



17TH INTERNATIONAL DENTAL CONGRESS

“DIGITAL DENTISTRY-SYNERGY
BETWEEN 3D TECHNOLOGIES AND AI”

ABSTRACT BOOK

K4 SKOPJE
12-14. 6. 2026





SKOPJE - СКОПЈЕ



12-14.06.2026

17th International Dental Congress

“DIGITAL DENTISTRY-SYNERGY BETWEEN
3D TECHNOLOGIES AND AI”

ABSTRACT BOOK

K₄ Skopje
12-14. 6. 2026



SCIENTIFIC COMMITTEE

Prof. Dr. Sabetim Cherkezi – President of the Scientific Committee

Prof. Dr. Julijana Nikolovska

Prof. Dr. Sonja Apostolska

Prof. Dr. Sašo Jovanovski

Prof. Dr. Silvana Georgieva

Prof. Dr. Lidija Kanurkova

Prof. Dr. Jetmire Alimani Jakupi

Prof. Dr. Ilijana Muratovska

Prof. Dr. Efka Zabokova Bilbilova

Prof. Dr. Sahmedin Sali

Prof. Dr. Kenan Ferati

Prof. Dr. Oliver Dimitrovski

Prof. Dr. Kiro Ivanovski

Prof. Dr. Irena Gavrilovikj

Prof. Dr. Emilija Kostadinovska

Research Associate Dr. Marija Andonovska

Assoc. Prof. Dr. Vancho Spirov

Assoc. Prof. Dr. Amela Cana

Assoc. Prof. Dr. Bunjamin Dzaferi

Assoc. Prof. Dr. Budima Pejkovska Shahpaska

Dr. Sci. Armend Rexhepi

Dr. Sci. Jeta Rexhepi

Dr. Sci. Zana Jusufi Osmani



ORGANIZING COMMITTEE

Dr. Marko Mladenovski – President of the Organizing Committee

Dr. Arben Emini

Dr. Martina Anastasovska

Dr. Milan Kamchev

Dr. Zarko Gjorgiev

Dr. Vasilka Trendafilova Strezovska

Dr. Milan Lameski

Dr. Dafina Bogeska

Dr. Ridvan Alili

Dr. Zoran Celakoski

Dr. Boban Dimitrijoski

Dr. Nazmi Ferati

Dr. Aneta Terzievska

Dr. Loran Straševski

Dr. Goce Babovski

Dr. Zana Durmishi

Dr. Elmaza Ljushi

Dr. Amar Nesimi

Dr. Drin Çerkezi

Dr. Blagica Boceva

Dr. Jovan Mladenovski

Dr. Nikola Dereban

Dr. Gent Vela

Dr. Oreli Esati

Dr. Maja Vasilevska Badeva

Dr. Sofija Miteva Kacarski

Dr. Sanja Petrovska

Dr. Daniela Necovska

Dr. Vlatko Kokolanski

Dr. Trajče Mitrev

Dr. Gracija Bakracheska

Dr. Dafina Stojanoska

Dr. Tanja Stefanoska

Dr. Nikola Markovski

Dr. Jasmina Džajkovska

Dr. Dejan Trifunovski

Dr. Teodora Straševska

Dr. Aleksandar Stojanovski

Dr. Florin Shishko

Dr. Bojan Poposki

Dr. Zoran Nonkulovski

Dr. Tamara Nikolovska

Dr. Mila Dashtevska

Dr. Marija Simonovska





Dear Colleagues,

It is my great honor and pleasure to welcome you to the 17th K4 Congress, proudly hosted by the Macedonian Dental Chamber.

It is a privilege for the Macedonian Dental Chamber to organize this important regional event, which for many years has brought together dental professionals from Macedonia, Slovenia, Croatia, and Bosnia and Herzegovina, fostering the exchange of knowledge, professional experience, and shared values.

This year's Congress is of particular significance as it coincides with the 30th Anniversary of the Macedonian Dental Chamber.

This important milestone reflects our long-standing commitment to advancing the dental profession, promoting continuous professional education, and strengthening regional and international cooperation.

I am confident that the scientific program, professional discussions, and collegial networking will inspire new ideas, encourage future collaborations, and contribute to the continued advancement of dentistry throughout our region.

On behalf of the Macedonian Dental Chamber, I sincerely thank all participants, speakers, authors, sponsors, and partners for their valuable contribution to the success of this Congress.

I wish you a productive, inspiring, and memorable 17th K4 Congress.

With kind regards,

Prof. Blagoja Dashtevski,
President
Macedonian Dental Chamber

A handwritten signature in blue ink, consisting of stylized, flowing letters that appear to be 'B. Dashtevski'.



Dear Colleagues, Distinguished Guests, Dear Friends,

It is with great honor and sincere pleasure that I welcome you to the 17th K4 Congress, proudly hosted this year by the Macedonian Dental Chamber.

This Congress represents far more than a scientific and professional gathering. It stands as a symbol of longstanding cooperation, mutual trust, and the shared vision of the Macedonian Dental Chambers, Slovenia, Croatia, and Bosnia and Herzegovina. Over the years, the K4 Congress has evolved into a distinguished regional platform where knowledge, experience, and professional values are exchanged without borders, while innovative ideas are encouraged to grow and flourish.

This year's Congress carries special significance as it takes place in the year marking the 30th Anniversary of the Macedonian Dental Chamber. This important milestone offers us an opportunity to proudly reflect on our achievements while looking toward the future with an even greater sense of responsibility, committed to building a modern, strong, and united dental profession.

The Book of Abstracts you hold in your hands is a testament to scientific curiosity, professional dedication, and the continuous pursuit of excellence. Each published abstract represents a valuable contribution to the advancement of dental science and clinical practice, while serving as an inspiration for new research, innovative ideas, and future professional collaborations.

On behalf of the Organizing Committee, I would like to express my sincere gratitude to all authors, invited speakers, members of the Scientific and Organizing Committees, sponsors, supporting institutions, and participants whose dedication, support, and trust have contributed to the successful organization of this Congress.

I am confident that the 17th K4 Congress will be remembered not only for its high scientific standards, but also for the new professional friendships, the exchange of ideas, and our shared commitment to advancing dentistry for the benefit of our patients and future generations of dental professionals.

Thank you for being part of this important chapter in the history of the K4 Congress and the Macedonian Dental Chamber.

I wish you a successful, inspiring, and memorable Congress.

With kind regards,

Dr. Marko Mladenovski
President of the Organizing Committee

A stylized, handwritten signature in blue ink, consisting of a series of loops and a long horizontal stroke.

MEDIKA LE-MA
DENTAL & MEDICAL DEPO

ГРАДИМЕ
СИГУРНА ИДНИНА
заедно



КВАЛИТЕТ
НА КОЈ МОЖЕТЕ
ДА СЕ ПОТПРЕТЕ



ПАРТНЕРСТВО
НА ДОЛГ РОК



ШИРОК АСОРТИМАН
ЗА ВАШИТЕ ПОТРЕБИ



ПОСВЕТЕНИ НА
ВАШИОТ УСПЕХ



www.medikalema.mk



078/413-288



[medikalema](https://www.facebook.com/medikalema)



[medikalema](https://www.instagram.com/medikalema)

M **MEDIKA LE-MA**
DENTAL & MEDICAL DEPO

GOLDEN SPONSOR



PLENAR LECTURERS



Lecturer:

Vancho Spirov

Institution:

Faculty of Medical Sciences, Goce Delcev University, Stip,
North Macedonia

Dr. Spirov Vancho works at the Clinic for Oral Surgery and Implantology at the University Dental Clinical Center “St. Pantelejmon-Skopje” and is an assistant professor at the Faculty of Medical Sciences UGD Stip.

He completed his professional training in the field of im-plantology at the Istanbul Faculty of Dentistry at the Clinics for Oral and Maxillofacial Surgery and the Clinic for Im-plantology. He carries out professional education for Guided implant therapy at the Faculty of Dental Medicine at the He-brew University Hadassah School in Israel. He is the author and co-author of 75 expert-scientific papers published in domestic and foreign journals. In 2014, he was named among the 100 best doctors by the Ministry of Health of the Republic of Macedonia. He is the winner of the “Goce Delchev” State Award in the field of Medicine and health for 2017.

Dr. Spirov is a member of the European Association for Osseointegration, a member of the Macedonian Dental Soci-ety, the Macedonian Implantology Society and a member of the Association of Oral Surgeons of Macedonia.

Abstract:

DUAL SCAN TECHNIQUE IN GUIDED IMPLANTOLOGY

One of the main factors for good osseointegration of placed dental implants is the correct 3D position in the bone tissue. The method of work with the help of surgical guides allows safe work, placement of the implants in the best possible position and the fabrication of a predictable prosthetic superstructure.

Depending on the support, i.e. the contact surface on which the surgical guide rests, there is three types of guides: 1. guides supported by teeth, 2. guides supported by bone, and 3. guides supported by immobile soft tissue (in case of total edentulism). The third group of surgical guides represents the group that is the most difficult to manufacture, because we do not have dental tissues through which we overlay the two files, namely the DICOM and STL files. Our lecture will explain the technique of making surgical guides for completely edentulous patients, namely the double-scanning technique, and will also present in detail all the factors that affect the precision of placed dental implants.



Lecturer:

Sladjana Milardovic

Institution:

School of Dental Medicine University of Zagreb

Assoc. Prof. Sladjana Milardović, PhD, is a prominent Croatian scientist, associate professor, and specialist in dental prosthetics based in Zagreb.

Current Positions and Employment: University of Zagreb, School of Dental Medicine: Associate Professor at the Department of Fixed Prosthodontics (since June 2022). She serves as the course coordinator and lecturer for subjects such as Fixed Prosthodontics I.

Editorial work: Editor-in-Chief of the Croatian edition of “Dental Tribune”.

Clinical practice: Works as a specialist in dental prosthetics in the private sector in Zagreb (collaborating with clinics such as Ars Salutaris and previously Visodent).

Areas of Expertise and Scientific Work: Her specific scientific and professional focus lies in fixed dental prosthodontics. She specializes in: Modern conventional and digital impression techniques; the application of CAD/CAM technologies in dentistry; dental traumatology and prevention (e.g., research on the prevalence of dental trauma and the use of mouthguards among athletes); and fixed prosthetic therapy for teeth with extensive crown destruction.

Scientific Contribution: She actively publishes scientific papers in domestic and international journals. According to databases, her work has been cited over 310 times on platforms such as ResearchGate and Google Scholar. She is the author or co-author of more than 20 relevant scientific publications and studies in the field of prosthodontics.

Education and Teaching Activities

In addition to regular teaching within the integrated undergraduate and graduate dentistry study programs in Zagreb, she actively participates in the continuing education of dental professionals. She organizes and conducts professional courses and participates in international exchange projects, including Erasmus+ programs.

Abstract:

STRESS-FREE PROSTHODONTICS – MORE CONTROL, LESS IMPROVISATION

Modern prosthodontics requires a high level of precision, predictability and effective communication between dentists, dental technicians and patients. Despite technological advances, everyday clinical practice still often involves improvisation, uncertainty in certain phases of therapy and unpredictable results that increase the stress of the entire team and reduce patient satisfaction.

The lecture focuses on presenting practical protocols that allow for greater control during the planning and production of prosthetic restorations, while reducing complications. Clinical examples will show how a standardized approach to diagnostics, proper therapy planning, communication and implementation contributes to more predictable aesthetic and functional results.

Special emphasis will be placed on the importance of interdisciplinary cooperation, proper material selection and clear communication with the patient as key factors for successful therapy. The lecture will also cover everyday clinical challenges – from the first examination to the cementation of the definitive work – with specific advice on how to reduce the possibility of errors and increase confidence in decision-making.

The aim of the lecture is to show how a well-organized and structured prosthetic workflow not only improves the quality of therapy, but also significantly reduces the stress of the therapist and the entire team and increases the trust and satisfaction of patients.



Lecturer:

Tadej Mirt

Institution:

University of Ljubljana, Faculty of Medicine,
Department of Prosthodontics

Dr. Tadej Mirt is a dentist, university assistant, and researcher based in Ljubljana, Slovenia. He is a member of the Department of Prosthodontics at the Faculty of Medicine, University of Ljubljana. His professional and research interests focus on prosthodontics, dental materials, and contemporary ceramic restorations, with particular emphasis on zirconia ceramics and additive manufacturing (3D-printing) technologies. He has authored and co-authored scientific publications in the fields of dental materials and zirconia restorations. In 2022, he received the Second Prize in the Senior Basic Science Research – Robert Frank Award at the PER-IADR Oral Health Research Congress for research on additively manufactured zirconia ceramics. He is also actively involved in Young CED-IADR.

Abstract:

3D PRINTING OF ZIRCONIA CERAMICS FOR COMPLEX PROSTHODONTICS: EMERGING POSSIBILITIES AND CURRENT LIMITATIONS

Complex prosthodontic situations often challenge conventional restorative workflows. In patients with extensive jaw resections, severe tooth wear, limited interocclusal space, or compromised anatomical support, restorations and frameworks may need to be highly individualized, with thin sections or complex geometries. In such cases, conventional subtractive manufacturing may be limited by milling tool access, blank dimensions, and the difficulty of producing delicate or anatomically complex ceramic structures. 3D printing of zirconia ceramics represents a developing manufacturing approach for complex prosthodontic applications. Vat polymerization-based ceramic additive manufacturing is currently one of the most relevant methods for producing high-resolution zirconia structures. Compared with conventional milling, this technique may allow the fabrication of geometries that are difficult to achieve subtractively, including thin ceramic restorations, lightweight frameworks, retentive features, and patient-specific designs. At the same time, the clinical relevance of printed zirconia depends on more than printability alone. Dimensional accuracy, fracture reliability, fatigue behaviour, hydrothermal aging, surface quality, and biological safety must also be considered, particularly when thin or geometrically complex structures are planned. 3D-printed zirconia is still not a routine clinical material. However, it may become relevant for selected prosthodontic indications in which conventional milling is limited by space, anatomy, or geometry. This presentation will discuss current possibilities and limitations of zirconia additive manufacturing, with emphasis on its realistic translation from laboratory research toward clinical prosthodontics.



Lecturer:

Amila Zukanovic

Institution:

Univerzitet u Sarajevu Stomatološki fakultet

Prof. dr. sc. Amila Zukanović is a full time professor at the Department of Preventive and pediatric dentistry, Faculty of Dentistry, University of Sarajevo.

She is a specialist in preventive and pediatric dentistry.

She published a large many number of scientific works, several books and textbooks, of which she was the editor-in-chief of 2.

A complete bibliography is available on Google Scholar.

Abstract:

POSSIBILITIES OF ENDODONTIC TREATMENT OF PRIMARY TEETH WITH IRREVERSIBLE PULP CHANGES

The treatment of primary teeth with irreversible pulp diseases represents a challenge for every dentist. The lack of patient cooperation and the anatomomorphological characteristics of teeth in the primary dentition are the main reasons for the failure of conventional endodontic treatment. For these reasons, a large number of primary teeth that are indicated for endodontic therapy ultimately end up with extraction as the treatment of choice. This lecture will present the possibilities of endodontic treatment of primary teeth with irreversible pulp diseases, with special emphasis on the possibilities of local antibiotic use within the lesion sterilization and tissue repair (LSTR) procedure.

ЗАМЕНА ЗА ИЗГУБЕНИ ЗАБИ
ИМПЛАНТИ ОД ФМД-ИТАЛИЈА



ОФИЦИЈАЛЕН ЗАСТАПНИК ЗА
РЕПУБЛИКА МАКЕДОНИЈА :

О.М.Р. ДООЕЛ

ТЕЛЕФОН 070/207-391

o.m.r.bitola@gmail.com

MEDIKA LE-MA
DENTAL & MEDICAL DEPO

VIK 
Dental

AO
МАКЕДОНИЈА

AMERICAN
ORTHODONTICS

АМЕРИКАН
ОРТОДОНТИКС

SPONSORS



INVITED LECTURERS



Lecturer:

Milan Kamchev

Institution:

Dental Center “Dr. Kamchev”

Dr. Milan Kamchev, DDS, is a specialist in Oral Surgery and founder of the Dental Center “Dr. Kamchev” in Kavadarci, North Macedonia. He graduated from the Faculty of Dentistry in 1974 and completed his specialization in Oral Surgery in 1982. Throughout his distinguished professional career, he has actively participated in numerous national and international congresses and symposia as a lecturer and presenter. Dr. Kamchev is the author of the monograph Emergency Conditions in Dentistry and the Code of Dental Ethics and Deontology of the Dental Chamber of Macedonia. In recognition of his contributions to oral surgery, implantology, and healthcare development, he has received several professional awards, including the Plaque for Special Merits in Oral Surgery and Implantology and the “September 7th Plaque” for his contribution to healthcare in the Municipality of Kavadarci.

Abstract:

DENTAL INTERVENTIONS IN PREGNANT WOMEN

In dental offices, pregnant women are classified as high-risk patients. Is pregnancy a disease or a state of health? The correct answer is that pregnancy is a specific physiological condition in which the female organism lives under a storm of hormones. Pregnancy begins with the fertilization of the egg cell and normally ends in the 40th week. The course of pregnancy may proceed with normal fetal development, but it may also be accompanied by complications that carry a risk of spontaneous abortion and, sometimes, threaten the health and life of the mother. 35% of all pregnancies are considered high-risk. The dentist should be familiar with the causes of high-risk pregnancy in order to make proper decisions about when and how to intervene in pregnant women. The most common dental diseases that may intensify the existing risk are pulpitis, periodontitis, abscesses, phlegmons, traumatic injuries, malignant diseases, and neuralgia. Severe pain, fear of intervention, and sleepless nights lead the pregnant woman into a state of stress, which may seriously disturb the balance of hormones that maintain pregnancy. Purulent processes in the oral region increase the levels of prostaglandins E2 and F2 in the blood, which have a strong uterotonic effect. The aim of this lecture is to remind dentists that they may face the decision of whether to intervene in a woman with a high-risk pregnancy. In such cases, consultation with the patient's gynecologist regarding the condition and course of the pregnancy is mandatory, while the final decision whether to intervene or not remains with the dentist. The dentist should provide conditions for painless treatment and strictly follow the protocol for managing pregnant women. The use of medications should be extremely restrictive, following the rule of using them as rarely as possible and in the lowest doses that achieve a therapeutic effect.



Lecturer:

Natasha Teovska Mitrevska

Institution:

International Balkan University

Asst. Prof. Natasha Teovska Mitrevska is a Specialist in Dermatology in the Department of Dermatology in ReMedika General Hospital in Macedonia for more than 15 years and 20 years in Remedika hospital and Asst. Prof. at International Balkan University in Skopje, North Macedonia. Master's degree in Public Health and PhD in clinical medicine.

She is member of many local, regional and international medical associations. Country Representative of International Union against Sexually Transmitted Infections and Vice president of STD society in North Macedonia and international secretary of Macedonian society for Dermatovenerology.

Advance trainer for Fotona laser, Trainer for Morfeus 8. Lecture and speaker worldwide on Nacional level and international in dermatology and aesthetic. With more than 30 stipends in field of dermatology and aesthetics, winner of the best price as a lecture on Pigmentary disorders.

Trainer of Laser and Health Academy in the field of Dermatology and Aesthetics, and part of Editorial Board for journals and publications. CBAM authorized instructor of Aesthetic Medicine courses in Macedonia and the supervisor of the CBAM designated centers throughout the Eastern European region. Auditor for Ga2len network. Mentor at EACCI. Country coordinator for 3D skin network at cost action. Task force for laser and EBD and Gerytaric dermatology, urticaria and angioedema at EADV. AMWC jury. European STI Guidelines Project Editorial Board IUSTI.

Abstract:

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

Laser and photobiomodulation (PBM) therapies offer precise, minimally invasive treatment options for a variety of oral and perioral conditions. Through a series of clinical cases and a review of current indications, this presentation highlights the use of ablative and non-ablative lasers, vascular-selective wavelengths, and PBM in the management of papillomas, condylomata acuminata, herpes simplex infection, lichen-related lesions, hemangiomas, venous lakes, and perioral dermatitis, as well as laser-assisted lip rejuvenation. Clinical outcomes demonstrated effective lesion clearance, regression of vascular lesions, symptom reduction in inflammatory conditions, accelerated healing, and favorable aesthetic results. Laser-based lip rejuvenation improved lip texture, contour definition, and overall perioral appearance with minimal downtime. Current evidence and clinical experience support the safety and effectiveness of individualized laser and PBM protocols for both medical and aesthetic indications in the oral and perioral region.



Lecturer:

Dancho Bizevski

Institution:

Faculty of Dental Medicine, MIT University in Skopje

Prim. Assoc. Prof. Dr. Dancho Bizevski graduated from the Faculty of Dentistry in 2004 at the University “Sts. Cyril and Methodius” in Skopje, Republic of Macedonia, and then joined the Department of Oral and Maxillofacial Surgery at the Military Hospital in Skopje. He is a specialist in oral surgery, primarius, Doctor of Dental Sciences and Assistant Professor at the Department of Oral and Implant Surgery at the Faculty of Dental Medicine at MIT University in Skopje. He is currently the current Vice-Dean for Science. Since 2010, he has been working at the specialized institution for surgery of the mouth, jaw and teeth Nova Dental Surgery - Skopje as a surgeon and manager. He has published a large number of scientific and professional papers, publications in renowned international journals and actively participates in domestic and international congresses as a plenary lecturer. In 2023, he defended his doctoral dissertation on the topic “Clinical and computer evaluation of changes in the vestibular lamina after direct and mediate implantation in the aesthetic zone”. Dr. Bizevski’s work has a wide applied clinical significance in implantological surgical interventions in the aesthetic zone and follows the latest trends in dental implantology. He is a member of the Dental Chamber of the Republic of Macedonia, the Macedonian Dental Society, the Association of Oral Surgeons at the Macedonian Dental Society, Lake Como Institute Italy, the European Association of Dental Implantologists, the editorial board of the Southeast European Journal of Immunology, as well as scientific and professional congress boards. He is an accredited lecturer at the Implantologia Basica School of Implantology.

Abstract:

DIAGNOSIS AND MANAGEMENT OF PERIAPICAL CHANGES IN THE OROFACIAL REGION

Periapical lesions of the jaws represent a heterogeneous group of pathological entities that may be of odontogenic or non-odontogenic origin. Their clinical and radiological presentation often overlaps, making accurate diagnosis challenging despite established diagnostic algorithms and classifications. This presentation reviews a series of cases involving jaw cysts in which the clinical, radiological, and pathological findings did not fully correspond to the expected diagnosis. All patients underwent surgical treatment under local anesthesia with complete removal of the lesion and subsequent histopathological examination. The cases highlight the importance of integrating clinical assessment, radiological analysis, intraoperative observations, and, most importantly, pathological-histological findings in establishing the final diagnosis. The presented experience emphasizes that successful treatment and prognosis depend on a comprehensive diagnostic approach and careful correlation of all available findings rather than reliance on a single diagnostic modality.



Lecturer:

Sabetim Cherkezi

Institution:

Faculty of Medical Sciences, University of Tetova

Prof. Sabetim Cherkezi, DDS, MSc, PhD, is an Associate Professor of Orthodontics at the Faculty of Medical Sciences, University of Tetova, and a faculty member at the Faculty of Dental Medicine, International Balkan University in Skopje, North Macedonia. He graduated from the Faculty of Dentistry at Ss. Cyril and Methodius University in Skopje and completed his specialization in Orthodontics in 2010. He obtained his MSc degree in 2012 with research focused on the prevalence of orthodontic anomalies among schoolchildren of different ethnic groups in the Gostivar region and earned his PhD in Dental Sciences in 2017 with a dissertation investigating orthodontic anomalies as risk factors in the initiation and progression of periodontal inflammatory diseases. Since 1998, he has been practicing orthodontics at Dental Clinic “Vivadent” in Gostivar, where he combines clinical work with academic teaching and scientific research. Prof. Cherkezi has progressed through all academic ranks at the University of Tetova and currently serves as Associate Professor, teaching Orthodontics, Gnathology, and Dental Materials. His scientific interests include orthodontic anomalies, impacted teeth, craniofacial development, periodontal implications of malocclusions, and contemporary orthodontic treatment approaches. He is the author and co-author of numerous scientific publications and conference presentations and has been an invited lecturer at national and international congresses throughout the Balkans and Europe.

Abstract:

ASSESSMENT OF IMPACTED MAXILLARY CANINES USING PANORAMIC RADIOGRAPHY AND CBCT

Impacted maxillary canines represent one of the most common eruption disturbances encountered in orthodontic practice and often require a multidisciplinary diagnostic and therapeutic approach. Accurate localization of impacted canines is essential for treatment planning, selection of the appropriate orthodontic-surgical procedure, and prediction of treatment outcomes. Conventional panoramic radiography remains a valuable diagnostic tool; however, certain clinical situations may require additional three-dimensional imaging for precise assessment. This presentation reviews the radiographic evaluation of impacted maxillary canines using panoramic radiography and cone-beam computed tomography (CBCT). Thirty patients treated at a specialist orthodontic clinic were examined to assess the position of impacted canines and compare diagnostic findings obtained through different radiographic methods. Particular attention is given to cases in which conventional localization techniques provide inconclusive results and CBCT imaging contributes to a more accurate diagnosis. The findings highlight the importance of proper radiographic assessment in improving treatment planning, facilitating orthodontic-surgical management, and enhancing the overall prognosis of impacted maxillary canines.



Lecturer:

Jetmire Alimani Jakupi

Institution:

Faculty of Medical Sciences, University of Tetova

Prof. Jetmire Alimani-Jakupi, DDS, MSc, PhD, is a specialist in Preventive and Pediatric Dentistry and Professor at the Faculty of Medical Sciences, University of Tetova, North Macedonia. She graduated from the Faculty of Dentistry at Ss. Cyril and Methodius University in Skopje in 2004, completed her specialization in Preventive and Pediatric Dentistry in 2009, obtained her MSc degree in 2010, and earned her PhD in Dental Sciences in 2014. Since the academic year 2013/2014, she has been actively involved in teaching and research at the University of Tetova, where she has served as Head of the Dentistry Study Program since 2016. Prof. Alimani-Jakupi has held numerous leadership and advisory positions within higher education and professional regulatory bodies, including the Agency for Quality in Higher Education and the Macedonian Dental Chamber. Her scientific interests include preventive and pediatric dentistry, restorative dentistry, dental traumatology, biomaterials, nanomedicine, oral implantology, and contemporary endodontics. She has authored and co-authored numerous scientific publications and is a frequent invited speaker at national and international congresses and professional meetings.

Abstract:

THE ROLE OF FISSURE SEALANTS IN CARIES PREVENTION IN PERMANENT MOLARS AND THE AUXILIARY USE OF ARTIFICIAL INTELLIGENCE IN MONITORING CONTROL

Fissure sealants are among the most effective preventive measures for protecting the occlusal surfaces of permanent molars against dental caries, particularly in children with deep and narrow fissures that favor plaque accumulation. This study evaluated the retention and caries-preventive effectiveness of GC Fuji Triage fissure sealants in permanent molars of 150 six-year-old children. Participants were divided into two treatment groups and one untreated control group. Clinical follow-up was performed using the modified Cvar and Ryge criteria, assessing sealant retention and the occurrence of secondary caries. In addition, artificial intelligence (AI)-supported radiographic analysis was utilized as an adjunctive diagnostic tool for the early detection of sealant loss and initial carious lesions. The results demonstrated significantly better outcomes in sealed teeth compared with the control group, with a markedly lower incidence of caries ($p < 0.001$). The findings support the effectiveness of fissure sealants in caries prevention and suggest that AI-assisted radiographic monitoring may enhance diagnostic accuracy and improve long-term preventive care in pediatric dentistry.



Lecturer:

Armend Rexhepi & Jeta Rexhepi

Institution:

Department of Dental Medicine,
Faculty of Medical Sciences,
University of Tetova



Dr. Armend Rexhepi, DDS, PhD, is a Specialist in Oral Surgery and Assistant Professor at the Faculty of Medical Sciences, University of Tetova. He obtained his Doctor of Dental Sciences degree from Goce Delčev University in Štip and completed his specialization in Oral Surgery in 2025. Alongside his academic appointment, he practices at PHO Apolon in Tetovo. His clinical and research interests include oral surgery, implant dentistry, bone augmentation procedures, dental anesthesia, and the management of impacted teeth. Dr. Rexhepi has authored and co-authored numerous scientific publications and conference presentations in the fields of oral surgery, implantology, and restorative dentistry, and regularly participates in national and international scientific meetings and professional training programs.

Dr. Jeta Bexheti Rexhepi, DDS, PhD, is a Specialist in Orthodontics and Assistant Professor at the Faculty of Medical Sciences, University of Tetova. She earned her Doctor of Dental Sciences degree from Goce Delčev University in Štip and completed her specialization in Orthodontics in 2025. Since 2013, she has served as Director and practicing dentist at PHO Apolon in Tetovo, combining clinical work with academic teaching and research. Her professional interests focus on orthodontics, dentofacial development, impacted teeth, and interdisciplinary dental treatment. Dr. Bexheti Rexhepi has contributed to numerous scientific publications and conference presentations in orthodontics, implantology, and oral health, and actively participates in professional and academic organizations.

Abstract:

ORTHODONTIC-SURGICAL TREATMENT IN PATIENTS WITH IMPACTED TEETH

Impacted teeth are a common clinical challenge that can lead to functional, esthetic, and psychological consequences when left untreated. Their management often requires close collaboration between orthodontists and oral surgeons to facilitate proper eruption and alignment within the dental arch. This presentation reviews the outcomes of combined orthodontic-surgical treatment in patients with impacted teeth. Following comprehensive clinical and radiographic evaluation, impacted teeth were surgically exposed and orthodontically guided into position using fixed appliances. The interdisciplinary approach resulted in a high rate of successful tooth eruption and alignment, with most patients achieving satisfactory occlusal function and improved dental esthetics. Early diagnosis, careful treatment planning, and coordinated management were key factors contributing to favorable outcomes and minimizing complications. Patient satisfaction was generally high due to the functional and aesthetic improvements achieved. These findings support orthodontic-surgical treatment as a predictable and effective approach for the management of impacted teeth and highlight the importance of timely intervention and multidisciplinary care.



Lecturer:

Nada Spirovska

Institution:

University Dental Clinical Center “St. Pantelejmon” in Skopje

Dr. Nada Spirovska Risteska was born in Skopje on September 29, 1983. She completed her primary and secondary education in Skopje, after which she enrolled at the Faculty of Dentistry, Ss. Cyril and Methodius University in Skopje. She graduated in January 2009. Following graduation, in the same year (2009), she commenced her specialization studies in Periodontology, which she completed in 2012, thereby obtaining the title of Specialist in Periodontology. In 2013, she enrolled in second-cycle postgraduate studies at the Faculty of Dentistry, Ss. Cyril and Methodius University in Skopje, which she completed in 2015 with the successful defense of her master's thesis entitled “Assesment of gingival and periodontal health status among high school population”. Since 2016, Dr. Risteska has been employed as a clinical doctor at the Department of oral pathology and periodontology at the University Dental Clinical Center “St. Pantelejmon” in Skopje. In 2019, she enrolled in third-cycle doctoral studies in the scientific field of Oral Pathology and Periodontology at the Faculty of Dentistry, Ss. Cyril and Methodius University in Skopje. She defended her doctoral dissertation entitled “Efficiency of periodontal self-assessment tool and determination of salivary biomarkers for periodontitis screening” in 2024, thereby obtaining the academic degree Doctor of Sciences. Dr. Risteska has participated in numerous professional symposia, congresses, scientific meetings, and workshops. She is the author and co-author of several papers published in national and international journals. She is also fluent in English.

Abstract:

SCREENING OF PERIODONTAL DISEASES – SIGNIFICANCE, POSSIBILITIES AND METHODS

Periodontal diseases remain a major public health concern due to their high prevalence, chronic progression, and often asymptomatic nature, which frequently results in delayed diagnosis and treatment. This study evaluated the potential of periodontal health self-assessment and salivary biomarkers as screening tools for the early detection of periodontitis. A total of 200 participants aged 25–75 years underwent clinical periodontal examination, completed a 16-item periodontal health self-assessment questionnaire, and were tested for salivary lactate dehydrogenase (LDH) and hemoglobin levels. The self-assessment questionnaire demonstrated high reliability, with a sensitivity of 84.9% and specificity of 76.6%. Salivary LDH testing showed a sensitivity of 82.5% and specificity of 87.3%, while salivary hemoglobin testing achieved a sensitivity of 85.7% and specificity of 62.6%. The findings suggest that periodontal self-assessment questionnaires and salivary LDH testing may serve as simple, inexpensive, and effective screening methods for periodontitis, supporting earlier detection and timely referral for comprehensive periodontal evaluation.



Lecturer:

Natasha Stavreva

Institution:

Faculty of Dentistry – Skopje, Ss. Cyril and Methodius
University in Skopje

Prof. Natasha Stavreva, DDS, PhD, is a Full Professor at the Department of Prosthodontics, Faculty of Dentistry, Ss. Cyril and Methodius University in Skopje, North Macedonia, and a specialist in Prosthodontics at the University Dental Clinical Center “St. Pantelejmon.” She completed her specialization in Prosthodontics in 2011, earned her MSc degree in 2012, and obtained her PhD in Dental Sciences in 2015. Since joining the Faculty of Dentistry, she has progressed through all academic ranks and was appointed Full Professor in 2026. Her research interests include all-ceramic restorations, zirconia-based prosthetic constructions, tooth preparation designs for fixed prosthodontics, minimally invasive dentistry, and gerodontology. Prof. Stavreva has authored more than 100 scientific and professional publications, contributed to several national and international research projects, and is the author and co-author of multiple professional monographs and textbooks. She is an invited speaker at numerous national and international congresses and serves on the editorial boards of scientific journals, while actively participating in professional dental organizations.

Abstract:

ORAL HEALTH IN ELDERLY PATIENTS – A CHALLENGE OF MODERN ERA

The human lifespan has greatly increased, and it's believed that by 2030, one in every six people will be older than 60 years. Also, nowadays older people are much better informed about their own health and the possibilities of improving it. Aging as an individual process takes place at different dynamics. In the elderly, it is particularly noticeable in physical appearance, cognitive functioning, and behavior. It brings different changes in the body, including changes in the oral cavity. A frequent condition that occurs in the elderly population is a partial or complete loss of teeth, xerostomy and oral cancer.

The use of Artificial Intelligence (AI) in dentistry has recently begun to take off, as it has in other sectors. Applications of AI in dentistry can be divided into four categories: diagnostics, decision-making, treatment planning, and treatment result prediction. The most well-liked dental AI application is diagnosis. The workload of dentists can be reduced by using AI to make diagnoses that are more precise and effective. Oral health as an integral part of general health, and consequently an important factor in quality of life. Elderly people have to be aware of the reasons for proper oral hygiene, the consequences of alcohol and smoking, dental prosthetic care, to maintain oral health to old age. The patients are becoming increasingly aware of the dental function and aesthetics, regardless of their age, which with the development of dental implants lead to high quality prosthetics, significantly improving patients' quality of life. It is necessary to assess the personal satisfaction of the individual and the opportunities that are reflected in the quality of life that each person, especially the elderly, subjectively experiences.

Prosthetic therapy enables the replacement of some or all lost teeth, and it is the most common type of therapy for elderly patients.



Lecturer:

Ilijana Muratovska

Institution:

Faculty of Dentistry – Skopje, Ss. Cyril and Methodius University in Skopje

Prof. Dr. Ilijana Muratovska is a specialist in Dental Pathology with over 30 years of clinical, academic, and research experience at the University Clinic Center in Skopje. Since joining the Department of Dental Pathology in 1993, she has combined clinical practice with teaching, mentoring, and scientific research, obtaining her specialist qualification in 1998.

She holds a Master's Degree in Dental Sciences (2004) and a PhD in Dental Sciences (2010). Prof. Dr. Muratovska is the author and co-author of 118 scientific publications indexed in Scopus and PubMed, as well as three professional and scientific books. She has actively participated in more than 50 international congresses and symposiums and has completed professional and scientific exchanges in Amsterdam, Vienna, Torino, and Osaka.

Her areas of expertise include dental pathology, clinical dentistry, scientific research, academic teaching, scientific publishing, and international scientific collaboration. She is fluent in Macedonian and English.

Abstract:

DEFINITIVE ROOT CANAL FILLINGS AND ASSOCIATED CHALLENGES

The purpose of a root canal filling material is to provide a permanent seal of the prepared root canal system, preventing bacterial proliferation, minimizing irritation in the apical region, and maintaining dimensional stability without significant solubility over time as a result of interactions with the surrounding tissues. According to ANSI/ADA Specification No. 57 (ANSI/ADA, 2000) and International Standard ISO 6876, the solubility of a root canal sealer should not exceed 3% of its original mass. For this reason, five different root canal obturation materials were analyzed with regard to their solubility, antimicrobial activity, and pH values. The tested materials differed in composition and included the bioceramic sealer EndoSequence BC, the epoxy resin-based sealer AH Plus, the zinc oxide-eugenol-based sealer Tubli-Seal, the calcium hydroxide-based sealer Sealapex, and the mineral trioxide aggregate-based sealer MTA Fillapex. The evaluation methods were selected in accordance with internationally accepted standards. The results demonstrated significant variations among all tested materials, with no single material fulfilling all desirable criteria, particularly over extended observation periods. In addition, attention is given to future approaches for evaluating the long-term success and performance of endodontic treatment, including the application of artificial intelligence in this field.



Lecturer:

Efka Zhabokova Bilbilova

Institution:

Faculty of Dentistry – Skopje, Ss. Cyril and Methodius University in Skopje

Dr. Efka Zabokova-Bilbilova, MSc, PhD, is a Scientific Advisor at the Department of Pediatric and Preventive Dentistry, Faculty of Dentistry, Ss. Cyril and Methodius University in Skopje, and Head of the Clinic for Pediatric and Preventive Dentistry at the University Dental Clinical Center “St. Panteleimon.” She specialized in Pediatric and Preventive Dentistry in 2003, obtained her MSc degree in 2005, and earned her PhD in Dental Sciences in 2010. Her academic and clinical interests focus on pediatric and preventive dentistry, dental caries prevention and management, minimally invasive dentistry, oral health promotion, and dental trauma. Dr. Zabokova-Bilbilova is the author of two books on dental caries, co-author of several book chapters, and has participated in multiple national and international research projects. She has published more than 200 scientific and professional papers and is a frequent speaker at national and international congresses. She is an active member of several professional dental organizations, including the International Association of Pediatric Dentistry and the World Dental Federation (FDI).

Abstract:

DENTAL TRAUMA: MODERN SOLUTIONS FOR EVERYDAY CHALLENGES

Dental trauma represents one of the most urgent and unpredictable conditions in everyday dental practice, particularly among children and adolescents. Traumatic dental injuries may cause functional, esthetic, and psychological consequences, while successful treatment depends on timely diagnosis, appropriate emergency management, and long-term follow-up. Factors such as the type of injury, stage of root development, condition of supporting tissues, and rapid clinical intervention play a crucial role in prognosis. This lecture will present contemporary therapeutic approaches in the management of dental trauma, with emphasis on regenerative procedures, adhesive techniques, digital diagnostics, and interdisciplinary treatment planning. Special attention will be given to crown fractures, luxation injuries, avulsion, and trauma in immature permanent teeth, highlighting modern adhesive and regenerative treatment concepts. Through selected clinical cases, current recommendations, and practical guidelines, participants will gain insight into diagnostic protocols, prognostic factors, common complications, and clinical decision-making strategies aimed at improving long-term functional and esthetic outcomes while preserving oral health.



Lecturer:

Biljana Evrosimovska

Institution:

Faculty of Dentistry – Skopje, Ss. Cyril and Methodius University in Skopje

Assoc. Prof. Biljana Evrosimovska, DDS, PhD, is a specialist in Oral Surgery and Associate Professor at the Department of Oral Surgery, Faculty of Dentistry, Ss. Cyril and Methodius University in Skopje, North Macedonia. She graduated as the top student of her class from the Faculty of Dentistry in Skopje and has been a member of the University Dental Clinical Center “St. Panteleimon” since 2008. She obtained her MSc degree in 2006, completed her specialization in Oral Surgery in 2007, and earned her PhD in Dental Sciences in 2012. Her clinical and research interests focus on salivary gland diseases, odontogenic infections, benign orofacial tumors, and regenerative techniques in oral surgery. Prof. Evrosimovska is an active lecturer, mentor, and certified instructor in advanced PRF protocols according to the Choukroun method. She has authored and co-authored numerous scientific publications, monographs, and textbooks, serves as a reviewer for international scientific journals, and regularly participates in national and international professional and scientific meetings.

Abstract:

INNOVATIVE TECHNOLOGIES AS A KEY TO SUCCESS IN THE TREATMENT OF DENTAL IMPLANT COMPLICATIONS

The exponential growth of dental implantology has inevitably led to an increasing incidence of peri-implant complications. Conventional mechanical debridement often fails to achieve complete decontamination of implant surfaces and predictable bone regeneration due to the complex macro- and microstructure of contaminated implants. This lecture presents a highly predictable treatment protocol based on the synergistic use of innovative technologies, including dental lasers, piezoelectric surgery, and advanced bioregenerative materials. The proposed minimally invasive approach combines piezoelectric decontamination, using specialized implant-cleaning tips to remove calcified biofilm and granulation tissue without damaging the titanium surface, with targeted laser therapy that provides superior bactericidal effects even within deep implant microthreads. The regenerative phase incorporates autologous platelet-rich fibrin (PRF) technology, including “sticky bone” and PRF membranes, to restore lost hard and soft tissues. This biologically driven approach promotes angiogenesis, accelerates healing, and enhances tissue stability. The integration of lasers, piezoelectric devices, and PRF technology offers a contemporary solution for the management of peri-implant diseases, improving decontamination, supporting regeneration, and increasing the predictability of long-term implant survival.



Lecturer:

Irena Gavrilovikj

Institution:

Faculty of Dentistry – Skopje, Ss. Cyril and Methodius University in Skopje

Assoc. Prof. Irena Gavrilovikj, DDS, MSc, PhD, is an Associate Professor at the Department of Orthodontics, Faculty of Dentistry, Ss. Cyril and Methodius University in Skopje, North Macedonia, and a specialist in Orthodontics at the University Dental Clinical Center “St. Panteleimon.” She graduated from the Faculty of Dentistry in Skopje in 1996, completed her specialization in Orthodontics in 2003, obtained her MSc degree in 2006, and earned her PhD in 2020. Since 1998, she has been actively involved in clinical practice, teaching, and research, mentoring undergraduate, postgraduate, specialist, master’s, and doctoral students. Her scientific and clinical interests focus on preventive, interceptive, and functional orthodontic therapy, as well as the effects of orthodontic treatment on craniofacial development and soft tissue changes. Dr. Gavrilovikj has authored numerous scientific publications, serves on editorial boards and as a reviewer for international journals, and is an invited speaker at national and international orthodontic congresses and scientific meetings. She is an active member of several national and international orthodontic and dental professional organizations.

Abstract:

INTERCEPTIVE ORTHODONTIC – EARLY INTERVENTION AND CLINICAL APPLICATION

Interceptive orthodontic treatment represents an important segment of preventive and pediatric orthodontics aimed at the early recognition, prevention, and correction of developing irregularities within the orofacial system. This approach is commonly applied during the deciduous dentition, early mixed dentition period, when jaw growth and dental arch are developing, still allow functional and morphological guidance of oral structures. The primary objective of interceptive therapy is to prevent the progression of malocclusions, improve the function of the stomatognathic system and to reduce the need for complex orthodontic treatment in later stages. Various therapeutic modalities are used in interceptive orthodontics, including space maintainers, expansion appliances, functional appliances and habit-breaking devices. Early orthodontic intervention contributes to improved esthetics, masticatory and speech function, as well as the psychological well-being of the patient. Timely diagnosis, appropriate treatment planning, and patient cooperation are considered essential factors for successful treatment. Contemporary research indicates that interceptive orthodontic treatment plays a significant role in guiding proper craniofacial development and ensuring long-term stability of orthodontic outcomes.



Lecturer:

Bunjamin Xhaferi

Institution:

Faculty of Dental Medicine, MIT University in Skopje

Dr. Bunjamin Xhaferi, DMD, is a specialist in Oral and Implant Surgery and a University Professor with extensive clinical, academic, and research experience. He graduated from the Faculty of Dentistry at Ss. Cyril and Methodius University in Skopje and completed his specialization in Oral and Implant Surgery in 2013. He currently practices at the University Dental Clinical Center "St. Panteleimon" and EM-DENT in Skopje, while also serving as a faculty member at MIT University. His professional interests focus on oral surgery, implantology, bone regeneration, and the clinical application of autologous dentin grafts in oral and maxillofacial surgery. Dr. Xhaferi has presented his work at numerous national and international congresses and has authored and co-authored multiple scientific publications in the fields of oral surgery, implant dentistry, and regenerative therapies. He is actively involved in research and continuing professional education, with particular emphasis on innovative grafting techniques and contemporary surgical approaches.

Abstract:

AUTOLOGOUS DENTIN GRAFT – AN INNOVATIVE BIOLOGICAL APPROACH IN AUGMENTATION SURGERY

Extracted teeth, once considered clinical waste, can now be processed into autologous mineralized dentin grafts (AMDG) for immediate clinical use in regenerative procedures. This study evaluated the effectiveness of AMDG in alveolar ridge preservation following tooth extraction and compared its clinical performance with a xenograft material. A total of 110 patients were included and divided into two groups: 54 patients treated with AMDG and 56 patients treated with a xenograft. Autologous dentin grafts were prepared from freshly extracted teeth using the SDG® processing system. Clinical and radiographic assessments were performed immediately after extraction and at 3- and 6-month follow-up visits to evaluate horizontal and vertical dimensional changes of the alveolar ridge. The AMDG group demonstrated minimal horizontal and vertical bone resorption, with dimensional stability comparable to or better than the xenograft group. Postoperative complications, including hematoma, infection, and lingual nerve paresthesia, were infrequent and less pronounced in the AMDG group. The findings suggest that autologous mineralized dentin grafts represent a safe and effective regenerative material with osteogenic, osteoinductive, and osteoconductive properties, providing a predictable option for alveolar ridge preservation and bone regeneration.



Lecturer:

Vladimir Popovski

Institution:

Faculty of Dental Medicine, MIT University in Skopje

Prof. Vladimir Popovski, MD, DDS, PhD, is a distinguished Maxillofacial Surgeon at the University Clinic for Maxillofacial Surgery and Zan Mitrev Clinic in Skopje, North Macedonia. He is a Professor at Ss. Cyril and Methodius University in Skopje and Professor Emeritus at MIT University. With nearly four decades of clinical, academic, and leadership experience, he has held numerous prominent positions, including Head of the University Clinic for Maxillofacial Surgery, Deputy Minister of Health, President of the Macedonian Dental Chamber, and President of the Macedonian Association for Maxillofacial Surgery. His clinical and research interests include maxillofacial oncology, salivary gland surgery, cleft lip and palate, orthognathic surgery, and facial trauma. Prof. Popovski is a former Councilor of the European Association for Cranio-Maxillofacial Surgery (EACMFS) and past President of the Balkan Association of Maxillofacial Surgery. He has authored numerous scientific publications, serves on the Editorial Board of the Journal of Oral and Maxillofacial Surgery (JOMS), and has received international recognition for his outstanding contributions to maxillofacial surgery and professional education.

Abstract:

AESTHETIC PRINCIPLES IN ORTHOGNATHIC SURGERY OF MANDIBULAR PROGNATHISM

Orthognathic surgery is a widely accepted and effective treatment modality for patients with mandibular prognathism, providing functional rehabilitation and significant aesthetic improvement. Achieving optimal facial aesthetics requires a comprehensive interdisciplinary approach involving close collaboration between orthodontists and maxillofacial surgeons throughout all stages of treatment. Modern evaluation of orthognathic patients extends beyond cephalometric measurements and dental casts, incorporating detailed clinical assessment of facial proportions, smile dynamics, and soft tissue characteristics in three dimensions. Analysis should include macroesthetic, miniesthetic, and microesthetic parameters to ensure individualized treatment planning. Presurgical orthodontic therapy plays a crucial role by eliminating dental compensations and positioning the teeth correctly within their respective basal bones. Surgical planning and execution, including precise occlusal splint positioning, are essential for achieving predictable outcomes. Contemporary advances in three-dimensional virtual planning and soft tissue simulation have further enhanced diagnostic accuracy and treatment predictability. Through careful interdisciplinary planning and modern digital technologies, orthognathic surgery can achieve long-term skeletal stability, improved airway function, optimal occlusion, and substantial enhancement of facial aesthetics and patient quality of life.



Lecturer:

Ivica Stančić

Institution:

Faculty of Dentistry, University of Belgrade

Prof. Ivica Stančić, DDS, MSc, PhD, is a Full Professor at the Faculty of Dentistry, University of Belgrade, Serbia, and a specialist in Prosthodontics. He holds both Master's and Doctoral degrees in Dental Sciences and has authored more than 30 SCI-indexed publications and over 200 presentations at national and international scientific meetings. Prof. Stančić has delivered more than 120 invited lectures at professional and scientific congresses and is the author of five textbooks and three patented innovations in the field of prosthodontics. He has received numerous awards for scientific achievement and innovation and has long served as President of the Prosthodontic Section of the Serbian Medical Society. Since 2014, he has been Head of the Dental Technician–Prosthetist study program, and since October 2024 he has served as Director of the Clinic for Prosthodontics at the Faculty of Dentistry, University of Belgrade.

Abstract:

PROSTHETIC TREATMENT IN ELDERLY PATIENTS – POSSIBILITIES AND LIMITATIONS

The demands and expectations of elderly patients regarding partial or complete prosthodontic rehabilitation may be justified, but are often influenced by individual perceptions and circumstances. For some patients, aesthetics is a primary concern, particularly when dissatisfaction with the appearance of their teeth has persisted for many years. However, clinical, anatomical, and systemic limitations may restrict the extent to which these expectations can be fulfilled. In other cases, treatment priorities focus on relieving pain and restoring basic oral function through limited prosthetic interventions due to medical, functional, or financial constraints. Additionally, many elderly patients present with old and worn prosthetic restorations that have adversely affected supporting tissues, yet may be reluctant to replace them and instead request repeated repairs with limited long-term benefit. Given that older adults frequently suffer from multiple chronic conditions, the selection of an appropriate prosthodontic treatment plan should aim to improve masticatory efficiency and contribute to better nutritional status and overall quality of life. Therefore, a strictly individualized approach, based on a comprehensive assessment of both general and oral health, is essential. When the patient's overall health condition is favorable, complex and extensive prosthodontic rehabilitation can be successfully performed, similarly to younger individuals.



Lecturer:

Jelena Popović

Institution:

Faculty of Medicine, University of Niš

Assoc. Prof. Jelena Popović, DDS, MSc, PhD, is an Associate Professor in the Department of Restorative Dentistry and Endodontics at the Faculty of Medicine, University of Niš, Serbia. She graduated from the Faculty of Medicine in 2003, completed her MSc degree in 2007, specialized in Restorative Dentistry and Endodontics in 2010, and earned her PhD in 2011. With more than 20 years of academic and clinical experience, her research focuses on endodontic infections, chronic periapical lesions, oxidative stress, cytokine responses, and endodontic instrumentation. She is the author and co-author of more than 20 SCI-indexed publications, numerous scientific papers, and textbook chapters, and actively participates in national and international research projects. Dr. Popović is a frequent lecturer and presenter at scientific meetings and congresses and is dedicated to advancing research and clinical practice in restorative dentistry and endodontics.

Abstract:

BULK-FILL COMPOSITES – BALANCE BETWEEN SIMPLE APPLICATION AND MECHANICAL RESISTANCE

Modern restorative dentistry aims to restore damaged dental tissues while meeting the functional and aesthetic demands of patients. Composite materials have become the restorative material of choice due to their favorable aesthetic, mechanical, and therapeutic properties. Continuous efforts to simplify clinical procedures have led to the development of bulk-fill composites, which allow faster and more efficient placement of posterior restorations. Compared with conventional composites, bulk-fill materials exhibit increased translucency, enabling deeper light penetration and more effective polymerization of thicker increments. Although their shade selection is more limited, this is generally not a disadvantage because they are primarily used in posterior teeth. Based on viscosity, bulk-fill composites are classified as high-viscosity and low-viscosity materials. While their physical and mechanical properties are generally comparable to those of conventional composites, current evidence suggests that in certain clinical situations a surface layer of conventional composite may be required to optimize performance. Therefore, a thorough understanding of the mechanical properties, indications, and limitations of bulk-fill materials is essential for achieving predictable and long-lasting clinical outcomes.



Lecturer:

Jelena Lečić

Institution:

School of Dental Medicine in Foca, University of East Sarajevo

Assist. Prof. Jelena Lečić, DDS, MSc, PhD graduated from the School of Dental Medicine in Foca, University of East Sarajevo, Bosnia and Herzegovina, in 2006. Obtained an MSc degree (2014), a specialist degree in Periodontology and Oral Medicine (2015), and a PhD degree (2022) from the Faculty of Medicine Foča, University of East Sarajevo, Bosnia and Herzegovina. Worked as a Language Assistant for the United Nations Mission in Bosnia and Herzegovina between 1999 and 2002. Employed by the Faculty of Medicine Foca since 2007, first as a Teaching Associate, then as a Senior Assistant. Currently employed as an Assistant Professor of Periodontology and Oral Medicine at the Dentistry Department, Faculty of Medicine Foca, University of East Sarajevo, Bosnia and Herzegovina. Member of the Association of Periodontologists of Serbia and the Chamber of Dentists of the Republic of Srpska.

Abstract:

DENTAL MANAGEMENT AND ORAL MANIFESTATIONS OF LEUKEMIA: A COMPREHENSIVE REVIEW OF TREATMENT PROTOCOLS

Leukemia represents a group of malignant transformations of hematopoietic stem cells in the bone marrow, characterized by the uncontrolled proliferation of immature white blood cells. Globally, it is the 15th most common cancer and the 11th leading cause of cancer-related mortality, notably being the most prevalent malignancy in children. The clinical significance of orofacial manifestations, such as gingival hyperplasia, mucosal pallor, spontaneous bleeding, and ulcerations, is paramount, as these symptoms frequently serve as the first clinical signs of the disease and often lead to a diagnosis in the dental office.

Dental care protocols for these patients are structured into three distinct periods. The first period, spanning from diagnosis to the initiation of systemic therapy, focuses on eliminating all potential sources of infection and trauma that could become life-threatening during immunosuppression. It is recommended that all invasive procedures be completed at least 7 to 10 days before chemotherapy begins. The second period occurs during active treatment, where the management shifts to addressing acute complications such as oral mucositis, xerostomia, and opportunistic infections. During this phase, dental interventions are strictly guided by hematological status and require specialized care. The third period involves long-term post-therapeutic monitoring, with a specific focus on chronic Graft-versus-Host Disease (cGVHD), which often manifests solely in the oral cavity through lichenoid lesions and salivary gland dysfunction. Furthermore, this patient group faces a six-fold higher risk of developing oral squamous cell carcinoma compared to the general population. In conclusion, the integration of dentists into a multidisciplinary hemato-oncology team is essential for early diagnosis, reducing mortality rates, and improving the overall prognosis and quality of life for patients with leukemia.



Lecturer:

Marija Antunović

Institution:

Faculty of Medicine, University of Montenegro

Assoc. Prof. Marija Antunović, DDS, PhD, is an Associate Professor in the Dentistry Study Program at the Faculty of Medicine, University of Montenegro, and Head of the Department of Oral Surgery and Dental Anesthesiology. She is also a Specialist in Oral Surgery at the Clinical Center of Montenegro, where she was awarded the honorary title of Primarius in 2018. Dr. Antunović graduated from the Faculty of Dentistry, University of Belgrade, and completed her specialization in Oral Surgery at the Military Medical Academy in Belgrade. She earned her PhD in Dental Sciences from the University of Montenegro with research focused on the prognostic significance of molecular markers and HPV-16 in oral cancer. Her scientific interests include oral surgery, oral oncology, HPV-associated oral cancer, molecular markers in oral carcinoma, and dental anesthesiology. She has authored and co-authored numerous scientific publications, including papers indexed in SCI and SCIE databases, and is an active participant and invited lecturer at international scientific congresses and professional meetings.

Abstract:

ARTIFICIAL INTELLIGENCE IN ORAL HPV INFECTION: RISK PREDICTION AND PROGNOSTIC MODELING

Oral carcinogenesis is a multifactorial process influenced by several risk factors, including age, gender, ethnicity, genetic susceptibility, tobacco/alcohol use and infection with human papillomaviruses (HPVs). HPV-associated squamous cell carcinoma of the oral cavity and oropharynx has been extensively studied due to its distinct biological and clinical features. In modern biomedicine, a key question is the extent to which artificial intelligence can contribute to oral cancer risk assessment and prognosis by improving diagnostic accuracy, patient stratification and clinical decision-making? Whole Slide Imaging (WSI) enables the digitization of histological slides into gigapixel-resolution images, forming the basis for AI applications in pathology. A critical step is annotation, where pathologists label diagnostically relevant regions (tumor, dysplasia, necrosis, invasive margins), converting expert knowledge into structured data for model training. Advanced systems integrate these histological data with clinical and molecular parameters such as TNM stage, histological grade, biomarkers, HPV status and treatment outcomes. When combined with WSI-derived morphological features, machine learning models can identify patterns associated with tumor behavior, including HPV-positive characteristics such as basaloid morphology, smaller and less intensely stained nuclei, increased nucleus-to-cytoplasm ratio, more regular tumor borders and distinctive tumor island architecture. The integration of WSI technology, expert annotations, deep learning, and clinical-molecular data establishes a new diagnostic paradigm for oral squamous cell carcinoma. This approach supports more accurate diagnosis, objective tumor evaluation, prognostic modeling and potential prediction of therapeutic response advancing personalized medicine.



Lecturer:

Miloš Beloica

Institution:

School of Dental Medicine, University of Belgrade

Assoc. Prof. Miloš Beloica, DDS, MSc, PhD, is a specialist in Pediatric and Preventive Dentistry and Associate Professor at the Clinic for Pediatric and Preventive Dentistry, School of Dental Medicine, University of Belgrade, Serbia. He graduated from the School of Dental Medicine in 2006, completed his MSc studies at the University of Siena, Italy, in 2009, and obtained his specialization in Pediatric and Preventive Dentistry in 2012. He earned his PhD in 2017 with research focused on dental adhesives and their bonding performance in primary and permanent dentition. Since 2008, he has been actively involved in clinical practice, teaching, and research at the University of Belgrade. His professional interests include pediatric restorative dentistry, adhesive dentistry, dental materials, and minimally invasive treatment approaches. Dr. Beloica is a frequent lecturer and course instructor, particularly in the field of adhesive systems and contemporary composite restorative materials.

Abstract:

SEDATION IN DENTISTRY

Fear of dental treatment and pain remains one of the most common challenges in contemporary dentistry, affecting a large proportion of both children and adults. Despite significant advances in pain control and treatment techniques, many patients continue to avoid dental care due to anxiety and negative expectations. Sedation has become a valuable tool in pediatric dentistry, enabling safe and effective management of anxious patients while facilitating the delivery of necessary dental treatment. In accordance with the recommendations of the European Academy of Paediatric Dentistry (EAPD) and the American Dental Association (ADA), sedation can be safely performed in ASA I and ASA II patients. At the Clinic for Pediatric and Preventive Dentistry in Belgrade, both oral and inhalation sedation are routinely used. Oral sedation is performed with midazolam, administered according to the patient's body weight, while inhalation sedation utilizes nitrous oxide in individually adjusted concentrations. The primary goal of sedation is to reduce anxiety, improve patient cooperation, and ensure safe and comfortable treatment. Furthermore, the use of sedation in childhood may contribute to the gradual reduction of dental fear, helping young patients develop a more positive attitude toward future dental care.



Lecturer:

Vesna Trpevska

Institution:

Faculty of Medical Sciences, Goce Delčev
University in Štip

Assist. Prof. Vesna Trpevska, DDS, PhD, is a specialist in Orthodontics at the University Dental Clinical Center “St. Panteleimon” in Skopje and Assistant Professor at the Faculty of Medical Sciences, Goce Delčev University in Štip, North Macedonia. She graduated from the Faculty of Dentistry in Skopje in 2008, completed her specialization in Orthodontics in 2012, and earned her PhD in Orthodontics in 2017. Her academic and clinical interests include orthodontic biomechanics, occlusion, digital occlusal analysis using the T-Scan system, temporomandibular joint disorders (TMJ/TMD), and occlusal splint therapy. Dr. Trpevska has authored numerous scientific and professional publications and actively participates in national and international congresses, scientific meetings, and continuing education programs in orthodontics and functional occlusion.

Abstract:

DIGITAL OCCLUSAL ANALYSIS FOR DIAGNOSIS AND THERAPY OF MYOFASCIAL PAIN SYNDROME

Myofascial pain syndrome is one of the most common causes of non-odontogenic orofacial pain and represents a significant diagnostic and therapeutic challenge for both clinicians and patients. Digital occlusal analysis using the T-Scan system has emerged as a valuable diagnostic tool for evaluating occlusal function and identifying factors that may contribute to the development and persistence of myofascial pain. Occlusal splint therapy remains a cornerstone of conservative management and is often considered the first line of treatment before initiating definitive therapeutic interventions. Through accurate diagnosis and individualized treatment planning, digital occlusal analysis and occlusal splint therapy provide effective, non-invasive solutions for reducing pain, improving occlusal function, and enhancing patients' quality of life. These approaches play an important role in the management of temporomandibular disorders and other conditions associated with non-odontogenic facial pain.



Lecturer:

Almedin Berisha

Institution:

Dental Clinic “Dr. Berisha” in Peja, Kosovo

Dr. Almedin Berisha, DMD, is a specialist in Orthodontics and a practicing dentist with a strong professional focus on Endodontics. He is the founder and owner of the Dental Clinic “Dr. Berisha” in Peja, Kosovo. He graduated from the Faculty of Dental Medicine, University of Sarajevo, in 2009 and completed his specialization in Orthodontics at the University of Prishtina in 2024. Dr. Berisha is an active lecturer, trainer, and hands-on instructor in contemporary endodontic techniques and has presented at numerous national and international dental congresses throughout the Balkans. He is the author and co-author of multiple scientific publications and case reports, with particular interest in complex root canal anatomy, non-surgical endodontic treatment, irrigation protocols, and modern endodontic technologies. He actively participates in professional organizations and scientific meetings and is committed to advancing evidence-based clinical practice in dentistry.

Abstract:

A PERFECT WHITE LINE, BUT A POOR OUTCOME? WHO IS THE SILENT HERO OF SUCCESSFUL ENDODONTICS?

The concept of the “perfect white line” on a radiograph has traditionally been regarded as a hallmark of successful endodontic treatment. However, clinical experience demonstrates that an ideal radiographic appearance does not always correspond to biological success, as persistent symptoms, discomfort, or progression of periapical pathology may still occur. This lecture explores the factors that contribute to such discrepancies, including anatomical complexities, inadequate disinfection, and the persistence of microbial biofilms within the root canal system. Particular emphasis is placed on the fundamental role of irrigation and chemo-mechanical preparation in achieving effective microbial control. Modern endodontics requires a shift in focus from radiographic perfection alone toward comprehensive infection management and adherence to evidence-based treatment protocols. Through clinical case presentations, this lecture highlights that the true measure of endodontic success lies not in the appearance of the obturation, but in the biological outcomes achieved through thorough disinfection and meticulous execution of all phases of treatment.



Lecturer:

Dejan Kalaba & Slavko Rajković

Institution:

Kalaba Dental Clinic, Belgrade,
Serbia



Rajković Slavko was born in Belgrade, Serbia, in 1979. He graduated from the Secondary School for Dental Technology in Belgrade in 1998. From 2002 to 2019, he worked as a dental technician at the private dental laboratory Legge Artis in Belgrade, where he gained extensive experience in fixed prosthodontics. In 2019, he established his own dental laboratory, focusing on contemporary prosthetic solutions and digital laboratory workflows.

Throughout his professional career, he has continuously expanded his knowledge by attending advanced training courses and educational programs led by internationally recognized experts, including Dieter Gruber (Ivoclar), Deni Pavlović, and Nondas Vlachopoulos. His primary field of professional interest and expertise is fixed prosthodontics, with a particular focus on all-ceramic and zirconia restorations, CAD/CAM technologies, and contemporary laboratory techniques.

Dr. Dejan Kalaba is a dentist based in Belgrade, Serbia, and the founder and owner of Kalaba Dental Clinic, established in 2009. The clinic provides modern dental diagnostic and therapeutic services, with a particular focus on oral surgery. Throughout his professional career, Dr. Kalaba has focused on contemporary dental and surgical procedures, continuously advancing his professional approach through the application of modern methods and technologies in dentistry. He lives and practices in Belgrade, Serbia.

Abstract:

FULL CONTOUR ZIRCONIA CROWNS – TECHNICAL LECTURE

Full-contour zirconia crowns have become a widely accepted restorative option in fixed prosthodontics due to their excellent mechanical properties, biocompatibility, and favorable esthetic outcomes. The successful fabrication of these restorations relies on effective communication between the dental clinic and the dental laboratory, as well as on the appropriate selection of materials according to the clinical indication, the restoration site, and the patient's functional and esthetic requirements.

This lecture will present the complete laboratory workflow for the fabrication of full-contour zirconia crowns, beginning with the fabrication of working models and digital design, followed by the production of a PMMA prototype and its clinical try-in. The lecture will further discuss the CAD/CAM milling process using multilayer zirconia discs, the finishing of pre-sintered zirconia, and the sintering protocol according to the manufacturer's recommendations. Special attention will be given to the glazing and characterization procedures required to achieve optimal esthetics while preserving the material's mechanical properties. Emphasis will also be placed on the critical steps that influence the precision, longevity, and clinical success of full-contour zirconia restorations. By presenting each phase of the workflow, this lecture aims to provide participants with a comprehensive understanding of contemporary laboratory protocols and to highlight the importance of interdisciplinary collaboration between the clinician and the dental technician in achieving predictable and high-quality restorative outcomes.



Lecturer:

Leonard Bakija

Institution:

Centrum Dental Clinic

Dr. Leonard Bakija, DMD, is a dentist from Gjakova, Kosovo, and founder of Centrum Dental Clinic. He graduated in Dental Medicine from AMECC Rezonanca in Prishtina and has focused his professional development on digital, aesthetic, and minimally invasive dentistry. Since establishing his clinic at the age of 26, he has been dedicated to integrating advanced digital technologies into everyday clinical practice to improve precision, efficiency, and patient experience. His areas of interest include digital dentistry, esthetic and restorative dentistry, veneers, implant dentistry, same-day restorations, and digital smile design. As a Key Opinion Leader (KOL) for SprintRay, Dr. Bakija actively promotes innovative digital workflows and contemporary restorative solutions, sharing his experience through professional education and clinical demonstrations.

Abstract:

MIDAS MINIMALLY INVASIVE DENTISTRY. REVOLUTION. A NEW OPTION WE CAN OFFER TO PATIENTS

The rapid development of digital technologies is reshaping modern dentistry and creating new possibilities for efficient, precise, and patient-centered care. This lecture presents the speaker's professional journey following the integration of the SprintRay MIDAS system into daily clinical practice and explores its impact on restorative and digital workflows. Through practical experience, MIDAS has enabled the design, fabrication, and delivery of high-quality restorations with increased speed, predictability, and clinical accuracy. The presentation highlights the application of fully digital protocols in restorative and implant dentistry, including minimally invasive restorations, same-day treatment concepts, and advanced esthetic solutions. Particular emphasis will be placed on how digital technologies can improve workflow efficiency, enhance patient experience, and expand treatment possibilities within a modern dental practice. The lecture aims to demonstrate how innovations such as MIDAS are contributing to the ongoing transformation of dentistry and helping clinicians achieve more predictable and biologically respectful outcomes.



ORAL PRESENTATIONS

OPI

TANJA DEJANOSKA

European University Skopje

Co-author: Vasko Kokalanov



APPLICATION OF ARTIFICIAL INTELLIGENCE IN PLANNING AND PREDICTING TREATMENT OUTCOMES IN ALL-ON-4 AND ALL-ON-6 CONCEPTS

Abstract

The All-on-4 and All-on-6 implant treatment concepts have become increasingly preferred approaches for the oral rehabilitation of edentulous patients.

The aim of this study was to evaluate the application of an artificial intelligence (AI)-based software solution for reducing treatment risks and improving clinical outcomes through precise and clinically relevant assessment of the distribution of von Mises stresses within dental implants and the surrounding bone tissue in All-on-4 and All-on-6 treatment concepts prior to surgery.

A detailed analysis of stress distribution in the cortical and cancellous bone, as well as within the implants themselves, was performed using computer simulations based on the finite element method (FEM) for both treatment concepts.

The available scientific literature presents diverse and, in some cases, conflicting opinions regarding implant stability in All-on-4 and All-on-6 rehabilitations. To address this challenge, the Center for Artificial Intelligence has developed an innovative AI-based software solution designed to optimize the prediction of the biomechanical behavior of implants and peri-implant bone tissues.

This technology offers broad clinical applicability in the planning of implant-supported prosthetic rehabilitation using the All-on-4 and All-on-6 concepts. Prediction of treatment outcomes is achieved through three-dimensional modeling of implant position, number, angulation, and geometry, together with the simulation of realistic occlusal loading conditions, including both vertical and oblique masticatory forces.

Such preoperative simulations represent a valuable tool in contemporary implantology, improving the predictability of biomechanical performance and potentially reducing complications associated with excessive loading of implants and the surrounding bone tissue.

Keywords: implant treatment, dental implants, All-on-4, All-on-6, artificial intelligence, bone tissue, masticatory forces, von Mises stress.

OP2

OGNJANKA DAMJANOVA GRAMATIKOVA

PHI Dental Clinical Center "St. Pantelejmon" – Skopje

Co-author: Lidija Stefanovska



A SMILE THROUGH TRUST: THE ROLE OF THE DENTAL NURSE IN THE TREATMENT OF PERSONS WITH DISABILITIES

Abstract

Introduction: Persons with disabilities often face limited access to dental healthcare due to fear, anxiety, communication difficulties, and specific healthcare needs. In providing high-quality dental care, the dental nurse plays a significant role in establishing trust, facilitating communication, and preparing the patient for dental procedures.

Aim: To highlight the importance of the dental nurse in the treatment of persons with disabilities through effective communication, psychological support, an individualized approach, and oral health education.

Materials and Methods: A review of current evidence and practical clinical experience related to the treatment of patients with disabilities in dental practice was conducted, with particular emphasis on the role of the dental nurse in everyday clinical care.

Results: An appropriate approach and individualized communication by the dental nurse contribute significantly to reducing patients' fear and anxiety. Through a calm tone of voice, clear and simple explanations of dental procedures, and an empathetic attitude, cooperation with both the patient and their family is improved. Furthermore, positive reinforcement, rewards, and small gifts following treatment help create a sense of security and trust, particularly among children and patients with communication difficulties. The dental nurse also plays an important role in educating patients and caregivers about proper oral hygiene practices, the prevention of oral diseases, and the importance of regular dental check-ups.

Conclusion: The dental nurse is an essential member of the dental team in the treatment of persons with disabilities. Through effective communication, emotional support, empathy, and patient education, the dental nurse makes a substantial contribution to successful dental treatment, improved patient cooperation, and enhanced oral health and quality of life for this patient population.

OP3

ANGEL ANDONOVSKI

DIGITAL WAX-UP GUIDED INJECTABLE VENEERS: A MINIMALLY INVASIVE APPROACH TO ESTHETIC SMILE REHABILITATION

Abstract

Introduction: Injectable composite veneers have emerged as a minimally invasive treatment modality that combines digital treatment planning with adhesive restorative dentistry. The integration of digital wax-up technology enables accurate transfer of the planned esthetic outcome to the clinical situation while preserving healthy tooth structure.

Aim: To present a fully digital workflow for esthetic rehabilitation using injectable composite veneers and evaluate its clinical predictability.

Material and Methods: A 37-year-old male patient presented with aged composite restorations, discoloration, and minor morphological irregularities affecting the maxillary anterior teeth. Following clinical assessment, an intraoral digital scan was obtained and a digital wax-up was designed using CAD software. The design was transferred to a 3D-printed model, from which a transparent silicone matrix was fabricated. Injectable composite resin was applied following adhesive procedures and completed with finishing and polishing.

Results: The digital workflow enabled precise reproduction of the planned tooth anatomy and smile design. The injectable veneer technique improved tooth morphology, corrected esthetic deficiencies, and achieved harmonious smile integration with minimal removal of healthy dental tissues. High patient satisfaction was obtained.

Conclusion: Digital wax-up-guided injectable veneers represent a predictable, minimally invasive, and cost-effective treatment option for esthetic smile rehabilitation. The combination of digital planning and injectable composite technology facilitates accurate translation of the virtual design into the final restoration while improving clinical efficiency.

Keywords: Injectable veneers, Digital wax-up, Digital dentistry, Composite veneers, Minimally invasive dentistry



OP4

MARTINA ANASTASOVSKA

¹University Clinic for Maxillofacial Surgery, Skopje, North Macedonia.²Faculty of Dentistry – Skopje, Ss. Cyril and Methodius University in Skopje, Republic of North Macedonia.Co-authors: Sanela Idoska¹, Danica Popovikj Monevska¹, Kjiro Ivanovski², Bojan Poposki², Vlatko Kokolanski²

EVALUATION OF OXIDATIVE STRESS AND ANTIOXIDANT POTENTIAL IN PATIENTS WITH ORAL CANCER

Abstract

Introduction: Oral squamous cell carcinoma (OSCC) is one of the most common malignant neoplasms of the head and neck region and is associated with impaired redox homeostasis. Salivary biomarkers may provide a non-invasive insight into the oxidative status of these patients.

Objective: This study aimed to evaluate oxidative stress and antioxidant potential by assessing the salivary biomarkers FRAS, MDA, and SOD in patients with OSCC before and after surgical removal of the tumor.

Materials and Methods: The study included 40 participants divided into two groups: 20 patients with histopathologically confirmed OSCC and 20 healthy individuals serving as a control group. Unstimulated saliva samples were collected from patients with OSCC before and after surgical intervention, whereas samples from the control group were collected once. Salivary flow rate was determined by visual measurement of the collected saliva volume, while FRAS, MDA, and SOD levels were assessed spectrophotometrically. Statistical analysis was performed using IBM SPSS Statistics, version 24.

Results: Before surgical treatment, patients with OSCC exhibited significantly lower FRAS and SOD levels and significantly higher MDA levels and salivary flow rates compared with the control group ($p < 0.05$). Following surgical intervention, a significant increase in FRAS and SOD levels was observed, accompanied by a decrease in MDA levels and salivary flow rates ($p < 0.05$).

Conclusion: OSCC is associated with pronounced oxidative stress, increased lipid peroxidation, and reduced antioxidant defense. The postoperative improvement in the evaluated parameters indicates a partial restoration of redox homeostasis and supports the potential use of salivary biomarkers as non-invasive indicators for monitoring oxidative status in patients with OSCC.

Keywords: Oral Squamous Cell Carcinoma; Oxidative Stress; Saliva; Antioxidants



OP5

SANELA IDOSKA

University Clinic for Maxillofacial Surgery in Skopje

Co-Authors - Martina Anastasovska, Vladimir Rendeovski



A RARE CASE OF MASSIVE LYMPHADENOPATHY WITH BONE INVASION AND INTRACRANIAL EXTENSION: MALIGNANT LYMPHOMA VERSUS ROSAI – DORFMAN DISEASE (RDD)

Abstract

Introduction: Massive lymphadenopathy is a result of severe infections, malignancies, autoimmune diseases or rare disorders. Depending on the subtype, malignant lymphoma can infiltrate and destroy bones, as well.

Case Outline: We present a rare case of a 67-year-old female patient with massive lymphadenopathy referred by a neurosurgeon to the University Clinic for Maxillofacial Surgery in Skopje. MRI radiographically records massive lymphadenopathy with nodal and extranodal extension, complete penetration through the calvaria with involvement of the meninges, the sphenoid bone with involvement of the cavernous sinus and Meckel's cave with thickening of the maxillary nerve, orbits with extraconal extension, ethmoid cells, infiltration of the maxilla and zygomatic bone, frontotemporal and upper eyelid soft tissue involvement, infratemporal, buccal and parotid space, neck and supraaortic mediastinum, resulting in disfiguring and a mutilated appearance of the patient. Only the lesion on the right naso-orbital with penetration towards the ethmoid cells is smaller compared to the previous MRI. Due to the availability of previous MRI imaging, the radiologist assumed that the changes are most in favor of Rosai-Dorfman disease, which is a rare histiocytic disorder with massive lymphadenopathy, nodal and extranodal extension and bone infiltration, which is self-limiting disease. However, FNAB of several cervical lymph nodes confirms malignant lymphoma. To establish a definitive diagnosis, a surgical biopsy of the cervical lymph nodes was performed with histopathological findings and immunohistochemistry confirming an aggressive type of malignant lymphoma.

Conclusion: Massive lymphadenopathy requires a multidisciplinary approach because it should be considered in the context of multiple diseases. Sometimes it can be self-limiting as in non-aggressive forms in Rosai-Dorfman disease, but in malignant lymphoma requires hemato-oncological treatment.

Key words: Massive lymphaden

OP6

BUDIMA PEJKOVSKA SHAHPASKA

PHI University Dental Clinical Center "St. Panteleimon" – Skopje

Co-author: Julijana Nikolovska



DIGITAL WORKFLOW IN THE DESIGN AND FABRICATION OF AN OCCLUSAL SPLINT

Abstract

The digital workflow in the design and fabrication of occlusal splints represents a contemporary approach that provides greater precision, efficiency, and predictability in the treatment of patients with bruxism, temporomandibular disorders (TMD), and occlusal abnormalities. With the advancement of CAD/CAM technology, intraoral scanners, and 3D printing, conventional analog methods are gradually being replaced by digital procedures that ensure better splint adaptation, reduced working time, and increased patient comfort.

The digital workflow begins with intraoral scanning of the dental arches and registration of the maxillomandibular relationship, followed by virtual design of the occlusal splint using specialized CAD software. During the design phase, the thickness, occlusal contacts, retention, and functional characteristics of the appliance are carefully defined. The final splint can then be fabricated either by CAD/CAM milling or by 3D printing using biocompatible materials.

At the PHI University Dental Clinical Center "St. Panteleimon," occlusal splints have been successfully fabricated using the SprintRay 3D printer, which has significantly streamlined the entire production process. The implementation of this technology has reduced manufacturing time, improved fabrication accuracy, and enhanced the reproducibility of the final product. Furthermore, the digital workflow facilitates easier data storage and enables rapid remanufacturing whenever necessary.

Digital technologies also improve communication between the dentist and the dental technician, thereby minimizing the possibility of errors during the fabrication process. Although the adoption of digital workflows requires appropriate equipment, professional training, and financial investment, this approach represents a significant step toward the modernization of contemporary dental practice and the improvement of treatment quality.

OP7

IRENA BOGATINOVSKA

PHI Dental Clinical Center "St. Pantelejmon" – Skopje

Co-author: Irena Gavrilovikj



FROM ANALOG PAST TO DIGITAL FUTURE – 3D GNATHOMETRIC ANALYSIS OF ANGLE CLASS II AND CLASS III MALOCCLUSIONS

Abstract

Introduction: The transition from conventional plaster models to digital models enables more precise, rapid, and reproducible visualization of complex orthodontic morphological deviations.

Aim: The primary objective of this study was to perform a digital gnathometric evaluation and identify specific morphological differences in sagittal and transverse parameters among patients with Angle Class II and Class III malocclusions.

Materials and Methods: The study included 60 subjects aged 15–20 years, divided into two groups ($n = 30$ per class). Digital 3D models were obtained using the Medit i600 intraoral scanner, and the analyses were performed with DWOS Dental Wings software. The following parameters were evaluated in both dental arches for each group: dental arch height (Korkhaus), anterior and posterior arch width (Schwarz), intercanine distance (Pont), and arch perimeter (Howe). Statistical analysis was performed using SPSS version 29.0, applying the independent samples t-test.

Results: Digital analysis proved to be highly efficient, with an average analysis time of 3.62 minutes. The results demonstrated no statistically significant differences in vertical parameters (dental arch height) between Angle Class II and Class III malocclusions ($p > 0.05$). In contrast, highly significant differences ($p < 0.01$) were observed in the transverse dimension in Class III patients, including greater anterior and posterior mandibular arch width and an increased maxillary intercanine distance. According to Howe's analysis, Class III patients exhibited significantly larger dental arch perimeters in both the maxillary and mandibular arches ($p < 0.01$), consistent with the morphological characteristics of mandibular prognathism.

Conclusion: Digital gnathometry represents a reliable and valid alternative to conventional methods. The findings indicate that the principal morphological differences between Angle Class II and Class III malocclusions are predominantly transverse and perimetric rather than vertical. The integration of 3D digital technology facilitates rapid diagnostic assessment and supports more accurate, individualized orthodontic treatment planning.

Keywords: 3D diagnostics, malocclusion, gnathometry.

OP8

ELENA VASILEVSKA GJORGIEVA

Dentaestetika Tim Polyclinic

Co-author: Slobodan Gjorgiev



CONTEMPORARY TREATMENT PROTOCOLS FOR OBSTRUCTIVE SLEEP APNEA: AN INTERDISCIPLINARY APPROACH

Abstract

Obstructive sleep apnea (OSA) is a prevalent disorder characterized by recurrent collapse of the upper airway during sleep, resulting in intermittent hypoxia, sleep fragmentation, and systemic consequences, including cardiovascular disease, metabolic disorders, and impaired cognitive function.

The diagnosis is established through polysomnography and comprehensive clinical evaluation. Continuous positive airway pressure (CPAP) remains the first-line treatment for patients with moderate to severe OSA, providing pneumatic support of the upper airway. However, patient adherence continues to be a major challenge. In patients with mild OSA or in those who are unable to tolerate CPAP therapy, mandibular advancement devices (MADs) represent an effective therapeutic alternative.

Additional treatment modalities include myofunctional therapy, weight management, positional therapy, laser-assisted procedures, and surgical interventions. In growing patients, orthodontic strategies such as maxillary expansion have demonstrated favorable clinical outcomes.

An individualized, protocol-based treatment approach significantly reduces the apnea-hypopnea index (AHI) and improves patients' quality of life. The role of dental professionals in the screening, diagnosis, and long-term management of obstructive sleep apnea is essential and contributes substantially to successful multidisciplinary care.



PROMEDIKA

WHOLESALE



Dentsply
Sirona

KAVO

Dental Excellence

ivoclar



D
DENTAURUM
1886



ВО ТВОИТЕ НАЈВАЖНИ МОМЕНТИ



POSTER PRESENTATIONS

PPI

BOJAN POPOSKI

Ss. Cyril and Methodius University in Skopje, Faculty of Dentistry – Skopje



Co-Authors: Kjiro Ivanovski, Vlatko Kokolanski, Nada Risteska, Icko Gjorgoski, Elena Rafailovska, Marija Andonovska, Marko Mladenovski, Sanela Idoska, Martina Anastasovska

NON-ENZYMATIC ANTIOXIDANTS ATTENUATE TISSUE LIPID PEROXIDATION IN EXPERIMENTAL 5-FLUOROURACIL-INDUCED ORAL MUCOSITIS

Abstract

Introduction: Oxidative stress plays a central role in the pathogenesis of chemotherapy-induced oral mucositis (OM). Malondialdehyde (MDA), a stable end-product of lipid peroxidation, is a widely used biomarker of oxidative tissue injury.

Aim: To evaluate tissue lipid peroxidation in parotid gland, liver, and kidney tissues in a rat model of 5-fluorouracil (5-FU)-induced OM and to assess the effects of non-enzymatic antioxidant supplementation.

Material and Methods: Forty male Wistar rats were randomly allocated into five groups (n=8/group): healthy control (G1), untreated OM control (G2), vitamin C plus glutathione (G3), zinc sulfate (G4), and combined vitamin C, glutathione, and zinc sulfate supplementation (G5). Oral mucositis was induced using a validated 5-FU/ acetic acid protocol. At sacrifice, parotid gland, liver, and kidney tissues were collected and analyzed for MDA concentrations, expressed as nmol/g protein.

Results: Untreated OM was associated with increased lipid peroxidation in all examined tissues. Compared with healthy controls, MDA concentrations increased from 8.96 to 14.98 nmol/g protein in the parotid gland, from 90.70 to 184.59 nmol/g protein in the liver, and from 133.95 to 260.00 nmol/g protein in the kidney. Antioxidant supplementation was associated with lower MDA concentrations across all tissues. In antioxidant-treated groups, parotid MDA ranged from 6.58–8.56 nmol/g protein, liver MDA from 115.15–118.56 nmol/g protein, and kidney MDA from 120.83–130.43 nmol/g protein, indicating attenuation of tissue lipid peroxidation relative to untreated animals.

Conclusions: Experimental 5-FU-induced OM was associated with increased oxidative damage in the tissues. Non-enzymatic antioxidant supplementation attenuated tissue lipid peroxidation, supporting the role of oxidative stress in chemotherapy-induced tissue injury and suggesting a potential protective effect of antioxidant-based interventions.

Keywords: oral mucositis; oxidative stress; antioxidants

PP2

ANITA PETRESKA

University Dental Clinical Center, Skopje Ss. Pantelejmon, Skopje, Republic of North Macedonia

Co-Authors: Efka Zabokova Bilbilova, Julijna Nikolovska, Vlatko Kokolanski

AI-SUPPORTED ASSESSMENT OF ANESTHESIA-FUNCTIONAL BURDEN IN SPECIAL-CARE PATIENTS

Abstract

Introduction: Dental treatment under general anesthesia in special-care dental patients is a major clinical and organizational challenge. The indication is influenced not only by dental treatment extent, but also by cooperation, sensory reactivity, mobility, nutrition type, and previous anesthesia exposure.

Aim: To develop an AI-supported framework for assessing anesthesia-functional burden in special-care dental patients treated under general anesthesia.

Material and Methods: A dataset of 320 dental treatment episodes under general anesthesia was analyzed. An Anesthesia-Functional Burden Index (AFBI) was constructed from five parameters: low cooperation, high sensory reactivity, modified nutrition type, reduced mobility/wheelchair use, and repeated previous general anesthesia. High AFBI was defined as at least three components. Descriptive statistics, odds ratios, Logistic Regression, Random Forest, and Gradient Boosting were applied.

Results: High AFBI was registered in 93/320 cases (29.1%). Low cooperation was observed in 63.4%, repeated previous general anesthesia in 40.9%, reduced mobility/wheelchair use in 36.3%, high sensory reactivity in 27.8%, and modified nutrition type in 23.1%. Cerebral palsy was associated with repeated previous general anesthesia (OR=3.55; $p<0.001$) and reduced mobility/wheelchair use (OR=3.15; $p<0.001$). Intellectual disability was associated with modified nutrition type (OR=2.60; $p=0.001$), while neurological comorbidities were associated with repeated general anesthesia (OR=2.47; $p=0.001$). Random Forest showed the best performance for high AFBI (ROC-AUC=0.669; PR-AUC=0.422).

Conclusion: AFBI enables structured assessment of functional and anesthesia-related burden in special-care dental patients. Clinical complexity should be assessed not only through dental treatment extent, but also through neurofunctional, sensory, behavioral, and anesthesia-related characteristics.



PP3

ANETA LAZAROVA

PHO Health Center Skopje

Co-Authors: Stefanoska T, Kostovska RD, Abdullahu E, Latifi RH, Dojcinoska NS



USE AND PERCEPTION OF AI-BASED TOOLS AMONG PARENTS FOR INFORMATION RELATED TO CHILDREN'S ORAL HEALTH

Abstract

Introduction: Artificial intelligence (AI) is increasingly being used as a source of health-related information. Data regarding its use and acceptance among parents in the field of children's oral health remains limited. **Aim:** To investigate the use, perception, and trust of parents toward AI-based tools as a source of information related to children's oral health.

Materials and Methods: This study was conducted in May 2026 using an anonymous electronic questionnaire developed by the principal investigator with the support of ChatGPT. The questionnaire was distributed through Viber groups to parents of children attending primary schools in the Municipality of Ilinden, Skopje. A total of 308 valid questionnaires were analyzed using descriptive statistics.

Results: The respondents were predominantly female (89.6%), the majority were aged 36–45 years (63.6%), and had a university or postgraduate degree (62%). 83.1% reported using AI tools, 20.8% used them daily. The most common purpose was obtaining work-related information (42.2%), while 34.1% used AI for health-related information. The majority of parents (65.9%) had never used AI tools to seek information about their children's oral health. The most frequently searched topics included toothache, nutrition and dental health, and tooth eruption. Information obtained through AI tools was considered partially useful by 53.2% of respondents, while 91.9% reported low or moderate trust in such information. Only 13.6% stated that AI-generated information had influenced decisions regarding their children's oral health. One-third of respondents (33.1%) believed that AI could contribute to oral health education, whereas 96.4% agreed that AI cannot replace a dentist.

Conclusion: Parents recognize the benefit of rapid access to information using AI tools, but demonstrate only moderate trust in its accuracy and continue to emphasize the essential role of dentists in making decisions regarding their children's oral health.

PP4

VLATKO KOKOLANSKI

Ss. Cyril and Methodius University in Skopje, Faculty of Dentistry – Skopje



Co-Authors: Kjiro Ivanovski, Bojan Poposki, Spiro Spasovski, Marija Andonovska, Martina Anastasovska

EDUCATIONAL IMPACT OF THE LABAXON VIRTUAL LABORATORY ON LEARNING ACTION POTENTIAL AND NEUROMUSCULAR FUNCTION IN DENTAL TECHNICIAN STUDENTS

Abstract

Introduction: Neurophysiological concepts such as membrane potential, ion transport, and action potential generation are fundamental in dental education. However, students often perceive these topics as difficult because of their abstract nature. Simulation-based learning has emerged as a useful approach for improving conceptual understanding and student engagement.

Aim: The aim of this study was to evaluate the educational impact of the LabAXON virtual laboratory on learning action potential and neuromuscular function among dental technician students.

Material and Methods: An educational interventional study with a pre-test and post-test design was conducted among 43 dental technician students. After theoretical instruction, students participated in simulation-based learning using the LabAXON virtual laboratory. Knowledge acquisition was assessed through online tests administered before and after the intervention. Outcomes were analyzed as percentages of correct answers and proportions of students demonstrating improvement. Statistical analysis was performed using the exact binomial test.

Results: The overall percentage of correct answers increased from 58.0% before the intervention to 76.4% after the intervention. Improvement in post-test performance was observed in 33 students (76.7%), whereas 10 students (23.3%) showed no improvement, demonstrating statistical significance ($p = 0.0003$). Most students also reported positive perceptions regarding the teaching materials and improved understanding after using the virtual laboratory.

Conclusion: The use of the LabAXON virtual laboratory was associated with improved understanding of neurophysiological concepts among dental technician students. Simulation-based learning represents an effective educational tool that may enhance the teaching of complex physiological processes in dental education.

Keywords: simulation-based learning; virtual laboratory; neurophysiology education; dental education; action potential

PP5

VLATKO KOKOLANSKI

Ss. Cyril and Methodius University in Skopje, Faculty of Dentistry – Skopje



Co-Authors: Kjiro Ivanovski, Bojan Poposki, Julijana Nikolovska, Marija Andonovska, Maja Milosevic Markovic, Marko Mladenovski, Svetlana Tosevska, Ramize Kruezi, Rejhan Muhamed Dzumkar, Tamara Tudzarova

FLUORIDE ION CONCENTRATIONS IN COMMERCIALLY AVAILABLE MOUTHWASHES: COMPARISON WITH MANUFACTURER-DECLARED FLUORIDE CONTENT

Abstract

Introduction: Fluoride-containing mouthwashes are widely used as adjuncts for prevention of dental caries and maintenance of oral health. Although fluoride concentrations are commonly declared on product labels, these values may not reflect detectable fluoride ion concentrations in solution.

Aim: To determine fluoride ion concentrations in commercially available fluoride-containing mouthwashes and compare the measured values with manufacturer-declared fluoride concentrations.

Material and Method: A total of 81 commercially available mouthwashes were screened, of which 48 products declaring fluoride compounds were included. Fluoride ion concentrations were determined using ion chromatography with conductivity detection and expressed in mg/L. Comparative analysis between declared and measured fluoride concentrations was performed for 35 products with quantitatively declared fluoride content.

Results: Measured fluoride ion concentrations demonstrated substantial inter-product variability and ranged from 0.0 to 727.79 mg/L, with a mean of 132.03 mg/L and a median of 18.10 mg/L. Among the 35 products with quantitatively declared fluoride concentrations, 20 (57.1%) demonstrated measured concentrations below 80% of the manufacturer-declared value, 12 (34.3%) were within $\pm 20\%$, and only 3 (8.6%) exceeded 120% of the declared concentration. Furthermore, 19 products (54.3%) contained less than 50% of the declared fluoride concentration, whereas 18 (51.4%) demonstrated less than 10% of the declared value.

Conclusion Substantial discrepancies were observed between manufacturer-declared fluoride content and measured fluoride ion concentrations in commercially available mouthwashes. The findings suggest considerable variability in fluoride ion availability among products and indicate that formulation-related factors may influence detectable fluoride ion concentrations in solution.

Keywords: fluoride, mouthwash, ion chromatography, fluoride ions

PP6

DAFINA KOLGECI

Dental Clinic "Blerina Dent"

Co-Authors: Blerine Kolgeci, Arben Emini, Albin Kolgeci, Dardan Goga



MINIMALLY INVASIVE DIODE LASER GINGIVECTOMY IN A POST-ORTHODONTIC PATIENT

Abstract

Background: Gingival enlargement, also known as gingival hyperplasia, is a common clinical finding associated with a variety of conditions. These include systemic and drug-related inflammatory responses, pregnancy, leukemia, and complications that may arise during orthodontic treatment. (1). Gingival hyperplasia, or overgrowth of the gums, is a relatively common side effect seen in patients wearing fixed orthodontic appliances. (2)

Aim: To evaluate the clinical effectiveness of minimally invasive diode laser gingivectomy in a post-orthodontic patient, focusing on periodontal healing and esthetic outcomes.

Case summary: This study presents the case of a 16-year-old healthy patient referred by the orthodontist to our clinic for gingival treatment. During the intraoral examination of the patient, it was seen that the patient suffered from loose gingival growth accompanied by a considerable amount of dental plaque. We had the presence of gingival pockets up to 4mm as well as bleeding on probing. The patient underwent a gingivectomy procedure under local anesthesia, which was performed with a laser diode with a wavelength of 880 nm and a power of 0.8 W. No sutures were placed. The patient's condition was continuously monitored to assess the results or any possible complications.

Results: Follow-up examinations showed satisfactory healing, reduced gingival inflammation, decreased probing depths, and absence of bleeding on probing.

Discussion: Diode laser-assisted gingival recontouring offers a conservative and reliable approach to improving gingival aesthetics. The technique is minimally invasive, delivers visible results immediately after treatment, and is generally well tolerated by patients due to its comfort and efficiency. (3) Owing to its high affinity for pigmented tissues and hemoglobin, the 810 nm diode laser is well suited for a wide range of soft tissue interventions in the oral environment. (4)

Key word: Hiperplasia, Diode Laser, Orthodontic

PP7

ADELINA VINCA NEXHIPI

PHO Health Center - Skopje



Co-Authors: Adelina Hoxha Tairi, Berat Bajrami, Petar Stankov, Tanja Stefanoska, Nadire Nexhipi

EVALUATION OF ORAL HYGIENE HABITS AMONG FIRST-GRADE CHILDREN THROUGH A PARENT QUESTIONNAIRE AND CLINICAL EXAMINATION

Abstract

Introduction: Early childhood caries is a common problem in children aged 6–7 years, a period when the first permanent molars erupt.

Objective: To assess the relationship between parents' knowledge of oral hygiene and the clinical status of the first permanent molars in children aged 6–7 years.

Materials and Methods: A cross-sectional study was conducted on 102 children aged 6–7 years (46 males and 56 females). Parents' knowledge and oral hygiene practices were assessed using a structured questionnaire. A clinical examination of the first permanent molars was performed, to evaluate the presence of dental caries, restorations and eruption status.

Results: The overall mean DMFT index calculated for the first permanent molars was 0.86. When analyzed by gender, female patients exhibited a slightly higher mean DMFT score (0.91) compared to male patients (0.81). Notably, the Decayed (D) component was the primary driver of the index across both groups (mean D = 0.58), whereas the Filled (F) component was substantially higher in females (mean F = 0.36) than in males (mean F = 0.20). Only 12.7% of the examined children are completely caries-free. More than half of the erupted first permanent molars (53.2%) have been sealed. A total of 54 or 13.2% of the total first permanent molars are unerupted.

Conclusion: Parental knowledge significantly influences oral health in children aged 6–7 years. It is essential for parents to be aware of their role in assisting with daily tooth brushing, as children at this age are unable to maintain adequate oral hygiene independently. Increased parental education and regular preventive dental check-ups are necessary.

PP8

ADELINA HOXHA TAIRI

PHO Health Center Skopje



Co-Authors: Adelina Vinca Nezhipi , Berat Bajrami , Petar Stankov , Tanja Stefanoska i Sara Tairi

CLINICAL EXAMINATION VS RADIOGRAPHIC DIAGNOSIS: WHICH IS MORE IMPORTANT IN MODERN DENTISTRY

Abstract

Introduction: Modern dentistry relies on both clinical examination and dental radiography for accurate diagnosis and effective treatment planning.

Aim: To compare the diagnostic roles of clinical examination and dental radiography in modern dentistry and to emphasize the importance of evidence-based patient selection for radiographic examinations according to FDA and ADA guidelines.

Method: This presentation is based on a review of FDA and ADA guidelines regarding patient selection for dental radiographic examinations. A comparative analysis of clinical examination and dental radiography was performed, focusing on their diagnostic roles, indications, limitations, and relevance in patient care. Key factors influencing radiographic prescription, including patient age, caries risk, presenting symptoms, periodontal status, and dental history, were evaluated . Additional information on digital radiography and radiation protection principles, including ALARA concept, was also included.

Results: The reviewed guidelines indicate that neither clinical examination nor radiographic imaging alone is sufficient for a complete diagnosis. Clinical examination remains the foundation of patient assessment, while radiography provides essential information about hidden structures and pathological conditions. Radiographs should be prescribed only after a thorough clinical evaluation and based on individual patient needs. Proper patient selection helps reduce unnecessary radiation exposure and improves diagnostic accuracy. Modern digital imaging techniques also contribute to safer and more efficient diagnostic processes.

Conclusion: Clinical examination and radiography are complementary diagnostic methods in modern dentistry. The best diagnostic approach combines thorough clinical evaluation with selective radiographic imaging based on evidence-based guidelines and patient-specific needs while following radiation protection principles.

PP9

ADELINA HOXHA TAIRI

PHO Health Center



Co-Authors: Adelina Vinca Nezhipi, Berat Bajrami, Petar Stankov, Aneta Lazarova i Sara Tairi

CROWDING IN PERMANENT DENTITION: A SCHOOL-BASED STUDY

Abstract

Introduction: Dental crowding is one of the most common orthodontic anomalies in the adolescent population and has considerable clinical significance due to its impact on oral hygiene, periodontal health, and the development of malocclusions. Previous epidemiological studies in European school populations have identified crowding as one of the most prevalent orthodontic irregularities, with reported prevalence rates ranging from 20% to 40%, depending on age and population characteristics.

Aim: The aim of this study was to assess the prevalence of dental crowding in a school-aged adolescent population and compare the findings with previously published epidemiological data. **Materials and Methods:** The study included 101 ninth-grade students from a primary school. The presence and severity of dental crowding were evaluated and classified as mild, moderate, or severe. The obtained results were compared with findings from European cross-sectional studies, including those reported by Al-Ani et al., which identified crowding among the most common orthodontic anomalies in adolescents, as well as studies reporting orthodontic anomalies in 70.4% of examined subjects, with crowding and spacing observed in 14.3% and 17.0% of the sample, respectively.

Results: Dental crowding was identified in 35 participants (34.7%). Mild crowding was the most prevalent form, affecting 21 participants, while moderate and severe crowding were each observed in 7 participants. The prevalence of dental crowding found in this study is consistent with the range reported among European adolescent populations (20–40%) and shows strong agreement with findings from previous epidemiological studies.

Conclusion: Dental crowding represents a common orthodontic anomaly in school-aged adolescents. The results are consistent with European epidemiological data and highlight the importance of early orthodontic screening and timely interceptive treatment approaches to prevent the progression of malocclusions.

PPI0

JOVAN MLADENOVSKI

Co-Author: Drin Cherkezi



RADIOGRAPHIC LOCALIZATION & EVALUATION OF IMPACTED MAXILLARY CANINES: A COMPARATIVE & CORRELATIVE STUDY OF THE CHAUSHU AND KUFTINEC METHOD

Abstract

Introduction: Impacted maxillary canines are among the most frequently encountered dental impactions after third molars and present significant diagnostic and therapeutic challenges. Accurate radiographic localization is essential for determining the position of impacted canines and planning appropriate treatment strategies. **Aim:** The aim of this study was to evaluate the methods used for localization and evaluation of impacted maxillary canines, compare and determine whether the results match using Chaushu and Kuftinec methods.

Materials and methods: A total of 10 patients with impacted maxillary canines were included in this study. Orthopantomography was used for radiographic evaluation. The sample consisted of 5 male and 5 female, aged between 9-18. 8 patients presented with mixed dentition, while 2 had permanent dentition.

Results: 6 patients presented with buccally impacted maxillary canines, of which 4 cases were bilateral and 2 unilateral. 4 patients showed palatal impaction, with only 1 bilateral case. Using the Kuftinec method, a total of 10 buccally impacted and 5 palatally impacted canines were identified and analyzed. Bilateral impaction was observed in 66.6% of patients, including 53.3% buccal and 13.3% palatal impactions. Unilateral impaction was present in 33.3% of cases, consisting of 13.3% buccal and 20% palatal impactions. According to the Chaushu method, the Canine-Incisor Index (CII) was applied in 7 cases, revealing 5 buccal and 2 palatal impactions. In the remaining 3 cases, the Canine-Canine Index (CCI) was used, demonstrating 2 palatal and 1 buccal impaction.

Conclusion: The methods used for determining the exact and precise canine locations all correspond and match 100%. The Chaushu & Kuftinec methods remain a wide field of study and clinical evidence for both locating and evaluating maxillary canine treatment, however for more complicated cases a CBCT is preferred.

Keywords: Impaction, Maxillary Canine, Chaushu, Kuftinec

PPII

ANA PETROSKA

PHI Denticija- Skopje, North Macedonia

Co-Authors: Julija Zarkova Atanasova, Marko Mladenovski



TO PRESERVE OR EXTRACT? CLINICAL EVIDENCE SUPPORTING TOOTH RETENTION THROUGH ENDODONTIC THERAPY

Abstract

Introduction: The decision between extraction and preservation of teeth requires careful clinical and radiographic evaluation. Endodontic treatment may allow retention of teeth with an initially unfavourable prognosis and subsequent prosthetic rehabilitation.

Aim: The aim of these case reports was to present three complex endodontic cases in which treatment facilitated preservation of these strategically important teeth.

Materials and Methods: Diagnosis was established through clinical examination and radiographic evaluation. Endodontic treatment and retreatment were performed using rotary instrumentation, irrigation protocols, and obturation. The first case: 35-year-old patient with a fractured clinical crown and severely calcified root canals. The second case: 65-year-old female patient with a fractured dental bridge and exacerbated chronic apical periodontitis on a third molar serving as a prosthetic abutment. The third case : 45-year-old female patient with failure of a previously treated tooth requiring endodontic retreatment. Follow-up clinical and radiographic examinations were performed to assess treatment outcomes.

Results:

In all three cases, the teeth were successfully preserved and remained functional. In the first case, calcified canals were successfully negotiated and treated. In the second case, endodontic treatment resolved symptoms, promoted periapical healing, and enabled a new prosthetic restoration. In the third case, although complete working length was not achieved, the tooth remained asymptomatic and functional, with no clinical or radiographic signs of persistent pathology during follow-up.

Conclusion: Complex endodontic cases can be successfully managed through diagnosis and treatment planning. Preservation of strategically important teeth with endodontic treatment is valuable treatment option, facilitating oral rehabilitation while avoiding extraction.

Keywords: endodontic treatment, retreatment, periapical lesion, tooth preservation

PPI2

JULIJA ZARKOVA ATANASOVA

Faculty of Medical Sciences, Goce Delcev University, Stip, North Macedonia

Co-Authors: Ljupce Mitreski, Elena Cucukovska, Anita Atanasova

DIGITAL PROTOCOL FOR INJECTABLE COMPOSITE MOLDING TECHNIQUE: A CLINICAL CASE REPORT

Abstract

Introduction: Injectable composite molding is a minimally invasive and predictable technique for esthetic rehabilitation. Digital workflows has enhanced treatment planning, accuracy, and clinical efficiency with this procedure. This clinical case report describes a fully digital protocol for injectable composite molding.

Case Presentation: A 28-year-old female patient presented with dissatisfaction regarding the appearance of her maxillary anterior teeth. Clinical examination revealed multiple diastemas, uneven incisal edges, minor asymmetries, and unaesthetic existing composite restorations. The patient requested a conservative treatment approach with maximal preservation of tooth structure. Prior to treatment, home tooth whitening was performed to establish the desired shade. A fully digital workflow was employed, including intraoral scanning, digital smile design, and virtual wax-up. A 3D-printed model and transparent silicone index were fabricated based on the approved design. A mock-up was used to evaluate esthetics and function. Although the treatment was primarily additive, minimal enamel recontouring was required in selected areas. Following adhesive procedures, a flowable injectable composite resin was injected through the transparent index to reproduce the planned anatomy. After polymerization, finishing and polishing procedures were performed to optimize morphology and surface gloss. The patient reported high satisfaction with the outcome, and follow-up evaluation demonstrated stable restorations and healthy periodontal tissues.

Conclusion: The digital injectable composite technique represents a conservative, efficient, and highly predictable option for anterior esthetic rehabilitation, providing accurate treatment execution and excellent esthetic outcomes.

Keywords: Injectable composite technique; Digital workflow; Digital smile design; Esthetic rehabilitation.



PPI3

JULIJA ZARKOVA ATANASOVA

Faculty of Medical Sciences, Goce Delcev University, Stip, North Macedonia

Co-Authors: Teodora Doneva, Tankica Vasilev, Verica Stojanova



ESTHETIC GINGIVAL CONTOURING THROUGH BOPT TECHNIQUE: A CLINICAL CASE REPORT

Abstract

Introduction: The Biologically Oriented Preparation Technique (BOPT) has emerged as a valuable prosthetic approach for achieving optimal esthetic integration and soft tissue stability in the anterior region. This clinical case report describes the esthetic rehabilitation using vertical preparation and progressive soft tissue conditioning with crowns.

Case presentation: A 35-year-old female patient presented with unsatisfactory old composite bonding restorations on the maxillary central and lateral incisors and compromised esthetics associated with irregular gingival contours and altered soft tissue architecture in the anterior maxilla. Following clinical and radiographic evaluation, a BOPT concept plan was selected. Vertical tooth preparations were performed on the maxillary anterior teeth. Digital impressions were obtained pre and post provisionals. Initial provisional crowns were fabricated using bis-acrylic resin material from mock up. Flowable composite was applied at the cervical margins to improve emergence profile and marginal adaptation. The provisional restorations were carefully contoured with flowable composite relining and temporarily cemented to support soft tissue healing and conditioning. After two weeks, the provisional restorations were replaced with PMMA provisional crowns with refined emergence profiles and highly polished cervical contours to further guide gingival remodeling. After six weeks of tissue maturation, six definitive monolithic zirconia crowns were fabricated and delivered. The transmucosal cervical margins contacting the inner gingival sulcus were highly polished, while the remaining surfaces were stained and glazed to optimize esthetics.

Conclusion: Six-month follow-up demonstrated healthy periodontal tissues, stable gingival contours, and satisfactory esthetic integration. The BOPT approach allowed successful soft tissue management and predictable esthetic rehabilitation.

Keywords: BOPT, vertical preparation, zirconia crowns

PPI4

DARKO KOCOVSKI

PHO Health Center Demir Hisar

Co-Authors: TO. Mitrova, S. Najdenoska – Bojchinoska



KNOWLEDGE, ATTITUDES, AND PRACTICES OF PARENTS REGARDING FLUORIDES

Abstract

Introduction: The proven effectiveness of fluorides in reducing caries prevalence has led to their widespread use in various preventive modalities. Nevertheless, the use of fluorides is often associated with differing opinions, insufficient public awareness, and parental concerns, particularly regarding their safety and potential adverse effects in children. Despite the extensive application and well-documented benefits of fluorides, the level of parental awareness regarding their importance in preventive dentistry remains uncertain.

Purpose: The aim of this study was to evaluate the knowledge and attitudes of parents regarding the use of fluorides in preventive dentistry.

Material and method: A cross-sectional survey study was conducted using a structured questionnaire. The study population consisted of parents of children aged between two and ten years. The questionnaire included several sections addressing demographic characteristics, knowledge about fluorides, attitudes toward their use, and daily oral hygiene practices. The collected data were analyzed and statistically processed.

Results: The results obtained from the questionnaire demonstrated that the majority of parents had previously heard about fluorides; however, their level of knowledge regarding the importance and preventive role of fluorides was limited. Approximately 30% of the participants were aware that uncontrolled fluoride use may lead to dental fluorosis. Furthermore, the majority of parents stated that they would use fluoride-containing products if recommended by a dentist, expressing a high level of trust in dental professionals.

Conclusion: Although modern society is highly digitalized and parents have access to a wide range of information sources, awareness regarding the importance and preventive benefits of fluorides remains insufficient. These findings highlight the need for improved parental education and greater promotion of preventive oral health measures.

Key words: children, fluorid

PPI5

MIMOZA SULEJMANI

PHIUDCC "Sveti Pantelejmon" Skopje

Co-Author: Sanja Pancevska



DENTURE DISPLACEMENT AND MUCOSAL SUPPORT BEHAVIOR IN MANDIBULAR IMPLANT OVERDENTURES WITH DIFFERENT ATTACHMENT SYSTEMS: A FINITE ELEMENT ANALYSIS

Abstract

Introduction: Biomechanical behavior of implant overdentures (IOD) and interaction between denture and supporting tissues is influenced by the type of attachment system.

Objective: The aim of this study was to evaluate denture stability and the behavior of resilient mucosal support in mandibular two-implant overdentures with different attachment systems using three-dimensional finite element analysis (3D FEA).

Material and method: In accordance with objectives of this study, an experimental research was conducted using numerical simulation software. Using the finite element analysis (FEA), 3D models of the edentulous mandible were formed. CBCT scan of the edentulous mandible was used to create the models. The tests were conducted on two models of a mandibular totally edentulous jaw, on which two implants (3.3x10mm) were placed at the position of the bilateral canines, perpendicular to occlusal plane. In each of the models, different retention systems (ball, locator) and an acrylic removable prosthesis were placed. In this study, the mucosal thickness was assumed to be 2 mm. The mucosal support was simulated using elastic spring elements combined with a nonlinear contact interface. The models were tested under loading with axial forces of 150 N bilaterally at the level of the first molar. These models were analyzed by finite element software (SOFISTIK software package).

Results: Under axial bilateral loading, increased support and bracing ability were observed in the 2-IOD model with ball attachment compared with locator attachment. The ball attachment demonstrated reduced denture mobility, whereas the locator attachment showed greater prosthesis displacement and increased loading of the posterior residual ridge.

Conclusions: Within the limitations of this finite element study, attachment design significantly affected overdenture displacement patterns and load transfer behavior. The ball attachment provided improved prosthetic stability, while the locator a

PPI6

ANETA LAZAROVA

PHO Health Center Skopje

Co-Authors: Stefanoska T, Hodza Tairi A, Abdullahu E, Crcevska S.



CURRENT STATUS OF NUTRITION EDUCATION WITHIN DENTAL SCHOOLS IN WESTERN BALKAN

Abstract

Introduction: Diet affects health from the moment of conception. The availability of appropriate nutrients is crucial for the growth, development, maintenance, and repair of oral and dental tissues throughout life. Vice versa, a healthy oral system is essential for proper nutrition. Knowledge of nutrition and oral health contributes to the prevention of oral and other non-communicable diseases.

Aim: The aim of this study was to assess the current status of nutrition education in dental schools across the Balkan region.

Method: The research was conducted over a period of six months in 2024 by two independent researchers using the Google Scholar database. The following keywords were used for the search: “Faculty of Dentistry”, “Balkan countries”, “curriculum”, and “nutrition”. The following data were collected: name of the faculty, type of institution (public or private), duration of studies (years/semesters), inclusion of nutrition and oral health subjects in the curriculum, and the academic title obtained upon graduation. The data were organized and analyzed using Excel tables.

Results: The data identified 34 faculties of dentistry in eight countries located on the Balkan Peninsula. Among the three private and three public dental faculties in North Macedonia, only one offers a separate subject titled “Food is an Integral Part of Oral and General Health”. In the remaining faculties in North Macedonia and the other Balkan countries, either no information was available or nutrition-related content was included only as lectures integrated into other subjects.

Conclusion: This study provides baseline information and suggests that dental curricula should be revised by introducing a separate subject dedicated to nutrition and oral health. A limitation of this study is that not all faculties have publicly available curricula on their websites, resulting in incomplete data. Direct contact with faculties in future research would improve data reliability and completeness.

PPI7

MIRKO SAVESKI

Faculty of Dentistry – Skopje

Co-authors: Stefan Kuzmanovski, Davor Dzikoski



COMPARATIVE ANALYSIS OF CORONAL MICROLEAKAGE IN TEMPORARY RESTORATIVE MATERIALS

Abstract

Introduction: During dental treatment, it is often necessary to temporarily seal the prepared cavity to allow the action of interappointment medicaments and facilitate reopening of the cavity at the subsequent visit. This is achieved by placing temporary restorative materials that provide an adequate seal of the prepared cavity.

Aim: The aim of this study was to compare coronal microleakage among three different groups of temporary restorative materials based on zinc oxide sulfate, zinc oxide phosphate, and glass ionomer cement, in order to determine potential differences in their performance and clinical reliability.

Materials and Methods: The study included 30 extracted mandibular and maxillary posterior teeth, which were randomly divided into three groups. A standardized Black Class I cavity measuring 2 mm × 4 mm was prepared in each tooth. Each group was restored with one of the temporary restorative materials and stored for 24 hours to allow complete setting of the materials. The following day, all tooth surfaces except the occlusal surface were coated with two layers of nail varnish and immersed in methylene blue dye for 24 hours. Subsequently, the teeth were rinsed in water for 2 hours and sectioned through the furcation region using a 1 mm diamond fissure bur. The crowns were then further sectioned in a bucco-oral direction using the same bur. Dye penetration and the degree of microleakage were measured using a graduated periodontal probe.

Results: The greatest degree of coronal microleakage was observed in the zinc oxide sulfate group, while the lowest microleakage was found in the glass ionomer group. Post-hoc Tukey HSD analysis demonstrated statistically significant differences among all three groups ($p < 0.001$).

Keywords: Temporary restorative materials, Black Class I cavity, methylene blue, coronal microleakage.

PPI8

OLIVERA MITROVA

Specialist Practice for Pediatric and Preventive Dentistry, Public Health Institution General Hospital with Extended Services – Gevgelija

Co-authors: Darko Kocovski

NON-PHARMACOLOGICAL BEHAVIOR MANAGEMENT TECHNIQUES IN PEDIATRIC DENTISTRY

Abstract

Introduction: Successful dental treatment in pediatric patients largely depends on the child's cooperation and behavior during dental interventions.

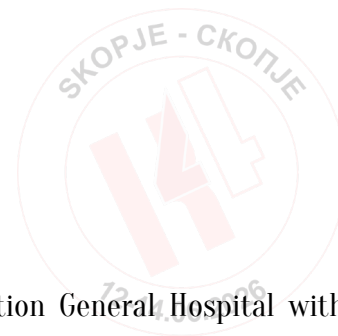
Purpose: The purpose of this study was to present the non-pharmacological behavior management techniques used in pediatric dentistry and to evaluate their effectiveness in reducing fear and improving cooperation among pediatric patients.

Materials and Methods: For the preparation of this paper, a search was conducted in the electronic database PubMed. Studies published between 2015 and 2025 were analyzed, and a review of contemporary literature and clinical recommendations, with special emphasis on the guidelines of the American Academy of Pediatric Dentistry. Were analyzed: Tell-Show-Do, distraction techniques (verbal, visual, and storytelling techniques), positive reinforcement, voice control, Ask-Tell-Ask... Studies were conducted involving children aged 6 to 8 years, analyzing the parent-child-dentist relationship and the presence of parents during preventive interventions.

Results: According to the analyzed studies, the Tell-Show-Do technique and positive reinforcement proved to be the most acceptable and effective approaches for improving cooperation and creating a sense of safety in children during dental visits. Distraction techniques demonstrated a positive effect in anxious children and reduced negative reactions. The authoritative attitude of the parents and their active involvement in the treatment with children showed the best results in developing security and self-confidence.

Conclusion: A dentist who sends every child out of the dental office with a smile is not only a professional in their field, but also a person who understands the importance of building trust with children. Positive experiences from childhood can have long-term beneficial effects on children's oral health and their attitudes toward dental care later in life.

Keywords: Pediatric dentistry, behavior management, children, Tell-Show-Do



PP19

KOSTADIN KANGOV

Private Dental Practice «Corona Dental», Gevgelija; Private Dental Practice «EDG-l», Strumica; Faculty of Dental Medicine, MIT University, Skopje

Co-authors: Riste Panajotu, Filip Tanturovski, Dancho Bizevski

TREATMENT OF A PATIENT WITH REDUCED OCCLUSAL VERTICAL DIMENSION USING ZIRCONIUM DIOXIDE

Abstract

Introduction: Prosthetic treatment in patients with a reduced occlusal vertical dimension, caused by tooth wear, tooth loss, or changes occurring in existing prosthetic restorations over time, is based on a thorough clinical analysis of the interocclusal distance, the positional stability of the vertical dimension at rest, and the effects of changes in the occlusal vertical dimension. The clinical protocol for increasing the occlusal vertical dimension by 1–5 mm is considered a reliable, safe, and predictable treatment, and any potential problems within these dimensions usually disappear within 2–4 weeks during the adaptation period.

Aim: The aim of this paper is, through a case report of prosthetic reconstruction using a highly aesthetic monolithic zirconia material, to present the rehabilitation of a patient with an advanced stage of bruxism, reduced occlusal vertical dimension, impaired aesthetics, and compromised function.

Material and Methods: A 47-year-old patient with reduced vertical dimension as a result of bruxism was clinically examined, revealing the presence of abrasive facets on the palatal surfaces of the upper anterior teeth and fractured incisal edges, abraded supporting cusps on the upper posterior teeth, and absence of tooth 15. In the lower jaw, a smaller loss of tooth structure and absence of teeth 36 and 46 were detected. The treatment plan consisted of prosthetic rehabilitation of the upper jaw teeth with full crowns and fabrication of a bridge in the region of teeth 16–14. The material of choice was monolithic zirconium oxide from Ivoclar – IPS e.max ZirCAD Prime for the posterior teeth and IPS e.max ZirCAD Prime Esthetic for the anterior teeth.

Conclusion: The use of zirconium dioxide in prosthetic reconstruction involving an increase in the occlusal vertical dimension is considered a material of choice due to its high strength and resistance, excellent aesthetics, and biocompatibility.

Keywords: bruxism, occlusal vertical dimension



PP20

BUDIMA PEJKOVSKA SHAHPASKA

PHI University Clinic "St. Panteleimon" – Skopje



Co-authors: Julija Zarkova Atanasova, Katerina Zlatanovska, Bruno Nikolovski, Meri Lazarova

APPLICATION OF THE LEAF GAUGE IN CONTEMPORARY PROSTHODONTICS

Abstract:

The leaf gauge is a clinical instrument with significant applications in the diagnosis and registration of intermaxillary relationships in contemporary dental practice. Its use is particularly important in gnathology, fixed and removable prosthodontics, occlusal therapy, and the management of temporomandibular disorders (TMD). The instrument consists of a series of thin plastic leaves of precisely defined thickness, enabling controlled disocclusion and gradual relaxation of the masticatory muscles to obtain a reproducible centric relation.

The use of the leaf gauge facilitates the elimination of occlusal interferences and reduces the influence of neuromuscular adaptation, thereby contributing to more accurate mandibular positioning. This is particularly valuable during the fabrication of prosthetic restorations, occlusal splints, full-mouth rehabilitations, and implant-supported prosthetic treatments. Furthermore, the instrument plays an important role in the diagnosis and management of patients with bruxism and temporomandibular disorders.

Within the framework of a modern digital workflow, the leaf gauge can be successfully integrated with digital occlusal analysis systems and CAD/CAM technologies, thereby improving the accuracy, functionality, and predictability of therapeutic outcomes. This paper presents a clinical case in which the vertical dimension of occlusion was digitally determined using a leaf gauge to achieve a functionally stable and precise occlusal relationship. Owing to its simplicity, clinical reliability, and high diagnostic value, the leaf gauge remains an indispensable instrument in everyday dental and prosthodontic practice.

PP21

STEFAN KUZMANOVSKI

Faculty of Dentistry – Skopje

Co-authors: Mirko Saveski, Vesna Korunoska Stevkovska, Emilija Bajraktarova Valjakova, Nadica Janeva, Natasha Stavreva, Aneta Mijoska

EVALUATION OF THE MARGINAL FIT OF TEMPORARY CROWNS FABRICATED USING CONVENTIONAL AND CONTEMPORARY TECHNIQUES: AN IN VITRO STUDY

Abstract:

Introduction: Marginal fit is one of the key factors in the design and fabrication of temporary crowns and bridges, particularly when they are intended for long-term use. Adequate marginal adaptation preserves the integrity of the marginal gingiva, prevents microleakage, and reduces the risk of temporary cement dissolution caused by saliva.

Aim: The aim of this study was to compare the marginal fit of temporary crowns fabricated using the conventional technique, CAD/CAM technology, and 3D printing.

Materials and Methods: A total of nine temporary crowns were fabricated for teeth #26, #44, and #47 and divided into three groups. In the first group, the crowns were fabricated using the conventional technique by taking a preoperative impression and filling it with a self-curing acrylic resin for temporary crowns (Politemp, Polident, Slovenia) after tooth preparation. For the second and third groups, the prepared teeth were scanned using a 3Shape intraoral scanner. The crowns were digitally designed in Exocad and fabricated either by CAD/CAM milling from a pre-polymerized PMMA disc or by 3D printing using a photopolymer resin. Marginal fit was evaluated by optical microscopy and software-based measurements (ImageJ) of the gap between the crown margin and the preparation finish line on all four axial surfaces. Measurements were expressed in micrometers (μm).

Results: The mean marginal gap values on the buccal, oral, mesial, and distal surfaces were 627, 519, 911, and 587 μm for conventionally fabricated crowns; 101, 100, 102, and 118 μm for CAD/CAM-fabricated crowns; and 145, 138, 130, and 90 μm for 3D-printed crowns, respectively. The results demonstrated a significant difference in marginal fit between the conventional and digital fabrication methods.

Conclusion: Contemporary CAD/CAM and 3D-printing techniques provide significantly better marginal fit of temporary crowns compared with the conventional fabrication method.



PP22

DANICA MONEVSKA POPOVIĆ

Clinic for Maxillofacial Surgery (Academician Ilija Vaskov), Skopje

Co-authors: Dr. Nol Cena, Prof. Dr. Suzana Božović Dvojakovska, Dr. Angela Monevska, Dr. Martina Anastasovska

ODONTOGENIC INFECTION AND HEMATOLOGICAL BIOMARKERS

Abstract

Introduction: Odontogenic cervicofacial phlegmons are severe infections of the superficial and deep anatomical spaces of the head and neck. One of the main characteristics of this type of infection is its potential to evolve and spread along the fascial planes of the neck from the skull base to the mediastinum, being potentially life-threatening.

The primary objective of this study is to assess the diagnostic utility of inflammatory biomarkers WBC, CRP, NLR and SII -systemic immuno-inflammatory index from routine blood tests in evaluating infection severity.

Material and methods: The present retrospective study is based on diagnosed cases of odontogenic cervicofacial phlegmons, admitted to the University Clinic for Maxillofacial Surgery in Skopje, RN, Macedonia between January 2019 and December 2024. The included data was collected from the medical charts. Routine blood samples were analyzed, complete blood count, C-reactive protein, WBC. Symptom Severity score (SS) was assessed in this study for all patients and patients were categorized into two groups based on infection severity: low-SS1 and high-SS2 intensity infection. Infectious biomarkers were calculated: SII (Systemic Immune-Inflammatory Index) - neutrophils x platelets/lymphocytes, and NLR (Neutrophil-to-Lymphocyte Ratio) - neutrophils/lymphocytes

Results: The results of the univariate logistic regression analysis for determining the predictive role of selected parameters for the severity of the clinical presentation of infection in patients with odontogenic cervicofacial phlegmon (Group SS1 vs. Group SS2) indicated the following parameters as significant: NEUT, WBC, and CRP, we did not find significant association with SII and NLR.



PP23

ZHIVKO MILOSHEVSKI

PZU Miloshevski / PZU Comfort Dental

Co-authors: Emilija Miloshevski



DIGITAL TRACKERS IN ORTHODONTIC REMOVABLE APPLIANCES

Abstract

Background: Successful orthodontic treatment with removable appliances depends heavily on patient compliance. Traditional methods of monitoring wear time are subjective and often unreliable. Recent advances in digital technologies, including microsenors and artificial intelligence (AI), enable objective and continuous tracking of appliance use.

Objective: To review recent developments in digital trackers used in removable orthodontic appliances, with a focus on improving patient compliance and treatment outcomes.

Methods: A narrative review of recent literature (2024–2026) was conducted, focusing on digital monitoring systems, including embedded microsenors, AI-driven platforms, and mobile health applications.

Results: Microsenors integrated into removable appliances provide accurate, real-time data on wear time. AI-based monitoring systems allow remote supervision and predictive analysis of patient behavior. Smart aligners and retainers can track usage patterns and support personalized treatment adjustments. Additionally, mobile applications improve patient engagement and motivation through reminders and feedback systems.

Discussion: Digital trackers enhance the objectivity of compliance monitoring and improve communication between orthodontists and patients. However, limitations include increased costs, data privacy concerns, and the need for further clinical validation.

Conclusion: Digital tracking technologies significantly improve the monitoring of removable orthodontic appliances and support personalized orthodontic care. Future developments are expected to further integrate AI and smart materials, leading to more efficient and patient-centered treatment approaches.

PP24

ANTOANETA TRAJKOVSKA

Faculty of Dentistry – Skopje, Ss. Cyril and Methodius University in Skopje, Republic of North Macedonia

Co-authors: Julijana Nikolovska, Marija Andonovska, Vlatko Kokolanski, Maja Milosevic Markovic, Marko Mladenovski, Bojan Poposki, Viktorija Manevska

ANTIMICROBIAL ACTIVITY OF COMMERCIALLY AVAILABLE MOUTHWASHES AGAINST STREPTOCOCCUS MUTANS: AN IN VITRO SCREENING STUDY

Abstract

Introduction. *Streptococcus mutans* (*S. mutans*) is one of the principal cariogenic microorganisms involved in the initiation and progression of dental caries. Mouthwashes are widely used as adjunctive oral hygiene products but their antimicrobial activity may vary considerably. The aim of this study was to evaluate and compare the in vitro antimicrobial activity of commercially available mouthwashes against a reference strain of *S. mutans*.

Materials and Methods. 80 commercially available mouthwashes available on the North Macedonian market were evaluated. Antimicrobial activity was tested against *S. mutans* ATCC 25175 using the agar diffusion method. Undiluted mouthwash preparations and a standardized bacterial inoculum were used. Following incubation under appropriate microbiological conditions, antimicrobial activity was assessed by measuring inhibition zone diameters (mm). Descriptive statistical analysis was performed, and products were ranked according to their inhibitory activity.

Results. Considerable variability in antimicrobial activity was observed among the tested mouthwashes. Inhibition zone diameters ranged from 0 to 27 mm, with a mean value of 13.45 mm and a median of 13 mm. Several products demonstrated strong inhibitory activity, producing inhibition zones greater than 20 mm, whereas some products showed no detectable inhibition under the experimental conditions. The findings enabled clear differentiation of mouthwashes according to their antimicrobial potential against *S. mutans*.

Conclusions. Commercial mouthwashes demonstrated substantial differences in their in vitro antimicrobial activity against *S. mutans*. While several products exhibited pronounced inhibitory effects, others showed minimal or no measurable activity. These findings provide comparative data on the antimicrobial potential of mouthwashes and may support evidence-based selection of adjunctive oral hygiene products.

Keywords: mouthwashes; *S. mutans*; dental caries; in vitro

PP25

PETROVSKI MIHAJLO

Faculty of Medical Sciences, Goce Delčev University, Štip, North Macedonia

Co-Authors: Mladenovski Marko, Veljanovski Darko, Nikolovski Bruno, Zlatanovska Katerina, Apostoloski Pavle, Popova M.

USAGE OF LASER TECHNOLOGY IN THE MANAGEMENT OF PERIODONTAL DISEASES: DENTISTS' KNOWLEDGE, ATTITUDES, AND CLINICAL PRACTICES

Abstract

Introduction: The integration of laser technology into periodontal therapy has introduced novel therapeutic possibilities aimed at improving clinical outcomes and patient comfort. Nevertheless, the extent of their clinical utilization and the level of professional awareness among dental practitioners remain insufficiently investigated.

Aim: This study aimed to evaluate the utilization of laser technology in the management of periodontal diseases and to assess dentists' knowledge, attitudes, and clinical practices regarding laser-assisted periodontal therapy in North Macedonia.

Materials and Methods: A cross-sectional survey was conducted among 34 dental practitioners who reported routine use of dental lasers in periodontal treatment. Structured anonymous questionnaire was used. The study was performed between November 2024 and March 2025.

Results: A substantial proportion of respondents (94%) considered laser-assisted periodontal therapy to provide clinically relevant advantages compared with conventional treatment approaches. However, 78% of participants indicated that patients possess limited knowledge regarding the potential benefits of laser-based interventions. Notably, 36% of surveyed clinicians had not completed adequate training in laser-assisted periodontal therapy. Concerning clinical application, 42% reported using lasers as an adjunct to non-surgical periodontal treatment, 13% primarily for periodontal surgical procedures, and 46% within a combined therapeutic protocol.

Conclusion: Despite ongoing technological advancements and increasing scientific evidence supporting specific laser applications in periodontology, their routine clinical adoption remains limited. The findings suggest a generally positive perception of laser-assisted periodontal therapy among dental practitioners; however, the need for additional professional education and greater patient awareness persists.

Keywords: dental lasers; periodontal diseases; laser-assisted periodontal therapy; periodontal therapy.





SKOPJE - СКОПЈЕ



12-14.06.2026

