patients and the material was given for pathohistological analysis. The obtained pathohistological finding includes non-surgical treatment of the white changes. Local keratinolytic therapy in combination with corticosteroid cream and vitamin therapy. The approach to treatment - ie. surgical resection, laser treatment or careful monitoring - should be chosen based on the histopathological grade of dysplasia and clinical features. These treatments may be effective in resolving the lesions; however, there is no evidence that they prevent malignant transformation. But regardless of treatment, long-term observation and periodic biopsy are important for follow-up, for recurrence and for eventual malignant transformation**.**

**OP-106**
**SEM AND EDS FOR EVALUATION AND DETECTION OF ENAMEL FLUORAPATITE USING FLUORIDE DENTAL MATERIALS**

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**BACKGROUND:** Fluoride dental sealants are commonly used to prevent tooth decay in children and adults. These products contain fluoride compounds, which react with the enamel on the teeth to form fluorapatite. The presence and distribution of fluorapatite in the enamel can have a significant impact on the effectiveness of the sealants and prevention from dental caries
**AIM:** The main objective of this case-study is to evaluate and detect the presence and distribution of enamel

fluorapatite at three different fluoride dental materials using Energy-dispersive X-ray spectroscopy (EDS) and scanning electron microscopy (SEM). The study aims to compare the effectiveness of various fluoride dental materials in terms of their ability to promote the formation of enamel fluorapatite.
**MATERIALS AND METHODS:** This in vitro case-study will involve analyzing the enamel surfaces of teeth treated with three types of fluoride dental materials: Glass ionomer cement**,** Restorative Compomer**,** Resin based sealant**.** Fluorapatite formation will be evaluated with EDS, based on the presence or absence of fluoride in the chemical composition of the enamel surfaces
**RESULTS AND CONCLUSIONS:** The EDS technique used in the study will provide insight into the mechanisms by which fluoride compounds interact with the enamel surface to form fluorapatite.
**Keywords:** Fluoride materials, SEM, EDS

**OP-107**
**TRAUMATIC INTRUSION OF THE PERMANENT TOOTH –A CASE REPORT**

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**INTRODUCTION:** Dental intrusion is an apical displacement of the tooth into the alveolar bone. This injury is accompanied by extensive damage to the periodontal ligament, cementum, disruption of the neurovascular supply to the pulp, and communication or fracture of the alveolar socket. Traumatic intrusion is considered one of the most severe luxation injuries to permanent dentition. Management of intrusion depends on several factors such as whether the tooth has a closed or open apex, the type of teeth (primary or permanent dentition), and how much the tooth is intruded in mm. Some studies have demonstrated that intrusions of up to 3.0 mm have an excellent prognosis, whereas teeth with severe intrusion or teeth that are intruded more than 6.0 mm present an unfavorable prognosis because of the occurrence of inflammatory resorption and pulp necrosis.
**MATERIALS AND METHODS:** The aim of this case report is to present an 8-year-old male patient with the complete intrusion of the permanent maxillary right central incisor, treated by immediate surgical repositioning and root canal treatment with a favorable prognosis.
**RESULTS**: After 10 months of clinical and radiographic follow-up, the teeth appeared normal and the patient was pleased with the outcome.
**CONCLUSION:** This type of dental trauma is complex and is commonly associated with pulpal necrosis and inflammatory ankyloses. Management is focused on reducing this effect and is commonly achieved by root canal treatment.
**Keywords** intrusion, injury, luxation.

**OP-108**
**CLINICAL AND RADIOGRAPHIC EVALUATION OF PULPOTOMY USING LASER AND MTA IN PRIMARY TEETH**

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**INTRODUCTION:** The pulpotomy technique basically consists in removing the coronal part of the pulp and fixing the radicular pulp with drugs.
**AIM:** The aim of this study was to evaluate the clinical and radiographic success of the effectiveness of MTA

in laser pulpotomy. When using a laser in the pulpotomy of primary teeth, in contact with the vital pulp, the laser radiation increases the formation of calcified nodes in the fibroblasts of the dental pulp and increases the activity of alkaline phosphatase, stimulating the production of collagen and osteocalcin. MTA is alkaline (pH=12.5) and is a biocompatible and bioactive material.
**METHOD:** In the research, 40 primary molars were analyzed. They were treated with the method of laser pulpotomy. In the analyzing process, MTA have been used as pulpotomy agent.
**RESULTS:** The study examined and monitored clinical parameters such as pain symptoms, percussion sensitivity, swelling, fistula and pathological mobility. Teeth that showed no signs of radicular illumination, internal and external root resorption, extension of the periodontal ligament were key RTG parameters for the success of endodontic therapy. Proportional values obtained at intervals of one, three and six months were compared with Fisher exact p, one-tailed test. Statistical significance was calculated for $p < 0.05$.
**CONCLUSION:** Laser vital pulpotomy with MTA is a reliable biological method for pulp treatment of primary teeth and could be recommended for the clinical practice
**Key words:** vital pulpotomy, primary teeth, MTA, Laser

**OP-109**
**DETERMINATION OF THE DEGREE OF KNOWLEDGE OF FIRST AID PROCEDURES FOR TRAUMATIC DENTAL INJURIES OF TEACHING STAFF IN PRIMARY SCHOOLS**

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**INTRODUCTION:** Traumatic dental injuries (TDIs) occur most frequently in children and young adults. The prognosis of the traumatized tooth depends on the first aid provided to the child by those present at the moment of the injury.
**AIM:** The aim of our study is to determine primary school teacher's capacity in administering first aid for traumatic dental injuries. At the same time, the goal of these studies is to provide information for the immediate or urgent care of TDIs.
**MATERIAL AND METHOD:** Our study included 61 teachers from two primary schools. The teachers have been chosen randomly. All of the teachers were from urban areas.
**RESULTS:** The research was conducted using a questionnaire. The questionnaire consisted of the following three questions. The first question is the extent of the teacher's knowledge about the type of teeth on which the dental trauma occurred. The second question was whether the (fractured) broken parts of the tooth can be used. The third question was in what environment the broken parts of the teeth should be kept. The statistical significance of the results was calculated for $p < 0.05$.
**CONCLUSION:** As a result of our research, according to their degree of dental knowledge, we have concluded that primary school teachers lack the necessary degree of knowledge and expertise to provide adequate first aid to children who have suffered traumatic injuries.
**Keywords:** Traumatic dental injuries, students, teachers, first aid, permanent dentition.

**OP-110**
**INCIDENCE OF WHITE SPOT LESIONS FOLLOWING FIXED ORTHODONTIC TREATMENT**

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**INTRODUCTION:** Fixed orthodontic appliances can interfere with removing bacterial plaques from dental surfaces which can ultimately lead to white spot formation.
**AIM:** The aim of this clinical study was to examine the effects of dental crema casein phosphopeptide-amorphous calcium phosphate (CPP-ACP) on white spot lesions (WSLs) formation in patients with fixed orthodontic appliances.
**MATERIAL AND METHODS:** In this clinical trial, 40 patients undergoing or scheduled for fixed orthodontic treatment were divided into two groups of 20 patients each. The control group received no preventive intervention. In the experimental group dental crema was applied every day over the examination period. The clinical examination for WSL took place at baseline and after debonding of the fixed orthodontic appliances. WSL formation was assessed by the WSL index.
**RESULTS:** The values between both groups were comparable at baseline (experimental: 1.26±0.25; control: 1.23±0.23). After debonding of the appliance, the values of WSL were significantly lower in the experimental group vs. the control group (1.21±0.28 vs. 1.32±0.33).
**CONCLUSION:** The incidence of WSLs in patients treated with fixed orthodontic appliances is significantly high. The use of dental crema CPP-ACP-containing significantly reduced the incidence of white spot lesion formation. The preventive therapy provided appears to be effective.
**Keywords:** white spots lesions, fixed orthodontic appliance.

**OP-111**
**TREATMENT OF PATIENTS UNDER GENERAL ANESTHESIA**

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General anesthesia is most commonly used to perform but also to facilitate dental treatment in patients with anxiety or behavioral difficulties, many of whom are children or patients with special needs. The problem of treating and curing such patients is complex. The patient's safety and comfort, the quality and timing of the treatment required, and the patient's level of anxiety, cooperation, and trust in the parent or caregiver must always be considered. Medical implications and the type of anesthesia used are also important in the overall assessment. When performing procedures under general anesthesia, a team led by a dentist and an anesthesiologist must perform a thorough preoperative assessment, as well as assess whether patients (parents/caregivers) are aware of the potential risks and obtain written consent. The measures taken ensure optimal patient management and reduce the frequency of intraoperative and postoperative problems and consequences.

**OP-112**
**DIFFERENCE BETWEEN THE RURAL AND URBAN AREAS IN PRILEP REGION AFTER GOVERNMENT DENTAL PREVENTIVE PROGRAM**

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**INTRODUCTION:** Dental fissure sealing is a safe and effective method of decreasing caries incidence, because the occlusal fissure is a much vulnerable site. The most caries-susceptible teeth during an eruption are the first permanent molars. In 2008 North Macedonia Government started a Dental preventive program: Fissure sealing at first permanent molars on 6-year-old school children with GC Fuji Triage, and it's still in use.
**AIM:** The primary objective of this research is to perform a more detailed examination of dental caries, DMFT structure, and to make a comparison among the examines in the urban and rural areas in the Prilep region.
**MATERIAL AND METHODS:** For improving the aim, we obtained 721 participants – school children from Prilep region. All the examined children were born in 2004, and occlusal sites of the first molars were sealed before 6 years for the first time, and that process continued until they were 12 years old.
**RESULTS:** The results show that sealants were highly effective in preventing dental caries in permanent molar teeth. The gained results show a significant statistical difference in the value: DMFT index in urban areas is 2, 43±2.902; decayed 1.03±1.975; extracted teeth 0.14±0.654 and filled teeth 1.25±1.943. DMFT index in rural areas is 2.21±2.668: decayed 0.96±1.743; extracted teeth 0.15±0.657 and filled teeth 1.10±1.877.
**CONCLUSION**: The results show that sealants were highly effective in preventing dental caries in permanent molar teeth and need to be undertaken in control within the child population.
**Keywords:** dental caries, fissure sealing.

**OP-113**
**INFLUENCE ON FRACTURE RESISTANCE OF ENDODONTICALLY TREATED TEETH RESTORED WITH NEW FERRULE DESIGN**

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**AIM:** This study presents the fracture resistance of ETZ prepared with a new ferrule design with a circular preparation around endodontically treated canals.
**MATERIAL AND METHODS:** Maxillary incisors were divided into 6 groups of 12. We used Y-TZP VALLPOST, Slovenia with retentive coronal shape. The groups were divided according to the diameter (Ø=1.4mm and Ø=1.6mm) of the Y-TZP VALLPOST, Slovenia) and the preparation for internal Ferrule 0 / 1 / 2 mm. Specimens were experimentally and clinically cemented with Multilink, Automix. Two-way analysis of variance ($p<0.05$) was used for statistical analysis. Fractures of the models were analyzed on a Carl Zeiss Optical Microscope V.8.
**RESULTS:** A 5-year clinical analysis was performed. Our research was providing knowledge about aesthetic reconstructions and the possibility of additional improvement of fracture resistance of frontal teeth prepared with a new ferrule method.
**CONCLUSION:** Within the limitations of this study, it is evident that preparation with an inner ring of 2 mm in all groups contributes to a significant increase in the fracture resistance of the ETZ. The retentive coronal rings of the zirconia post together with 2mm inner ferrule in all groups significantly reduced irreparable root fractures.

**OP-114**
**CONTEMPORARY PROSTHETIC TREATMENT FOR CHALLENGING PATIENTS WITH MULTIDISCIPLINARY APPROACH**

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**INTRODUCTION:** Challenging patients are in need for complex dental treatment. Sometimes these patients need orthodontic treatment, or pre-prosthetic surgery, or therapy with splints before we proceed contemporary prosthetic treatment.
**AIMS:** To present the contemporary prosthetic treatment for challenging patients with multidisciplinary approach.
**MATERIALS AND METHODS:** Series of patients were treated with different types of prosthetic devises. Before beginning with prosthetic treatment, because these patients were challenging, multidisciplinary approach, was inquired. For young adult patients orthodontic treatment plan (class Angle II) and crown lengthening was performed, after which fixed dental constructions were manufactured. For patients that had temporomandibular dysfunctions and pain in the orofacial area, computed tomography was performed. Then splint was manufactured before the prosthetic rehabilitation, so that the maximum optimal treatment plan was provided.
**RESULTS:** There is no definite contemporary prosthetic treatment plan that can be suitable for every patient. Sometimes other protocols from different specialties must be involved.
**CONCLUSIONS:** With the treatment protocol provided, the deduction is that every patient must be treated individually. This includes the pre-prosthetic treatment, so that the dental prosthetic appliance will be suitable and will be designed on the mutual satisfaction of both the patient and the multidisciplinary dental team.
**Keywords:** contemporary prosthetics, challenging patients, pre-prosthetic treatment, multidisciplinary approach

**OP-115**
**RARE GENETIC DISORDER - CHERUBISM - case report**

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**INTRODUCTION:** Cherubism is defined as a skeletal dysplasia with presence of bilateralsymmetrical fibrosis lesions on mandibullae and maxillae. It is a genetic disorder with autosomal dominant type of inheritance and the cause of the appearance is a mutation of the SH3BP2 gene. The name of cherubism is correlated with a specific facial appearance of the patients ,,Angelic appearance,,.
**CASE:** Four year-old female came to our dental office with a specific external appearance. Through the intraoral examination swelling was observed in the area of tuber maxillae and ramus mandibullae. Family history for the presence of cherubism was positive. The diagnosis of cherubism is usually made by X-ray, Cone Beam Computed Tomography (CBCT), biochemical markers, age and genetic examination. We made panoramic x-ray, CBCT, and karyotype genetic examinations. The differential diagnosis could be: masseteric hypertrophy, gigantoform cementoma, gigantocellular granuloma, brown tumor, ameloblastoma, odontogenic, myxoma, aneurysmal bone cyst, craniofacial fibrous dysplasia.
**TREATMENT:** Following the patient x-ray for 6 months, in some cases surgical interventions.
Further approaching treatment: TNF - in the circulatory system contributes to the regression of the disease.
**CONCLUSION:** Cherubism is a rare disease where the lesion resolves spontaneously by 12 years of age. Mild forms without facial deformities do not need to be treated, surgical intervention is required if there are functional or aesthetic problems.
**Keywords:** Cherubism, Genetic disorder

**OP-116**
**HOW TO RECOGNISE IF YOUR PATIENT SHOULD BE EQUILIBRATED-CASE REPORT**

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**INTRODUCTION:** Occlusal disturbances with CR/MIR discrepancies and occlusal interfences that are contributing to the breakdown or the instability of the masticatory system need equilibration. Examination of the joints, muscles, periodontium and dentition helps us to diagnose the need of occlusal splint therapy.
**AIM:** To assess the need and use of occlusal splint in TMD patients, by repositioning the mandible to a centric occlusion, before starting the orthodontic therapy with fixed appliances.
**MATERIAL AND METHOD:** Class II division 2 patient with laterotrusion and TMJ problems with chief complain of facial asymmetry, history of headache, pain, discomfort in TMJ and hypertrophy in the left masseter and right temporalis anterior. After the complete clinical examination, PA x-ray and careful study of properly mounted casts we ordered the occlusal splint therapy for 9 months and fixed appliances for period of 2 years.
**RESULTS:** We established proper occlusion at the end of the treatment with proper function as well as improvement of dental and facial esthetics.
**CONCLUSION:** Once the cause of occlusal-related disorders is identified, occlusal splint therapy is useful for the diagnosis and management of various masticatory system disorders. TMD patients need a careful study which will determine a combination of treatment options, starting with equilibration with occlusal splint therapy, proceeding with fixed orthodontic appliances to arrive at the desired goal of equal intensity contacts on all teeth in CR.
**Key words:** Orthodontic treatment, occlusal splint, occlusal contacts, TMD.

**OP- 117**
**DECISION FOR EXTRACTION AT INDIVIDUALS WITH DIFFERENT TYPE OF VERTICAL GROWTH**

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**AIM:** The purpose of our study was to evaluate the need for extraction at individuals with different type of vertical growth and different sagittal irregularities.
**MATERIALS AND METHOD:** We conducted a survey on cephalograms of 180 individuals aged 12-16 years: equally divided for Class I, Class II and Class III, with different type of vertical growth. We used parameters from Kim analysis to determine the need for teeth extraction. Vertical growth was determined with the value of craniomandibular angle (SN/MP). We used Bjork polygon and lower gonial angle to compare with the necessity of reduction of teeth number, as well.
**RESULTS:** Statistical analysis showed very high statistical significance for the values of extraction index for hyper divergent individuals with Class II division 1 and Class III, as well. We gained smaller values for combination factor, interincisal angle and lip protrusion for individuals with vertical type of growth at examinees of both groups. Lower gonial angle was with statistical significance smaller at individuals with hypo divergent type of growth. Bjork polygon was in positive correlation with the type of growth according to craniomandibular angle.
**CONCLUSION:** Our findings indicate that hyper divergent type of growth requires reduction in the number of teeth, but in individuals with horizontal growth the treatment is mostly done without the extraction. Decision for extraction of teeth depends as well on the position of incisors, lip position and crowding in mandibular dental arch.
**Key words:** extraction, Kim-analysis, malocclusion, vertical growth

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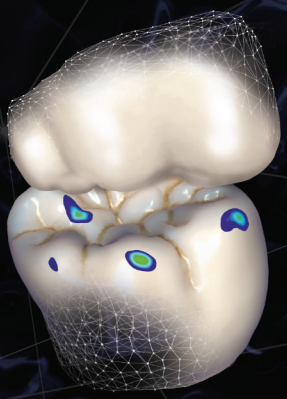

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**OP-118**
**EXTRACTIONS IN ORTHODONTICS**

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**INTRODUCTION:** The controversies regarding whether to extract teeth or not has been a key question in planning orthodontic treatment for 100 years.
**AIM:** To review and analyze critically the current available literature in the field of extractions in orthodontics and to provide clinical implications based on scientific evidence on the topic.
**MATERIAL AND METHODS:** A computerized literature search was conducted in PubMed for articles published on extractions in relation to orthodontics.
**RESULTS:** The paper provides important information and a systematic overview of the main reasons for extractions as: crowding, dentoalveolar protrusion, need for facial profile alteration, and mild anteroposterior maxillary discrepancies. The factors governing the choice of teeth for extraction are analyzed and described in detail. These factors include: condition of the tooth, position of the tooth and position of the crowding. The article focuses on diagnostic elements for extraction as clinical examination, model analysis and cephalometric analysis. Different extraction procedures as balancing extractions, compensating extractions, phased extractions, enforced extractions, Wilkinson extractions, stobies extractions, serial extractions and driftodontics are presented in the study. Indications, advantages, and disadvantages for extraction of different teeth are described and presented in detail.
**CONCLUSIONS:** Many factors influence the choice of teeth for extraction and careful treatment planning in conjunction with good patient co-operation, appliance selection and management of the treatment.
**Key words:** extraction, malocclusion, crowding

**OP-119**
**TREATMENT MODALITIES IN PATIENTS WITH CLASS III MALOCCLUSION - case report**

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**INTRODUCTION:** Class III malocclusion gives intraoral changes and extraoral changes that affects the aesthetic appearance of patients Treatment modalities depend of the growth of the jaw and the development of the entire facial skeleton.
**AIM:** is to show early phase of treatment of Class III with different orthodontic appliances
**MATERIAL AND METHOD:** case report of 2 patients treated with different orthodontic appliances both patients have skeletal class III.
Case 1An 8 year male patient in early mixed dentition with inverted overlap in the front teeth and lost space for the maxillary canines. Ceph indicate a reduced length of maxilla and slightly increased length of mandible.
Case 2An 9 years and 11 months old female in late mixed dentition Ceph analysis indicates reduced of maxillary length with increased mandibular length. After the protraction of the maxilla with Delair mask brackets with rot prescription were bonded.
**RESULTS:** Case 1after using an upper removable appliance with screw for sagittal protrusion and lowered labial bow a positive o.j and o.b. was obtained for a period of 5-6 months.
Case 2after using the orthopedic effect of the Delair mask for 14 months protraction correction of the sagittal

jaw relations was obtained. The patients are still under treatment.
**CONCLUSION:** Early treatment of patients with class III provides the opportunity to obtain satisfactory occlusal and aesthetic effects. Use of the Delair mask in the early stages of orthodontic therapy enables orthopedic action on the upper jaw.
**Keywords:** class III malocclusion, early treatment Delair mask, maxilla

**OP- 120**
**SOME PHYSIO FOR DENTISTS**

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**AIM:** To introduce some practical everyday exercises for reducing occupational diseases and disorders.
**MATERIAL AND METHODS:** The ergonomic hazards, caused by stained posture and prolonged repetitive movements, can induce musculoskeletal disorders. It occurs in 54-93% of dental professionals and involve the spine, shoulders and hand-wrist tract. Some other researchers have found symptoms of discomfort for dental workers occurred in the wrist/hands (69, 5%), neck (68, 5%), upper back (67, 4%), low back (56, 8%) and shoulders (60, 0%). Due to those findings it is necessary to do exercises, relaxation techniques that can help us avoid injuries and reduce stress, improving the quality of life, ultimately leading to extend careers.
**RESULTS:** Dentistry does not lend itself to good posture, however, it is possible with instruction and practice to correct the harmful postural habits that may be the cause of such stress and pain. Searching the literature we found out some exercises and stretches that can be done in our office or home.
**CONCLUSION:** Ergonomics is crucial in dentistry, as it helps ensure that dental professionals can work comfortably and safely while delivering quality care to patients.
**Keywords:** ergonomics, exercises, dentistry, occupational diseases, prevention

**OP-121**
**EFFECTS OF VITAMIN C AND E ON TOOTH MOVEMENT**

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Application of mechanical force on teeth causes orthodontic tooth movement as a result of the biological responses of the surrounding periodontal tissues. Local regeneration involves the resorption of the alveolar bone adjacent to the periodontal ligament in the pressure zone, apposition in the tension zone, and formative and degenerative changes in the periodontal ligament.
It has been well documented that various medications and some chemical substances affect bone metabolism and affect orthodontic tooth movement. Vitamins are among those substances, and they act as antioxidants by inhibiting free radicals. Vitamin C and E increase osteoblastic activity. These supplements positively affect bone formation on the tension side of the teeth during tooth movement.

**OP-122**
**THERAPY TREATMENT OPTIONS OF SPORT DENTAL INJURIES**

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Several different sports like karate, handball, basketball, or some other sport activities like riding a bike or roller skaters often cause dental trauma in young patients. Accidental falls, impacts and hits play major role in these injures, sometimes even with serious health impact. Soft tissue trauma presents a high percentage of injures, but 40% are dental traumas, and upper maxillary incisors are most affected. Fractured or lost upper first maxillary incisor demands immediate restoration. Prosthetic solutions for different sport facial and dental traumas are crowns, removable partial dentures or implants. Managing the pain fast with different treatment choices like extraction of the tooth, endodontic treatments and early temporary prosthetic therapy protocols are showing good results. Individual approach for every type of trauma is needed, and most of the patients are accepting the suggested treatment plan. Restored teeth show good aesthetic and function solutions, too. Choosing the best therapy treatments in these patients is very important, because dental trauma can also cause some psychological and social problems. Immediate treatment is necessary, and proper restoring often demands a team effort.
**Keywords:** sport dental injuries, fracture, mouth guards

**OP- 123**
**ADHEZIVE SYSTEMS IN ORTHODONTIC PRACTICE IN THE REPUBLIC OF NORTH MACEDONIA**

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**INTRODUCTION:** Orthodontic anomalies imply a deviation in the position of the teeth, their shape and number, as well as their size. Treatment usually involves correction using fixed orthodontic appliances. Success with fixed orthodontic appliances, to a large extent, also depends on the adhesive system used when fixing the briquette.
**AIM**: The purpose of the study is to show which adhesive systems are used and which are the best for treatment with fixed orthodontic appliances.
**MATERIALS AND METHODS**: For our study was created a questionnaire which was delivered to 60 doctors of orthodontics.
**RESULTS:** Of the respondents, 58.3% are from the private sector, and 41.7% from public sector. Most of them, 53.4% have more than 15 years of work experience. Orthodontists mostly use total adhesive systems, namely 71.7% two-phase systems and 28.3% three-phase systems, which is statistically significant (p<0.05). 80% of respondents reported that their adhesives were effective after the first year of applying the briquettes and rings, 13.3% failed after 6-10 months, and 6.7% reported that the adhesives loosened within the first 2-5 months.
**CONCLUSION:** Adhesive systems, to a large extent, anticipate orthodontists' expectations for the adhesion strength of briquettes and enamel rings.
**Keywords:** adhesive systems, fixed orthodontic appliances, briquettes, orthodontic anomalies.

**OP-124**
**MMPs-1 TISSUE LEVELS AND CLINICAL PARAMETERS AT AGGRESSIVE PERIODONTITIS PATIENTS**

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**INTRODUCTION:** The matrix - metalloproteinase represent a family of host derived proteolytic enzymes

which have the ability to degrade extracellular matrix components.
**Aim:** to determine the correlation between the MMPs -1 concentration in the inflammatory gingival bounding tissues at aggressive periodontitis patients, with the clinical parameters.
**MATERIAL AND METHODS:** A total of 28 patients (male and female), mean age <35 were included. Clinically were noted the dental plaque index IDP (Silness-Loe), gingival inflammation index (Loe-Silness), clinical attachment loss (CAL) and Miller-Pelzer index of bone resorption. For setting the concentrations of MMPs-1, quantitative enzyme method was used, with the commercial set: SensoLyte MMPs-1 ELISA Kit Colorimetic, AnaSpec. The protocol for this study was approved by the Ethical committee for medical-dental investigations of the Faculty of Dentistry at the "Ss Cyril and Methodius" University, Skopje.
**RESULTS:** Average values of the IDP were $\bar{x}$ =1,07, IGI were $\bar{x}$ = 2,27. CAL was $\bar{x}$ = 6,57. The index of the bone resorption was $\bar{x}$ = 4,53. Concentrations of the MMP-1 were $\bar{x}$=658,35. We appointed presence of positive correlation between IDP and MMP-1 (r =0,76). Important, positive correlation was present between IGI and MMP-1 (r =0,68). CAL and alveolar bone resorption were strongly correlated with MMP-1 (r=0,75 and r=0,42).
**CONCLUSION:** The microorganisms from the biofilm initiate the production of the collagenase-MMP-1 and their concentrations rise with the development of the inflammatory processes, leading to the loss of attachment and resorption of the alveolar bone.
**Key words**: MMP-1, aggressive periodontal disease, biofilm, inflammation.

**OP-125**
**THE NEW NORMAL - DENTISTRY AND PATIENTS WITH AUTISM SPECTRUM DISORDER (ASD)**

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**INTRODUCTION:** Autism spectrum disorder (ASD) is a developmental disability caused by differences in the brain, characterized by insidious disability in communication, social interaction, and using language and abstract concepts. They require unique management because of their behavioral characteristics, their problems with social communication and interaction.
**AIM**: This article reviews the present literature on the issues dealt with children with autistic spectrum disorder from the dental perspective.
**RESULTS**: Over the last few years there has been a growing interest to cater to the requirements of children with ASD. This study is also an update on the various strategies and recommendations for an easier and successful management of children with ASD in the dental clinic including sensory adaptive dental environment, picture exchange communication system, behavior management techniques as well as pharmacological approaches known so far.
**CONCLUSION**: Specialized knowledge, as well as increased awareness and attention to the specific needs of children with ASD, are paramount while delivering appropriate dental care.
**Keywords**: Autism spectrum disorder (ASD), behavioral approach, oral health care, dental treatment

**OP-126**
**ORAL SIGNS OF ADVERSE DRUG REACTIONS**

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**BACKGROUND:** Adverse reactions to drugs are common and may have a variety of clinical presentations in the oral cavity. They are harmful and unintended responses to a medical product. As newer therapeutic agents are approved, it is likely that more adverse drug events will be encountered. The extent of adverse drugs reactions is unknown; however, because a lot of them are asymptomatic, many are believed to go unnoticed. Their pathogenesis, especially of the mucosal reactions, is largely unknown and appears to involve complex interactions between the drug, other medications, the patient's underlying disease, genetics and lifestyle factors.
**AIM:** to describe the most common adverse drug reactions that dentists may encounter in daily clinical practice.
**MATERIALS AND METHODS:** research was done exploring specialized databases PubMed, MEDLINE, EBSCO, Science Direct, Scopus for the period 2010-2023, by use of MeSH terms: adverse drug reaction, drug-induced reactions, oral manifestation.
**RESULTS.** The most common oral manifestations were categorized in groups as follows: saliva and salivary glands involvement, soft tissue alterations, hard tissue damages, and non-specific oral conditions.
**CONCLUSIONS:** Knowledge of adverse drug-induced oral effects helps dental professionals to better diagnose oral disease, administer drugs and improve patient compliance during drug therapy and may foster a more rational use of drugs.
**Key words:** oral cavity, adverse drug reactions, oral signs;

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**PP-1**
**PROSTHODONTIC REHABILITATION WITH MONOLITHIC ZIRCONIA– CASE REPORT**

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**INTRODUCTION:** Patient demand for esthetic restorations has resulted in increased use of all-ceramic restorations in anterior and posterior cases. Multilayer monolithic zirconia has improved optical properties, strength and it fulfills patient's esthetic demands and overcomes the chipping risk of bi-layer zirconia-ceramic restorations. Using high-strength materials that can be characterized with glazes and colors to mimic natural esthetics, monolithic zirconia restorations seem to be a promising alternative to metal- and zirconia-veneered restorations.
**AIM:** Functional and aesthetic reconstruction in maxilla of the patient with partially edentulous arch using Multilayer monolithic zirconia restorations.
**MATERIALS AND METHOD:** We made functional and aesthetic reconstruction in 46 years old patient in maxillary arch. The patient came with partially edentulous maxillary arch - Kennedy class III, modification 1(with tree edentulous area). After preparation of the teeth we made intraoral scan with Launca intraoral scanner and send STL files to the laboratory. Design of the bridges and crowns was made with Exocad. We have printed the construction with Dental resin for 3D printing and made try in. Full arch reconstruction was made with monolithic multi layered Katana Zirconia UTML- Kuraray Noritake.
**CONCLUSION:** Monolithic zirconia crowns have high fracture resistance and this allows the tooth restoration without excessive tooth preparation, patient was satisfied with the aesthetic and function of the monolithic zirconia crowns and bridges and would choose the same treatment modality if they were to be treated again. With the application of the digital workflow in daily practice, it is possible to achieve high precision with high-strength materials.
**Key words:** Aesthetic zone, Prosthodontic rehabilitation, Monolithic zirconia**.**

**PP-2**
**EVALUATION OF USE OF FLEXIBLE DENTURES AS ALTERNATIVE SOLUTIONS FOR PARTIAL EDENTULISM TREATMENT**

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**INTRODUCTION:** The aim of this study was to evaluate the use of flexible dentures as alternative solutions for partial edentulism treatment over a period of one year in the territory of the municipality of Stip, North Macedonia.
**MATERIALS AND METHODS:** This research was conducted in the period from 01.01.2018 to 31.12.2018. During this one-year period, a survey and clinical examination was carried out on a total of 60 patients wearing flexible dentures. The age of the patients who entered our research was from 29 to 70 years and were divided into three groups: G1 - from 29 to 41 years old, G2 - from 42 to 55 years and G3 - from 56 to 70 years. All subjects were clinically examined and filled out a specially made questionnaire consisted of questions related to the aesthetics, comfort and adjustability of flexible dentures, as well as the frequency and manner of maintaining oral hygiene. The data analyses were based on the respondents in the questionnaires and calculated using Statistical software SPSS for Windows version 23. A p-value <0.05 was considered statistically significant.
**RESULTS:** 42% of patients belong to age G2, 57% are male and 43% are female. 67% are satisfied with the aesthetics of flexible prostheses, and 100% with durability. 85% of the respondents are satisfied with the comfort of the flexible prostheses. 68% of subjects needed 2 weeks to adjust to the flexible prosthesis. Based

on the performed examination, 72% of the examined patients fall into Kennedy Class I.
**CONCLUSION:** Flexible dentures stand in a superior position in fulfilling the various patients' demands for more retentive and aesthetic treatment needs.

PP-3
OCC**LUSAL SPLINTS AS THE FIRST-LINE STRATEGY IN THE TREATMENT OF BRUXISM -CASE REPORT**

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**INTRODUCTION:** Condition with repetitive muscle activity, clenching or grinding of the teeth is known as bruxism. Dental malocclusions are commonly considered to be a major risk factor for temporomandibular disorders, tinnitus, and they are usually bruxism related conditions.
**AIM:** The aim of this case report is to describe bruxism treatment with occlusal splint, different disorders (TMD, bruxism and tinnitus) associated in a single case, and show each other correlation.
**MATERIALS AND METHODS:** Female patient, 30 years old, presented with difficulty in mastication, associated with pain of the left TMJ, cervical pain, buzzing in the ears, masticatory muscles tender to palpation and hypertrophy of the right masseter muscle, limited mouth opening, non-coordinated mandibular movements and shifted midline. Facial asymmetry was indication for cephalometric posteroanterior (PA) radiograph. Analysis confirmed skeletal and extraoral asymmetry. The initial therapy was treatment with individual upper soft occlusal splint as the first-line strategy, use day-night time (except chewing), myofunctional exercises as well as body relaxation exercises were recommended.
**RESULTS:** Three months later, the patient reported improvement in mouth opening, decreased pain after chewing and decreased buzzing symptoms. The patient felt more comfortable after practicing the exercises.
**CONCLUSION:** We can conclude that this type of therapy leaded in improvement in all symptoms. Occlusal splints can be used as first-line strategy in treatment of patients with bruxism.
**Key words:** Bruxism, dental malocclusions, tinnitus, TMD.

**PP-4**
**OXIDATIVE STRESS LEVELS IN CHILDREN'S SALIVA WITH CARIOUS LESION – A SINGLE CENTRE EXPERIENCE**

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**INTRODUCTION:** Saliva as a medium for analysis has been considered to be safe and noninvasive way in order to substitute plasma samples for diagnosis or prognosis of diseases which is especially important when dealing with pediatric population. Current research suggests that in the early stages of the caries development the markers of the oxidative damage would be increased, but also the total antioxidant capacity would be increased in order to reduce the potential oxidative damage. We have employed collection of saliva from children with caries and caries free in order to evaluate the antioxidant capacity of the saliva (SAT)
**MATERIALS AND METHODS**: 40 children who were reported at the Clinic for pedodontics dentistry were included in this study. The children were divided in two groups i.e., control group which was caries free (n=10) and group with caries (study group, n=30). Additionally, the caries group was subdivided into initial caries group (n=13) and moderate caries (n=17). The total antioxidant capacity was evaluated using a FRAS5 spectrophotometric method and the saliva was collected according to the manufacturer manual (SAT test, Italy). All data were statistically analyzed by using the t-test (GraphPad Prism, USA). Differences were considered significant when $p>0.05$**.**
**RESULTS:** The SAT levels were compared between the control and the study group and a statistically significant difference was obtained ($p> 0.05$, t-test). The control study group had higher level of SAT in comparison

with the study group (2360.75 vs 1979.93). Moreover, intergroup comparison, had shown that the total antioxidant capacity of the saliva was decreased in the subgroup with moderate caries when compared with the children with intermediate caries (1111.8 vs 1979.93).
**CONCLUSION:** The higher caries severity decreases the total antioxidant capacity of the saliva. The presented method is fast, non-invasive and can be used in early detection of caries deterioration in children. Hence, the information for antioxidant capacity of the saliva can be useful in caries prevention and periodontitis.

**PP-5**
**CORELATION OF DIFFERENT MAGINAL DESIGN, TYPE OFCEMENT AND FRACTURE RESISTANCE OF ZIRCONIA CROWNS**

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**INTRODUCTION**: One of the major problems of all-ceramic restorations is their probable fracture under occlusal force in posterior region. The aim of the present in vitro study was to compare the effect of two marginal designs (shoulder and chamfer) and two types of cement on the fracture resistance of zirconia crowns.
**MATERIALS AND METHODS:** The stainless steel dies prepared with two different designs (shoulder and chamfer) were used as premolars. 20 zirconia copings with a wall thickness of 0.6 mm were fabricated for each type of preparation and cement. After cementation by two different types of cement (phosphate and glass ionomer), they were loaded on Universal Testing Machine until fracture.
**RESULTS:** The mean values of fracture resistance of copings cemented with phosphate cement for shoulder and chamfer preparation were 899.0 ± 19.7 N and 617.14 ± 25.9 N, respectively. The mean values of fracture resistance of copings cemented with glass-ionomer cement for shoulder and chamfer preparation were 799.0 ± 31.6 N and 522.43 ± 20.9 N, respectively Student's *t*-test revealed statistically significant differences between the groups.
**CONCLUSION:** Based on the results of this study, both marginal designs had high fracture resistance, which are higher than the physiological masticatory force in posterior region. Both can be used, but since the fracture resistance of chamfer preparation is significantly higher than the shoulder preparation, and the phosphate cemented copings showed significantly higher resistance than the glass-ionomer cemented ones within a same type of preparation, chamfer preparation in combination with phosphate cement are recommended for zirconia based restorations from both mechanical and periodontal point of view.
**Key words:** zirconia, tooth preparation, fracture resistance, cement

**PP-6**
**EVALUATION OF PH CHANGES OF DIFFERENT ENDODONTIC SEALERS**

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**INTRODUCTION:** The potential antimicrobial activity of endodontic definitive charges may be related to their alkaline pH value.
**AIM:** The aim was determination of the dynamics and changes of the pH value in different time intervals of the three different types of endodontic fillers: bioceramics, epoxy resin and zinc oxide eugenol.
**MATHERIAL AND METHOD:** The following endodontic materials were used in the trial: calcium silicate (BioRoot RSC, Septodont), epoxy resin (AH-plus, Dentsply) and zinc eugenol oxide (Endoseal, Prevestden pro). Test strips are standard Ph indicator strips (Merck,De) with a scale of values.

**RESULTS:** After the first hour, the pH value at Bio Root is 12.5, so that in 24 hours and 72 hours the pH value decreases to 12, while according to the dynamics index, a rate of decrease of 4% is registered. The pH value of Ah plus in the first hour is 10, so that in 24 hours and 72 hours the pH value increases to 11, while according to the dynamics index, a growth rate of 10% is registered. The pH value of Endoseal registers variations in the first hour, it is 4 (pH less than 7 is acidic), then in 24 hours it increases to 10 (passes into alkaline), according to the dynamics index, a rate of increase of 150% is registered, for yes, in 72 hours the pH value decreased to 8, according to the dynamics index, a rate of decrease of 20% was registered.
**CONCLUSION:** New endodontic bioceramics materials possess high pH values, promising better antimicrobial properties.

**PP-7**
**AN IN VITRO EVALUATION OF LEAKAGE AFTER OBTURATION WITH 3 DIFFERENT SEALERS AND THERMAFIL OBTURATOR**

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**INTRODUCTION:** Obturation techniques require endodontic sealer and gutta-percha, which fills most of the endodontic space. No optimal sealer material was identified to complete the requires of endodontic obturation.
**AIM:** The aim of this study is to evaluate the leakage after obturation with sealer and Termafil obturator.
**MATERIALS AND METHODS:** A number of 30 human one rooted extracted teeth were included in this study. The teeth were preserved in normal saline. The crown at the cement-enamel junction was removed. The canal length and glide path was formed with hand K-file (Dentsply, Maillefer, Ballaigues, Switzerland) No. 15. There were 3 experimental groups according to the sealers. They were instrumented with Pro Taper Gold Rotary system (Dentsply, Maillefer). After the protocol of irrigation with sodium hypochlorite, chlorhexidine gluconate and EDTA the groups were obturated with sealers.1 group: obturated with Endometasone N + Thermafil obturator, 2 group: obturated with Ah plus + Thermafil obturator, 3 group: obturated with GJC + Thermafil obturator. The samples were placed in 2 % methylene blue for 2 days, washed, dried and longitudinally sectioned in a vertical direction.
**RESULTS:** Tested group opturated with Thermafil obturator and Endometasone N showed higher percentage of leakage than others.
**CONCLUSIONS:** The results have shown that all tested group have a percentage of leakage, but the group with glass ionomer sealer in combination with Thermafil obturator has shown the least leakage.
**Keywords:** Ah plus, Endometasone N, GJC, Thermafil opturator, Thermaprep Plus

**PP-8**
**THE BOND STRENGHT BETWEEN COMPOSITE CEMENT AND COMPOSITE ESTHETIC POSTS**

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**AIM:** Well treated endodontic teeth with crown deficiency need to be restored with post and core.
By application of static force to measure the bond strength between composite cement and composite esthetic posts, where the post surface was or was not chemically treated.
**MATERIALS AND METHODS:** For realization of our goals we included 10 composite esthetic posts, all with same diameter 1,6mm. For each group are used five posts from different manufacturer. Group 1 (control group)-without surface treatment, Group 2 (examined group) chemically treated using 37% phosphoric

and silanization. All of the experimental posts were cemented into adequate glass cylinders, using cement Varolink. Afterwards these cemented experimental posts in the composite cement are pulled out from the glass cylinders and are cut out perpendicularly to the post axis in 1,5mm depth using diamond separating disc. By application of static force the breaking force was measured of the experimental post specimens.
**RESULTS:** The average value of the breaking force at the control group varies 10, 96 ± 10, 10 MPa; ± 95%Cl: 4, 53-17,36MPa; the minimal value is 1, 54 MPa and the maximal value is 35,95Mpa. The average value of the breaking force at the examined group varies 17, 27±8,27Mpa; ±95, 00%Cl: 12, 01-22, 53; the minimal value is 5,16Mpa and the maximal value is 23,05Mpa.
**CONCLUSION:** The pretreatment of the composite posts improves their adhesion to the composite cement.
**Key words:** acid treatment, bond strength, breaking force, composite esthetic posts.

**PP-9**
**TREATING OF FULLY EDENTULOUS MANDIBLE USING FOUR COMPRESSIVE IMPLANTS IMMEDIATELY LOADED WITH OVERDENTURE**

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**INTRODUCTION:** Implant-retained dentures have become a successful, popular treatment option to enhance the stability and retention. The aim of this case report is to highlight the benefits of usage compressive implants immediately loaded with overdenture.
**CASE DESCRIPTION:** We are presenting a female patient at the age of 62 without any medical issues. Intraorally, we diagnosed fully edentulous mandible, treated with conventional acrylic denture. All clinical and paraclinical examinations such as 3D CBCT and anatomical studio models were made. We insert four compressive implants with multi-unit platform in the anterior part of the mandible between the mental foramens. Inserted implants are immediately loaded with overdenture. Implants were inserted using full thickness flap with mid-crestal incision. We achieved implant torque between 35N/cm and 45N/cm. The final impression was taken after 72 hours. On the final cast with implant analogs, dental technician used burnout abutments for producing milled bar. The bar and the implant platform are connected by the screw-retention method. After 48 hours throughout the principle of occlusal rims, vertical dimension was registered. In the next phase the wax try-in of the denture was performed.
**CONCLUSION:** This treatment option prevent bone resorption in the anterior part of the mandible. Denture achieves better retention and stability. Patients are getting better oral health related quality of life as a result of improvements in mastication, speech and swallowing.
**Key words:** anodontia, compressive implant, immediate, overdenture.

**PP-10**
**IMMEDIATE IMPLANT PLACEMENT IN EXTRACTION SOCKET WITH PREVIOUS PERIAPICAL INFECTION**

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**INTRODUCTION:** Immediate post-extraction implant placement is a well-accepted protocol due to the preservation of aesthetics, shorter total treatment time, maintenance of socket walls and reduced surgical time. Despite all these advantages, there is a risk of microbial intervention in cases with a periapical lesion which can delay the process of osseointegration.
**AIM:** To evaluate the successes of the immediate implant placement in areas exhibiting periapical lesions,

gaining aesthetics and function by establishing a successful protocol for safe implant embedding.
**CASE REPORT:** Surgical intervention and bone grafting were performed before tooth extraction to resolve the infection and develop the site for immediate implantation, helping ensure the bone volume needed for high primary stability. The reported case has clinically demonstrated that interim endodontic and periapical site preparation, when performed correctly can eliminate the hopeless tooth infection, regenerate bone and facilitate satisfactory immediate implant placement.
**CONCLUSION:** This study is proof of the principle that sockets can heal naturally with immediately placed implants in infected sites and tissue shrinkage can be reduced by utilizing the least invasive surgical and prosthetic protocol.
**Keywords:** Alveolar ridge preservation, Bone graft, Immediate implant placement.

**PP-11**
**MANAGEMENT OF CONGENITALLY MISSING MAXILLARY LATERAL INCISORS: ORTHODONTICS-IMPLANTO-PROSTHETICS**

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**INTRODUCTION:** Missing maxillary lateral incisors is a common developmental anomaly and often creates a major esthetic problem due to their position in the dental arch. Treatment in such cases depends on either creation of space followed by prosthetic replacement or closing the space and replacing the missing lateral incisors by canines. In this report we highlight some of the key factors which should be considered for replacement of missing lateral incisors using single tooth implant.
**AIMS:** This clinical report describes the treatment of a patient with bilateral missing maxillary lateral incisors. An interdisciplinary approach involving Orthodontist, implant surgeon and prosthodontist was used in the treatment.
**METHODS AND MATERIALS:** This clinical report describes the treatment of a patient with bilateral missing maxillary lateral incisors. An interdisciplinary approach involving Orthodontist, implant surgeon and prosthodontist was used in the treatment.
**RESULTS:** At the end treatment, the patient presented with class I canine, normal overbite and overjet, and good facial esthetics with canine protected occlusion.
**CONCLUSION:** When indicated, space opening and replacement of missing lateral incisors with implant supported tooth substitution may provide excellent esthetics and functional results.
**Key words:** lateral incisor, implant

**PP-12**
**PLATELET RICH FIBRIN IN PREPOSTHETIC ORAL SURGERY**

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**INTRODUCTION:** The application of platelet-rich fibrin (PRF) is a completely new approach to tissue regeneration and is gradually becoming a valuable tool in promoting tissue healing in a lot of oral surgical interventions.
**AIM:** The aim of this clinical study was to confirm the effect of PRF on bone and soft tissue defects, during oral surgical interventions.

**MATERIALS AND METHOD:** Patients were treated for pre-prosthetic soft tissue surgery, in whom it was indicated deepening of the fundus with the application of A-PRF membrane covering the periosteum. Postoperatively, symptoms of discomfort, pain, and tenderness were noted, as well as signs of inflammation. Wound healing was rated using the Landry, Turnbull and Howley's index.
**RESULTS:** The analysis of the obtained values for the wound healing index revealed excellent wound healing in all of the patients, with the highest grade 5. The application of PRF enables faster creation of the new soft tissue and conditions for faster rehabilitation of the alveolar ridge.
**CONCLUSION:** Our results reliably indicate the effectiveness, simplicity and economy of the PRF application. This method significantly improves tissue regeneration which is an imperative for successful oral surgical interventions.
**Key words:** platelet-rich fibrin, growth factors, wound healing

**PP-13**
**SIMPLIFIED SURGICAL EXTRACTION PLANNING USING CONE BEAM COMPUTED TOMOGRAPHY**

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**INTRODUCTION:** Immediate post-extraction implant placement is a well-accepted protocol due to the preservation of aesthetics, shorter total treatment time, maintenance of socket walls and reduced surgical time. Despite all these advantages, there is a risk of microbial intervention in cases with a periapical lesion which can delay the process of osseointegration.
**AIM:** To evaluate the successes of the immediate implant placement in areas exhibiting periapical lesions, gaining aesthetics and function by establishing a successful protocol for safe implant embedding.
**MATERIALS AND METHOD:** Surgical intervention and bone grafting were performed before tooth extraction to resolve the infection and develop the site for immediate implantation, helping ensure the bone volume needed for high primary stability. The reported case has clinically demonstrated that interim endodontic and periapical site preparation, when performed correctly can eliminate the hopeless tooth infection, regenerate bone and facilitate satisfactory immediate implant placement.
**CONCLUSION:** This study is proof of the principle that sockets can heal naturally with immediately placed implants in infected sites and tissue shrinkage can be reduced by utilizing the least invasive surgical and prosthetic protocol.
**Keywords:** Alveolar ridge preservation, Bone graft, Immediate implant placement.

**PP-14**
**X-RAY-AN IMPERATIVE IN THE ORAL SURGICAL INTERVENTIONS SURGICAL EXTRACTION OF A REPRESSED ROOT IN A CYSTIC CAVITY**

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**INTRODUCTION:** A cyst is a pathological cavity located in bones or soft tissue, wrapped in a cystic membrane, filled with liquids or mushy content. During their growth, cysts tend to lesion the surrounding bone causing a smaller or larger bone defect. This kind of bone destruction can cause the roots to be pressed higher in the cystic cavity during extraction.
**AIM:** An adequate assessment of the extraction cases with mandatory retro-alveolar or orthopantomography imaging prior to the extraction. The aim is to avoid any complications like compression of fractured roots in

the maxillary sinus, cystic cavity, etc.
**METHODS AND PROCEDURE:** A female patient at the age of 30 was admitted to the University Clinic for Oral Surgery in Skopje, referred by her family dentist, with an extraction of tooth 16 (the upper right first molar) in progress, during which the buccal roots were extracted while the palatal root was pushed into the cystic cavity.
**RESULTS:** The palatal root was removed from the cystic lumen, and a complete cyst enucleation - enucleation in toto - was performed without opening the maxillary sinus. The obtained material was sent for pathophysiological examination. New bone beams are observed in the cystic space 8-12 weeks post-surgery.
**CONCLUSION:** Teeth extraction should be approached seriously, with a prior exhaustive history, intraoral status, and a mandatory X-ray of the patient,
**Keyword:** cysta radicularis, cistectomia, sinus aperta, radix relicta

**PP-15**
**APPLICATION OF PIEZOSURGERY IN EXTRACTION OF IMPACTED CANINES (case report)**

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**INTRODUCTION:** The permanent canines and wisdom teeth are most affected by impaction. Regarding the impacted canines, orthodontic traction and self-transplants are potential treatment options but many factors have to be considered when performing these interventions: patient age, root formation stage and tooth development, angulation, absence of root dilacerations, extensively of the osteotomy etc. In cases where these two treatment options are unpredictable or contraindicated, a surgical extraction of impacted tooth is a method of choice.
**AIM:** The aim is to present a piezosurgery-assisted extraction of impacted canine evaluating advantages and disadvantages when compared to osteotomy with conventional rotatory instruments.
**MATERIALS AND METHOD:** A 14 years-old female was referred to our clinic with complaint for absence of the right maxillary canine. CBCT scan revealed impacted maxillary right canine, Class III by Archer. Due to the unfavorable position and curved root, orthodontic traction treatment was considered as contraindicated, so we proceeded with a tooth removal using piezo surgical device.
**RESULTS:** Piezosurgery showed less damaging of adjacent tissue and less heating during the procedure, shortened postoperative period and patient discomfort, as well as lower inflammatory response.
**CONCLUSION:** Taking into account the advantages over disadvantages of using the piezo approach for extraction of impacted canines, we can recommend this method with full confidence and predictable outcomes.
**Keywords:** impacted canine, piezo surgery, tooth extraction.

**PP-16**
**ASSESMENT OF AESTHETIC EFFECTS AFTER LASER-ASSISTED CROWN LENGTHENING IN THE FRONTAL AESTHETIC REGIONS**

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**INTRODUCTION**: The crown lengthening in the frontal aesthetic regions includes removal of the incorrectly positioned gingiva and restoration of its margins, within acceptable limits for aesthetics. The crown lengthening can be performed much simpler with the help of lasers. Starting from the fact that aesthetic smile is more

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demanded by patients, as well as due to the advantages that laser light has, the main goal was set - to make an assessment of aesthetic effect of laser-assisted crown lengthening in the upper frontal region.
**MATERIAL AND METHOD:** The total number of subjects was 35. In order to fulfill the main goal, adequate questionnaire for subjective assessment of the achieved aesthetics with the help of prosthetic restorations by the patients was done. A small part of the questionnaire was done by the dentists who performed the interventions for assessment of the achieved aesthetics.
**RESULTS:** Over ninety percent of the subjects indicated that with the help of the restorations, an improved aesthetic effect it gained. Most of the subjects subjectively estimated that they had a significant improvement in aesthetics, in contrast equal number of clinical doctors estimated that significant and a moderate improvement in aesthetics were achieved.
**CONCLUSION:** Based on this research, we can conclude that usage of the laser in the clinical crown lengthening procedures is characterized by a significantly improved aesthetics, assessed by the patients and by the dentists.
**Keywords**: aesthetics, aesthetic effect, crown lengthening, laser-assisted crown lengthening

**PP-17**
**ODONTOMA AS AN ETIOLOGICAL FACTOR FOR IMPACTION OF TEETH**

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Odontoma is considered to be the most common odontogenic tumor of the oral cavity. Most odontoma are discovered during routine radiographic investigations and can cause disturbances in the teeth eruption. Here we report two cases, where the odontoma are the main etiological factor for tooth impaction. The aim of this study is to determine the necessity of the removal of the odontoma as a main etiological factor for tooth impaction in order to induce successful tooth eruption. In the first case, a radiography examination using orthopantomogram showed radio-opaque lesions mesial to the impacted right mandibular canine. The lesion was surgically removed under local anesthesia. After mucoperiosteal flap was raised, superficial bone was removed followed by the removal of the calcified structures. The flap was approximated and sutured. In the second case, a radiography examination using CBCT revealed presence of radio-opaque lesions next to the unerupted left maxillary canine. Surgery was performed under local anesthesia. After the primary canine was removed, the odontomas were removed in order to establish eruption path for the canine. The results of this study show that using the appropriate surgical protocols that eliminate odontogenic lesions can establish adequate environment for teeth to erupt. Diagnosis of odontoma at an early age and its surgical excision may prevent eruption disturbances. A careful follow-up of the case, implementing preventive and interceptive orthodontics, if necessary, prevents future malocclusion.
**Keywords:** CBCT, Odontoma, Surgery, Tooth impaction

**PP-18**
**FULL MOUTH REHABILITATION WITH DENTAL IMPLANTS FROM SURGICAL PROCEDURE TO PROSTHETIC REHABILITATION (STEP BY STEP) – CASE REPORT**

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**INTRODUCTION:** This concept was first introduced by Dr. Paulo Malo in 1998 where he successfully treated his first patient. All on 4 concept was applied to both jaws, respectively the maxilla and mandible.
**CLINICAL CASE:** Man, 63 years old, with total anodontia came in our clinic to find a solution about this problem with mastication and esthetic. The case started with general examination, the general condition of the patient was very good, no history with drugs and chronic disease. The case was followed with local examination, no pathological lesions found in oral mucosa. After the examination we continued with panoramic X-ray analysis in which we had important information of bone volume. Next step was 3D planning of dental implants.

**PP-19**
**BONE AUGMENTATION WITH XENOGRAFT AND NON-RESORPTIVE MEMBRANE - CASE REPORT**

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**INTRODUCTION:** Bone grafting is used where we have a defect, i.e. in the place where bone is missing, while enabling the formation of new bone through a process of tissue regeneration. With the progress of implantology, i.e. with the demand for implants, artificial bone is used more and more today. After tooth loss, bone resorption is irreversible, leaving the area without adequate bone volume for successful implant treatment. Bone grafting is the only solution to reverse dental bone loss and is a well-accepted procedure required in one in every four dental implants.
**AIM:** The purpose of this poster presentation is to present the benefits of bone augmentation and non-resorptive membrane on a patient before placing dental implants.
**CASE REPORT:** The patient was a 56-year-old man, healthy, without chronic diseases and without oral diseases, with good oral hygiene. For this purpose, we used plexus anesthesia after that we made an incision and flap to the place where we put the bone and membrane. We have used xenograft artificial bone and non-resorptive membrane from bottis. A xenograft is a bone substitute that has an origin other than human and bovine. They are usually distributed as a calcified matrix.
**CONCLUSION:** In the past period, with the advancement of technology and new sophisticated materials for bone augmentation, problems with bone loss are being solved. Bone augmentation with artificial bone has a significant role in the repair of bone defects in the maxillofacial region.
**Key words:** Augmentation, artificial bone, graft, membrane.

**PP-20**
**THE IMPACT OF COVID-19 ON ORAL HEALTH IN CHILDREN FROM THE MUNICIPALITY OF KRUSHEVO**

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**INTRODUCTION:** The Covid-19 pandemic had a strong impact on people's oral health. Restrictive measures taken to prevent the spread of the virus were the reason for an increase in the DMFT.
**AIM:** The purpose of the study is to determine whether the Covid-19 pandemic has increased patients` awareness of oral health care.
**MATERIALS AND METHOD:** The study included fifth-grade children from elementary school examined in 2018/19 (No=118), 2020/21 (No=77), and 2022/23 (No=122). Our data were statistically processed.
**RESULTS:** In the 2018/19 school year, DMF=179, in 2020/21 DMF=138, and 2022/23 DMF=227. The difference

between carious and extracted teeth, between the three generations, was not statistically significant (p>0.05), but the difference between filled teeth are statistically significant (p<0.01), in the 2018/19 %F=26.82, in 2020/21 %F=48.55, and in 2022/23 %F= 45. 38.
**CONCLUSION:** The restrictive measures during the pandemic contributed to an increase in the DMF index among school children. Awareness of the importance of oral health also increased.
**Keywords:** DMFT, Carious, Filled, Oral health.

**PP-21**
**FUNCTIONAL DIAGNOSE AND TREATMENT BY CMD PATIENTS**

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**INTRODUCTION:** The specialist term craniomandibular dysfunction (CMD), also known as myoarthropathy, is a collective term for a group of clinical symptoms which start in the chewing muscles, the jaw joints and associated structures. Symptoms by CMD are headache, migraine, tinnitus, pain in the back, shoulders and neck, spinal and joint problems.
**AIM:** This article show us the importance of a CMD examination and diagnosis in situations where we have the absence of malocclusion and the importance of orthodontic treatment as part of therapy.
**RESULTS:** After the treatment we had functional and dynamic occlusion met the bite elevation and the patient free of pain.
**CONCLUSION:** In the first view the treatments seems not necessary in course of the static occlusion. If you look at the problem issue by TMJ, you can noticed necessarity of treatment in course of deficiency of function after functional analysis.
**Keywords:** CMD, centric guide aligner, headache

**PP-22**
**INFLUENCE OF MALPOSITIONED TEETH ON PERIODONTAL HEALTH**

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**INTRODUCTION:** Malposition is defined as abnormal location of the teeth/tooth in the dental arch. All types of tooth malposition, such as diastemas, crowding, rotated teeth and incisor proclination can cause early tooth loss due to the formation of periodontal pockets primary because the bone crest tends to follow the cementoenamel junction.
**AIM:** of this study was to identify the influence of malpositioned teeth on periodontal health.
**MATERIAL AND METHODS:** Total number of 60 subjects, aged from 13 to 39 years were examined. Visual inspection was done to identify the type of abnormal tooth position. After that, their periodontal health was assessed via: bleeding on probing, periodontal attachment loss and probing depth.
**RESULTS:** The most common periodontal changes associated with malpositioned teeth were: 100% - gingival bleeding; 68.33 % - gingival recession; 53.33 % - gingival enlargement and 18.33 % chronic periodontitis. We have noticed a significant association between gingival recession and the buccally positioned tooth and between chronic gingivitis and periodontitis and excessive proclination of mandibular incisors, presence of diastema and crowding. (for p<0.05).
**CONCLUSION:** Malposition of teeth have very bad influence of periodontal health on the affected teeth. Most of the patients had need for basic periodontal and orthodontic treatments.
**Keywords:** gingivitis, gingival recession, malposition of teeth, periodontal status, periodontitis

**PP-23**

## IMPORTANCE OF EARLY DETECTION OF POTENTIAL ORAL FOCAL INFECTIONS IN MEDICAL HIGH -RISK PATIENTS

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**INTRODUCTION:** In patients with systemic diseases like end stage of chronic kidney disease, the nature of the disease itself can provoke inflammatory pathological process in the oral cavity to be transformed into an oral focus or act as activating general factor for focal infections.
**AIM:** To emphasizes the necessity of active continued education in the field of general medicine and focal infections.
**CASE PRESENTATION:** A 43 old patient on hemodialysis secondary to systemic lupus erythematosus came to our clinic with a complaint of pain and swelling in the area of tooth 27.Radiographic examination and inspection demonstrated combined perio-endodontic lesion. The bleeding time and platelet count was within the normal limits and the tooth was extracted on non-dialysis day while the patient was receiving Amoxicillin with adjustment dose of 1000 mg once daily. Due to the risk of prolonged bleeding, the wound was closed with a suture. Bitewing radiograph was made and revealed radiolucent area around the apical area of teeth 25 and 26 and the result from their electric pulp testing was negative. It was decided for these teeth to undergo endodontic treatment. Periodontal examination showed 15 sites with depth of periodontal pocket ≥5mm and conservative treatment preceded by antibiotic prophylaxis.
**CONCLUSION:** Oral and radiographic examination and treating patients with systemic diseases should be comprehensive and cautiously. Untimely diagnosis of asymptomatic inflammatory lesions in patients prior to organ transplantation can elevate rate of mortality.

**PP-24**

## SOFT TISSUES AUGMENTATION OF MILLER I AND II RECESSIONS WITH SECOND GENERATION PLATELED-RICHED FIBRIN PRF

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**INTRODUCTION:** The muco-gingival surgical modality SCTG + CAF in the treatment of Miller I and II gingival recessions is considered as a “gold standard” technique for predictive and complete root coverage of the defects, with long-term clinical stability.
**AIM:** To evaluate the clinical efficiency of the CAF + PRF by comparing the values of periodontal clinical parameters measured preoperatively and 1 month postoperatively, as well as by the obtained immunohistochemical analysis of the biopsy material taken from the recipient site.
**CASE REPORT:** A 37-year-old man was referred to our clinic for treatment of localized gum recession Miller II, tooth 31. Preoperative measurements of periodontal clinical parameters were performed: vertical dimension of gingival recession (RD / VGR), periodontal pocket depth (PPD/PD) keratinized / attached gingival level (CAL), keratinized gingival width (KTW / KMW) and gingival thickness (GT) all measured in mm. CAF + PRF therapeutic modality is used to treat gingival defect. One month postoperatively, re-measurements of the values of the periodontal indices were performed and they were compared with ones obtained preoperatively.
**CONCLUSION:** Significant reduction of RD, PPD and CAL values were measured 1 month postoperatively, while the values of KTW and GT were insignificant. PRF is not only an adjuvant and/or replacement of the SCTG, but is also a superior alternative in the surgical treatment of this type of mucogingival defects.
**Keywords:** PRF, platelet concentrates, CAF, Miller I and II, gingival recessions, mucogingival surgery.

**PP-25**
**LIP REPOSITIONING: SURGICAL SOLUTION FOR TREATING GUMMY SMILE: CASE REPORT**

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**INTRODUCTION:** Excessive gingival display over 4mm in the upper jaw is considered as a gummy smile. One of the factors that contribute to gummy smile is upper lip hypermobility.
**AIM:** The aim of this paper is to present a case of treating upper lip hypermobility by surgical lip repositioning.
**MATERIAL AND METHOD:** We are presenting a 38 years old female with excessive gingival display of 6mm as a result of previously diagnosed lip hypermobility. Preoperative, all important measurements were implemented. The patient was medically fit for the surgical procedure under local anesthesia. Surgical area was demarcated with sterile pencil. First partial thickness incision was done at the mucogingival junction from the right second premolar to the left second premolar. Second partial thickness incision was made parallel at approximately 9mm distance above the first incision. Horizontal incisions were connected with vertical incisions, the epithelium was excised and incisions were sutured by continuous interlocking sutures.
**RESULTS:** Lip repositioning is surgical procedure that restricts muscle pull of the upper lip. Postoperative symptoms: mild discomfort, extraoral swelling and mild pain 2-3 days. Sutures were removed after 8 days and measurements showed 2mm of gummy smile.
**CONCLUSION:** Lip repositioning is an effective procedure to reduce gingival display by positioning of the upper lip more coronally. It is important to know that studies show relapses 9 to 12 months after the surgery.
**Keywords:** gummy smile, lip hypermobility, lip repositioning, esthetic surgery.

**PP-26**
**THE USE OF MESENCHYMAL STEM CELLS IN ALVEOLAR BONE REGENERATION**

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**INTRODUCTION: T**o describe and evaluate the efficacy of the use of Mesenchymal Stem Cells (MSCs) in alveolar bone regeneration and investigate the crucial role of the materials used as scaffolds.
**MATERIAL AND METHODS:** Systematic review/ meta-analysis. Reports and systematic reports were evaluated using PubMed, Cochrane library and the AUTh university library, and were categorized in three groups: Tissue- sources of stem cells, differentiation to osteoblasts and scaffolds that can be used. A wide range of randomized controlled trials (RCT) was assessed to estimate the efficacy of this technique.
**RESULTS:** The technique efficacy was estimated through 8 reviews and 14 RCTs, published in 2 meta-analyses, with control groups of specific characteristics, and the results were quite similar. Despite the low quality evidence, the outcomes show a significant effectiveness of MSCs use in alveolar bone regeneration, and encouraging signs that this technique can compete the current ones.
**CONCLUSIONS:** While there are several encouraging findings of the use of mesenchymal stem cells in bone regeneration, research is still on its early stages. Since personalized medicine is the future, MSCs will play a role in bone regeneration. More RCTs. towards this field need to be fulfilled with the long-term results and greater heterogeneity.
**Key words:** alveolar bone regeneration, mesenchymal stem cells, meta-analysis, tissue engineering

**PP-27**
**DENTAL CAVITY FREE POPULATION - FUTURE ASPIRATIONS AND CHALLENGES IN DENTAL MEDICINE**

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**INTRODUCTION:** Dental cavity is a preventable disease but it remains as a major public health concern. The implementation of preventative programs, oral health education and control measures of dental cavity in the pediatric population is of crucial importance.
**AIM:** To determine the index of oral hygiene in children without dental cavity and its correlation with the hygienic-dietary lifestyle of the children.
**MATERIALS AND METHODS:** The research was conducted on 125 children at the age of 12 without dental cavity of which 96 from an urban environment and 29 from rural environment from the municipalities-Karpos and Gjorche Petrov. Clinical examinations were conducting DMFT index using the Klein – Palmer system a questionnaire. Additionally the index of oral hygiene was noted using the OHI method of Greene -Vermillion.
**RESULTS:** The mean value of the OHI index in the group of children from an urban environment was 0,289 while the OHI index value in the group from a rural environment was 0,942. The most of the children in both groups brush their teeth twice a day and consume whole foods such as vegetables and fruits on a regular basis, whilst the children from a rural environment often eat snacks in between meals.
**CONCLUSION:** The correlation between dental plaque, oral hygiene and the consummation of whole foods is obvious, but other factors need to be evaluated.
**Key words:** dental cavity, oral hygiene, healthy foods

**PP-28**
**MENAGAMENT OF AVULSED PERMANENT TOOTH – CASE REPORT**

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**INTRODUCTION:** Dental avulsion is a serious traumatic injury characterized by the complete expulsion of the tooth out of its alveolar socket.
**AIM:** To evaluate the success of existing protocols when dealing with dental avulsion.
**CASE REPORT:** A 9-year-old female patient suffered craniofacial trauma with avulsion and enamel-dental coronary fracture of the upper right central incisor (URCI) and enamel-dentin coronary fracture of the upper left central incisor (ULCI). The avulsed tooth, with an open apex, was transported in a bottle of water and reimplanted after 10 hours. The URCI was carefully cleaned from the non-viable tissue. It underwent extra-oral endodontic treatment with calcium hydroxide (Calcident 450®, Confident Clinical) and later closed with glass ionomer cement (ChemFill®, Dentsply, Sirona). Under local anesthesia, the clot was removed from the alveolus and irrigated with physiological solution. The tooth was reimplanted into the socket and stabilized with semi-rigid splint to adjacent teeth for 4 weeks. The ULCI was sealed with glass ionomer cement and later restored with composite resin (Evetric®, Ivoclar, Vivadent). The patient was medicated with amoxicillin and clavulanic acid for 8 days, being instructed to a soft diet and to avoid sports practice. After 3 weeks the upper right central incisor (URCI) was obturated with Biodentine™, Septodent and restored with composite resin.
**CONCLUSION:** After an 18-month clinical and radiographic evaluation following the injury, it was found that the patient had no symptoms, and the results were functional and aesthetically acceptable.

**PP-29**
**CLINICAL TRIAL OF FLUORIDE INFLUENCE IN PATIENTS WITH CIRCULAR CARIES**

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**INTRODUCTION:** Early childhood caries (circular caries) can occur at an early age, with the eruption of deciduous teeth of the age of 1 to 1.5 years old. This is a multifactorial dental disease that has become a worldwide problem with high prevalence in recent decades.

**AIM:** The purpose of the study was clinical evaluation of the remineralizing effect of the topical treatment, in patients with starting stages of circular caries.
**CASE REPORT:** This study was conducted at the Clinic for Pediatric and Preventive Dentistry, Skopje, and included 117 patients of both sexes, with the starting stages of circular caries. They were aged of 1.5 to 3.5 years old, with a fully formed primary tooth. It was selected 61 patients with initial lesion – white spot and 56 patients with superficial form. From both groups 30 patients were treated with topical fluoride preparation, for a period of six months, applied once a week. The remaining patients had regular check-ups and instructions, but they did not undergo fluoride treatment. After the fluoride treatment, we followed the remineralizing effect, i.e. which initial lesions were reversed or where the intracrystal spaces were filled and the crystals were repaired after six months of topical application. In some patients who were able to satisfy other preventative factors, we were able to obtain a clinical picture of complete remineralization on initial lesion (restitution ad integrum) in vivo, approximately similar to a healthy tooth. How successful the remineralization will be depends on the predominant, protective, or pathogenic factors.
**Keywords:** circular caries, early childhood caries, remineralization, initial lesion, white spot

**PP-30**
**EVALUATION BETWEEN ZIRCONIUM POSTS AND DIFFERENT TYPES OF CEMENTS**

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**INTRODUCTION:** Zirconium post systems have long-lasting and reliable retention of the crown or bridge.
**AIMS:** The aim of this study is to demonstrate the adhesion of zirconium post systems, cemented with different types of cements, Multilink Automix (MLA)- Ivoclar Vivadent, and RelyX Unicem 2 automix (RLX)-3M ESPE.
**MATERIALS AND METHODS:** For this study, we used two types of resin cements: Multilink Automix (MLA)-Ivoclar Vivadent, and RelyX Unicem 2 automix (RLX)-3 MESPE, 80 zirconium post with different diameter d1=1,2; d2=1,35 and d3=1,5 , and extracted incisors. Zirconium posts were applied in every sample and were cemented with two types of resin cements. The Pull-out test, was applied on the prepared samples. For the test we used universal testing machine, and maximum force was measured in newtons (N).
**RESULTS:** The obtained results from the research show us that zirconium post systems are increasingly used in everyday dental practice. The extraction power of zirconium posts cemented with RelyX Unicem 2 Automix cement showed the best results with diameter d3, compared to other diameters d1 and d2.
**CONCLUSION:** It is important that the applied resin cements play a special role in the retention and adhesion of the post system in the root part of the tooth.
**Key words:** Zirconium post, Resin cements, Pull-out test.

**PP-31**
**THE INFLUENCE OF FIXED - PROSTHETIC RESTORATIONS ON PERIODONTAL HEALTH**

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**INTRODUCTION:** Definitive fixed prosthetic restorations are cemented in the patient's mouth and should be in a harmonious relationship with the periodontium and must not affecting these tissues negatively.
**AIMS:** of this research was to determine the prevalence of periodontal changes in people with fixed-prosthetic reconstructions.
**MATERIALS AND METHODS:** The research includes total number of 40 subjects in the age range of 20-75 years with fixed prosthetic structures. For each patient during the dental examination, the following parameters were determined: the depth of the periodontal pockets (PD) and the clinical attachment loss (CAL); the degree of involvement of the furcation; the degree of gingival inflammation and the presence of gingival recession. The examination was performed only on the abutment teeth of the prosthetic reconstructions.
**RESULTS:** The average depth of the periodontal pockets among subjects was 3.98654 ± 0.25045. From data, can be noted that average amount of the clinical loss of attachment was 5.28592± 0.70523. According to this, it is observed that most of the subjects has a moderate form of periodontal disease. Presence of gingival recession is observed in 55% from the subjects. Furcation involvement was observed in 42.5% of the molar abutment teeth.
**CONCLUSION:** Based on the presented data, it can be concluded that there are significant changes on the abutment teeth among patients who have fixed prosthetic constructions.
**Key words:** abutment teeth, furcation involvement, gingival recession, periodontal status, periodontitis

**PP-32**
**BIOLOGICAL CHARACTERISTICS OF MODERN POLYMER MATERIALS IN DENTAL PROSTHODONTICS**

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**INTRODUCTION:** The biological characteristics of modified high-performance polymers are relate to biocompatibility, and therefore the devices produced from these polymers comply with all biological standards and are not cytotoxic.
**AIMS:** of this paper is to evaluate the biological characteristics of modern polymer materials.
**MATERIALS AND METHODS:** In order to realize the main goal of this research, an adequate analysis of the contemporary dental and dental technical literature was done.
**RESULTS:** PEEK (Polyetheretherketone) is a material that does not contain metals, so patients do not have a metallic taste in their mouths, there is no ion exchange and they are not allergenic, and they do not cause allergies in patients who use them. Materials made of PEEK are neutral, so they have low water absorption, and these constructions have color stability.
**CONCLUSION:** The material is biologically stabile and devices made of this material are used, they do not interact with other materials and do not cause side effects. During the production of devices, there is the possibility of achieving a small thickness, and also the constructions are processed and polished easily.
**Keywords:** biopolymers, biological characteristics, biological stability, PEEK.

**PP-33**
**EASY AND PRECISE DENTAL PHOTOGRAPHY**

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# DENTAL MOBILE APP

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**INTRODUCTION:** Digital photography has a huge impact in every segment of our lives and it is very hard to imagine our existence without it. The impact is so big that the phrase "an image is worth a thousand words" now is accepted as a fact. Photography has always been a part from dentistry and the biggest progress was the change to digital photography, which now is a synonym to modern dentistry.
**AIM:** To emphasize the advantages of SMILE LITE MDP in everyday clinical practice.
**MATRIALS AND METHODS:** Today, with the implementation of the modern applications and tools, the digital photography in modern dentistry has become more precise and easy to accomplish. One of those tools is SMILE Lite MDP a small, compact, portable, easy to use accessory that turns smartphones into photo studios allowing the most beautiful dental photos.
**CONCLUSION:** The advantages of SMILE LITE MDP in the dental photography practice are many, it is very simple, fast and extremely useful for documenting and keeping track of the procedure, which is very helpful and beneficial for both patients and dentists.
**Keywords:** dentistry, dental photography, digital photography, documentation, smile lite mdp.

**PP-34**
**CASTLEMAN'S DISEASE: A CASE REPORT OF RARE CERVICAL LYMPHADENOPATHY**

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**INTRODUCTION:** Castleman's disease (CD) is a rare lymphoproliferative disorder of unclear etiology, characterized with lymphadenopathy, and sometimes with multiorgan failure.
**AIMS:** We present a rare case of hyaline-vascular variant of Castleman's disease with giant lymph node hyperplasia.
**MATERIAL AND METHODS:** 21-year old female patient was referred to the University Clinic for Maxillofacial Surgery in Skopje for a surgical biopsy of a large lymph node, localized on the left side of the neck. The biopsied tissue was subjected to histopathology evaluation (HPE) with Immunohistochemistry. In addition, serological and molecular analyzes were performed, as well as laboratory to rule out autoimmune disease.
**RESULTS:** HPE reports from the Institutes of Pathology in Skopje and Ljubljana revealed mutually different diagnoses such as Leishmania lymphadenitis and hyaline-vascular variant of CD ruling out HHV-8 as infectious agent. However, additional serological analysis confirmed HHV-8 as the causative agent. Serological analyzes excluded the existence of lymphadenopathy associated with Leishmaniosis, Brucellosis, AIDS and Toxoplasmosis, also. Molecular analyzes of the tissue itself did not confirm monoclonality of the B- and T-cell receptor thus excluding the existence of Hodgkin and non-Hodgkin lymphoma as patients with HHV8-associated CD are at increased risk of developing malignant lymphomas. Laboratory analyzes did not confirm the existence of an autoimmune disease.
**CONCLUSIONS:** Given that the patient refused treatment with a monoclonal antibody that is recommended in the treatment, the monitoring of disease progression is done with PET-CT periodically.
**Key words:** Castleman's disease, HHV-8, surgical biopsy

**PP-35**
**TREATMENT OF GINGIVITIS CHRONICA AFTER FIXED PARTIAL DENTURE (FPD) – 2 years follow up**

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**INTRODUCTION:** Gingival inflammation and periodontal disease are common complications of fixed dental prosthesis. They can be overcome by good oral hygiene maintenance, but sometimes conservative and

surgical treatments are necessary.
**AIMS:** To present the course of treating a gingivitis in a patient who required replacement of old fixed partial denture (FPD).
**MATERIALS AND METHOD:** 52 years old patient came for replacement of a fixed prosthetics construction with surrounding inflammation and gingivitis. The therapy began with cleansing tartar, subgingival concernments, tender sediments and removal of necrotic cement. We did rinsing with 3% $H_2O_2$ and Betadine 1%. After removing of old crowns (16, 17) surgical therapy was performed with reverse angle sectioning of the gingiva and removal of the pathologically changed tissue - gingivectomy and gingivoplasty. The wound was closed with single interdental stitches. The whole procedure was conducted under the antibiotic therapy. The patient was given directions for maintaining the oral hygiene on higher level.
**RESULTS:** The examination was conducted after 30, 60 days and 2 years after placement of fixed dental prosthesis along with the oral hygiene instructions. After 7 days the stitches were removed and the patient was given new instructions for oral hygiene maintaining. 30 days after the intervention we noticed a significant gingival recovery. After 60 days new crowns were cemented.
**CONCLUSION:** In 2 years follow up we found a complete recovery of the gingiva and perfect healthy pink color. The patient was completely satisfied with performed intervention.
**Keywords:** gingival inflammation**,** gingivectomy, gingivoplasty

**PP-36**
**HUMAN IMMUNE RESPONSE OF ODONTOGENIC RESIDUAL CYST (CASE REPORT)**

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**INTRODUCTION:** Odontogenic residual cysts are the most common odontogenic inflammatory cysts. Immunopathological reactions play a dominant role in their etiopathogenesis. The aim of this study was to determine the presence of T and B lymphocytes cells in the inflammatory infiltrate by applying immunohistochemical method in a patient with residual cyst in the lower jaw.
**CASE REPORT:** A 62-year-old woman with a residual cyst in the lower jaw was admitted to the Oral Surgery Clinic. Enucleation in toto of the cyst was performed and pathophysiological and immunohistochemical analysis were made.
Analysis confirmed the diagnosis of residual cyst in the mandible with the presence of multilayered squamous epithelium beneath which is an inflammatory infiltrate with granulation tissue with predominance of T lymphocytes versus B lymphocytes and rare resident macrophages.
**CONCLUSION:** The use of pathophysiological and immunohistochemical analyzes proves the presence of cellular and humoral immune responses and their role in the etiopathogenesis and development of cyst.
**Key words:** residual cyst, pathophysiological, immunohistochemical, human immune response.

**PP-37**
**MULTIPLE DIASTEMA CLOSURE WITH ONE SHADE COMPOSITE FOLLOWING ORTHODONTIC TREATMENT: A CASE REPORT**

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**INTRODUCTION:** Maxillary anterior diastema is a common aesthetic complaint of many patients. Diastema closure with composite restoration has become one of the most popular treatment option to satisfy patient's expectations.
**AIMS:** The aim of this case report was the multiple diastema closure of anterior teeth with one-shade

composite restorations.
**MATERIALS AND METHODS:** 21 year old female patient attended to our clinic because of the diastemas of maxillary anterior teeth after orthodontic treatment. A diagnostic impression was taken and a silicon index (Zetaplus, Zhermack, Germany) was obtained on the waxed-up cast. The teeth were isolated with a rubber dam. Bond Force II (Tokuyama Dental, Japan) was preferred as the adhesive agent with prior 35% orthophosphoric acid application. One shade composite resin (Omnichroma, Tokuyama Dental, Japan) was used and polymerized with a LED device (Elipar S10, 3M ESPE, Seefeld, Germany) for 20s. Finishing and polishing were performed with polishing disks (OptiDisc, Kerr, ABD) and polishing twists (Twist Dia, Kuraray, Japan).
**RESULTS:** As a result of the initial and 6-month clinical follow-up, it was observed that aesthetic restorations were obtained in terms of color and anatomical form, compatible with the surrounding natural tooth structure.
**CONCLUSIONS:** Composite resins applied in one shade offers advantages of omitting the color selection step and eliminating the possible improper color match. One shade composite resin could be a suitable clinical choice to restore anterior teeth.
**Keywords:** Diastema, one shade, composite, aesthetic.

**PP-38**
**DIRECT POLYETHYLENE FIBER SUPPORTED ADHESIVE BRIDGE APPLICATION: CASE REPORT**

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**INTRODUCTION:** In cases where conventional bridges and implants cannot be applied in treatment of anterior tooth deficiencies, polyethylene fiber supported adhesive bridges are an alternative.
**AIM:** Aim of this case report is to examine rehabilitation of 15-year-old patient's unilateral lateral tooth deficiency with polyethylene fiber-supported adhesive with clinical follow-ups.
**MATERIAL AND METHODS:** Patient who applied to our clinic with congenital lateral tooth deficiency was planned to be treated with polyethylene fiber-supported adhesive bridge until the implant period after intraoral and radiographic examination. Minimal preparation was done to right central and canine teeth. After polyethylene fiber material was wetted with bonding material before application and placed on lingual of teeth with flowable composite. It was polymerized for with LED light device. Lateral tooth was obtained with composite material by incremental technique on placed fiber mesh. Polishing is completed with discs containing aluminum oxide.
**RESULTS:** According to Modified USPHS criteria after 1 week, 6 months, no loss of retention, deterioration in anatomical form, discoloration and caries were found in abutment teeth.
**CONCLUSIONS:** Consequently, it can be said that fiber-supported adhesive bridges are conservative treatment approach in patients whose growth development continues, in cases where implant treatment cannot be applied immediately or traditional bridge prostheses aren't preferred due to need for preparation on teeth.
**Keywords:** Adhesive Bridge, Composite, Polyethylene Fiber, Ribbond

**PP-39**
**NON-INVASIVE APPROACH WITH MTA PULPOTOMY TO SYMPTOMATIC IRREVERSIBLE PULPITIS: A CASE SERIES**

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**INTRODUCTION:** Root canal therapy is often recommended for permanent mature teeth with symptomatic irreversible pulpitis, and though vital pulp treatments are less invasive.

**AIM:** To evaluate the clinical and radiographic outcomes of total pulpotomy treatments with MTA (mineral trioxide aggregate) for the teeth of patients who came to our clinic with severe tooth pain.
**MATERIALS AND METHODS:** Three patients applied to the clinic with severe pain at tooth number 36, 47, and 36. Clinically, percussion and pulp vitality tests of the teeth were positive. The periapical tissues had a normal radiographic anatomical appearance. As a result, the teeth were diagnosed with irreversible symptomatic pulpitis. Carious tissue was removed under local anesthesia. Coronal pulp tissue were removed with a high-speed air motor under water cooling. In about 1–10 minutes, a sterile cotton pellet with 1% sodium hypochlorite was used to stop the bleeding. MTA was applied to the pulp chamber floor with 2-3 mm thickness and temporary filling was applied. The following day, composite restoration was applied over glass ionomer cement base.
**RESULTS:** Spontaneous, chewing, and heat/cold pain were evaluated at 1, 3, and 6-month follow-ups. Patients had no pain. The electric pulp tests of teeth were positive. There was no percussion, sinus tract, or swelling. Radiographs were normal.
**CONCLUSIONS:** MTA pulpotomy may be a good alternative to root canal treatment in symptomatic permanent mature teeth.
**Keywords:** vital pulp treatments, irreversible pulpitis, MTA, calcium silicate based cement, pulpotomy

**PP-40**
## CURRENT MODIFICATIONS OF DENTAL ADHESIVE SYSTEMS FOR COMPOSITE RESIN RESTORATIONS: A REVIEW IN LITERATURE

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Currently, dental caries is prevalent all around the world and composite resins are widely used as restorative materials for its treatment. Adhesion of composite resins to tooth tissues is achieved using a variety of dental adhesive systems and is crucial for the survival of composite resin restorations. Adhesive dentistry began in 1955 by Buonocore and up to date developing technology led to evolution of adhesive strategies from no-etch to total etch (4th and 5th generation) and to self-etch (6th, 7th and 8th generation) adhesive systems. Although adhesive agents allow a more conservative restorative approach, achieving durable bond strength remains a matter of concern mainly due to degradation of the resin-dentin interface in the challenging oral environment. Endogenous collagenolytic enzymes, matrix metalloproteinases and cysteine cathepsins are responsible for the time-dependent degradation of hybrid layer collagen. Additionally, bacterial enzymes, metabolites and oral fluids can penetrate into the resin-dentin interface and may be involved in the degradation of the hybrid layer. Various modifications have been suggested to develop adhesive systems with particular functions to tackle these problems such as incorporation of matrix metalloproteinase inhibitors, antibacterial and remineralizing agents into adhesive systems, as well as improvement of their mechanical and chemical properties. This literature review focuses on the principles, current status and future of the different techniques and materials designed to prevent the degradation of hybrid layer and bond strength

**PP-41**
## ENDODONTIC MANAGEMENT OF THE RADIX ENTOMOLARIS: REPORT OF THREE CASES AND REVIEW OF THE LITERATURE

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**INTRODUCTION:** An anatomical variant of predominantly the mandibular first and less frequently the second and third molar is the occurrence of a supernumerary distolingual root, termed radix entomolaris (RE). RE has clinical significance since it can impose endodontic challenges or be associated with periodontal manifestations.

**AIM:** To present three endodontic cases of mandibular molars with RE, and to review the literature on endodontic management of this anatomical variation.
**MATERIALS AND METHODS:** For the first part, patient records of a private endodontic practice were scanned for RE cases. Three selected cases are presented. For the second part, research of the literature was performed on PubMed database until February 2023 using the keywords "radix entomolaris", "additional root" and "distolingual root". The citation lists of the references that were included were subsequently examined to identify additional relevant studies.
**RESULTS:** Careful clinical inspection of tooth crown, proper angulation and interpretation of pre- operative periapical radiographs, and cone beam computed tomography can facilitate initial diagnosis of RE. Modification of the access cavity to a trapezoidal shape extending distolingually and creation of straight-line access can prevent endodontic complications. The presence of RE is associated with populations with Mongoloid traits. Its dimensions can vary from a short conical extension to a mature root, which can be curved buccolingually. It can be separate from, or partially fused with, the other roots.
**CONCLUSION:**
Awareness of this unusual variant can contribute to successful endodontic treatment.
**Keywords:** Anatomical variations, endodontic treatment, mandibular molars, radix entomolaris

**PP-42**
**AESTHETIC RESTORATION OF PEG SHAPED LATERAL INCISORS WITH COMPOSITE RESIN**

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**INTRODUCTION:** One of the most common forms of localized microdontia affects the maxillary lateral incisors, called "peg shaped lateral".
**AIMS:** In this report, peg shaped lateral incisors and cervical caries lesions were treated with direct composite restorations.
**Materials and Methods:** Intraoral examination of patient who was admitted to our clinic with peg-shape lateral teeth was performed. A wax-up model and a palatal silicone index was created. Shade selection was made with the button technique and the teeth were isolated with a rubber dam. Bond Force II (Tokuyama Dental, Japan) was preferred as the adhesive agent with prior 35% orthophosphoric acid application. A2B shade composite resin (Estelite Asteria, Tokuyama Dental, Japan) was used and polymerized with a LED device (Elipar S10, 3M ESPE, Seefeld, Germany) for 20s. The restorations were then evaluated for occlusal interferences and lateral movements. After obtaining the macro and micro surface morphologies on the buccal surfaces, the restorations were polished with polishing disks (OptiDisc, Kerr, ABD) and twists (Twist Dia, Kuraray, Japan). The patient was motivated for oral hygiene and informed for recall.
**RESULTS:** After the restorative procedure, the patient was satisfied with the appearance. At the 1-month recall, no discolorations or chipping were detected on the restorations.
**CONCLUSIONS:** In regard to the treatment of shape anomalies direct composite resin restorations exhibit excellent physical properties, marginal integrity and esthetics.
**Keywords:** Peg shaped lateral, direct restoration, aesthetic, composite.

**PP-43**
**EFFECT OF FLUORIDE TREATMENTS ON BLEACHED ENAMEL MICROHARDNESS AND SURFACE MORPHOLOGY**

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**INTRODUCTION:** Tooth bleaching is a popular dental procedure which is generally agreed that decreases mineral content, while fluoride treatment enhances enamel remineralization.
**AIMS:** To evaluate the effect of 3 different fluoride treatments on the surface microhardness and morphology of enamel exposed to 2 bleaching agents

**MATERIALS AND METHODS:** 90 enamel fragments from 23 extracted 3rd molars are mounted on acrylic resin supports, polished, randomly divided into 9 groups and exposed to 2 bleaching agents (22% carbamide peroxide [CP] and 38% hydrogen peroxide [HP] and 3 fluoride treatments (0.05% NaF daily, 0.2% NaF weekly and 5% NaF final topical fluoridation). The positive control group were not exposed to bleaching agents or fluoride treatment. The negative control group were exposed to the bleaching agents but no fluoride treatments. All specimens were stored in artificial saliva, and enamel microhardness was evaluated. Surface microhardness data were statistically analyzed using two-way ANOVA and Tukey's post-hoc test and 3 specimens of each group were examined under SEM.
**RESULTS:** The bleached group specimens with no fluoride treatment exhibited lower microhardness than those treated with fluoride with ANOVA analysis. Varying degrees of surface changes were observed among the experimental groups
**CONCLUSION:** Both bleaching agents reduced enamel microhardness while the topical fluoride treatments enhanced it. The surface morphology of the enamel was altered after bleaching and fluoride treatments
**Keywords: bleaching, enamel, fluoride, microhardness, morphology**

**PP-44**
**IMPLANT REHABILITATION AND MYELODYSPLASIA**

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**INTRODUCTION:** Myelodysplastic syndrome is a clonal hematopoietic disorder characterized by dysplasia and ineffective hematopoiesis of one or more bone marrow cell lines. The differentiation with acute myeloid leukemia depends on the number of myeloblasts detected in the circulation.
**OBJECTIVE:**
A value greater than 20% is the limit established for diagnosis and frequently, in one in 3 cases, both has a progression towards the latter serious condition. Depending on the affected cell line, the patient's clinic varies accordingly. One, two or all three lines can be altered, creating complex and varied clinical pictures.
**RESULTS AND CONCLUSION:** A recent systematic review of the literature has shed light on the importance of dental care in these patients by suggesting clinical practice guidelines.
**KEYWORDS:** myelodysplasia, implant rehabilitation

**PP-45**
**ESTHETİC APPROACH IN THE TREATMENT OF MULTIPLE MISSING TEETH AND ANTERIOR DENTAL CROWDING**

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**AIM:** This case report describes the rehabilitation of a patient with missing teeth and anterior dental crowding in the maxilla using full-contour crowns and laminate veneers.
**MATERIAL AND METHOD:** A 43-year-old female patient presented to clinic with problems in her maxillary anterior teeth. As a result of clinical and radiographic examination, it was determined that the teeth numbered 22, 16, and 26 were missing and there were discolored fillings in the anterior region. Intraoral and extraoral photographs were taken during the first session. In the same session, impressions were taken to obtain a diagnostic model. After wax-up application on the models, silicone index was prepared. Tooth number 23 was designed in lateral and tooth number 24 in canine form. In second session, after the mock-up application, the teeth were prepared in accordance with the chamfer margin design. After the digital impression (3shape), laminate veneers were designed for teeth 11 and 12, and full-contour restorations were designed for teeth 21,23,24,25,13,14,15 in computer-aided design software programs (Exocad). After 2 weeks, the permanent restorations were cemented with adhesive resin cement (3M RelyX U200).
**CONCLUSION:** The restorations were aesthetically and functionally satisfactory for the patient and dentist. No complications were observed after 6 months of follow-up.
**Keywords:** aesthetics, all-ceramic restorations, digital workflow, laminate veneer

**PP-46**
**TREATMENT OF WEDGE LATERAL ANOMALY WİTH COMPOSİTE RESTORATİONS: TWO CASE REPORTS**

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**INTRODUCTION:** Cylindrical and pointed tooth anomalies usually seen in maxillary teeth. Treatment with composite restorations is preferred because it's minimally invasive and economical.
**AIM:** This case report aims to examine treatment of 2 patients with wedge laterals with direct composite resin with clinical follow ups.
**MATERIALS AND METHODS:** Intraoral and radiographic examinations of 2 patients who applied to our clinic with wedge lateral teeth were performed. Treatment with composite restorations was planned because its, simple and economical. A common protocol was used in both patients. Teeth were isolated with rubberdam. 37% phosphoric acid (Kuraray, Okuyama, JAPAN) applied to enamel surfaces of threated teeth. Adhesive resin (Clearfil S3 Universal Bond, Kuraray, JAPAN) applied according to manufacturer's instructions. It was polymerized for 10 seconds with LED light device (Elipar S10, 3M ESPE). Composite restorations were made by incremental technique with help of silicone index and normal form was achieved in lateral teeth (Estelite Asteria, Tokuyama, JAPAN). Polished with aluminum oxide-containing polishing discs (Soft-lex,3M ESPE, USA)
**RESULTS:** In the clinical evaluation of the patients at 1week, 3 months and 6 months according to Modified USPHS (United States Public Health Service) criteria for discoloration, marginal harmony, retention, color match and secondary caries, no problem was found.
**CONCLISIONS:** Treatment of wedge laterals with composite resins, when performed with appropriate indication and careful application protocol, can be conservative and aesthetic.

**PP-47**
**TREATMENT OF SMOKER MELANOSIS WITH GINGIVOPLASTY**

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**INTRODUCTION:** Dental esthetic needs of patients are increasing with a greater demand on pleasing look. This demand gets fulfilled not only by having healthy set of dentition but also esthetically improved gingival component. Gingival melanin pigmentation is one of the factors which determine the smile of an individual also it does not usually present as a medical problem, but patients may complain that their black gums are unaesthetic. The etiological factors of gingival melanosis are both local and systemic and include hormones, drugs, smoking, and idiopathic causes. Treatment of gingival melanin pigmentation can be done using scalpel, chemical agents, abrasion, grafts, electro surgery, cryosurgery or lasers.
**MATERIAL AND METHODS:** The 37-year-old female patient was introduced to our department for dental examination. She found the generalized blackish pigmentation of the gingiva in the upper as well as the lower jaw kind of disturbing. The patient's desire was aesthetic gum correction. In the anamnesis taken from the patient, it was learned that she quit smoking 2 years ago. The patient was informed that she should not start smoking in order to maintain gingival health.
**RESULTS:** The hyper pigmented areas of the patient's upper-lower jaw anterior region gingiva were scraped with a Kirkland knife and eliminated until in the healthy connective tissue was found. The denuded connective tissue had been left to secondary intention.
**CONCLUSION:** As a result of 3-month follow-up, gingival pigmentation was found to provide patient satisfaction.
**KEYWORDS:** Dental aesthetic, Gingivoplasty, Melanin pigmentation, Smokers melanosis

**PP-48**

## THE COMPARISON BETWEEN REMOVABLE DENTURES CONSTRUCTED WITH THE SR-IVOCAP AND THE TRADITIONAL SYSTEM

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**INTRODUCTION:** The resin shrinkage during and after the polymerization process is one of the main problems in traditional polymerization. The aim of our study was to evaluate and compare the patient satisfaction regarding the dentures constructed with the SR IVOCAP system and the traditional polymerization.
**MATERIALS AND METHODS:** 70 edentulous patients, aged from 45 to 80 years old, were included in the study. Two different types of removable dentures were constructed. In the first group dentures with the traditional polymerization technique were constructed. In the second group, dentures with the injection molding technique, SR-IVOCAP technique were constructed. The following steps were as follows: preliminary impression with alginate, the construction of the individual tray, the sectional border molding technique, the final impression, the centric occlusion determination, try in phase, denture insertion. In the post-insertion phase patients fulfilled a questionnaire regarding the satisfaction about the stability, ability to chew, the comfort of the patients, the ability to speak and the overall satisfaction of the patients regarding their dentures. The level of satisfaction was as follow: highly satisfied, fairly satisfied, and poorly satisfied.
**RESULTS:** Based on the data from the study, the satisfaction of the patients treated with the injection molding technique was statistically higher compared to the dentures constructed with the traditional technique.
**CONCLUSIONS**: The processing technique of the removable denture construction, do influence on the overall satisfaction of the patients.
**Keywords:** Injection molding, traditional polymerization

**PP-49**

## REGENERATIVE ENDODONTIC TREATMENT OF AN IMMATURE PERMANENT INCISOR WITH APICAL PERIODONTITIS: A CASE REPORT

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**İNTRODUCTION:** This case report describes the treatment of a case with necrotic pulp and chronic apical abscess using regenerative endodontics treatment (RET).
**CASE PRESENTATION:** A 36-year-old patient was referred to clinic with pain association maxillary left central incisor region. Intraoral clinical examination showed that 21 was seen in negative response to sensitivity pulp tests, and the tooth was tender to palpation and percussion. A sinus tract was observed. Periapical radiographic examinations revealed an open apex on the 21.
The diagnosis was pulp necrosis, chronic apical periodontitis, and RET initiated. The access cavity was opened under rubber dam isolation. The canal was irrigated with 20 mL of 1.25% sodium hypochlorite and 20 mL of saline. The calcium hydroxide paste was applied as the intracanal medicament. Four weeks later, the tooth remained asymptomatic. The canal was irrigated with 20 mL of 17% EDTA and 30 mL of saline. Over preparation was performed with #40 h-file to blooding. After ten minutes, the blood clot filled the canal space, a cervical barrier of 3 to 4 mm of MTA was applied over the clot, and the crown was restored with composite resin restoration.
**RESULT:** At the 3 month follow-up, the tooth remained asymptomatic. Periapical radiographs revealed decreased radiolucent area around the apical part of the root.
**CONCLUSION:** Although healing began to be seen at a 3-month follow-up in the present study, clinical randomized controlled trials with long-term follow-up examinations are needed to establish the efficacy of RET in teeth with apical periodontitis.

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**PP-50**
**CHALLENGES IN PROSTHETIC REHABILITATION OF A PATIENT WITH JALILI SYNDROME**

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**INTRODUCTION:** Jalili syndrome is a rare genetic - autosomal recessive condition characterized by the cone-rod dystrophy of the retina and Amelogenesis Imperfecta.
**AIM:** The purpose of this presentation is to present the challenges which prosthodontic team encountered during the prosthetic rehabilitation of a patient with Jalili syndrome.
**CASE REPORT:** A 59-year-old female patient was admitted at the Clinic for Prosthetic Dentistry because of troubles she had with previously made dental bridge in the maxilla and dysfunctional subtotal denture in the mandible. She had spontaneous pain in frontal region in the upper jaw and luxation and pain on tooth 36; knife edge alveolar ridge in the mandible, bilateral posterior cross bite and anterior skeletal open bite. The orthopantomogram revealed dental bridge made on three abutment teeth in maxilla (16, 21, and 26), periapical diffuse lesion on tooth 21, and metal-ceramic crown on tooth 46. The patient had nystagmus, and complained on color vision defects and progressive loss of vision with advancing age.
The dental treatment comprised of removal of previously made dental bridge, extraction of teeth 21 and 36, production of connected metal-ceramic crowns on maxillary first and second molars with attachments, metal-ceramic crown on teeth 46 and pair of metal-based removable partial dentures with artificial teeth with the smallest available dimensions. Artificial premolars were not inserted in the upper denture because of the limited space.
**CONCLUSION:** The prosthodontic treatment restored the patient's anterior open bite, normalized the masticatory function and phonetics, and significantly improved esthetic appearance and social life.
**KEY WORDS:** Jalili syndrome, prosthetic treatment

**PP -51**
**PLEOMORPHIC ADENOMA: A CASE SERIES**

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**INTRODUCTION:** Pleomorphic adenomas (PA) are the most common benign salivary gland neoplasm and they can occur in the submandibular, sublingual and minor salivary glands, often in the parotid gland. PA usually presents as a slowly progressive, asymptomatic swelling. The most common areas in the mouth are the palatal region, upper lip, buccal mucosa, floor of the mouth, lingual tonsil and retromolar regions. It is most common between the ages of 30-60 and in women. Diagnosis of PA is made by radiographic and tissue samples.
**AIMS:** The aim of this case report is to present cases of PA in different regions.
**CASE REPORT:** Case 1: A 58-year-old female patient without any systemic disease was applied to our clinic with complaints of swelling and pain in the retromolar region. Excisional biopsy was performed under local anesthesia. The lesion was diagnosed as PA as a result of histopathological examination. Case 2: A 34-year-old male patient without any systemic disease was applied with the complaint of swelling in the palatal region. The lesion was removed under local anesthesia and the pathology result was PA.
**CONCLUSION:** If no medical intervention is made in the early stages, PA can reach very large sizes and transform into a malignant form. PA in the minor salivary glands is most common in the palate, upper lips, and buccal mucosa and is usually asymptomatic and painless.
**Keywords:** Pleomorphic adenoma, Salivary glands, Tumor, Swelling

**PP-52**
**ODONTOMA: A CASE REPORT**

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**INTRODUCTION:** Odontomas are the most common odontogenic tumors in the oral cavity and are considered hamartomas, unlike true neoplasms. Odontomas can be seen in at any age range and regions of the dental arches. They are classified as compound and complex odontomas according to their radiographic and microscopic features. Compound odontomas are more common than complex odontomas. Although the etiology of odontomas are not known exactly, it is thought that trauma, infection and genetic factors may be effective. Compound odontoma is presented in this case report.
**CASE REPORT:** An 18-year-old female patient without any systemic disease was admitted to our clinic with the complaint of crowding of her teeth. The panoramic radiograph showed that 35 number tooth was impacted; a lesion area with multiple radiopaque masses, surrounded by a radiolucent border, with regular borders, was detected between the roots of teeth 42 and 43. Based on the radiographic findings of the lesion, the patient was referred to the Oral and Maxillofacial Surgery clinic with a preliminary diagnosis of compound odontoma. After excisional biopsy, lesion was sent for histopathological examination which confirmed the diagnosis of compound odontoma
**CONCLUSION:** Compound odontoma is asymptomatic, painless and growing slowly. They may be detected by chance on a routine radiograph of a missing tooth.
**Keywords:** compound odontoma, asymptomatic, radiopaque

**PP-53**
**USE OF DENTAL IMPLANTS IN CHILDREN AND ADOLESCENTS, A REVIEW OF THE LITERATURE**

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**INTRODUCTION:** Treatment with dental implants is considered a ubiquitous technique for handling tooth loss. There is a growing interest into using implants for some special cases of growing patients. Specifically, it is claimed that implants can be used in cases of oligodontia or anodontia caused by genetic disorders (such as ectodermal dysplasia), severe injuries and surgical interventions.
**AIMS:** To review the literature about the use of dental implants in children and adolescents.
**MATERIALS AND METHODS:** A literature review was performed using the electronic databases: PubMed, Google Scholar, Embase and Scopus.
**RESULTS:** There are insufficient studies to support the effectiveness and longevity of the use of implants in children and adolescents. Their placement is sometimes recommended only for patients with severe oligodontia or anodontia. The preservation of the already deficient alveolar ridge may be the most important reason for using dental implants in a growing patient. Placing implants in the anterior area of the mandible is related with higher success rate, compared with the posterior area or the maxilla, were the use of «mini» implants appears as a possible, provisional, treatment solution.
**CONCLUSIONS:** The use of dental implants in growing patients is a promising new treatment approach but a challenging one. In all cases the recommended age for implant placement is decided per case according to location, gender and skeletal maturity of the pediatric patient.
**Keywords:** dental implants, children, adolescents, prosthetic rehabilitation

**PP-54**
**PROSTHODONTIC TREATMENT OF MAXILLARY LATERAL INCISORS AGENESIS: A CASE REPORT**

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**INTRODUCTION:** Ti-base zirconia abutments combined with all ceramic restorations on implants are aesthetic treatment options for lateral incisor agenesis.
**AIM:** The aim of this case report is present the treatment of a patient with congenital lateral teeth deficiency with feldspathic all-ceramic single crowns applied on implant-supported custom-made Ti-base zirconia abutments.
**MATERIALS AND METHODS:** Oral and radiographic examinations of the 20-year-old male patient who applied to our clinic with congenital lateral teeth deficiency were performed. It was decided to place two implants and make all-ceramic crowns. 3.0mm-11.5mm two implants were surgically placed. After 3-months osteointegration period, the prosthetic treatment started with the digital scan of an implant-specific scan body which provided the 3D registration of the implant. A software program was used to design and fabricate. Owing to the output profile of the implants, the screw hole will remain in the buccal, so customized Ti-base zirconia abutments were prepared. Zirconia abutments were cemented with resin cement to Ti-base with 1.5mm gingival height and 3mm abutment height. Temporary crowns were prepared by using 3D printer. It was waited for a few weeks for soft tissue remodeling. Temporary crowns were removed. Feldspathic-ceramic crowns were prepared and cemented.
**CONCLUSION:** Successful results can be achieved with custom-made Ti-base zirconia abutments and feldspathic-ceramic restorations.
**Keywords:** Feldspathic ceramic, lateral agenesis, intraoral scanner, Ti-base zirconia abutment

**PP -55**
**SEM/EDX CHARACTERISATION OF ENAMEL SURFACES POLISHED WITH THREE TYPES OF POLISHING MATERIALS-PRELIMINARY RESULTS**

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**INTRODUCTION:** Professional oral hygiene, which include polishing of the supragingival surfaces, is integral part of periodontal diseases treatment. Recent years different air polishing powders are introduced.
**THE AIM:** of the present study is to evaluate the morphology of enamel surface after polishing with polishing paste and two air polishing powders – sodium bicarbonate and erythritol.
**MATERIALS AND METHODS:** 9 extracted incisors are randomly divided in three groups. The enamel is polished with polishing paste and brush (group A), sodium bicarbonate polishing powder (group B) and erythritol polishing powder (group C). Teeth are prepared and scanned on scanning electron microscope (SEM) with energy dispersive spectroscopy (EDX).
**RESULTS:** The SEM micrographs demonstrate deep surface scratches, remnants of biofilm and polishing material in group I. Group II reveals fine scratches and pores on the enamel surface without biofilm deposits, whereas group III demonstrate finer scratches and small amount of pores without biofilm remnants. In addition the wt% of the surface elements shows varieties which corresponds with decreasing of Ca/P ratio of samples where air-polishing is performed compared to the sample treated with conventional polishing.
**CONCLUSION**: With the limitation of the present study it could be concluded that air polishing is less invasive for the surface morphology but there is alteration of the Ca/P ratio in the inorganic components of hydroxyapatite. Further examinations should be performed to clarify the observed results.

**PP-56**
**FREE GINGIVAL GRAFT: A CASE REPORT**

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**INTRODUCTION:** Gingival recession occurs as a result of migration of the free gingiva towards the apical cement-enamel junction. As a result of gingival recession, patients may experience problems such as sensitivity and aesthetics. Free gingival graft is the most preferred method to increase the attached keratinized tissue band.
**AIMS:** In this case report, free gingival graft application is presented to increase the insufficient keratinized tissue band.
**MATERIALS AND METHODS:** A 12-year-old, systemically healthy, female patient applied to our clinic with the complaints of sensitivity in tooth 31 and pain in the gingiva on brushing. A free gingival graft was planned in order to maintain soft tissue continuity and increase the insufficient keratinized tissue band. After local anesthesia, the half thickness flap was elevated. A free gingival graft taken from the palatal region was placed on the recipient area. The sutures providing the adaptation and stabilization of the graft were placed. Periodontal paste was placed to protect the wound area during the healing period. Sutures were removed 10 days after the operation.
**RESULTS:** Free gingival graft is an application with a high success rate in increasing the keratinized gingiva and at the same time covering the root surface.
**CONCLUSION:** The patient's sensitivity and aesthetic complaints can be eliminated by providing root surface coverage in the area with gingival recession.
**Keywords:** Free gingival graft, gingival recession, tooth sensitivity

**PP-57**
**EVALUATION OF CONTENT RELATED TO PERIODONTAL DISEASES UPLOADED TO THE VIDEO SHARING SITE YOUTUBE**

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**INTRODUCTION:** The aim of our study is to evaluate the accuracy and reliability of the information provided by the videos about periodontal diseases on the YouTube video platform, which is a public internet information resource.
**MATERIAL AND METHODS:** A video search was conducted on the YouTube video platform with three keywords 'gingivitis', 'gum disease' and 'periodontitis', which were determined using the Google Trends application. After the videos were ordered according to the number of views, a total of 300 videos were examined, including the first 100 videos for each term. After applying the exclusion criteria, the remaining 117 videos were evaluated. The interaction index and viewing rates of the videos were calculated. The audio-visual quality of the videos was rated as good, medium and poor. The videos were scored according to 10 categories. (Classification, etiology, clinical findings, radiological findings, prognosis, maintenance, treatment, cost and anatomy). Statistical analyses were performed using the Shapiro-Wilks, Kruskall-Wallis, Dunn and Bonferroni corrected Z tests
**RESULTS:** It was found that 17, 7% of the videos were published in 2020, 29, 3% were uploaded by profiles in the 'other' category, 61, 7% were published in the USA country and 44% were related to the term 'gum disease'. When the videos were evaluated according to the knowledge level points, it was determined that only two videos could get 9 points, while there was no video with full points. A statistically significant difference was found between the median values of the information level score.

**PP-58**
**THE USE OF MESENCHYMAL STEM CELLS IN ALVEOLAR BONE REGENERATION**

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**INTRODUCTION:** To describe and evaluate the efficacy of the use of Mesenchymal Stem Cells (MSCs) in alveolar bone regeneration and investigate the crucial role of the materials used as scaffolds.
**MATERIAL AND METHODS:** Systematic review/ meta-analysis. Reports and systematic reports were evaluated using PubMed, Cochrane library and the AUTh university library, and were categorized in three groups: Tissue- sources of stem cells, differentiation to osteoblasts and scaffolds that can be used. A wide range of randomized controlled trials (RCT) was assessed to estimate the efficacy of this technique.
**RESULTS:** The technique efficacy was estimated through 8 reviews and 14 RCTs, published in 2 meta-analyses, with control groups of specific characteristics, and the results were quite similar. Despite the low quality evidence, the outcomes show a significant effectiveness of MSCs use in alveolar bone regeneration, and encouraging signs that this technique can compete the current ones.
**CONCLUSIONS:** While there are several encouraging findings of the use of mesenchymal stem cells in bone regeneration, research is still on its early stages. Since personalized medicine is the future, MSCs will play a role in bone regeneration. More RCTs. towards this field need to be fulfilled with the long-term results and greater heterogeneity.
**Key words:** alveolar bone regeneration, mesenchymal stem cells, meta-analysis, tissue engineering

**PP-59**
**THE USE OF MOUNTHGUARDS IN CHILDREN**

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**OBJECTIVE:** To investigate the frequency of use of mouth guards in children aged 10-15 who are training contact sports - basketball, handball and mixed martial arts (MMA) in the territory of the municipality of Podgorica.
**MATERIAL AND METHODS:** 51 athletes participated in the research, 37 male and 14 female (22 basketball players, 21 handball players and 8 MMA athletes). Respondents filled in questionnaire, which contained 4 questions about basic data, 7 questions about sports and training and 22 questions about the use of mouth guards and tooth injuries.
**RESULTS:** The average training length of the respondents is 3 years, and they train 6 times on average per week. The majority of athletes (44 respondents, 86.2%) do not use mouth guards during training and matches; and the main reason is lack of information (78.4%).The same percentage (78.4%) doesn't know why they don't use a protector, while much less common reasons are the discomfort of the protector (3.9%) and finance (17.7%). Respondents who use mouth guards (7 respondents) have semi-finished protectors, of which only one child uses the protector from the very beginning of training. Eighteen respondents (35.2%) had a tooth injury during training or a match, most often it was a fracture of the tooth crown (75.3%).
**CONCLUSION:** Most athletes do not use mounthguards in training and matches, but the basic ones the reason is lack of information about their importance.
**Key words:** children, sports, mounthguards, teeth injuries

**PP-60**
**ANTIBIOTIC USAGE IN PEDIATRIC DENTISTRY: A REVIEW**

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**INTRODUCTION:** The use of Antibiotics in pediatric dentistry is a common practice to treat infections that can occur during or after dental procedures. The inappropriate use of antibiotics can lead to the development of antibiotic resistance, which can have serious consequences for public health. Aim: The aim of this review is to examine the current recommendations on the use of antibiotics in pediatric dentistry and to provide guidance on the appropriate indications for prophylaxis for certain medical conditions or treatment of dental infections.
**MATERIALS AND METHODS:** This study reviews the current literature from the year 2000 to 2021. An electronic literature search was conducted in PubMed, Scopus, and Google Scholar databases. Results: Antibiotics should be prescribed prophylactically to prevent infection in high-risk patients (children with congenital heart disease, prosthetic cardiac valves or compromised immune system). Clinical situations in pediatric dentistry that indicate antibiotic usage include acute apical abscess with systemic symptoms, cellulitis, acute necrotizing ulcerative gingivitis, aggressive periodontitis and tooth replantation. The dose and duration, should be based on the infection type, the age and the presence of any allergies or medical conditions.
**CONCLUSIONS:** The appropriate use of antibiotics in pediatric dentistry is essential to prevent the development of antibiotic-resistant bacteria. Antibiotics should only be prescribed when there is an active infection or when prophylaxis is necessary to prevent a serious medical condition.
**Keywords:** Antibiotics, apical abscess

**PP-61**
**TREATMENT OF A SKELETAL CLASS II PATİENT WİTH TWİN-BLOCK APPLİANCE: A CASE REPORT**

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**INTRODUCTION:** One of the treatment options for skeletal Class II malocclusion due to mandibular retrusion in growing patients is the twin-block appliance.
**AIM:** The aim of this case report is to present fixed orthodontic treatment following functional treatment of a skeletal Class II patient with a twin-block appliance.
**MATERIAL AND METHOD:** A female patient with a chronological age of 11 years 8 months applied to our clinic with the complaint of dental crowding and retrognathic mandible. According to the hand-wrist radiograph, the patient's growth stage is S. In the clinical examination of the patient, Class II molar and canine relationship was observed and the overjet increased. As a result of the cephalometric analysis, it was determined that SNA: 77.5°, SNB: 68.7°, ANB: 8.8° and GoGnSN: 34°. It was planned to apply a twin-block appliance containing an expansion screw. After functional therapy, non-extraction fixed orthodontic treatment was applied.
**RESULTS:** Twin-block appliance and fixed orthodontic treatment period is 3 years 1 month in total. Post-treatment cephalometric analysis values are SNA: 77.8°, SNB: 72.4°, ANB: 5.3°, SNGoGn: 31.5°. Mandibular advancement with functional treatment improved the soft tissue profile of the patient. An ideal occlusion was achieved by obtaining Class I canine and molar relationship with fixed mechanics after twin-block appliance.
**CONCLUSION:** During the pubertal growth period, the treatment of Class II malocclusion can be performed effectively with the twin-block appliance.
**Keywords:** Class II, Functional Treatment, Mandibular Retrusion, Twin-Block

**PP-62**
**VOLUMETRIC AND CBCT ANALYSIS OF SOLO PRF vs STICKY BONE SOCKET PRESERVATION**

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**INTRODUCTION:** Wound healing after tooth extraction ends with the phases of residual alveolar bone remodeling and modeling. For maintaining the residual alveolar ridge volume, many graft materials and bone substitutes are used. A-PRF as an autologous blood derivate is widespread used in the last years, used as a solo graft material, or with other bone grafts or bone substitutes for socket preservation methods. Advantages of PRF vs PRP are in the preparation processes with no anticoagulants used, but only by blood centrifugation.
**OBJECTIVE:** Evaluation of the two methods used for preservation of the hard and soft tissues volume, bone quality and the impact of A-PRF on postoperative morbidity.
Material and method: Two case reports are described in this s
tudy. First case is socket preservation with A-PRF in combination with xenograft, and second case presents the usage of A-PRF as a solo graft material.
**RESULTS:** Collected data from the clinical measurements of alveoli width and height, interdental papilla height, and bone density from CBCT are noted in the tables.
**DISCUSSION:** PRF like a graft material with his structure and properties is useful for socket preservation. Volume preservation and bone density of post extraction alveoli is noticeable in the two cases, with better results in the combination of A-PRF and xenograft. Also there is no post-operative morbidity in both cases.
**CONCLUSION:** Therefore, we can recommend A-PRF like a solo graft material, or in combination with particular grafts.
**Keywords:** A-PRF, xenograft, CBCT, socket preservation, guided bone regeneration

**PP-63**
**EFFECT OF NONSURGICAL PERIODONTAL THERAPY ON TNF-α AND IL-6 SERUM LEVELS IN OBESE AND NORMAL WEIGHT SUBJECTS**

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**INTRODUCTION/AIM:** The aim of this study was to investigate nonsurgical periodontal therapy (NSPT) effect on TNF-α and IL-6 serum values in obese and normal weight subjects.
**MATERIAL AND METHODS:** The study, conducted at the Faculty of Medicine in Foča University East Sarajevo, included 4 groups of systemically healthy subjects (N=60). Group I consisted of obese subjects affected by periodontitis (OP), group II of normal body weight subjects affected by periodontitis (NP), group III obese subjects with healthy periodontium (OH) and group IV normal body weight subjects with healthy periodontium (NH). Body mass was defined by body mass index. Periodontal health and oral hygiene were evaluated by Plaque index (PI) by Silness-Löe, Bleading index by Mühlemann- Son (BI), probing depth (PD) and clinical attachment level (CAL). Serum values of TNF-α and IL-6 were measured and periodontal health and oral hygiene were evaluated at the baseline for all subjects and three months after the therapy in periodontitis patients. Periodontitis patients underwent NSPT at the baseline.
**RESULTS:** At the baseline, statistically significant difference was confirmed for the TNF-α values between OP and NH ($p<0.001$), NP and NH ($p<0.05$) and OH and NH ($p<0.05$). Three months after the therapy, statistically significant differences in TNF-α and IL-6 serum values compared to baseline in OP and NP and the difference between OP and NP in TNF-α and IL-6 serum values were not observed.
**CONCLUSION:** Periodontal therapy improved periodontal health and oral hygiene status, however did not significantly affect TNF-α.

**PP-64**
**PROSTHETİC REHABILITATION OF A PATIENT WİTH DİGİTAL WORKFLOW: A CASE REPORT**

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**AIM**: The purpose of the present case report was to prosthetic rehabilitation of the patient with extensive damaged, endodontically treated teeth and malposed dental implants using full digital workflow.
**CASE PRESENTATION:** A 35-year-old female patient was referred to our clinic for the rehabilitation of single-tooth deficiencies in the maxillary and mandible arches and also insufficient appearance and chewing functions of damaged teeth. After the radiographic and clinical examinations, it has been determined to restore the case with teeth-implant-supported fixed partial dentures. Thus, 2 dental implants have been placed for 16 and 36 numbered teeth. After the osseointegration process, a cement-retained angled (25°) abutment has been placed and torqued over the 36 numbered implant, excessively damaged and endodontically treated 15, 24, 25, 26 numbered teeth prepared using chamfer margin configuration. For all teeth, abutment and dental implants, digital impressions have been obtained using an intra-oral scanner and recommended scan bodies. Screw and cement-retained crowns were digitally designed, milled using a multi-layered monolithic zirconia disc and cemented after the required adjustments.
**RESULT:** The patient was reasonably satisfied and had no complaints during the 6 months follow-up.
**Keywords:** Digital workflow, malposed dental implants, multi-layered monolithic zirconia, prosthetic rehabilitation

**PP-65**
**ALPORT SYNDROME AND ORAL MUCOUS MEMBRANE PEMPHIGOID: A CASE REPORT**

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**INTRODUCTION:** Alport syndrome is a rare disease of ultrastructural collagen abnormality responsible for 0.2% of all causes of end-stage renal disease. Female participants are rarely affected except in cases of lionization of sex chromosomes in an X-linked inheritance, which is the most common type (85%). In the rarer autosomal recessive AS or autosomal dominant AS, both sexes are equally affected. Women are less frequently affected with hearing loss.
**AIMS:** The aim of this poster presentation is to report a case of Alport syndrome with concurrent manifestation of oral mucous membrane pemphigoid. Materials and Methods: A female patient, 26 years old, came to the Department of Oral Medicine/ Pathology, Dental School, Aristotle University of Thessaloniki, complaining about pain and a burning sensation of her right cheek. Her medical history revealed the diagnosis of Alport syndrome seven years ago and a kidney transplantation which took place a year ago.
**RESULTS:** The clinical examination revealed an ulcer, partially covered by a pseudo membrane, on the oral mucosa of the right cheek, surrounded by an erythematous border. A biopsy was taken and the histopathological examination showed mucous membrane pemphigoid. After communicating with the attending nephrologist, the prescription of methylprednisolone was decided.
**CONCLUSIONS:** The thorough medical history, the detailed clinical investigation, the biopsy of the lesion and finally the collaboration of different dental and medical specialties constitute necessary prerequisites of a successful treatment.

**PP-66**
**THE MANAGEMENT OF A PATIENT WITH FRANK-TER HAAR SYNDROME**

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**INTRODUCTION:** Frank-Ter Haar syndrome (FTHS) is a rare hereditary disease inherited as an autosomal recessive trait. This case report aims to present the dental management of a patient with FTHS.
**MATERIQALS AND METHOD:** A 6 years old female pediatric patient, previously diagnosed with FTHS referred to the department of pedodontics with a complaint of pain and swelling in the right mandibular molar region. Extraoral examination revealed full cheeks, prominent forehead and eyes, micrognathia, and deformities of the fingers. Intraoral and radiographic examination revealed multiple impacted teeth, microdontia, gingival hypertrophy, hypodontia. Pain upon palpation and extraoral fistula at the right mandibular molar area were also observed. The patient was surgically treated under general anesthesia to remove the impacted deciduous second molar tooth and the adjacent permanent first molar tooth. After 3 months, the patient was again referred to the clinic with the complaint of pain and swelling in the left mandibular molar region. After the radiographic and clinical examination, the impacted deciduous second molar tooth was extracted under general anesthesia. The healing process was uneventful after the surgeries. The patient is kept under control at 3-month intervals.
**CONCLUSION**: The awareness of this rare syndrome on the part of dentists is crucial since this condition involves multiple dentomaxillofacial anomalies. Radiologic examinations are also important for early diagnosis and to improve oral health of patients with FTHS.
**Keywords:** Dental anomaly, Frank-ter Haar, Impacted tooth, Syndrome.

**PP-67**
**MOLAR INCISOR HYPOMINERALIZATION: A CASE REPORT**

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**INTRODUCTION:** Molar incisor hypo mineralization (MIH) is the hypo mineralization of one to four permanent first molars, usually associated with affected incisors, caused by many factors such as genetics and medication, however the real cause is still unknown. Most commonly reported clinical problems related with MIH are post-eruptive enamel breakdown, extreme teeth sensitivity, local anesthesia problems, and aesthetic problems and finally tooth loss.
**OBJECTIVE:** The management of MIH can be done by adhesive or fissure sealants for the molars, micro abrasion and bleaching for the incisors, composite resin restorations, glass ionomer
cement (GIC), amalgam restorations, stainless steel crowns, and extraction in very severe
cases. In the intraoral examination of a seven year old patient, lower right first permanent molar and upper right first permanent molar teeth were diagnosed with hypo mineralization. As treatment
method, hypo mineralized teeth were restored using prefabricated metal crowns.
**RESULTS:** The presence of MIH not only requires the pediatric dentists to identify problems at the earliest opportunity, but also clarify the problem and the treatment methods to the parents and child.
**CONCLUSION:** Patients with MIH-affected teeth suffer from number of problems such as poor esthetics especially if anterior teeth affected, food retention, and higher sensitivity of the exposed dentin. This condition can lead to rapidly progressing caries which increase the risk of losing teeth, and hence it is necessary for dentists to diagnose this condition at the earliest and treat appropriately.

**PP-68**
**TREATMENT OF THUMB SUCKING HABIT BY USING HABIT BREAKING APPLIANCE: A CASE REPORT**

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**INTRODUCTION:** The most common harmful habits in children are thumb sucking, mouth breathing, and tongue thrusting. The most commonly encountered malocclusions associated with these habits are open bite and crossbite problems. Habit breaking appliance are generally movable, but it can be made fixed in patients with poor cooperation.

**AIM:** Does habit breaker as an appliance can be used to eliminate habits such as incorrect swallowing, tongue sucking, and thumb sucking, or prevents an object from entering between the teeth with its protrusions.
**MATERIALS AND METHOD:** In this case presentation, a habit breaker appliance was made to prevent tongue thrusting in an 8-year-old patient, and after a 4-month period, it was observed that the existing habit had been eliminated.
**CONCLUSION:** Habit-breaking appliances used during the primary and mixed dentition periods help children have a healthy occlusion during their permanent dentition period,reducing the need for advanced orthodontic treatment.

**PP-69**
**ENDODONTIC TREATMENT OF MAXILLARY FIRST MOLAR TOOTH WITH FRACTURED INSTRUMENT**

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**AIM:** Instrument fracture within the root canal during root canal treatment is an undesirable complication in endodontics. There are several recommended methods to retrieve separated instruments.
**MATHERIAL AND METHODS**: A 20 years old female was referred to our clinic with dentoalveolar abscess. Orthopantomography showed a separated endodontic instrument in the middle of the palatinal canal on the maxillary first molar tooth and associated periapical lesion. Non-surgical endodontic retreatment was planned. Broken file was successfully retrieved by using endodontic instruments (Hedsrom file and K file) and irrigation with NaOCl at first session. After the instrument removed the canal, the tooth was prepared in working length and root canals filing with calcium hydroxide. After resolution of the abscess, the endodontic treatment was completed at the second appointment.
**RESULT:** The patient was recalled at the end of six months. She was satisfied by the treatment and the tooth was clinically asymptomatic. A six months follow-up radiographic examination revealed progressive involution of periapical lesion.
**CONCLUSION:** The teeth with have broken instrument, abscess and periapical lesion may be successfully treated with non-surgical endodontic retreatment.

**PP-70**
**IDENTIFICATION OF BITEMARK-FORENSIC SIGNIFICANCE**

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**INTRODUCTION:** The tooth is the most solid part of the human body and despite its various influences and habits resists change by providing information about the individual. The skin is susceptible to bite mark. It has the ability to self-regenerate and change on the skin resulting from the bite mark very quickly and often changes are overlooked on sightings. Therefore the thorough examination of the victim is necessary.
**MATERIALS AND NETHOD:** When investigating bite marks, processing involves: finding bite mark left on food or the body, photographing bite mark, taking a swab with a cotton swab or removing part of the skin to obtain the blood of the perpetrator from the remnants of saliva at the site of the bite mark. Two prints, then make two plaster models and with the help of transparent paper and indigo cross out the biting edges. It is best to engage a dentist or dental technician to make comparative traces of the suspects. The analysis and expertization of bite mark traces include: macroscopic analysis of the morphological features of the imprinted teeth, histological analysis of the epidermis from the bite mark, histochemical methods of extracting the enzyme from saliva from the bite mark, biochemical procedures for extracting DNA from saliva and immunological procedures.
**RESULTS:** The human bite mark is an elliptical or oval injury with the characteristics of the teeth of the following distribution: upper extremities-33%, face-26, 6%, chest-20%, back-13.3%.And due to discoloration during hemoglobin decay, they are difficult to analyze.

**CONCLUSION:** The identification of the human bite mark is analyzed by forensic dentists. The biggest problem with the underdevelopment of this method is the small number of educated staff for dental identification.
**Key words:** bite mark, bite mark identification, forensic dentists, skin, saliva

**PP-71**
**MANAGEMENT FOR DENTAL TREATMENT OF THE SPECIAL NEEDS PATIENTS IN CLINICAL CENTRE OF MONTENEGRO**

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**INTRODUCTION:** People with disabilities and other special needs present unique challenges for oral health professionals in planning and carrying out dental treatment. There are many terms used to describe people who have trouble receiving dental treatment in a routine manner. These include “people with special needs”, “children with special health care needs”, “people with disabilities”, “people with complex needs”, and other terms.
**AIM:** The aim of this work is to present the procedure for dental treatment of persons with disabilities in Clinical Centre of Montenegro. The Clinical Center of Montenegro is the only public health institution in Montenegro that treat patients of special needs under general anesthesia.
**MATERIAL AND METHODS:** Present organization protocol for providing dental treatment of 66 patients in year 2022.
**CONCLUSION:** 53 children with special needs are younger than 16 years old are treated in Institute of pediatric Clinical Centre of Montenegro and 13 patients older than 16 years old are treated in Clinic for Maxillofacial Surgery. There is a constant increase in this category of patients. There are many reasons for insisting on national preventive programs for special needs patients.
**Key words:** Patients with special needs, general anesthesia, dental treatment

**PP-72**
**EFFECTIVNESS OF MARGINAL SEALING OF TEMPORARY RESTORATIVE MATERIALS**

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**INTRODUCTION:** Temporary restorative materials are an important prerequisite for success of endodontic treatment, because their main task is to close the cavity and prevent microleakage that is to disable fluid percolation and penetration of microorganisms into the root canal.
**THE AIM:** To compare effectiveness of marginal sealing of different temporary restorative materials after endodontic treatment by dye penetration test.
**MATERIAL AND METHODS:** Thirty intact extracted maxillary and mandibular third molars were used in research which were preparated by traditional accesses cavity. The canals were mechanically instrumented to the working length (Reciproc blue, R40) and opturated. The samples were divided into three groups (n=10) by materials used for temporary restoration: Group I: Citodur; Group II: Cegal; Group III: Fuji IX. After termocycling of 500 cycles (5-55C), the teeth were immersed in 1% methylene blue for 24h. The teeth were longitudinally sectioned and dye penetration was analyzed with the stereomicroscope (x40).
**RESULTS:** The microleakage was noted in all three groups. The maximum microleakage was registered in Fuji IX, and then in Cegal group. Minimal dye penetration and absence of micro cracking was registered in Citodur, with statistically significant difference compared to the other two tested materials.
**CONCLUSION:** No material prevented marginal microleakage. The best marginal sealing at traditional cavity accesses was registered in Citodur.
**Keywords:** dye penetration, marginal sealing, methylene blue, temporary restorative materials

**PP-73**
**DETECTION OF DISTAL CANALS IN RETREATMENT OF LOWER FIRST MOLAR WITH CBCT**

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**INTRODUCTION:** Cone-beam computed tomography (CBCT) is advanced diagnostic procedure, which can help in solving various clinical difficulties.
**AIM:** The aim of this case report is to present usage of CBCT in localization of missing second distal canal in lower first molar.
**CASE PRESENTATION:** A 23-years-old female patient was referred to our clinic for retreatment of a tooth 36. The retroalveolar X-ray revealed inappropriate obturation with large periapical lesions on both root apices. After localization of mesiobuccally, mesiolingual and distal canal, old obturation material was removed, and intracanal medication (calcium hydroxide paste) was applied. After 14 days, canals were obturated with sealer (AH plus, Dentsply Sirona, USA) and gutta-percha. Patient was sent to make control X-ray, whereupon we got suspicious of existence of the second distal canal. By analyzing CBCT, the presence and position of distolingual canal were detected. Missing canal was treated as previous, and the patient was referred to the Clinic of prosthodontics for adequate restauration. Control X-ray after one and two years show healing of periapical lesion.
**DISCUSSION:** Retroalveolar radiography remains routine method of imaging in endodontics. CBCT can be indicated when there is a doubt for presence of missed canals.
**CONCLUSION:** CBCT is very significant diagnostic procedure in endodontics because it gives information which we can't get by analyzing 2D image.

**PP-74**
**FULL DIGITAL WORKFLOW IN ALL-ON-4 TREATMENT CONCEPT: CASE REPORT**

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**INTRODUCTION:** Intraoral scanning in implant rehabilitation of edentulous patients is the subject of numerous scientific controversies. Even though the precision and accuracy of intraoral scanners (IOS) is being improved every day, some published articles indicate their insufficiency for certain indication.
**AIMS:** Our goal was to test the reliability of full digital workflow in making a polymethyl methacrylate (PMMA) screw-retained hybrid restoration on implants in the edentulous mandible.
**MATERIALS AND METHODS:** In the female patient, four implants were inserted in the lower jaw (two angulated and two straight implants) at tooth positions 32, 35, 42, 45. Immediately after implantation, a temporary screw-retained bridge was made. Four months later, the process of definitive restoration was started. Intraoral scanning was performed using 3Shape Trios 4 IOS (3Shape A/S, Copenhagen, Denmark) and scan bodies (CARES Mono Scanbody, Straumann Group, Basel, Switzerland). STL file was used for creating of printed cast and hybrid screw-retained restoration prototype. Protocols of clinical and laboratory manufacturing procedures were applied.
**RESULTS**: The Sheffield test for checking the passive fit of implant supported bridges was applied. The final restoration satisfied patient's aesthetic and functional requirements.
**CONCLUSIONS:** Based on experience and obtained clinical results, intraoral scanning could represent a reliable method for creating dental restoration on implants in edentulous jaws.
**Keywords:** digital, edentulous jaws, hybrid restoration, implants, intraoral scanning

**PP-75**
**ASSESSMENT OF ANTIMICROBIAL PROPERTIES OF CALCIUM SILICATE–BASED SEALERS**

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**INTRODUCTION:** Calcium silicate-based sealers release $Ca(OH)_2$ which is considered responsible for their antimicrobial properties.
**AIM:** To examine antimicrobial properties of calcium silicate-based sealers
**MATERIAL AND METHODS:** Three calcium silicate-based sealers were included: Bio C®, EndoSequence BC®, BioRoot® and control AH Plus®. Antimicrobial properties were tested by disc diffusion method (DDM) on three reference strains (Candida albicans, ATCC 10231; Enterococcus faecalis ATCC 29212; Staphylococcus aureus ATCC 25923) and by direct contact test (DCT) on two reference strains (E. faecalis and S. aureus). The results of the DDM are represented by zones of inhibition (ZOI) expressed in millimeters, while the results of the DCT are represented by the number of colonies per milliliter (CFUs/ml).
**RESULTS:** The DDM showed ZOI (12 mm) around all three calcium silicate-based sealers regarding C. albicans. A ZOI against S. aureus (5mm) was observed only for AH Plus. No ZOI was observed around any of the tested sealers for E. faecalis. The DCT showed a significant reduction in the number of S. aureus colonies for Bio C and BC Sealer. All calcium silicate-based sealers showed a reduction in the number of colonies of E. faecalis.
**CONCLUSION:** The ability of antimicrobial substances to diffuse from calcium silicate-based sealers and stop the growth of microorganisms was demonstrated only for C. albicans. On the other hand, a bactericidal effect of calcium silicate based sealers was observed during DCT.
**Key words:** antimicrobial, calcium silicate, direct contact test

**PP-76**
**STUDY OF FILM THICKNESS OF THE CALCIUM SILICATE AND CALCIUM ALUMINATE CEMENTS**

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**BACKGROUND:** Calcium silicate (CSC) and calcium aluminate (CAC) cement manufacture preparations are widely used in dentistry multipurposly. Film thickness is important for luting process and lining as well as sealing during canal obturation. It should be as minimal to penetrate deeper into hard dental tissues or to cover them preventing microleakage. Aim of this study was to assess film thickness of calcium silicate and calcium aluminate cement.
**MATERIALS AND METHOD:** Experimental groups involved preparations of CSC and CAC while controls were MTA-Angelus MTA and BIOREP-Itena cements. Film thickness was determined by ISO 3107. Two optically flat, square glass plates having a contact surface of 200mm2 and 5 mm thickness were used. Three samples of each cement were mixed as 1g powder to 0.33ml of liquid then placed on the glass slab and covered with another and pressed with load of 150 N for 10 min. Reading of cement thickness between plates was done by stereomicroscope.
**RESULTS:** CSC and CAC showed film thickness of: 47± 4 µm, 41± 5 µm respectively while MTA-Angelus exposed 41± 2 µm and MTA Biorep 16± 2 µm. Conclusion Statistically significant difference was not detected between experimental cements (p>0, 05) but existed between control ones(p<0,05).
**Key words:** calcium aluminate cement, calcium silicate cement, film thickness mineral trioxide aggregate

**PP-77**

## INVESTIGATION ON RADIOPACITY OF CALCIUM SILICATE AND CALCIUM ALUMINATE CEMENTS WITH ADDITION OF TITANIUM DIOXIDE

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**BACKGROUND:** Concerning meaningful of calcium silicate (CSC) and calcium aluminate (CAC) cement preparation for multipurpose use, the aim of this study was to assess the effect of titanium dioxide (TD) as addition to radiopacity of CSC and CAC material.
**MATERIAL AND METHODS:** Two experimental groups with TD additive were formed: A) CSC+Mg-silicate+Bi2O3 B) CAC+calcium silicate+Mg-silicate+ Bi2O3. Experimental cements were enriched with nano-powder TD in concentration of 5, 10 and 15%. Controls were pure CSC, Portland cement, pure CAC and MTA-Angelus. Each cement was mixed as 1g powder to 0.33ml of liquid. The prepared mass was poured into cylindrical mold following ISO6876 requirements. Three samples of each group were radiographed alongside an aluminum step wedge to evaluate radiopacity. Radiograms were processed by Adobe Photoshop CS4 program where radiopacity value was expressed in aluminum standard units. ANOVA method and SPSS program (Chicago, USA, IBM) was used for data manipulation.
**RESULTS:** Specimens CSC with 10% -3.05±0.25, 15%TD-3.29±0.15, CAC with 15%TD-3.01±0, 01 were statistically significantly different from MTA 6.61±0.79 (p<0, 05). Conclusion ISO requirement satisfied CSC with 10% and 15%TD, CAC with 15% and MTA cement.
**Key words:** calcium aluminate, calcium silicate cement, mineral trioxide aggregate, radiopacity, titanium dioxide

**PP-78**

## RUBBERDAM APPLICATION IN RESTORATIVE AND ENDODONTICS PROCEDURES THE EXPERIENCE OF THE THERAPIST AND THE PATIENT

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**INTRODUCTION:** Challenges in the application of rubberdam, inexperience and discomfort of the patient are the reasons for its undesirability. That's why education and training of young dentists is important, as well as bringing this phase of work closer to patients.
**AIM:** To examine the attitudes about knowledge and skills of young dentists and the experiences of patients.
**MATERIAL AND METHODS**: The research was conducted on the basis of questionnaires filled out by 30 young dentists and 30 patients after working with rubberdam. The questionnaires had three categories: general information about the dentist's knowledge and experience, information during clinical work with rubberdam, and patient impressions.
**RESULTS:** Lack of clinical experience (2-4 years) didn't significantly affect the ability to place rubberdam in simple clinical procedures (p=0.321), while they had a significant impact on the ability to place in more difficult situations (p=0.027). During clinical work, the indication for placement of rubberdam didn't significantly influence the choice of the jaw on which the dental procedure will be performed (p=0.659). After clinical work, 57% of patients felt no pain and 93% would agree to reapply rubberdam during future procedures.
**CONCLUSION:** Young dentists have knowledge but insufficient experience when working with rubberdam. Additional education and training during work with rubberdam is necessary, in order to increase the independence of young dentists. Patients easily tolerate working with rubberdam.
**Keywords:** clinical experience, clinical procedures, rubberdam

**PP-79**
**EVALUATION OF THE PH VALUES OF DIFFERENT MATERIALS FOR STIMULATING TERTIARY DENTINOGENESIS**

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**INTRODUCTION:** Alkaline pH of the materials is one of the key factors for stimulating tertiary dentinogenesis.
**THE AIM:** The aim of this study was to evaluate pH values of commercial materials with different chemical composition, produced for stimulating tertiary dentinogenesis.
**MATERIAL AND METHODS:** Six materials were tested: two calcium silicate cements, MTA (Master-Dent, USA) and Biodentine (Septodont, France), two products based on calcium hydroxide, Life (Kerr, Italy) and Calcimol LC (Vocco, Germany), two light-curing materials containing hydroxyapatite, LCCL (Master-Dent, USA) and Biner LC (Meta Biomed, Korea). Measurements of the pH values were done after 1h, 3, 7, 14 and 28 days, using a calibrated pH meter (Cyberscan pH 510 Neth). Results were statistically analyzed using ANOVA and Tukey post-hoc test ($\alpha$=0.05).
**RESULTS:** MTA and Biodentine had the highest pH values, both similar and high alkaline, over 28 days. During the first 7 days, Life had lower pH values than MTA and Biodentine, while in other intervals there was no significant difference. The pH value of Calcimol LC decreased over time and was significantly lower than the pH values of MTA, Biodentine and Life at all examined time intervals ($p<0.05$). LCCL and Biner LC had similar pH values, but significantly lower in comparison with other evaluated materials ($p<0.05$).
**CONCLUSION:** Materials with different chemical composition produced for the stimulation of tertiary dentinogenesis demonstrated different pH values.
**Key Words:** Calcium silicate, calcium hydroxide, hydroxyapatite, pH, dentinogenesis

**PP-80**
**EVALUATION OF EFFECTIVENESS OF THE NEEDLE-FREE INJECTION SYSTEM ON PAIN PERCEPTION DURING LOCAL ANESTHESIA**

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**INTRODUCTION:** The technique of spraying the anesthetic solution, under high pressure in dentistry is a method of installing local anesthesia without needle. The purpose of this study was to evaluate the effectiveness of a needleless jet anesthetic device in adult patients, using two dental anesthetic solutions and compare them. Furthermore, the experience and acceptance of the participants was evaluated.
**MATERIALS AND METHOD:** 50 healthy adults were selected. The study took place at the Dental School of AUTH, Greece. The administration area of jet injection was the upper lateral incisors in the right and left quadrants in two different sessions, using correspondingly different anesthetic solutions. Randomized double blind method was performed and the anesthetic solutions were 0.3 ml articaine 4% with adrenaline 1/100000 and 0.3 ml mepivacaine 3%. After administration and every 2 minutes, electrical pulp vitality tests on teeth and soft tissue pain reaction tests were recorded. These tests were repeated until the complete withdrawal of the pulpal anesthesia. During the session, the participants completed a corresponding questionnaire, while post-operative complications were documented.
**RESULTS:** Between the two amide-types local anesthetic solutions administered with this device, the solution containing a vasoconstrictor (articaine) is clearly superior both for the depth of anesthesia and for its duration.
**CONCLUSION:** The effectiveness of both anesthetic solutions in the establishment of anesthesia in the surrounding soft tissues was positive, as well as the assessment of the acceptance of the technique by the participants.

**PP-81**
**ANTIFUNGAL ACTIVITY OF OLIVE LEAF EXTRACT ON ORAL CANDIDA ISOLATES**

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**INTRODUCTION:** Candida species (Candida spp.) is a part of the normal flora in the oral cavity. Candida may cause various forms of infections, from superficial to systemic conditions. With the increasing use of antifungal agents and a growing number of resistant strains, many researchers are working to find a new herbal therapeutic as a safer alternative in treatment. Among natural products, Olive leaf extract (OLE) is a promising therapeutic tool for the treatment of oral infections due to its antimicrobial activity against a large number of pathogenic microorganisms.
**AIM:** The aim of this study was to determine the antifungal activity of OLE against clinical isolates of Candida spp.
**MATERIALS AND METHODS:** Using the disc diffusion method, we tested the sensitivity of 15 clinical oral isolates of Candida spp. (11 C. albicans, 3 C. krusei, and 1 C. tropicalis) to four concentrations of OLE (7.5 µg/µL, 15 µg/µL, 30 µg/µL and 60 µg/µL).
**RESULTS:** All tested concentrations of OLE showed a statistically significantly higher antifungal effect against Candida spp. compared to the control (DMSO). There was a concentration-dependent effect of OLE on the tested samples. Concentrations of 60 µg/µl and 30 µg/µl had statistically significantly higher antifungal activity compared to concentrations of 15 µg/µl and 7.5 µg/µl and a concentration of 30 µg/µl compared to the lowest tested concentration of 7.5 µg/µl.
**CONCLUSION:** OLE could be a potential drug in the treatment of oral diseases caused by Candida.
**Keywords:** Antifungal activity, Candida, Candida albicans, Olive leaf extract.

**PP-82**
**ALVEOLAR BONERESORPTION IN APICAL PERIODONTITIS**

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**INTRODUCTION:** Matrix metalloproteinases (MMPs) are proteinases involved in extracellular matrix degradation. Although different inflammatory mediators participate in the pathogenesis of apical periodontitis (AP), role of MMPs and their tissue inhibitors (TIMPs) in alveolar bone resorption is poorly elucidated.
**AIM:** To determine the relative gene expression of MMP-2, MMP-9, TIMP-2, receptor activator of nuclear factor kappa-B ligand (RANKL), and osteoprotegerin (OPG) in AP and associate it with levels of these molecules in healthy tissues. Furthermore, potential correlation of investigated molecules was evaluated in AP samples.
**MATERIALS AND METHODS:** The experimental group comprised of 30 AP lesions collected from 30 voluntary patients (18 females, 12 males, and average age 39.2±15.2 years) in conjunction with apicoectomy. Thirty pulp tissues of intact teeth extracted due to orthodontic reasons, collected from 30 voluntary patients (18 females, 12 males, average age 22.8±4.1 years), used as healthy controls. The relative gene expression of the investigated molecules (MMP-2, MMP-9, TIMP-2, RANKL, and OPG) in all tissue samples was examined using reverse transcriptase real-time polymerase chain reaction. Statistical analysis was performed using Chi-square test, Student t test, Mann-Whitney U test, and Spearman correlation.
**RESULTS:** A highly significant increase of relative gene expression was observed in AP for MMP-2, MMP-9, RANKL, and OPG compared to the healthy group (P=0.012, P=0.019, P=0.032, P=0.016, respectively). Levels of MMP-9 were significantly increased in periapical periodontitis.

**PP-83**
**RELATIONSHIP BETWEEN THE VALUES OF PRIMARY STABILITY OF DENTAL IMPLANTS IN RELATION TO GENDER AND JAW**

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**INTRODUCTION:** The most important factor and prerequisite for achieving osseointegration, and thus successful implant therapy, is the implants stability, which depends on the quality of the bone at the implant site, implant design and surgical implantation technique.
**METHODS AND MATERIALS:** A clinical prospective experimental study was performed on 38 healthy patients of both sexes, with the absence of one tooth in the lateral region indicated for implant placement under favorable conditions. All 38 patients with missing one tooth were installed with self-tappered Bredent Narrow SKY (Bredent®, Germany) dental implants with dimensions 3.5 x 10 mm. The implants were placed with an insertion torque of 35 N / cm2. After implant placement, the measurement of the primary stability of the implant was performed by the method of resonant frequency analysis (RFA), the Osstell mentor apparatus (Integration Diagnostics AB, Gothenburg, Sweden).
**RESULTS:** The arithmetic mean and standard deviation of the primary stability of dental implants in the mandible was 73.2 ± 8.1 ISQ, while in the maxilla, it was 64.2 ± 7.0 ISQ, which is a statistically significant difference (t = 3,673; p = 0,001). Significantly higher ISQ values were found in the mandible. The arithmetic mean and standard deviation of ISQ in men was 71.8 ± 7.9, while in women, it was 61.8 ± 6.1, which is a statistically significant difference (t = 3.895; p=0. 001).
**CONCLUSION:** A clinical study has shown that self-tappered implants show statistically significant values of primary stability implanted in the premolar region of the mandible of men.

**PP-84**
**DENTAL ASSESMENT IN PATIENTS GOING THROUGHT ORTHOGNATHIC SURGERY**

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**INTRODUCTION:** Orthodontic surgical treatment is mainly indicated in adult patients where dentofacial deformities cannot be managed with orthodontic treatment alone. Due to the complexity and long duration in time of this treatment, dental assessment of patients is needed before, during and after treatment.
**AIM:** To give a clinical statistical description of dental assessment in our orthognathic surgery patients.
**MATERIAL AND METHODS:** This is a clinical statistical study with description nature. In the period of time January 2018-June 2021, no 60 patients aged 17-39 had orthognathic surgery treatment at OMF Surgery Service, Mother Theresa University Hospital Centre. Oral screen and dental assessment was done for all the patients before, during and after treatment.
**RESULTS**: Oral hygiene is an important factor is the success of orthognathic surgery. n=24 (40%) needed professional cleaning and scaling before treatment, n=39 (65%) needed professional hygiene treatment before surgery and n=36 (60%) after treatment. All the patients had orthodontic treatment before and after surgery. N=30 (50%) of the patients needed minimal one dental treatment (like filling, endodontic treatment etc) before surgery and n=14 (23%) needed dental treatment after treatment.
**CONCLUSION:** Proper selection of patients who will be subject to this surgery is one of the keys for a successful treatment.

**PP-85**
**TREATMENT OF BILATERAL CROSSBITE AND OPEN BITE- CASE REPORT**

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**INTRODUCTION:** Crossbite and open bite are two common dental problems that can potentially attract significant functional, aesthetic, and psychological consequences. A bilateral crossbite is an inadequate transversal relationship between the maxilla and mandibullae, while an open bite is disharmony with the vertical relationship of the jaws.
**AIM:** This case report aims to present the result of the combined hyrax expander and fixed orthodontics appliances.
**MATERIALS AND METHOD:** The patient was a 22-year-old female with bilateral crossbite and open bite. The patient was treated at the Clinic of Orthodontics, University of Belgrade. Clinical and radiographic evaluation revealed a skeletal class I relationship with anterior open bite and bilateral crossbite. The treatment plan involved a hyrax expander for the first 4 months. After the transversal relationship was corrected a fixed orthodontics appliance was placed to align teeth and improve bite alignment. Intermaxillary elastics were used for correcting the vertical relationship of the bite.
**RESULTS:** The patient showed significant improvement in occlusion, facial profile, and smile esthetics. The final records demonstrated class I occlusion, ideal overjet (2,5mm) and overbite (2mm), and normal skeletal relationships.
**CONCLUSION:** After undergoing therapy for 24 months, the patient's occlusion, facial profile, and smile esthetics all significantly improved. The patient reported increased comfort, and function. Fixed orthodontic appliances in combination with a hyrax expander is a successful treatment for bilateral crossbite and open bite.

**PP-86**
**EXTRACTION OF IMPACTED MAXILLARY CANINES AND ASSOCIATION WITH KPG INDEX**

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**INTRODUCTION:** Impacted maxillary canines are one of most commonly impacted teeth, right after third molars. Literature is scarce of evidence how often is necessary to extract palatally impacted maxillary canines, but this is uncommon treatment option.
KPG index is used to determine impaction difficulty in relation to position of impacted canine on CBCTs. We tried to assess whether patients with impacted maxillary canines indicated for extraction, have higher KPG index values.
**MATERIALS AND METHODS:** 113 patients were included in this study. Descriptive variables such as gender, side of impaction and localization were measured. Canine's position on CBCT images was measured and scored using the KPG index. Based on the index value, impaction was defined as easy, moderate, difficult, and extremely difficult.
**RESULTS:** Maxillary canine impactions are twice more often in females. Impacted canines were most commonly impacted palatally, with moderate KPG index. Almost 12% of impacted teeth were extracted before start or during treatment. Teeth that erupted spontaneously had lower KPG index values, and all described as easy impaction. Teeth that were extracted had higher KPG index compared to teeth that were surgically exposed. The Y of the crown values of KPG index were higher for canines that had to be extracted compared to those that were orthodontically treated.
**CONCLUSION:** KPG index can give us insight on impaction difficulty before start of treatment, and help us to choose treatment modality for each patient.

**PP-87**
**ORTHODONTIC AND ORTHOGNATHIC SURGERY TREATMENT OF CLASS III MALOCCLUSION**

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**INTRODUCTION:** Class III skeletal pattern is characterized by disharmony between maxillary and mandibular basal bones anteroposteriorly, clinically an elongated and protruding lower third of the face followed by impaired function and aesthetics.
**AIM:** The aim of this report was to describe a treatment method for a patient with a Class III Skeletal discrepancy using a combination of orthodontic and surgical treatment.
**MATHERIALS AND METHODS**: A 23-year old female diagnosed with maxillary retrognathism and mandibular prognathism was treated at Clinics for Orthodontics and Maxillofacial Surgery. Clinical parameters were: protruded chin, left sided unilateral crossbite, negative overjet. The treatment was fixed orthodontic appliances on both jaws (a year and a half), after which the patient went through bimaxillar surgery. After which she continued to wear fixed appliances for another 4 months. After the removal of the appliances, retention was sustained using Essix-retainers. During the treatment, 3 lateral cephalograms (pre-treatment, pre- surgical and post-treatment) were taken and analyzed.
**RESULTS:** By analyzing the lateral cephalograms significant changes in soft and skeletal tissues have been noted, with the patient having stable Class I occlusion. Parameter changes were: SNA angle: 79 - 81 degrees; SNB angle: 84 - 80 degrees; ANB angle: - 5 - 1 degree; positive overjet: 1.5mm.
**CONCLUSION:** Combining orthodontic and orthognathic surgical treatment has established better skeletal balance, facial proportion, function and aesthetics, improving the patients quality of life.

**PP-88**
**PIEZOSURGERY POSITIVE OUTCOMES IN ORTHOGNATIC SURGERY**

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**PURPOSE:** Piezosurgery device was developed for atraumatic cutting of bone by ultrasonic vibrations in oral surgery, but in the last two decades from the literature was shown that piezoelectric devices are very good indicated in Maxillofacial Surgery and Orthognathic Surgery.
**MATERIALS AND METHODS:** In this presentation we will discus 15 cases of bimaxillar surgery operated with piezosurgery.
**RESULTS:** Compared to burs and saws, piezoosteomtomy showed a significant intraoperative blood loss reduction but the surgical procedure duration was longer and with higer cost and special training. In bimaxillar surgery with piezosurgery was shown a lower incidence of postoperative hematoma, swelling and nerve impairment.
**CONCLUSION:** In bimaxillar surgery piezo devices achieve better results compared to traditional osteomties instruments. Piezosurgery is less aggressive and safer.
**Keywords**: piezosurgery, orthognathic surgery, positive outcomes

**PP-89**
**OSTEONECROSIS OF THE JAW RELATED TO MYELOMA MULTIPLEX: A CASE REPORT**

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**BACKGROUND:** Medication-related osteonecrosis of the jaw (MRONJ) can be caused by antiresorptive and antiangiogenic drugs. Diagnostic criteria of MRONJ are: 1) current or previous therapy by antiresorptive or antiangiogenic drugs; 2) exposed bone or appearance of fistula that persists longer than 8 weeks; 3) the patient has not been irradiated and there is no proven metastasis in the jaw bone. The invasive surgical procedures like tooth extraction and dentoalveolar surgery are risk factors for the MRONJ development.
**CASE REPORT**: A 53-year old patient was referred to the Dental Clinic of the Clinical Center of Montenegro because of the pain and suppuration in the symphisic region of the lower jaw. Teeth 41, 42 and 43 have been extracted 6 months before. Investigated the patients' medical records, we found that the patient has been treated for Myeloma multiplex: Zometa (Novartis Pharma Stein AG, Swiss) i.v. 4mg according to the following protocol: 12X4mg, with a break of 6 weeks, for a total therapy duration of 18 months. The OPT image presented an oval, relatively sharply limited zone of osteolysis in the symphisic region of the lower jaw, with the bone sequestrum in the central part. After the surgical therapy, the histopathologic findings confirmed the diagnosis: Osteomyelitis chronica purulenta.
**CONCLUSION**: MRONJ is a serious adverse reaction to bisphosphonate drugs, especially in patients with malignant diseases. Preventive dental procedures before the beginning of bisphosphonate therapy are crucial for the prevention of MRONJ.

**PP-90**
## UNILATERAL PALATAL HYPERPLASIA: A CASE REPORT

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**INTRODUCTION:** Dentures exert a varied amount or pressure on the oral mucosa of the patients wearing them in comparison to dentulous patients; this can lead to the formation of fibrous hyperplasia of the hard palate, which can manifest as small confluent pebbles, usually edematous, and asymptomatic. The occurrence of this condition is commonly attributed to the contact between the maxillary denture and the hard palate. Other considered causes are bad oral hygiene, constant use of the dentures, skin irritation and other causative factors.
**CASE PRESENTATION:** A 70 year old female patient with dentures with a papillous, unilateral mass on the hard palate, which had remained asymptomatic for a long period of time, but reportedly started causing stability problems of the denture and mild pain. Total excision of the mass was executed using the conventional scalpel and a diode laser 980 nm. Postoperatively, the section healed smoothly and the denture was rebased and the patient responded well.
**CONCLUSION:** Hyperplasia formation can be prohibited with meticulous dental hygiene and regular controls of the denture's fit. Surgical excision is the treatment of choice when it comes to palatal hyperplasia. Diode laser is a surgical tool that is growing in popularity, providing excellent hemostasis and ensuring a swift procedure, faster patient recovery compared to only using conventional surgical tools, while they can restart using their denture sooner. Conventional tools not only do not ensure hemostasis, but also require longer recovery time and the use of surgical cements.

**PP-91**
## MAXILLARY OSTEOTOMY OF UNTREATED ANTERIOR ALVEOLAR PROCESS FRACTURE

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**INTRODUCTION:** Maxillofacial fractures can damage the jaw, teeth and soft tissues of the head and neck region. When these injuries occur, best practice is to reconstruct as soon as possible. Delayed treatment

requires osteotomy and/or orthodontic treatment.
**CASE PRESENTATION:** a 23-year-old male suffered a maxillary traumatic injury accompanied by anterior alveolar process fracture without missing or damaged teeth and left untreated at first hand. After 6 months, he presented to our clinic with evident aesthetic and functional complications, due to delayed reconstruction. Evaluation results showed that orthodontic treatment couldn't involve because of extensive displacement of teeth in the anterior alveolar process. Subsequently, the patient was treated by a segmental maxillary sandwich osteotomy combined with allogenic human bone graft and an autologous platelet concentrate (platelet-rich fibrin, PRF). The involved teeth were wire splinted, while there were no complications, and the patient was discharged from the hospital the following day. The patient was monitored and checked at monthly intervals in the office for 3 months, postoperatively. Three months after the surgery, the upper splint was removed, and the fracture and maxillary teeth appeared to be healing nicely.
**CONCLUSION:** maxillofacial fractures can cause serious health problems when patients are not appropriately treated. Moreover, concerning treatment of those injuries, this case report indicates that when PRF is used, it can improve significantly wound healing and has very promising results in tissue regeneration.

**PP-92**
**IMPLANT THERAPY OF TRAUMATIC DENTAL INTRUSION - A CASE REPORT**

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Traumatic dental intrusion presents a tooth-supporting tissue injury with axial tooth imposition into the alveolar bone, leading to severe damage of periodontal fibers, pulpal tissue, and cementum. The injured tooth is dislocated axially towards the alveolar bone, and pulpal necrosis usually occurs. The treatment includes surgical or orthodontic tooth repositioning followed by a four-to-eight-week stabilizing with flexible splints. In most cases, an unfavorable prognosis of tooth intrusion is induced by a pathological external inflammatory resorption of the injured root, resulting in tooth loss. This condition can be managed through a prosthetic or implant approach. The present report describes a case of traumatically intruded maxillary left central incisor with a history of orthodontic extrusion and root resorption with subsequent root fracture, requiring tooth extraction. Considering the high soft tissue level, a protocol of early implant placement (with soft tissue healing) was performed at the post-extraction site. Eight weeks following the tooth extraction, the Straumann BLT implant was inserted, with simultaneous bone augmentation. Six months after implant placement, when the osseointegration process was completed, the prosthetic restoration was placed.

**PP-93**
**SURGICAL TREATMENT OF ODONTOMA: CASE REPORT**

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**INTRODUCTION:** Odontogenic tumors originate from epithelial or mesenchymal embryonic tissues from which teeth normally develop. They are most commonly asymptomatic, but can elongate the jaws, lead to luxation of the surrounding teeth and cause bone resorption.
**CASE REPORT:** The paper presents the case of a 12-year-old patient who was referred by the orthodontist due to painful swelling in the fornix region on the right side of the upper jaw in the frontal region and unerupted upper right central incisor. Based on the anamnesis, clinical examination and analysis of the radiograph, a diagnosis of Odontoma Maxillae in Regio Frontalis Lateris Dextri in Obs. was made.
A sulcular flap was performed under local anesthesia at the vestibular side of the alveolar ridge with two vertical incisions in the area of upper left central incisor and premolar region on the right side. After raising the mucoperiosteal flap, surrounding bone was removed and the odontoma was eliminated in its entirety. Bone

defect was rinsed with sterile saline solution. Histopathological findings confirmed the clinical diagnosis. The flap was repositioned and sutured with 5/0 polypropylene simple interrupted sutures afterwards. Antibiotics were prescribed to the patient and postoperative instructions were given. Seven days later, surgical sutures were removed and the patient was referred back to the orthodontist.
**CONCLUSION:** When it comes to odontogenic tumors, especially in children and adolescent patients, cooperation between the pediatric dentist, orthodontist and oral surgeon is extremely important for early diagnosis of tumor presence and its timely removal.

**PP-94**
**BUCCAL FAT PAD FLAP IN CLOSURE OF OROANTRAL COMMUNICATION Lazar Lukić,**
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Oroantral communication is abnormal communication between oral cavity and maxillary sinus, which if not treated, may progress to oroantral fistula. They are often induced by cists, tumors, iatrogenic procedures such as implant surgery, cyst and tumor enucleation. The most common reason for this type of defects is the extraction of maxillary posterior teeth, due to their root proximity to the thin antral floor in this area.
Multiple techniques are available to repair this defect, such as buccal flap, palatal rotating flap and buccal fat pad flap. Before choosing a technique many aspects should be considered, including the size of the defect, time of diagnosis and the presence of sinus infection.
The buccal fat pad flap is used as a treatment for many defects that occur in maxillofacial area because of its rich blood supply, approachable location and low donor site morbidity. It is a simple and reliable technique for closure of oroantral communications and fistulas. Recommendation for using this technique is when the oroantral communication defects are larger than 5mm. In this report we will describe a surgical procedure of using buccal fat pad for closing large oroantral defect. Based on our experience, we can say that it is a simple method with a high success rate.
**Keywords:** Buccal fat pad, defect, oroantral communication, oroantral fistula, sinus

**PP-95**
**PREVALENCE OF TORUS MANDIBULARIS IN YOUNG HEALTHY DENTATE ADULTS**

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Prevalence of torus mandibularis in young adult patients can have various adverse effects on oral and occlusal states in middle age patients. This study was designed to determine the association between tm status and occlusal states in young healthy dentate adults.
This was a cross-sectional study: the sample populations included students at University of Montenegro who participated for practical education. The predictor variables in this study included oral simptoms (termomandibular joint noise, tooth clenching and grinding, buccal mucosa ridging, dental attrition and tongue habit) oral anatomy(occlusal vertical dimension) and oral function (average occlusal pressure, occlusal contact area and absent). Additional variables were demographic in nature and included age, number of residual teeth, vodu weight and gender. These variables were compared among participates with and without tm using univariante analysis and multiple logistic regression analysis. Out of 156 participants included in the study half were woman. Averidge age 20/25. Tm sad present in 89 (57%). Multiple logistic regression analysis showed that tm status was associated with dental attrition and occlusal contact area P=<0.05. This study showed that tm was presented in more than half the young healthy dentate participants and was closely associated with dental attrition and occlusal contact area, and get useful information's to help prevent the development of tm before middle age.

**PP-96**
**GENE EXPRESSION PATTERNS OF PIK3CA, AKT AND mTOR IN DIFFERENT ORALMUCOSAL LESIONS**

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**INTRODUCTION:** Oral mucosal lesions (OMLs) are a heterogeneous group of conditions that can be divided into benign lesions (BL), oral potentially malignant disorders - OPMDs and oral malignancies (mainly oral squamous cell carcinomas - OSCCs). Molecular alterations in the oral mucosa are known to be predictive biomarkers for the OML behavior. The PI3K–AKT–mTOR signaling pathway is related to important cellular functions, and is frequently affected in malignancies.
**AIM:** The aim of this study was to assess the relative gene expression of PIK3CA, AKT and mTOR in OMLs.
**MATERIALS AND METHODS:** 76 patients were included in the study – 16 with benign lesions, 29 with OPMDs and 31 with OSCC. Total RNA was extracted from the collected tissue samples. Relative gene expression of investigated markers was determined by reverse transcriptase-real-time polymerase chain reaction.
**RESULTS:** A significant increase of relative gene expression was observed for PIK3CA between BLs and OPMDs ($p=0.003$) as well as between BLs and OSCCs ($P<0.001$). AKT was overexpressed in OSCCs compared to both BLs ($p=0.015$) and OPMDs ($p=0.021$). mTOR overexpression was observed in OSCC compared to benign lesions ($p=0.042$).
**CONCLUSION:**The findings of the present study indicate the substantial role of the PI3K–AKT–mTOR signaling pathway in the etiopathogenesis of OSCCs, whilst its involvement in the OPMD lesions still remains to be elucidated.
**Keywords:** oral mucosal lesions, etiopathogenesis, PI3K–AKT–mTOR signaling pathway, relative gene expression

**PP-97**
**ASSESSMENT OF THE IMPACT OF SMOKELESS TOBACCO AEROSOL ON ORAL MUCOSA AND CHEMOSENSORY FUNCTION**

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**INTRODUCTION:** Due to increasing health concerns about the harmful effects of smoking and as a harm reduction measure, a new alternative Tobacco Heating System (THS) has been developed. The effects of cigarette smoking on oral health and chemosensory functions have been extensively studied, but there aren't clinical studies investigating the effects of THS on oral tissues and chemosensory functions.
**AIM:** To evaluate the effect of new THS on oral mucosa and chemosensory function. The stratified cross-sectional study included 45 subjects divided into three groups: THS-smokers, conventional-cigarette smokers, and nonsmokers. Subjects were clinically examined with standard examination procedures, and olfactory function was assessed with a screening test-Sniffin' Sticks Screening Test. The taste function was assessed with a taste function test (Taste Strips) for the basic tastes of sweet, sour, salty, and bitter.
**RESULTS:** Participants from the smoking group had an average of 5-10 years of smoking experience and smoked an average of 5-10 cigarettes or more than 15 tobacco sticks/day. A statistically significant increase in taste identification for salty taste was found in THS smokers compared to conventional tobacco smokers ($p=0.013$). No statistically significant differences were found in oral mucosal morphological changes ($p=0.071$), olfactory function (0.263), and taste function ($p=0.606$)-sour ($p=0.115$), sweet ($p=0.954$), bitter ($p=0.098$).
**CONCLUSION:** The results of the study show that the taste perception of salty taste significantly increases in THS smokers compared to conventional-cigarette smokers.

**PP-98**
**THE EFFECT OF OSTEOGENIC DIFFERENTIATION AND BET INHIBITORS ON ORAL CANCER CELL LINE SCC25 VIABILITY**

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**INTRODUCTION:** The development of therapeutic resistance in oral squamous cell carcinoma (OSCC) can be attributed to the presence of cancer stem cells (CSCs), a small cell subpopulation harboring CD44 marker, with marked self-renewal and differentiation capacity.
**AIMS:** To assess the effects of differentiation induction and BET inhibitor treatment on oral CSCs apoptosis and miRNAs' expression.
**MATERIALS AND METHODS:** OSCC cell line (SCC25) was used in the experiments. CD44+ cells were magnetically separated from the heterogeneous tumor cell population. The cells were subsequently subjected to osteogenic induction. The cells were also treated with a BET inhibitor - JQ1. An Annexin V assay was used to assess the potential cytotoxic effects of the differentiation and the JQ1 treatment. The relative expression levels of miRNA-21 and miRNA-133 were evaluated by qPCR.
**RESULTS:** Upon differentiation, considerable cell death by apoptosis was noted, less pronounced in the CD44+ cells compared to the heterogeneous population of SCC25 cells. A similar trend was observed after the JQ1 treatment, having little effect on CD44+ cells. In CD44+ cells, the differentiation led to a gradual decrease of the oncogenic miRNA-21 and increase of tumor suppressor miRNA-133 level. JQ1 treatment exhibited similar effects on miRNA-133, while unexpectedly having an opposite effect on miRNA-21.
**CONCLUSION:** Both cell differentiation and JQ1 treatment lead to cell death by apoptosis of SCC25 cell line. This was accompanied by significant, yet inconclusive changes in the micro RNA levels.

**PP-99**
**ORAL HYGIENE OF ADOLESCENTS WITH MENTAL DISORDERS**

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**INTRODUCTION:** According to the WHO, there is an increasing prevalence of mental disorders among children and adolescents. Previous studies have shown that people with mental disorders have a higher prevalence of oral diseases, for which the main cause is dental plaque.
**AIM:** The aim of this study was to determine the oral hygiene status among adolescents with mental disorders.
**METHODS AND PATIENTS:** The study was conducted as a cross-sectional study among two groups of participants. The study group comprised of 75 hospitalized adolescents with mental disorders (mean age 18.87 ± 3.05). The control group comprised of 75 mentally healthy adolescents (mean age 19.21 ± 3.15). All the participants were subjected to targeted dental examination in order to determine the OHI-S. The data related to mental disorders of the study group was obtained from the patient's medical records.
**RESULTS:** The majority of the study group patients were diagnosed with schizophrenia, schizotypal and delusional disorders (F20-F29), as well as with behavioral and emotional disorders usually occurring in childhood and adolescence (F90-F98), and they were treated with an average of 3.27 ± 0.83 psychiatric medications. The mean value of OHI-S in the study group was 2.01 ± 0.87, which was significantly higher than in the control group (0.57 ± 0.38).
**CONCLUSION:** The results indicate a need for multidisciplinary approach in order to improve not only oral health, but also mental and general health of adolescents with mental disorders.
**Keywords:** adolescents, hospitalization, mental disorders, oral hygiene, OHI-S

**PP-100**
**DENTAL HEALTH CARE AMONG MONTENEGRO UNIVERSITY STUDENTS**

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**INTRODUCTION:** Oral health is an important part of general health. Knowledge, beliefs and attitudes that students acquire during dental school can influence their behavior not just their own health, but also towards health in their immediate environment. The aim of the study was to assess the level of oral health among students of the first year Montenegro University.
**MATERIAL AND METHODS**: This study included 60 students from different faculties divided in the regions of Montenegro, 20 students from the northern region, 20 students from the central region and 20 students from the southern region. The parameters used to assess oral health was DMFT (decayed, missing, filled teeth). According to the methodology and criteria of the World Health Organization (WHO) all patients were examined using standard dental diagnostic tools under artificial light on dental chair.
**RESULTS:** The value of DMFT index was 13. DMFT index students from northern region was 14.8, DMFT index students from central region was 15.4 and DMFT index students from the southern region was 8.75. The prevalence of fillings was 61.75%, the prevalence of missing teeth was 7.06 and the prevalence of caries was 31.09%
**CONCLUSION:** The present study showed the average DMFT index value in the student's population was 13 which may be regarded as compared to the others countries. Due to the limited number of studies on oral health in students in our region it is difficult to conclude whether there has been an improvement in caries prevalence over the last few decades. It is a comforting result that the dominant component of DMFT index was restored teeth (61. 75 %)

**PP-101**
**EPIDEMIOLOGY OF DENTAL CARIES AMONG THE SECOND-YEAR STUDENTS**

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**INTRODUCTION:** The knowledge, understanding and attitudes that a dental student gets during his studies can guide him how to behave toward his own health and the level of his own oral health behavior can serve as positive models for their patients, families and friends.
The aim of the study was to assess the dental health status of second-year students at the Faculty of Medicine, Dentistry program, University of East Sarajevo.
**MATERIALS AND METHODS:** As a part of the Preventive Dentistry course, in the academic year 2021-2022, the dental health status of the 2nd year students at the Faculty of Medicine, Dentistry program, University of East Sarajevo was assessed. The dental examination was performed using a dental probe and a mirror under artificial light, in accordance with the recommendations of the World Health Organization (WHO). The parameters used for the assessment of dental health were the following indices: Decayed, Missing and Filled teeth (DMFT), and related indices (Person Caries Index, Teeth Caries Index and DMFT structure).
**RESULTS:** The survey included 54 students aged 21 (± 1 year). Caries was diagnosed in 98.1% examined students. The average value of the Teeth Caries Index was 29.45%, while the average value of the DMFT was 9.20. Shown through percentage representation in DMFT structures, the values were as follows: Decayed-7.30%, Missing-24.37%, Filled-68.33%.
**CONCLUSION:** Preclinical students need properly designed oral health educational programs to increase

their attitudes and behavior toward oral health.
**Keywords:** student, tooth, dental health, caries.

**PP-102**
**THERAPEUTIC EFFECTS OF CHLORHEXIDINE-GEL USE IN INFLAMMATORY PROCESSES**

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**PURPOSE:** To determine the therapeutically effect of chlorhexidine-gel in treatment of gingival inflammation through comparative analysis at patients treated with conventional treatment (CT) versus conventional treatment assisted by chlorhexidine-gel (CT-G).
**MATERIAL AND METHODS:** To achieve the purpose of this study, 40 patients ( both sexes, age ranging from 20-40 years, clinically diagnosed with periodontitis, pocket depth 3-5 mm), were revaluated. The patients were divided into two groups, the first treated with (CT) and second treated with (CT-G). All patients were subject to determination of the following indexes: plaque index (PI), Silness-Loe, index of gingival inflammation (GI), Loe-Silness on four occasions (first visit, five days later, 10 and 30 days in the course of the treatment). The following were determined with the series with numerical markers: Descriptive statistics, while the interactive effect on both studied methods, were researched according to repeated measures Anova (F)/ Post-hoc-Bonferroni test (p).
**RESULTS:** The results show reduction of PI and GI with both groups after 5th, 10th and 30th day of treatment compared to the state seen at the first visit, also the comparison of PI and GI between the groups, showed better results with the ( CT-G) group.
**CONCLUSION:** The patients treated with (CT-G) have much better clinical effects than the group of patients treated only with (CT), which were noted as reduced gingival inflammation, conventional therapy, and chlorhexidine gluconate gel.

**PP-103**
**ABUNDANCE OF PREVOTELLA MELANINOGENICA AND STREPTOCOCCUS MITIS IN ORAL MUCOSAL LESIONS**

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**INTRODUCTION:** Oral mucosal lesions (OMLs) are the third most common group of intraoral pathologies, consisting of benign lesions, oral potentially malignant disorders - OPMDs and oral malignancies (predominantly oral squamous cell carcinoma - OSCC). Endotoxins, enzymes and metabolic products from oral bacteria damage the human cells directly, but also lead to chemokines and cytokines secretion which can potentially lead to OML formation.
**AIMS:** The aim of the study was to assess the prevalence of Prevotella melaninogenica and Streptococcus mitis in the oral mucosal lesions.
**MATERIALS AND METHODS:** 87 patients were included in the study – 23 with benign lesions, 30 with OPMDs and 34 with OSCC. After DNA extraction, Taqman based real time PCR (qPCR) was performed to detect the microorganisms in the OMLs.
**RESULTS:** P. melaninogenica was present in 14 benign lesions (60, 8%), 25 OPMDs (83, 3%) and 27 OSCCs (79, 4%). A statistically significant difference was observed between the benign lesions and OPMDs (p = 0,036). S. mitis was present in 13 benign lesions (56, 5%), 15 OPMDs (50%) and 24 malignant lesions (70, 6%). A statistical trend was observed when comparing OPMDs and OSCCs (p = 0,092).

**CONCLUSION:** These preliminary findings demonstrate an abundance of Prevotella melaninogenica and Streptococcus mitis in OMLs, implicating them as important etiological factors. However, their role in determining the OMLs type remains to be elucidated.
**Keywords:** oral bacteria, oral mucosal lesions, Prevotella melaninogenica, Streptococcus mitis

**PP-104**
**SUCCESSFUL MANAGEMENT OF INTERNAL ROOT RESORPTION USING STANDARD ENDODONTIC TREATMENT PROTOCOL**

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**INTRODUCTION:** Internal root resorption is a process initiated within the pulp space characterized by the loss of dentin from its walls. This condition is associated with chronic pulp inflammation and consequent odontoblasts and partial tissue necrosis.
**AIM:** Our report describes successful endodontic treatment of maxillary lateral incisor with internal resorption and apical lesion.
**CASE REPORT:** Patient reported to our clinic for comprehensive dental examination. Panoramic radiograph showed incidental finding of periapical lesion and internal root resorption of a left maxillary lateral incisor. Clinically the tooth was restored with metal ceramic crown and had no sensitivity to percussion or palpation. Access cavity was prepared through the crown and root canal was cleaned and shaped using a reciprocating file system. During instrumentation, canal was copiously irrigated and calcium hydroxide paste applied for one week period. Monocone gutta-percha technique was used for obturation. Control radiographic examination, 14 months later, showed healing of the periapical lesion.
**DISCUSSION:** Resorptive cavities, if left untreated, could be a source of infection and consequent treatment failure. Mechanical instrumentation and cleaning of the entire cavity, even with specialized endodontic instruments, is not always technically possible.
**CONCLUSION:** Healing of the apical lesion in the presented case suggests that in some clinical situations desirable outcome is possible after adequate irrigation and medication protocols even with standard obturation method that cannot avoid voids.

**PP-105**
**CONSERVATIVE ENDODONTIC TREATMENT OF A LARGE PERIAPICAL LESION**

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**INTRODUCTION:** Periapical lesions are result of a dynamic interplay between infective agents within the root canal and patient's immune responses to it. In most cases microbial elimination from root canal system by means of chemo mechanical preparation can lead to favorable outcome.
**AIM:** Our goal was to report successful conservative endodontic treatment of a large periapical lesion in mandibular frontal region.
**CASE REPORT:** An 82-year-old female patient was referred from an oral surgeon to try conservative endodontic treatment of lower left second incisor and canine that supported prosthetic bridge and had compromised periodontal status. Clinical examination showed fluctuant swelling with suppuration in the labial area and periapical palpation sensitivity. Panoramic radiography revealed a large multilocular periapical radiolucency with ill-defined borders surrounding left mandibular incisors and canine. Instrumentation done using reciprocating file system. After 2 years, control clinical and radiographic examination, showed good result and healing of the periapical lesion.
**DISCUSSION:** Periapical lesions can be treated by different treatment modalities, from conservative

endodontic therapy to periapical surgery and ultimately tooth extraction. Less invasive nonsurgical approach of these lesions is a more acceptable procedure that minimizes psychological trauma and patient discomfort**.**
**CONCLUSION:** Having in mind that most periapical lesions are a consequence of a microbial activity within the root canal system, orthograde endodontic approach should be preferred over surgery

**PP-106**
**ENDODONTIC TREATMENT OF INCLINED MANDIBULAR WISDOM TOOTH WITH PULP STONE**

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**INTRODUCTION:** Denticles are calcified structures that occur in pulp chamber and alter its internal anatomy. These structures can influence the outcome of endodontic procedure creating difficulties during instrumentation. Etiological factors of these type of calcifications are not well understood yet.
**AIM:** To present endodontic treatment of inclined mandibular wisdom tooth with pulp stone**.**
**CASE REPORT:** A male patient was referred to our clinic for endodontic treatment of mandibular left wisdom tooth due to prosthodontic reasons. This third molar had significant mesial inclination and old filling on occlusal surface. Radiograph revealed diffused radio-opacities in the pulp chamber and partially traceable canal outlines for mesial and distal roots. Conservative access cavity enabled sufficient visibility and differentiation of denticles in pulpal tissue. Multiple pulp stones associated with pulp tissue altered by fibrosis were freed from dentinal walls and removed using hand instruments. Root canals were instrumented and obturated in a single visit.
**DISCUSSION:** Although proper ultrasonic tips are best for stone dislodgement, convenient burs also may be safely used. Some anatomical details, like color difference between floor and walls of the chamber can help in differentiation of denticles and surrounding dentin.
**CONCLUSION:** Root canal treatment success is dependent on careful clinical and radiographic examination of the pulp chamber. Difficult clinical problem could be solved relying on adequate diagnostic skills and everyday armamentarium.

**PP-107**
**PIVOTAL ROLE OF PRO-INFLAMMATORY CYTOKINES IN ALVEOLAR BONE RESORPTION IN APICAL PERIODONTITIS**

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**INTRODUCTION**: Apical periodontitis (AP) represents an inflammatory process characterized by an excessive bone resorption in periapical area that occurs as a consequence of the interplay between microbial infection and different inflammatory mediators.
**AIM**: To investigate the relative gene expression of tumor necrosis factor-alpha (TNF-α), Interleukin – 1 beta (IL-1β), IL-6, receptor activator of nuclear factor kappa-B ligand (RANKL), and osteoprotegerin (OPG) in AP and compare it with levels of these molecules in healthy control tissues. In addition, we aimed to determine their potential correlation in AP samples.
**MATERIALS AND METHODS**: The study group consisted of 30 AP lesions harvested from 30 adult voluntary participants (18 females, 12 males, and average age 39.2±15.2 years) in conjunction with apicoectomy. Thirty pulp tissues of intact teeth extracted due to orthodontic reasons, collected from 30 voluntary individuals

(18 females, 12 males, average age 22.8±4.1 Years), served as healthy controls. The relative gene expression of the investigated molecules (TNF-α, IL-1β, IL-6, RANKL, and OPG) in all tissue samples was analyzed using reverse transcriptase real-time polymerase chain reaction. The Chi-square test, Student t test, Mann-Whitney U test, and Spearman correlation were used for statistical analysis.
**RESULTS**: A highly significant increase in relative gene expression was observed in AP samples for TNF-α, IL-1β, IL-6, RANKL, and OPG compared to the healthy control group (P=0.001, P=0.004, P=0.001, P=0.032, P=0.016, respectively). Highly significant positive correlations were observed between examined molecules in AP samples.
**CONCLUSIONS**: Investigated pro-inflammatory cytokines play a pivotal role in alveolar bone resorption in AP.
**Keywords:** Apical periodontitis, Bone resorption, Interleukin – 1 beta, Interleukin – 6, Receptor activator of nuclear factor kappa-B ligand, Tumor necrosis factor-alpha.

**PP-108**
**COMPARATION OF THE RECIPROC BLUE FILE EFFICACY IN ROOT CANAL RETREATMENT WITH DIFFERENT SEALERS**

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**INTRODUCTION:** Insufficient chemo mechanical preparation and obturation of the root canal are probably the main reasons for endodontic treatment failure. Retreatment is a procedure to remove root canal filling material, followed by cleaning, shaping, and obturation.
**AIM:** The aim of this study is to evaluate the Reciproc Blue file efficacy for the retreatment of the root canals obturated with gutta-percha and different endodontic sealers.
**MATERIAL AND METHODS:** Twenty extracted teeth were instrumented with the Reciproc R40 (40/.06) file to working length. The samples were divided into two groups (n=10) according to the sealer which the root canals will be obturated with: Group 1: AH Plus, Group 2: BioRoot RCS. Retreatment was performed with the Reciproc R50 (50/.05) file. The time required to establish working length during retreatment was recorded. The samples were split longitudinally to evaluate the surface area of the residual canal filling material using a stereomicroscope at 40x.
**RESULTS:** Shorter time for desobturation was achieved in the first group, which was statistically significant compared to the second group ($p < .05$). No significant differences were detected concerning the residual filling material ($p > .05$), although lesser amount was found in the second group.
**CONCLUSION:** The Reciproc Blue file failed to completely remove both types of the sealer from the root canal walls, which implies that the most efficient desobturation requires the application of various mechanical and chemical resources.
**Keywords:** AH plus, BioRoot, Reciproc Blue, Retreatment

**PP-109**
**RETRIEVAL OF PULP STONE OUT OF FIRST MAXILLARY MOLAR**

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**BACKGROUND:** Pulp stones are the form of dental pulp calcifications that may fill the whole pulp chamber. These structures can create problems for location and full access to root canal orifices. Multiple etiological factors are considered to be involved in its formation.
**AIM:** To present a case of pulp stone retrieval out of a first maxillary molar
**Case report:** A female patient was referred to our office due to complaint of pain on intake of cold beverages and spontaneous pain episodes in the upper right molar region. Clinical examination revealed class II lesion on first right maxillary molar. Radiograph showed a deep distal caries lesion, very close to the pulp and large

pulp stone in pulp chamber. After standard access cavity preparation, without unnecessary extensions, the pulp stone was dissected and displaced using hand instruments. Four root canals were instrumented and treatment was completed in a single visit.
**DISCUSSION:** Although etiology of pulp stones is not well understood yet, long-standing irritations such as caries, periodontal disease or chronic inflammation have been associated with pulp calcifications. Also, age, trauma, some syndromes and systematic diseases are considered to be involved.
**CONCLUSION:** Success rate of root canal therapy depends on clinical knowledge of variations of the pulp space anatomy that can further be complicated by denticles. Adequate diagnosis and planning may lead to successful outcome even without contemporary armamentarium.

**PP-110**
**SODIUM HYPOCHLORITE/ETIDRONIC ACID IRRIGANT RELEASES ACTIVE TGF-β1 AND DENTIN SIALOPROTEIN FROM DENTIN**

**Bojan Dželetović,**
**Serbia**

**INTRODUCTION:** Sodium hypochlorite/etidronic acid (NaOCl/EA), single irrigant solution, was proposed as replacement of final irrigation with chelating agent in endodontics. However, data on release of active TGF-β1 and dentin sialoprotein (DSP), non-collagenous protein controlling TGF-β1 activity, from dentin by NaOCl/EA is scarce.
**AIMS:** To evaluate NaOCl/EA effects on active TGF-β1 and DSP release from human root dentine.
**MATERIALS AND METHODS:** Prepared standardized root segments from 20 permanent lower incisors were randomly assigned as follows: group I - 1.5%NaOCl+17%EDTA; group II -1.5%NaOCl/9%EA; group II- distilled water; groupIV-1.5%NaOCl; group V- 1.5%NaOCl+9%EA. After irrigation conducted according to protocol defined for each group, root segments were placed into tubes with phosphate-buffered saline and incubated at 37°C for 14 days. TGF-β1 and DSP were quantified by enzyme-linked immunosorbent assay.
**RESULTS:** Investigated molecules amounts released by NaOCl/EA did not differ significantly compared to NaOCl+EDTA. NaOCl/EA releases significantly higher TGF-β1 amounts compared to distilled water, while DSP amounts did not differ. NaOCl/EA releases significantly higher DSP amounts compared to NaOCl, while TGF-β1 amounts did not differ. NaOCl/EA released significantly lower active TGF-β1 and DSP amounts compared to NaOCl+EA.
**CONCLUSIONS:** NaOCl/EA seems to be as effective as NaOCl+EDTA in active TGF-β1 and DSP release from human root dentine, but less effective than EA as final irrigant after NaOCl.
**Keywords:** DSP, etidronate, irrigation, TGF-β1

**PP-111**
**SUCCESSFUL TREATMENT OF MANDIBULAR PREMOLAR ROOT PERFORATION**

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**BACKGROUND:** Root perforations are procedural complications which can, beside of the loss of root integrity, induce destruction of the adjacent periodontal tissues. This can result in lower success rates of endodontic treatment and the loss of the tooth.
**AIM:** To illustrate a clinical case of successful treatment of root perforation in mandibular premolar.
**CASES REPORT:** A 79-year-old female patient was referred to our department for management of mandibular left first premolar with a root perforation on the mesial aspect of the coronal segment of the root. Clinical examination revealed that the tooth was reshaped during preparation for a crown. Perforation site was visible through wide open access cavity. Sealing of the perforation defect was achieved with fast setting calcium silicate-based cement, inserted using a hand plugger. Material was condensed with large size paper points. The root canal was instrumented and obturated in the same visit. Clinical and radiograph follow-up,

after 5 years, showed no signs of infection, soft and hard tissues damage and good overall result.
**DISCUSSION:** Calcium silicate-based materials are widely accepted as a repair material of choice for different types of root perforations. Teeth with endodontic complications that are adequately treated could be abutments for long-term prosthodontic solutions.
**CONCLUSION:** Careful clinical technique and materials that provide an effective seal of the perforations contributes to higher therapy success rate and functional significance of the tooth.

**PP-112**
**INFLUENCE OF WEARING DENTURES AT NIGHT ON THE APPEARANCE OF STOMATITIS**

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**INTRODUCTION:** Prosthetic stomatitis most often affects the palatal mucosa in patients who wear partial or total dentures. Local factors include trauma, continuous wearing of dentures, poor hygiene, age of the dentures, and general factors such as diabetes, vitamin deficiency in the diet, and various medications.
**THE AIM: T**he aim of this work is to monitor the frequency of denture stomatitis and its relationship with wearing the dentures during the night.
**MATERIALS AND METHOD:** Patients from Rakovica Health Center, Belgrade, Serbia, department of prosthetics
**RESULTS:** Out of 15 patients, 12 women and 3 men, with denture stomatitis, average age 64, 11 of them stated that they wear dentures at night, which is 73.3%. The average age of the prostheses was 5 to 7 years. Of these, there were 11 total and 4 partial prostheses.
**CONCLUSION:** Prosthetic stomatitis is a chronic process, mainly with the presence of a fungal infection (Candida albicans), it occurs more often in patients who wear dentures overnight, more in women and in the upper jaw. The presence of dentures can reduce salivary pH, salivary flow, and interfere with soft tissue cleansing. A large number of microorganisms live on the surface of the prosthesis. In the beginning, when they receive dentures, patients are advised to wear it at night for easier getting used to it, but each patient should be monitored separately.
**Key words:** dentures, stomatitis, night wear

**PP-113**
**CAD/CAM PRODUCTION OF TOTAL DENTURES: AN OVERVIEW**

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**INTRODUCTION:** The history of CAD/CAM technology dates back to the 1980s. Since then, this technology has advanced significantly, allowing for more efficient and accurate fabrication of total dentures. Retention and stabilization are also critical factors in the success of complete dentures.
**AIMS:** The aim of this study is to provide an overview of the CAD/CAM production of total dentures, including the materials and methods used, the advantages and disadvantages of this technology, and the current state of research on this topic.
**MATERIALS AND METHODS:** Studies published between 2010 and 2021 were included in the review. Key search terms included “CAD/CAM dentures,” “computer-aided denture design,” “digital denture fabrication,” “denture retention,” and “denture stabilization.”
**RESULTS:** The use of CAD/CAM technology in the production of total dentures has been shown to reduce the time and labor required for the fabrication process, as well as improve the accuracy and precision of the final product. CAD/CAM technology can also contribute to improving retention and stabilization of complete dentures through the design of the denture base and the use of advanced materials.
**CONCLUSIONS:** Overall, CAD/CAM technology offers significant benefits for the production of total dentures, including improvements in retention and stabilization. While there are some limitations to this technology,

ongoing research and development are likely to improve its capabilities and reduce costs in the future
**Keywords:** CAD/CAM, dental prostheses, denture production, denture retention

**PP-114**
**PROSTHETIC REHABILITATION - CASE REPORT**

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**INTRODUCTION:** The concept of "All-on-Four", "All-on-Six" is based on placing four/six conventional implants in the part of fully edentulous jaws. The rehabilitation of patients allows for the aesthetics and functionality of the fixed implant-supported prostheses.
**CASE REPORT:** This case report concerns a 72-year-old patient. A treatment plan and the provision of informed consent, opted for an immediate, full-arch rehabilitation. The surgeon was in charge of designing general implant features and the number, size, and position of future abutments. At surgery, the implant showed excellent fit and stability. The combination of tilted and straight implants for supporting fixed prostheses can be considered a viable treatment modality. The entire process, from impression acquisition to implant production was implemented in a digital setting and completed in three weeks. This protocol technique also stabilizes bone levels and keeps the jaws healthy. This case report demonstrates that the correct planning with a wide and regular diameter options dental implants, which is associated with appropriate soft tissue and bone manipulation, allows for the achievement of admirable clinical results, with high survival, success, and prosthesis success rates.
**Key words:** dental implants, full-arch rehabilitation, prosthetic rehabilitation

**PP-115**
**THE COMPARISON BETWEEN METAL CERAMIC AND ALL CERAMIC FIXED RESTORATIONS**

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**INTRODUCTION:** Metal ceramic restorations are the point of reference, for the construction of fixed restorations. Recently, all ceramic restorations are of a great interest due to the high aesthetic and biocompatibility**.**
**AIM:** To evaluate and compare the complications, success rate and survival rate of the two different types of restorations.
**MATERIALS AND METHODS:** A search in PubMed was done with the following key words: all ceramic, metal ceramic, dental ceramic, zirconia, porcelain metal restorations. All the articles which fulfilled the inclusion criteria were selected and analyzed. The complications of the all ceramic and metal-ceramic restorations were evaluated and compared such as the ceramic fracture, esthetic failures, chipping, caries, de-cementation and the survival and success rate.
**CONCLUSIONS**: Based on our study the survival rate of metal ceramic restorations were similar compared to all ceramic restorations. Although, one of the complications regarding all ceramic restorations is ceramic chipping, the success rate of the restorations was similar. A large variety of all ceramic restorations, which properties differ from on another. All ceramic restorations are a good option in the term of fixed appliances and further scientific research should be conducted.
**Key words:** all ceramic restorations, metal ceramic, complications, success rate, survival rate.

**PP-116**
**MINIMAL INVASIVE TOOTH PREPARATION IN ANTERIOR ESTHETIC RESTORATION**

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**OBJECTIVES:** The case report describes the prosthetic rehabilitation of a patient with a maxillary anterior gap resulting from microdontia of the lateral incisors. With the use of new technologies, a simpler way to achieve an excellent aesthetic appearance for the patient is made possible.
**MATERIALS AND METHODS:** A 21-year-old female patient had an aesthetic problem due to microdontia of the lateral incisors. A mock-up was created using a digital diagnostic model. After consultation with the patient and corrections to the mock-up, minimally invasive tooth preparation was done and veneers were made using CAD/CAM technology from lithium disilicats ceramics (Ivoclar Vivadent Emax).
**RESULTS:** with the applied preparation and planning technique, tooth structures were preserved and a satisfactory aesthetic result was achieved, and the patient was satisfied with the outcome. The ceramic veneers closed the spaces, a natural appearance was achieved, and the function and occlusion of the restorations were satisfied.
**CONCLUSION:** the applied approach and technique of making ceramic veneers used in this case gave an excellent aesthetic result. However, successful rehabilitation in the anterior aesthetic zone requires thorough diagnostics and careful step-by-step planning.
**Keywords:** ceramic veneers, aesthetic, rehabilitation, microdontia

**PP-117**
**IMPLANT SUPPORTED PROSTHETIC REHABILITATION FOLLOWING COMPLETE EXODONTIA-CASE REPORT**

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**INTRODUCTION:** This case report presents the fabrication of mandibular implant supported hybrid prosthesis in the form of a Toronto bridge hybrid bar on a metal base with acrylic teeth to rehabilitate an edentulous patient.
**CASE REPORT:** This article describes and illustrates the 2-stage surgical and prosthetic treatment of a patient with an edentulous mandible opposing teeth of fixed dental restauration. Initially, mandibular teeth in the terminal stage of periodontitis disease were extracted. Then a temporary complete denture was made. After three months (early placement of implants after tooth extractions with partial bone healing), prosthetically-guided placement of 6 implants in the lower jaw was performed. After the period of osseointegration (protocol of conventional loading of implants) and 2 weeks after placing the healing abutment, we started the prosthetic phases (analog impression techniques). Also, this report includes the steps involved in the prosthodontic rehabilitation; an effective treatment plan, the restoration of vertical dimension, an immediate denture, an implant-level impression, a verified-master cast, the fabrication of definitive prosthesis.
**CONCLUSION:** The prosthetic rehabilitation of a fully edentulous mandible treated with dental implants using the “Toronto Bridge” technique is effective for restoring both function and aesthetics.
**Keywords:** dental implants, edentulous mandible, hybrid prosthesis, prosthetic rehabilitation

**PP-118**
**THE EXAMINATION OF MASTICATORY EFFICIENCY IN PATIENTS WITH DIFFERENT TYPE OF OCCLUSION**

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**INTRODUCTION:** Assessment of chewing efficiency is a useful method in evaluating masticatory function in older adults with natural and artificial teeth.
**OBJECTIVE:** The aim of study was to examine the masticatory efficiency of older patients without and with different types of prosthetic devices and compare subjective and objective assessment of chewing performance.
**MATERIAL AND METHODS:** The study involved 100 patients, both gender, aged 65 and more. The chewing function questionnaire (CFQ) was used as a research instrument which provided information about subjective assessment of patient chewing efficiency. The experimental part of the research included the two-color chewing gum test (mixing ability) and the results obtained were an indicator of objective assessment of masticatory function.
**RESULTS:** The patients masticatory efficiency progressively reduces with a decrease in the number of natural teeth ($p<0.05$). The results show a mutual correlation between the date obtained by CFQ and the clinical mixing ability test ($r=0.742$; $p<0.05$).
**CONCLUSION:** This research showed the necessity of patients' chewing efficiency testing, because the loss of natural teeth is one of the main factors that impairs masticatory function. Objective testing of mixing ability correlates with subjective assessment of patients measured by a questionnaire and both can be used in a clinical practice.
**Keywords:** chewing efficiency, questionnaire, chewing gum.

**PP-119**
**ROOT CANAL RETREATMENT OF FIRST MAXILLARY MOLAR WITH MISSED PULP STONE**

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**BACKGROUND:** Calcified masses in dental pulp chambers in form of spherical stones can influence endodontic treatment and its outcome. Due to internal anatomy change and blocking access to root canals these can add weight to root canal shaping and cleaning.
**AIM:** To report endodontic retreatment of first maxillary molar with missed pulp stone
**CASE REPORT:** A female patient was referred to our department for endodontic retreatment of maxillary left first molar. Panoramic radiograph revealed inadequate previous root canal filling while intraoral examination showed recontoured tooth after removal of prosthetic crown. During access cavity preparation we concluded that a pulp stone, missed in previous treatment, was present in pulp chamber. Denticle was freed from pulp chamber and displaced with an aid of hand instruments. Orifice of fourth root canal was discovered under the denticle and all four canals were instrumented. Retreatment was completed in second visit, after intracanal medication phase.
**DISCUSSION:** Proper differentiation of pulp stones and surrounding dentin can be critical for its removal and successful treatment. Localization of root canal orifices at walls/floor junction of pulp chamber or at the terminus of root developmental fusion lines can be useful guide.
**CONCLUSION:** Conservative endodontic approach can be the treatment of choice without tooth weakening and excessive hard tissues removal. Although pulp stones are not everyday problem in dental practice, clinician should have in mind the possibility of variations of pulp chamber anatomy caused by pulp stones.

**PP-120**
**ENDODONTIC TREATMENT OF SECOND MAXILLARY MOLAR WITH MULTIPLE PULP STONES**

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**BACKGROUND:** Calcifications in the form of calcified stones in the dental pulp chamber can be challenging

for the location and access to canal orifices. These structures can change chamber morphology and make difficulties during root canal system instrumentation.
**GOAL:** To report a case of endodontic treatment of second maxillary molar with multiple pulp stones.
**CASE REPORT:** A female patient was referred to our office for endodontic treatment of maxillary left second molar. Old prosthodontic bridge was removed and treatment plan included endodontic therapy. Coronal parts of the pulp chamber were not visible on **preoperative** radiograph while canal outlines were only partially visible for the mesial root. Access cavity preparation revealed multiple pulp stones occupying pulp chamber. Pulp stones were freed and removed using an ultrasonic tip. After the removal of denticles exploration of pulp chamber revealed root canals orifices and the treatment was completed in the same visit.
**DISCUSSION:** Pulp stones can interfere with endodontic instrumentation and make location of root canal orifices difficult. Its removal may be related to potential complications such as perforations and tooth dentine excess removal.
**CONCLUSION:** Thorough knowledge of pulp chamber morphology and location of canal orifices, even in cases with access blocked by pulp stones, will probably lead to a successful outcome. Pulp stones, most reliably, could be dislodged and removed using proper ultrasonic tips, without unnecessary hard tissues damage.

**PP-121**
**RETREATMENT OF MANDIBULAR MOLAR WITH APICAL ROOT RESORPTION AFTER POST RETRIEVAL**

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University of Belgrade, School of Dental Medicine, DentalNet Research Group, Serbia

**BACKGROUND:** External apical resorptions are commonly caused by apical periodontitis and lead to loss of root structure. Endodontic retreatment should stop the resorption process but in teeth restored with cast post and crown it could be challenging procedure.
**GOAL:** To present successful conservative endodontic retreatment of mandibular molar with apical root resorption after crown and cast post removal.
**CASE REPORT:** A patient was referred to our clinic for mandibular molar therapy. Dental radiograph showed failed endodontic filling, periapical lesion and apical root resorption. We planned orthograde retreatment, removed the crown, sectioned and retrieved the posts by means of ultrasonic tip. Previous root canal filling was removed using reciprocating file system. Following chemical-mechanical treatment, calcium hydroxide paste was placed and a week later root canal was obturated. We restored the tooth with fiber post and a crown. Control clinical examination, eight months later, showed good outcome that was radiographically confirmed.
**DISCUSSION:** Microleakage around dental restorations may deteriorate the quality of canal filling leading to infection and endodontic therapy failure. In teeth restored with post and crown its removal is prerequisite for complete cleaning of root canal system.

**COCLUSION:** Complete cleaning of root canal system and elimination of microorganisms is enabled only through orthograde endodontic therapy. This approach should always be the first choice for treatment of teeth with periapical lesions as it causes less trauma in comparison to surgery.

**PP-122**
**REMOVAL OF FRACTURED ENDODONTIC INSTRUMENT TIP**

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**BACKGROUND:** Separated endodontic instrument in a root canal prevents optimal cleaning and shaping of canal space and interferes with the favorable treatment outcome.
Goal: To report a clinical case removal of endodontic instrument tip separated in mandibular first molar

**CASE REPORT**: A male patient was referred to our department for the removal of a fractured endodontic file out of mandibular first molar. Dental radiography revealed separated file tip in the middle segment of one of mesial root canals. Gates–Glidden burs were used to create a straight-line access allowing visibility of the coronal aspect of the fractured fragment. Magnification of dental microscope allowed the removal of dentin circumferentially around the fragment with an aid of endodontic ultrasonic tip. Separated tip of reciprocating endodontic instrument was loosened up and retrieved by means of ultrasonic vibrations. Endodontic therapy was completed after medication phase, in two visits.
**DISCUSSION:** Separated endodontic instrument removal is one of the accidents that needs appropriate treatment planning in order to minimally damage surrounding dentin tissue and maintain the original canal shape. Specialized endodontic ultrasonic tips could be used for this purpose as effective, inexpensive and easily applicable armamentarium.
**CONCLUSION:** Conservative retrieval should always be the first treatment option for endodontic instrument fractured in root canal. Although it requires significant clinical experience and specialized armamentarium it causes less psychological trauma in comparison to other options.

**PP-123**
**RETRIEVAL OF HAND FILE FRAGMENT SEPARATED IN MAXILLARY PREMOLAR**

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University of Belgrade, School of Dental Medicine, DentalNet Research Group, Serbia

**BACKGROUND:** Endodontic instrument fracture during therapeutic procedure prevents optimal shaping and cleaning of the root canal system and interferes with the favorable treatment outcome.
**GOAL:** To present a clinical case of hand file fragment retrieval out of a maxillary premolar.
Case report: A male patient was referred to our clinic for the retrieval of fractured endodontic instrument in maxillary premolar. Radiograph showed approximately 5 mm long file fragment in the apical canal third. Straight-line access to the instrument's coronal aspect was created in order to enable removal of dentine circumferentially around the fragment. This allowed application of ultrasonic vibrations to the file, its release and successful removal. Dental microscope magnification enabled additional visibility during whole procedure. Root canal patency was conformed and endodontic instrumentation completed. After medication phase root canal obturation was done in the second visit.
**DISCUSSION:** Fractured endodontic instrument removal should be performed with minimal damage to root canal dentin. Technique using dedicated endodontic ultrasonic tips is a relatively simple, fast and efficient way for resolution of these kind of clinical problems.
**CONCLUSION:** Separated instrument retrieval could be a challenging process that affects planning of a more comprehensive prosthetic solution. Although it is not always possible to preserve the original shape of endodontic space during endodontic instrument removal, adequate strategy and careful implementation lead to successful outcome.

**PP-124**
**RETRIEVAL OF ENDODONTIC INSTRUMENT SEPARATED IN MANDIBULAR INCISOR**

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**INTRODUCTION:** Endodontic instrument separation is a complication that might occur during endodontic treatment and prevents effective cleaning and shaping of root canal space hindering desirable outcome of the therapy.
**AIM:** To report a case of a successful retrieval of endodontic instrument fragment separated in mandibular incisor root canal.
**CASE REPORT:** A male patient was referred to our office for fractured endodontic file removal. The instrument

was separated in mandibular incisor. Retroalveolar radiograph showed approximately 7 mm long instrument fragment in the middle root canal segment. Straight-line access was already obtained allowing good visibility of the coronal aspect of the broken instrument. Specialized endodontic ultrasonic tip was used for dentine removal circumferentially around coronal aspect of the fragment. Ultrasonic vibrations allowed loosening up and retrieval of the broken instrument without the need for additional magnification. After root canal patency was confirmed, endodontic treatment was completed in two visits, including medication phase.
**DISCUSSION:** Removal of separated instrument is a prerequisite for successful canal instrumentation, treatment of existing and prevention of potential complications, thus it affects the outcome of the complete therapy. We consider the technique described in present case report an easy, safe and low-cost solution that can be performed in every day practice.
**CONCLUSION:** Adequate treatment planning, good experience and appropriate armamentarium enable conservative and effective removal of fractured instruments.

**PP-125**
**MANDIBULAR PREMOLARS WITH TWO ROOT CANALS – ENDODONTIC THERAPY**

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**BACKGROUND:** Endodontic instrumentation, disinfection and three-dimensional obturation of the entire root canal system are prerequisites for successful treatment. Anatomical variations such as additional canals and roots can make clinical diagnosis and management a challenging task.
**AIM:** To present endodontic management of two mandibular premolars with two root canals.
**CASES REPORT:** Two patients were referred to our department for endodontic treatment of mandibular premolar teeth. History of transitory pain on cold beverages intake was recorded for both patients. Clinical examinations revealed extensive carious lesions but teeth were without percussion and palpation sensitivity. The possibility of complex canal system morphology was indicated on preoperative periapical radiographs. Appropriate access cavities were prepared in order to enable tactile exploration and direct visibility of entire pulpal chamber. Unusual shape of coronal pulp space led to additional canals identification. After instrumentation, done by reciprocating file system, obturation was completed in accordance with standard protocols.
**DISCUSSION:** Careful radiographic examination indicated morphological aberration. Subsequent detailed clinical exploration revealed extra canals. Identification of additional root canals is of crucial importance as they may harbor microorganisms and be a cause of treatment failure.
**CONCLUSION:** Appropriate knowledge of morphology, clinical technique and specialized armamentarium such as dental microscope, in some cases, can be of major importance for therapy success.

**PP-126**
**ACUTE NECROTIZING ULCERATIVE GINGIVITIS**

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**INTRODUCTION:** Acute Necrotizing Ulcerative Gingivitis (ANUG) is an infection characterized by necrosis of the interdental papillae, spontaneous bleeding, pain and halitosis. Its systemic disease background and acute, painful and destructive clinical presentation makes it unique when compared with other periodontal diseases.
**AIMS:** The purpose of the presentation is to understand the difference between NUG and other types of periodontal diseases, the microbial aspect and the proper treatment approach that we have to follow.
**MATERIALS AND METHODS:** Proliferating oral anaerobic bacteria are involved in the development of the disease. NUG is predominantly associated with spirochetes, with the main cultivatable bacteria being Treponema sp. and Fusobacterium sp. Conservative approach is the first line of treatment by superficial

debridement and proper oral hygiene instructions, combined with application of hydrogen peroxide (3%) and prescription of oral rinses of chlorhexidine (0,2%). Use of metronidazole 250mg has been found effective and it is recommended if systemic symptoms are present. Other systemic drugs have also been suggested, such as penicillin, tetracycline and Amoxicillin/clavulanic acid. Treatment is completed with scaling and root planning.
**RESULTS:** Treatment of NUG is completed when all clinical symptoms and signs of the disease are absent and optimal conditions for future plaque control are established.
**CONCLUSION:** If left untreated, it may spread to the entire gingival complex; mucosa and alveolar bone, leading to necrotizing ulcerative stomatitis/periodontitis.

**PP-127**
**TREATMENT OF A PERİODONTALLY HOPELESS TOOTH: A CASE REPORT FOLLOWED FOR 15 MONTHS**

**Yagmur Sarac Gul**
Recep Tayyip Erdogan University Faculty of Dentistry, Turkey

**AIM:** The aim of this report is presenting treatment and following phases radiographically of a hopeless tooth number with 33 and including periodontal bone loss was the periapical region.
**CASE DESCRIPTION:** Systemically healthy, 31-year-old, famale patient applied to clinic with complaints chronic pains and tooth mobility. First, clinic and radiographic examination were made and found out that patient had stage 3, grade C periodontitis. Along with positive answer electric pulp testing, 33th tooth had severe periodontal bone loss beyond the periapical region in radiographic examination and mobility with degree 2(Miller's) were observed. After 10 weeks of initial periodontal therapy, periodontal regenerative surgery was planned. At mentioned tooth area, full thickness flap was elevated with blunt dissection and removed the granulation tissue also subgingival calculus. Defective area was made visible. Nearly crater like defect was filled with xenogen particulate graft, tented with resorbable collagen membrane and flaps were closed primer intention with silk sutures. 10 days later, sutures were removed.
**RESULTS:** At 15 month recalls, no complications were observed. Radiographic bone filling occurred and mobility of tooth decreased with successive months. By the end of the 15 month electric pulp test was still positive. Conclusions: Guided tissue regeneration (membrane particular grafts) technique may have a great success on seen radiographically hopeless teeth even such cases.
**Key Words:** Periodontal regenerative surgery, bone filling

**PP-128**
**SUBEPITHELIAL CONNECTİVE TISSUE GRAFT: A CASE REPORT**

**Melek Beder, Mine Keskin**
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**INTRODUCTION:** Gingival recession is a common problem that can cause excessive dentin hypersensitivity and aesthetic problems.
**AIMS:** The aim of this case report is to evaluate the clinical results of the treatment of gingival recession in the upper central tooth using subepithelial connective tissue graft combined with coronally advanced flap techniques.
**MATERIALS AND METHODS:** A 29-year-old female patient was applied to our clinic with complaints of esthetics and sensitivity in her central tooth. In the intraoral examination, it was determined that the patient had gingival recession in the upper central tooth with a depth of 3 mm and a width of 4 mm. After the non-surgical periodontal treatment, subepithelial connective tissue graft and coronally advanced flap surgery was performed on the relevant area.
**RESULTS:** In the follow-up after the treatment, it was observed that there was closure on the open root surface and the dentin sensitivity disappeared.

**CONCLUSIONS:** It was observed that coronally advanced flap applied together with subepithelial connective tissue graft provided a complete coverage on the root surface.
**Keywords:** Coronally advanced flap, gingival recession, subepithelial connective tissue graft

**PP-129**
**SUBEPITHELIAL CONNECTİVE TISSUE GRAFT: A CASE REPORT**

**Mine Keskin, Reyhan Şenkal**
Recep Tayyip Erdogan University, Faculty of Dentistry, Turkey

**İNTRODUCTION:** As a result of gingival recessions, the root surface is exposed, causing dentin sensitivity and aesthetic problems.
**AIMS:** The aim of this case report is to evaluate the clinical results of the treatment of gingival recession in the lower canine using the combined double papillary flap technique with subepithelial connective tissue graft.
**MATERIALS AND METHODS:** A 32-year-old female patient was applied to our clinic with complaints of esthetics and sensitivity in her canine tooth. In the intraoral examination, it was determined that there was gingival recession in the related tooth with a depth of 7 mm and a width of 3 mm. After the non-surgical periodontal treatment of the patient was completed, subepithelial connective tissue graft and double papillary flap surgery was performed on the relevant area.
**RESULTS:** In the follow-ups after 1, 3 and 6 months, it was observed that there was closure on the open root surface and the dentin sensitivity disappeared.
**CONCLUSIONS:** It was observed that double papillary flap applied together with subepithelial connective tissue graft provided a complete coverage on the root surface.
**Keywords:** Subepithelial connective tissue graft, double papillary flap, gingival recession

**PP-130**
**TREATMENT OF ADJACENT GINGIVAL RECESSIONS: CORONALLY ADVANCED FLAP WITH SITE-SPECIFIC APPLICATION OF CONNECTIVE TISSUE GRAFT**

**Reyhan Şenkal, Melek Beder**
Recep Tayyip Erdoğan University, Faculty of Dentistry, Department of Periodontology, Turkey

**INTRODUCTION:** Gingival recession is a prevalent problem that is related to esthetic demands and dentin hypersensitivity. Connective tissue graft procedures allow predictable root coverage.
**AIMS:** The aim of this study was to evaluate the short-term (9 months) effectiveness of a surgical procedure combining coronally advanced flap with site-specific application of connective tissue graft in the treatment of gingival recessions.
**MATERIALS AND METHODS:** A 35-year-old systemically healthy female presented with dentin hypersensitivity and discomfort while brushing on two adjacent Miller Class 1 gingival recession of 3-5 mm depth with narrow band of keratinized tissue in the maxillary lateral incisor and canine. The root coverage procedure was performed by coronally advanced flap with site-specific application of connective tissue graft harvested from the lateral palate. The case was followed up for 9 months.
**RESULTS:** At 9-month follow-up, both of the roots were covered and 1-3 mm of keratinized tissue width was gained and gingival thickness was notably increased. The technique showed optimal clinical results in terms of coverage and resolution of hypersensitivity of gingival recessions.
**CONCLUSIONS:** In the treatment of adjacent gingival recessions , the coronally advanced flap + site-specific application of a small, thin connective tissue graft was able to provide root coverage at 9-month.
**Key Words:** Connective tissue graft, coronally advanced flap, gingival recession, root coverage

**PP-131**
**COMPOSİTE RESTORATİON OF WEDGE LATERALS: TWO CASE REPORTS WİTH 16 MONTHS FOLLOW-UP**

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**INTRODUCTION**: Inherited wedge laterals are smaller than their normal size, and the mesiodistal width at the incisal is shorter than at the cervical. It is seen in 0.6%-9.9% of populations.
**AIMS:** The aim of this report is to present the composite restoration of wedge laterals in 2 patients.
**MATERIALS AND METHODS:** Two healthy female patients, aged 41 and 18 years, applied to our clinic with aesthetic complaints due to deformity of the anterior teeth. After the examination, treatment options were explained and it was decided to apply composite restoration at the request of the patients. The same treatment steps were followed for the patients. Tooth color was determined, the appropriate composite (A2, Clearfil Majesty Esthetic, Kuraray, Japan) was selected. All surfaces of the teeth were acidified with 35% acid for 15 seconds, washed and dried. G-Premio bond was applied in accordance with the manufacturer's instructions. The composite was placed in accordance with the natural form of the teeth, and the treatment was completed in a single session. Restorations were made with finishing burs, polishing discs. The importance of oral hygiene and the things to pay attention to were explained to the patient.
**RESULTS:** Patients were called at 16 months. No fractures or discoloration were observed in the restorations. Patients reported their aesthetic satisfaction.
**CONCLUSION:** Composite restorations, which can be applied in a single session without the need for preparation, are preferred for patients and physicians with successful aesthetic results.
**Keywords:** Composite resin, Wedge later

**PP-132**
**ASSESSMENT OF MASTICATORY FUNCTION IN TOTAL DENTURE USERS**

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**INTRODUCTION:** Total dentures (TD) with replacement of lost teeth play a significant role in establishing adequate masticatory function.
**OBJECTIVE:** The objective of this research is to evaluate the masticatory function (MF) in TD users, expressed through the monitoring of masticatory efficiency as a function of time.
**MATERIAL AND METHOD:** Ten patients participated in the research, whose masticatory efficiency was monitored on the day of delivery, as well as after 7 and 40 days of wearing dentures with and without adhesive. Subjects chewed two colored samples of Wrigley chewing gum, which after 20 and 40 chewing cycles were photographed and analyzed with the View Gum program. After the spectrophotometric analysis of the chewed samples, a comparison was made of the samples of denture users (with and without the use of dental adhesives) with the samples of subjects with intact teeth.
**RESULTS:** The results showed a significantly lower effectiveness in the users of TD with and without the use of dental adhesives compared to subjects with an intact dental row during the entire evaluation period. After 40 days, the official efficiency was significantly increased compared to the seventh day and the day of handing over the total prostheses
**CONCLUSION:** The adaptation period of 40 days significantly affects the masticatory function in TP wearers, who's MF can be improved by using dental adhesives in the first seven days after handing over the prosthesis.
**Key words**: total dentures, masticatory efficiency

**PP-133**
**PROSTHETIC REHABILITATION OF PATIENTS WITH A MEDIAN DIASTEMA AND DISPLACED MIDDLE OF THE DENTAL ROW IN THE UPPER JAW**

**Valentina Pavlović, Aleksandar Stanišljević, Sarija Chebli, Marijana Ivanovic Borovic, Katarina Radovic**
School of Dental Medicine, University of Belgrade, Serbia

**CASE REPORT:** Prosthetic rehabilitation of patients with a median diastema and displaced maxillary midline.
**INTRODUCTION:** Maxillary diastema mediana is a common aesthetic complaint of patients. The assessment of the aesthetics of the smile is determined by the position of the upper central incisors, as well as the symmetry of the midline. Diastema is a gap between teeth, which most often occurs between the upper central incisors - diastema median, but it can also occur between other teeth.
**AIM:** Prosthetic rehabilitation with ceramic and metal-ceramic crowns in order to achieve adequate function and aesthetics in the upper jaw.
**MATERIAL AND METHOD:** Presentation of 3 cases, female patients aged between 34 and 37 years. Wax up models and laboratory temporary crowns were made in order to achieve the appropriate effect and easier communication with patients. The impression was taken with additional silicone and the ceramic and metal-ceramic crowns were made.
**RESULTS:** The patients were successfully rehabilitated with prosthetic therapy in all three cases. The maxillary midline is much closer to the middle of the face according to morphological parameters. In cases with a diastema and a loose tooth row, the spaces are symmetrically closed.
**CONCLUSION:** Diastemas and a displaced center of the dental row represent a significant aesthetic problem. With proper planning, making diagnostic and wax up models, adequate rehabilitation with predictable results is possible.

**Key words:** median diastema, ceramic crowns, metal-ceramic

**PP-134**
**STEM CELLS FROM APICAL PAPILLA. TISSUE REGENERATION AND NEW PRESPECTIVES**

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**INTRODUCTION:** Stem cells are undifferentiated cells located in different parts of the body. The main role of stem cells is to obtain restoration of injured cells, tissue augmentation and general homeostasis. Stem cells from the apical papilla (SCAPs) are located at the apical papilla of immature permanent teeth and their properties include high proliferative potential, self-renewal ability and immunogenicity.
**AIM:** The aim of this study is to analyze the characteristics and the regeneration abilities of these stem cells and the application they have in stem cell-based therapy.
**MATERIALS AND METHODS:** The international databases PubMed and Google scholar were searched with keyword “stem cells from apical papilla”, “SCAPs”, “neurogenic differentiation”, “dental stem cells”.
**RESULTS:** There is a large volume of published studies describing that SCAPs are capable of self-renewal, proliferation, and multilineage differentiation. Numerous studies have confirmed that SCAPs proceed the capacity to differentiate into multiple cell types such as osteoblasts, odontoblasts, neural cells, adipocytes, chondrocytes, and hepatocytes. Stem cell-based therapy is an emerging field as a promising medical treatment of multiple diseases that includes pulp-dentin regeneration, periodontal tissue regeneration, bone regeneration, neural regeneration and repair, angiogenesis and immunotherapy.
**CONCLUSIONS:** SCAPs have a remarkable tissue reparative and regenerative potential and they have been proposed as ideal candidates for tissue regeneration. However more research and clinical trials need to be done.

**PP-135**
**NONSURGICAL ENDODONTIC TREATMENT AND RETREATMENT IN PERMANENT LOWER TEETH WITH PERIAPICAL LESIONS: 3-YEARS FOLLOW-UP**

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**INTRODUCTION:** Unappropriated occlusions of prosthodontic rehabilitation may affect periapical lesions. Consequently, that could result in irreversible pulpitis which may lead to periapical abscess.
**AIM:** To present a case of nonsurgical, endodontic treatment of permanent lower teeth with large periapical lesions.
**CASE PRESENTATION:** A 42-year-old male patient was referred to our clinic for prosthodontics preparation. Clinical examination showed the presence of a metal-ceramic bridge between teeth 41-35. The radiograph examination (orthopantomographic image) revealed inadequate obturation on teeth 32 and large apical and lateral lesions on teeth 33, 34 and 41. After removing the prosthetic restorations, endodontic treatment was performed using Ni-Ti instruments (Protaper Next, Dentsply Sirona, USA). NaOCl (2%) was used for root canal irrigation. Intracanal medication (calcium hydroxide paste) was applied and changed after 14 days. Canal obturation was performed with resin-based sealer (AH plus, Dentsply, Sirona USA) and gutta-percha points. Control radiography 3 months and 3 years later showed periapical healing.
**DISCUSSION:** Inadequate prosthodontics rehabilitation can be the cause of periapical lesions. Elimination of microorganisms from the root canals and adequate endodontics treatment is the most important factor for the periapical lesions healing.
**Conclusion:** Nonsurgical endodontic treatment and retreatment could be successfully performed for the restoration of many teeth for prosthodontics preparation.

**PP-136**
**FUSION OF SUPERNUMEMARY TOOTH AND PERMANENT INCISER CASE REPORT**

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**INTRODUCTION:** Mesiodens is the most common type of supernumerary tooth that can appear in the maxillary midline area. Fusion is the union of two embryologically separate teeth in development.
**OBJECTIVE:** The aim of the work was to show the clinical result of therapy fusion of the mesiodens and the permanent upper central incisor, as a condition that will ensure the preservation of the permanent upper central incisor in the oral cavity.
**MATERIAL AND METHOD**: The case shows fusion of supernumerary tooth and tooth 21, in a boy aged nine. Analysis of the CBCT scan shows the existence of an unerupted supernumerary tooth; as well as the link-up of the crown and cervical part of the root of the supernumerary tooth with the cervical part of the root tooth 21. The therapy included the palatal gingivectomy of tooth 21, which provided the necessary visibility for the separation; extraction of a supernumerary tooth; placement of an immobilization splint made of fiberglass fibers (53-12-11-21-22-63) for two weeks. After recovery of soft and hard tissues in the area of tooth 21, tooth 21 was endodontically treated. After the definitive obturation of the root canal, the cementation of the fiber-glass post and the fabrication of the composite upgrade were started.
**RESULTS:** A six-month control CBCT scan shows bone reparation in the area of tooth 21.
**CONCLUSION:** Conservative endodontic treatment of mesiodens and permanent tooth fusion with surgical therapy gave very good aesthetic and functional results.
**Keywords** Bone reparation, CBCT scans, Extraction, Fusion, and Supernumerary tooth.

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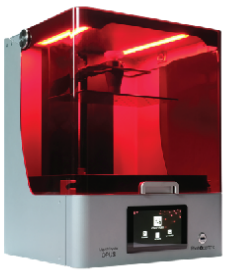

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**Официјален и овластен дистрибутер за W&H Австрија**

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**FIRST EDITION**
*The second edition with correction of all unintentional, technical errors and deficiencies will be available by 09.09.2023

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