



3RD CONGRESS OF THE BALKAN ASSOCIATION OF ORTHODONTIC SPECIALISTS
4TH CONGRESS OF THE MACEDONIAN ORTHODONTIC SOCIETY



“THE HIGHS AND LOWS OF ORTHODONTICS – OUR LEARNING CURVE”

BOOK OF ABSTRACTS



SEPTEMBER 12-15, OHRID, NORTH MACEDONIA



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Skopje, 2019

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Dear colleagues and friends,

On behalf of the Organizing and Scientific Committees of the joined 3rd Congress of BAOS and 4th Congress of MOS, let me wish you a sincere and cordial welcome in the city of Ohrid, one of the grandeur UNESCO heritage sites.

Let's be as numerous as the grains in a pomegranate – the fruit we have chosen as a logo for the Congress.

Why the pomegranate?

Because it is beautiful, reminding of the beautiful colors of the Balkan under the crown of the sun. Because it consists of chambers and many vivid grains inside them – just as the countries and the nations of the Balkans – divided in one way, but also unseparately living together. The pomegranate symbolizes health, fertility and eternal life. Let's all of us gather under the “crown” of BAOS, as numerous and vivid as the grains of the pomegranate; let's fruitfully foster the orthodontic science and bring healthier life to our patients!

Let's smile together.

Sincerely yours,

**Prof. Gabriela Kjurchieva Chuchkova
President of the Congress**





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СВ. КЛИМЕНТ И СВ. НАУМ
ОХРИДСКИ



KEYNOTES



VASKA VANDEVSKA-RADUNOVIC **Oslo, Norway**

Dr. Vaska Vandevska-Radunovic received her DMD and MSc in orthodontics at the University “Kiril i Metodij” in Skopje. She continued her orthodontic training at the University of Bergen, Norway 1990-1992, where she obtained her PhD (doctor odont) in 1998. She is currently Professor and Head of the Department of Orthodontics, University of Oslo and is involved in the education and research activity of graduate, post-graduate and doctoral students. For six years she was a member of the Continuing education committee of the Norwegian Association of Orthodontists. She was Chairman of the Membership Committee of NEBEOP and is President elect for the EOS in 2022. Her main areas of interest are tissue reactions during orthodontic tooth movement and relapse, retention procedures and long-term outcome of orthodontic treatment and the effect of orthodontic treatment on periodontal health.

Highs and Lows of Impacted Maxillary Incisors

Supernumerary teeth are the most frequent cause of delayed eruption of maxillary incisors. Their surgical removal is expected to expedite spontaneous incisor eruption; however, this is not always the expected result. Very often, the impacted teeth have to be moved actively into alignment, which means surgical exposure of the affected teeth, bonding and orthodontic traction. Evidence show that actively moved and aligned incisors have significantly different crown and periodontal features than the control teeth, indicating that spontaneous eruption may be the preferred option. On the other hand, waiting for spontaneous tooth eruption may take a long time and negatively affect children’s appearance and function. How long shall we wait for spontaneous eruption and are there any predicting factors that can help clinicians make a proper and sound decision? The “highs” and “lows” of incisor crown position, periodontal status and patient satisfaction will be addressed in a group of patients that have undergone surgical and orthodontic traction of impacted incisors.



ATHANASIOS E. ATHANASIOU
Athens, Greece



Dr. Athanasios E. Athanasiou is the Executive Dean and Professor of Orthodontics at the Department of Dentistry, European University Cyprus, Nicosia, Cyprus.

He received his Dental Degree and Ph.D. from the University of Athens, Greece and his Certificate in Orthodontics and Master of Science in Dentistry from Temple University, USA.

He was President of the World Federation of Orthodontists, the European Federation of Orthodontics and the Greek Orthodontic Society; Dean of the School of Dentistry and Professor and Chairman of the Department of Orthodontics, Aristotle University of Thessaloniki, Greece, and Dean and Professor of Orthodontics at the Hamdan Bin Mohammed College of Dental Medicine, Mohammed Bin Rashid University of Medicine and Health Sciences, Dubai, United Arab Emirates.

He has supervised 64 Ph.D. and Master's dissertations, and has published more than 180 scientific articles and chapters as well as 3 textbooks. He serves as referee or member of the editorial board in many scientific journals, has been external examiner for various educational institutions, he is honorary member in several professional organizations, and has been awarded for his scientific contributions.

Professor Athanasiou maintains in Athens, Greece, a private practice limited to orthodontics.

Diagnosis and Management of Face Asymmetries

The presentation will address the various etiologic, classification, diagnostic and therapeutic aspects of young and adult patients with face asymmetries. The etiology and classification will be presented with regard to patients with hemifacial microsomia, hemimandibular hypertrophy, hemimandibular elongation, mandibular condyle fracture, TMJ ankylosis, masticatory muscle pathology, face tumors, and TMJ arthritis. The described systematic, detailed, and interpretative diagnostic protocol will include anamnestic evaluation, clinical examination, radiological and imaging assessment, and laboratory tests. The principles of management will describe the appropriate orthodontic, orthopedic, and/or surgical treatment.



ABBAS R. ZAHER
Alexandria, Egypt

Dr. Abbas R. Zaher is professor and Chairman of the Department of Orthodontics at the University of Alexandria, Egypt. He received his Dental Degree and MS Degree from the University of Alexandria. His PhD from Orthodontics was received from the University of Iowa, USA and University of Alexandria, Egypt.

He is the President, of the Egyptian Orthodontic Society, Founding Member in the Arab Orthodontic Society, International Member, the American Association of Orthodontists, Member of The European Orthodontic Society, Honorary Life Member in the Greek Orthodontic Society, Fellow in the International College of Dentists and Fellow in the Pierre Fauchard Academy. He was the Past Vice-President of the World Federation of Orthodontists.

He was invited to lecture in many International Universities in all over the world USA, Greece, Australia, Romania, Japan, UAE, Egypt, Poland, Turkey, Latvia, Croatia and Italy.

He had more than 40 scientific publications in Egyptian and international journals.

He received the Helen and B. F. Dewel Clinical Orthodontic Award for the best Clinical Article in the American Journal of Orthodontics and Dentofacial Orthopedics, 1995. He is honorary member in The International College of Dentists (ICD) 2016 and honorary Life Member in the Greek Orthodontic Society 2016.

Management of Difficult Canine Impactions and Transposition

Ectopic teeth are not an infrequent encounter in orthodontic practice. These cases could be encountered in a variety of situations and impaction, transposition and mal position are only examples. The orthodontist is sometimes faced with a variety of treatment options and the decision is usually based on the position and the risk factors.

Treatment plan for complete transposition of the canine often entails keeping the canines in its erupting position, accepting the transposition and finishing the treatment accordingly and in conjunction with other complementary dental procedures. The great antero-posterior distance of canine movement in order to correct the teeth order in cases of complete transposition is sometime a challenge. Factors that will help potentiate the success of correction should be carefully considered while planning the treatment of such cases.

The orthodontists should be able to handle and is responsible for dealing with each and all of these issues.

NEJAT ERVERDI
Istanbul, Turkey



Dr. Nejat Erverdi graduated in 1981 from Hacettepe University Faculty of Dentistry in Ankara . He started his postgraduate education at the Department of Orthodontics of the same faculty and completed his PhD program in 1985. For the military service, Dr. Erverdi attended the Military Postgraduate Education Center in Istanbul and completed his military service as an educator. In 1987 he joined the Marmara University Faculty of Dentistry Department of Orthodontics as a lecturer. In 1988 he became Assistant Professor; in 1989 he passed the exam and became Associate Professor. In 1994 he became a full Professor. Dr. Erverdi is the head of the Department of Orthodontics between 1988-2006. He is one of the founders of the Turkish Orthodontic Society. Since 2000 he was serving as a Council member of the European Orthodontic Society. In 2003 he was accepted as the full member to the North Atlantic Component of the Edward Angle Society. He is the author of over 100 articles in local and international journals and seven international book chapters. He was the president of the IXth International Symposium on Dentofacial Development and Function in October 2002. He was elected as the president of the European Orthodontic Society for the year of 2011. He was the president of EOS congress which was held in June 2011 in İstanbul. His book about Archwise Distraction Osteogenesis was published by Springer company in the year of 2014. He is still investigating and writing about Archwise Distraction Osteogenesis and cleft palate treatment. His book Contemporary Orthodontics in Turkish language was published in the year of 2017.

What Do We Know About Class III Malloclusion: Diagnosis, Treatment and Retention

Class III is one of the most difficult malocclusions to treat and maintain the treatment results. Different etiologic factors effect the development of this malocclusion but heredity is generally accepted as the most important one.

Conventional diagnostic tools like cephalometry ,standard profile and facial photographs still constitute the key tools that are effectively used for the diagnosis; along with the three dimensional diagnostic tools that has begun to be used widely in the recent years.

Treatment options are various and they change in accordance with the age ,severity and themorphology of the malloclusion.

Retention treatment is planned according to the treatment modality and the skeletal age of the patient.

In this presentation; the etiology and diagnosis of skeletal Class III malloclusion will be briefly addressed ,along with the discussion of the different, conventional tretment protocols like TAD's supported Class III treatment and the Archwise Distracton for the treatment of severe skeletal situations on some treated cases.



NAZAN KUCUKKELES
Istanbul, Turkey

Dr. Nazan Kucukkeles done her PhD in 1984-1989 in Orthodontic Department of Marmara University in Istanbul where she became a professor and the vice dean in year 2002. She chaired the Orthodontic Department of Marmara University in 2006-2011. She executed the editor in chief position of Turkish Journal of Orthodontics in 2004-2008. She has many publications and presentations and giving clinical courses in european countries since over 10 years. She is an active member of Angle Society of Europe. She has been studying on treatment protocols of true Class III over 15 years. Her other topics are ; orthopaedic treatment of skeletal malocclusions, orthognathic surgery cases, vertical anomalies, maxillary expansion , lingual technique.

Long Term Results of Rapid Maxillary Protraction Using Corticotomy and Skeletal Anchorage

Using face mask is a common treatment protocole for the correction of maxillary retrognathism. It is possible to advance maxilla in growing individuals, about 2-3 mm in 9-12 months of treatment time. But we don't have many options other than surgery or distraction if the growth is completed or the anomaly is more severe. Waiting for the growth completion for surgical option may result in psychological problems in the adolescent stage. It is also possible to elongate membranous bone of maxilla by distraction protocole which is performed usually on cleft cases. On the other hand few researchers documented the clinical and cephalometric results of a 'distraction like' method. They protracted maxilla rapidly by using face mask following Lefort I surgery. These studies reported 5-11 mm maxillary advancement in a very short period of time. In 2004 we designed a study to evaluate the effects of a similar treatment method and compared it with the conventional one (RPE+face mask therapy). The results of surgery assisted protraction was more remarkable and rapid compared to the other group. After these promising results we decided to improve the technique by preparing an intraoral design which maxilla was protracted by Class III elastics attached between the upper splint and the mini plates located on the symphyseal bone. We treated a group of patient with this latter design and also evaluated the results of this treatment method. During this lecture short and long term progress of cases treated with both protocols will be presented together with the results of both studies.

MOSCHOS A. PAPADOPOULOS
Thessaloniki, Greece



Dr. Moschos A. Papadopoulos is Professor, Chairman and Program Director at the Department of Orthodontics, School of Dentistry, Aristotle University of Thessaloniki, Greece. He is also Past President of the Balkan Association of Orthodontic Specialists and of the Orthodontic Society of Northern Greece, Honorary Editor of the “Hellenic Orthodontic Review”, and served as Asst. Editor of the “World Journal of Orthodontics” and as Assoc. Editor of “Stoma”. He also is/ or served as Member of the Editorial Board of 19 peer reviewed journals, and as Referee of 40 orthodontic, dental and medical journals. He is an active member in more than 20 national and international societies, federations, and unions.

Dr. M. A. Papadopoulos received several awards and distinctions, among others the “A. Tsoukanelis Award” from the Aristotle University of Thessaloniki, the “Annual Scientific Award” from the German Association of Plastic Surgeons, the “Joseph E. Johnson Clinical Award” and the “Turpin Award for Evidence-Based Research” from the American Association of Orthodontists, the “Align Research Award” from Align Technology Inc. USA, the “Ioannis Margelos Research Scholarship” from the Hellenic Society of Endodontics, the “Best Poster Presentation Award” and the “Best Publication Award” from the Orthodontic Society of Northern Greece. Currently the main clinical and research interests of Dr. M. A. Papadopoulos include the subjects of “noncompliance orthodontic treatment”, “use of miniscrew implants as temporary anchorage devices in orthodontic treatment”, and “evidence based orthodontics”.

Dr. M. A. Papadopoulos has written the books entitled “Orthodontic treatment for the Class II non-compliant patient: Current principles and techniques”, “Skeletal anchorage in orthodontic treatment of Class II malocclusion”, and “Cleft lip and palate: Diagnosis and treatment management”, has published more than 200 scientific publications, and has presented more than 330 lectures, courses and papers worldwide.

Multidisciplinary Orthodontic Treatment of Complex Dental Cases

During last decades, there is an increase in the number of patients, mostly adults, who present complicated dental problems and seek orthodontic treatment. Tissue reaction to orthodontic forces can be somehow slower in the adults than in the young patients, but orthodontic movement is carried out with a similar way in all ages. Thus, orthodontic treatment of complicated cases can be separated in two categories: comprehensive and adjunctive orthodontic treatment. Adjunctive treatment includes the management of pre-prosthetic patients and patients with located periodontal problems of small extent. Comprehensive treatment includes management of conventional orthodontic problems, orthodontics in patients with severe periodontal background, pre- and post-surgical orthodontics (orthognathic surgery), orthodontics in patients with craniofacial anomalies such as cleft lip and palate, as well as orthodontic management of patients with temporomandibular dysfunction problems.

During orthodontic management of patients with complicated problems their specific particularities should be taken in account. Periodontal control and treatment should be performed before, during and after the end of treatment and the patients should present a good oral hygiene. Suitable anchorage modalities, such as conventional (i.e., transpalatal arches) or skeletal (i.e., miniscrew implants), as well as orthodontic biomechanics should be carefully considered and selected to be utilized, depending on the biomechanical factors that the specific condition of the particular patient presents. An appropriate retention of the treatment result should be always carefully considered after the end of treatment. Finally, the creation of temporomandibular dysfunction problems should be avoided and the previously existed should be corrected before the initiation of orthodontic treatment.



HALUK İŞERİ **Istanbul, Turkey**

Dr. Haluk İşeri is the Head of Orthodontic Department and Dean of the Dental School of İstanbul YeniYüzyıl University. He is a past President of the Turkish Orthodontic Society and an active member of Edward H. Angle Society. He acted in the Editorial Boards of European Journal of Orthodontics, AJO-DO, Angle Orthodontist, Seminars in Orthodontics and Journal of Mondo Ortodontico. He published the June 2012 issue of Seminars in Orthodontics "Maxillary Expansion and Mandibular Widening: Treatment Methods and Stability" as the guest editor. He worked as a research fellow at the University of Copenhagen and involved in collaborated research with the Universities of Washington, Copenhagen, Tel Aviv and Padova. His main research interests are growth and development of the craniofacial skeleton, maxillary expansion, open bite treatment, adult orthodontics, skeletal anchorage with mini screws, orthognathic surgery and distraction osteogenesis, accelerated orthodontic treatment and diagnosis and treatment of obstructive sleep apnea. He published 70 articles and book chapters and has given about 200 lectures, conferences and courses worldwide.

Maxillary Expansion and Mandibular Widening in Growing and Non-growing Patients

The question as to whether to extract teeth for orthodontic correction of a malocclusion was debated by Edward Angle and Calvin Case. In the past century, the intellectual pendulum has moved back and forth between nonextraction and extraction orthodontic treatment strategies in patients with tooth size-arch size discrepancies. Semirapid maxillary expansion (SRME) was introduced with the hypothesis that may result in reduction of relapse in post-retention period. Mandibular transversal skeletal deficiencies are common problems usually associated with narrow basal bone and dentoalveolar structures, and dental crowding, but in comparison with maxillary deficiencies, the diagnosis and treatment of mandibular transverse discrepancies has received little attention. Distraction osteogenesis (DO) has great potential for correcting transverse mandibular deficiencies. Maxillary and mandibular expansion (DO) has been an efficient non-extraction treatment alternative for maxillo-mandibular transversal deficiencies efficiently increasing mandibular skeletal and dental arch widths with stable long term treatment outcomes (five years post retention).

RAFI ROMANO
Tel Aviv, Israel



Dr. Rafi Romano is a specialist in orthodontics and dentofacial orthopedics, earned at The Dental Faculty, Hebrew University, Hadassah Jerusalem. He maintains a private practice in Tel Aviv, Israel, limited to orthodontics, with an emphasis on adult and esthetic orthodontics.

Dr. Romano is AAO Ambassador representing the Israel Orthodontic Society, of which he is Past President. He is the editor of five books: Lingual Orthodontics, (Decker, 1998), The Art of the Smile (Quintessence, 2005), The Art of Treatment Planning (Quintessence 2009), Lingual & Esthetic Orthodontics, (Quintessence 2011) and The Art of Detailing, (Quintessence, 2013).

Dr. Romano is a member of the Editorial Board of the International Journal of Esthetic Dentistry – IJED; is former Editor-in-chief of “Orthodontics: The Art and Practice of Dentofacial Enhancement,” Quintessence publishing (formerly, “World Journal of Orthodontics” –WJO) and former editor of the Journal of the Israeli Orthodontic Society.

He lectures worldwide on esthetic orthodontics and adult multidisciplinary orthodontic treatment and conducts courses in lingual orthodontics around the globe.

He is an Active Member of the European Academy of Esthetic Dentistry - EAED, American Association of Orthodontics - AAO and the World Federation of Orthodontists – WFO.

CAD/CAM in Orthodontics: From Customized Brackets to Full Digital 3D Treatment Planning and Implementation

A new technology in which CAD/CAM is utilized at all treatment stages, from 3D diagnosis to numerous treatment planning features and to accurate finishing processes. For many years, CAD/CAM technology has been widely used in dentistry - in dental restorations, prosthodontics and implantology and by dental technicians. Yet, in orthodontics it is not used extensively, although technology has evolved remarkably. In the last few years, CAD/CAM is used to manufacture clear aligners and customized brackets, but these treatment modalities are not as flexible as doctors may expect and treatment planning is mainly handled by the manufacturers. The lecture will review simple techniques in which the digital workflow is used in daily practice in Orthodontics in affordable and easy-to-use techniques.



ANA ANGELOVA VOLPONI
London, UK

Dr. Ana Angelova Volponi is a Lecturer in Regenerative Dentistry at the Faculty of Dentistry, Oral & Craniofacial Sciences, King's College University of London.

She is a Deputy Director of the Postgraduate MSc Course in Regenerative Dentistry at King's and leads the BDS Course in Oral and Craniofacial Developmental Biology. She is also a BDS Basic Science Coordinator for the Faculty.

Dr. Ana Angelova Volponi is a well-recognised researcher in the field of Dental Stem cells and Regenerative dentistry and acts as an expert in the field. Her published research work on the tooth tissue/organ engineering has been covered by many of the world media as BBS, Newsweek, The Guardian, SKY news etc.

In 2014, her research work was presented at the Royal Society Science Exhibition, representing King's College, University of London.

Ana is an Editor of many peer-reviewed journals and is a Fellow of the Higher Education Academy of UK.

In 2018 she received the prestigious William Gies Award of IADR, in the area of Biomaterials and Bioengineering.

Translating Stem Cell research Into Clinical Solutions
(Regenerative Dentistry Approaches)

Adult stem cells play an important role in development, constant remodelling, repair and regeneration of tissues and organs throughout the life of an organism.

Different Stem cell populations derived from oral and craniofacial tissues have been identified and well characterised. These include adult stem cells from craniofacial bone, dental pulp, periodontal ligament, soft oral tissues and dental tissues at different stages of development.

Significant research is now being carried out to further identify the origins, properties, and potential applications of these cells, setting up the foundations of Regenerative dentistry as a new concept in clinical dentistry, that encompasses the knowledge of the underlying biological mechanisms and pathways in development and repair, as well as the cells involved.

This lecture focuses on the new developments in the field of regenerative dentistry and its possible applications in clinical orthodontics.



SASIL POONNEN
Dubai, UAE



Dr. Sasil Poonnen is adjunct Assistant Professor at the Department of Orthodontics at the Sharjah University, UAE. He is Dental Surgeon; B.D.S since 1985 and Orthodontist, M.D.S. since 1989.

He maintains a private practice Sasil's Dental Clinic for 20 years. He works currently as Adjunct Assistant Professor at the Department of Orthodontics at the Sharjah University, Sharjah, UAE. He was lecturer at the Department of Orthodontics at the Ajman University for 5 years and at the Department of Orthopedics & Dentofacial Orthopedics, College of Dental Surgery, Kasturba Medical College, Mangalore.

He is a Life Member – Indian Orthodontic Society, Member of American Association of Orthodontists, Member of World Federation of Orthodontists.

He was a guest speaker, invited speaker and key note speaker of many Conferences in Thailand, USA, Dubai, India, Nepal, Korea, Macedonia.

He was Program director for Advances in Orthodontics (New York University, USA, 2015).

He wrote a chapter in Craniofacial Growth, Orthodontics and Dentofacial Orthopedics –

A Tribute to Donald Hugh Enlow- First Edition Chapter 33 An Evaluation of the Morphogenic and Anatomic effects of the Herbst Fixed Functional appliance using Enlow's Counterpart Analysis.

He was awarded from Brazilian Orthodontic Society (2012) for Distinguished Professionals in the field of orthodontic education.

Smart Orthodontics: How to Make Your Straight Wire Appliance Answer All Your Clinical Needs

Straight wire appliance comes in a wide range of design and prescriptions. There are no clear guidelines on how to use them in different situations. The inclination of various teeth before treatment combined with its tip and torque which is already there on the bracket can be prudently used to our advantage by applying some basic principles before we start our treatment.

Conventional methods of classifying a malocclusion and deciding treatment protocols accordingly has got its limitations and each malocclusion has variability in its treatment response when using the same mechanics .

This presentation Smart Orthodontics is all about treating different malocclusions by using the same brackets in a very simplified modified manner to treat different types of malocclusion which we encounter in our clinical practice .



DR. CESARE LUZI
Rome, Italy

Dr Cesare Luzi received his Dental degree at the University of Rome “La Sapienza”. Postgraduate education and Master of Science in Orthodontics at the University of Aarhus, Denmark. Founder and first President of the European Postgraduate Students Orthodontic Society (EPSOS). Past President of the Italian Society of Biomechanics (SIBOS). President of the Italian Association of Specialists in Orthodontics (ASIO) 2018-19. Active member of SIDO (Italian Society of Orthodontics) and AIdOr (Italian Academy of Orthodontics). Member of the EOS (European Orthodontic Society). Winner of the Houston Research Award of the EOS (2006) and of the First Prize Award for Clinical Research of SIDO (2006). Winner of the Beni Solow Award 2010. Diplomate of the European Board of Orthodontics Diplomate of the Italian Board of Orthodontics. Visiting Professor University of Ferrara (Italy). Private practice in Rome, Italy, limited to orthodontics.

Asymmetric Class II Malocclusions: From Differential Diagnosis to Individualized Treatment Mechanics

Skeletal and dento-alveolar asymmetries can be considered one of the major challenges in modern orthodontics. The first step for final success is a proper diagnosis which highlights the type and localizes the asymmetry. Functional or structural, dental or skeletal asymmetries require different treatments. The second step is setting the goal, by deciding whether the asymmetry is treatable or not with a pure orthodontic approach or requires more invasive treatment methods such as orthognatic surgery. If the decision is to address the asymmetry by dental movements, an individualized treatment plan with asymmetric mechanics and anchorage should be set-up. The third and final step is appliance choice and design, which is nothing but a logical consequence of the problem that has to be addressed, since no simplified technique with one-size-fits-all appliances, generating symmetric mechanics, has the potential of correcting asymmetries. The presentation will highlight the characteristics of class II subdivision malocclusion with respect to a proper diagnosis, treatment planning and ultimate generation mechanics and anchorage.



INVITED
SPEAKERS



AYŞE TUBA ALTUĞ **Ankara, Turkey**

Dr. Ayşe Tuba Altuğ graduated from University of Ankara, School of Dentistry in 1995 and she is still a faculty member and head of department at the same university at Orthodontics Department. She has also graduated from the Surgical Orthodontic Research Fellowship Program of New York University Medical Center Institute of Reconstructive Plastic Surgery in 2001. Besides her appointment at Department of Orthodontics, she is currently a doctorate student on Basic Biotechnology at University of Ankara, Institute of Biotechnology in order to improve her knowledge on genetics and support her research interest in facial clefting. She has been working as the Secretary General of the Turkish Orthodontic Society for the last 4 years.

Her clinical and research interests are mainly focused on; cleft lip and palate, genetics, craniofacial abnormalities, head and neck syndromes and orthognathic surgery.

She has given conferences and hands-on courses on “presurgical infant orthopedics for cleft lip and palate -nasalveolar molding” at several universities in Turkey. She has published many articles and still working on surgically assisted rapid maxillary expansion (SARME). She is and has been supervising many doctorate and specialization in orthodontics thesis on genetics of cleft lip and palate, genetics of hypodontia, surgically assisted rapid maxillary expansion (SARME), pharyngeal airway changes in skeletal Class II and Class III malocclusion following orthognathic surgery.

Orthognathic Surgery and Pharyngeal Airway

As a result of orthognathic surgery of skeletal class 2 and 3 anomalies, significant changes occur not only in craniofacial hard and soft tissues but also in the pharyngeal airway dimensions. In this lecture, I would try to share our experiences in evaluating the pharyngeal airways changes following maxillary impaction, maxillary advancement, mandibular set back and mandibular advancement protocols. Although 3D images are golden standard in the evaluation of all 3D structures like a tube-shaped pharyngeal airway, they still have some ethical limitations due to excessive amount of radiation applied. Therefore, in this series of studies that will be presented, we preferred to improve our measuring abilities on lateral cephalometric radiographs which are used in routine clinical practice. In addition to linear and angular measurements, area measurements were also performed by a special gadget called planimeter. Last but not least, the effect of bimaxillary orthognathic surgery on pharyngeal airway was also evaluated by finite elements method (FEM) in Class 3 cases.

Acknowledgement: I would like to thank my doctorate students Nagihan Ceylan Eser, Nurver Karsli, Can Arslan, Nisalldiz and my dearest friend and colleague Ufuk Toygar Memikoglu for being wonderful teammates.



STJEPAN SPALJ
Rijeka, Croatia



Dr. Stjepan Spalj graduated and attained Master and PhD at School of Dental Medicine University of Zagreb. Specialised in orthodontics at University Dental Clinic in Zagreb. Graduated journalism at Faculty of Political Sciences University of Zagreb. Associate professor of orthodontics, oral epidemiology and public health dentistry at University of Rijeka and visiting professor at Universities of Trieste and Zagreb. Head of Department of Orthodontics at Faculty of Medicine in Rijeka, principal investigator in two scientific projects, mentor of three PhD thesis, co-author of three textbooks and 40 papers in journals indexed in Current Contents. Erasmus scholarships and study visits at Universities in Mainz-Germany, Bologna, Trieste and Naples-Italy, Ljubljana-Slovenia, Krakow-Poland, Oslo-Norway and Graz-Austria.

Orthognatic Surgery - the Patients' Perspective

People with facial deformities often have emotional issues, affected social life, and sometime they experience impaired oral function. Their perspective is key element in addressing treatment goals and evaluating treatment outcomes.

Lecture is based on our research and will address the aspects that are altered in people with deformities. It will also point those aspects whose changes are induced by orthognatic surgery and reveal to what extent surgery can change self-esteem, discomfort, dysfunction and disability.



GABRIELA KJURCHIEVA-CHUCHKOVA
Skopje, North Macedonia

Dr. Gabriela Kjurchieva-Chuchkova received her dental and orthodontic education, at the Faculty of Dental Medicine, University “Ss. Cyril and Methodius”, Skopje; master degree in 1995, specialisation 1996, and PhD 2005. She is currently Associate professor at the Department of Orthodontics, Faculty of Dental Medicine, University “Ss. Cyril and Methodius”, Skopje. and is involved in the education and research activity of graduate, post-graduate and doctoral students, and supervising specialization in orthodontics. Her main research interests are effect of functional orthodontic treatment on growth and development, early orthodontic treatment and interdisciplinary treatment of impacted teeth.

She has published many articles, has given lectures at congresses as invited speaker, serves as referee or member of the editorial board in scientific journals. She was member of the editorial board for 50 years beyond Faculty of Dental medicine, University “Ss. Cyril and Methodius”. Participated in the national program “Strategic plan for the development of dentistry in the Republic of Macedonia in the period 2011-2021”.

She is an Active Member of the Macedonian Orthodontic Society (MOS) - President, Macedonian Dental Association (MDA) – Vice president, member of the European Orthodontic Society (EOS), World Federation of Orthodontics (WFO), Anthropological Society of Serbia (ADS), and Balkan Association of Orthodontic Specialists (BAOS) - President of 3rd Congress of BAOS 2019 .

Highs and Lows of Hyoid Bone

Hyoid bone, as unique bone in human body with no articulation, changes its position during various oral functions and other physiological movement. The aim of this presentation will be addressed to main problems facing patients with impaired nasal breathing, and to estimate the relationship between head posture, mandibular growth direction, hyoid bone position and airway dimension. Postural changes of the head is positively correlated with more inferior posture of the hyoid bone and the tongue. The distance between the hyoid bone and the lower mandible border could be a sensitive morphological indicator. Compensatory activity associated with a low hyoid bone position in those patients work to maintain the patency of the pharyngeal airway. Determination of the hyoid bone and the tongue position in children with impaired nasorespiratory function can be used in therapeutic and prognostic evaluation.

NEDA STEFANOVIC
Belgrade, Serbia



Dr. Neda Stefanovic is an Assistant Professor at the Department of Orthodontics Faculty of Dental Medicine University of Belgrade, where she has obtained her DMD, MSc and PhD, as well as a specialty degree in orthodontics. Dr. Stefanovic has done her PhD research in cooperation with the Department of Orthodontics and the Craniofacial Imaging Center at Case Western Reserve University in Cleveland, OH, USA, where she was mentored by Prof. J. Martin Palomo, who is an expert in the field of craniofacial imaging, informatics, and airway analysis.

Her research interests are mostly focused on airways, orthognathic surgery, genetics, and most recently quality of life assessment.

Dr. Stefanovic teaches undergraduate, as well as postgraduate students at the Department of Orthodontics University of Belgrade, and has lectured both nationally and internationally. She has published and presented numerous scientific papers, authored a monograph, co-authored two chapters in a book on 3D craniofacial imaging that is about to be published by Springer, and is a reviewer in seven scientific journals.

To Extract or Not to Extract – What do the Airways suggest?

Permanent teeth are commonly extracted in orthodontics in order to relieve crowding, reduce incisor protrusion or correct sagittal discrepancies. The discussion about the extractions of permanent teeth in orthodontics started in the early 1900s, and the impact of extractions on esthetics, relapse and TMJ health has been debated ever since. Nevertheless, even with a significant amount of research investigating these topics, there are no strict guidelines on when to extract and when no to.

Owing to the increased awareness of the obstructive sleep apnea syndrome in the past decade, the ongoing extraction debate has also included upper airway dimensions. Unfortunately, we still don't have sufficient evidence, from which we could draw solid conclusions and suggest possible guidelines. However, the growing pool of data now contains three-dimensional information about post-orthodontic airway changes in growing and non-growing patients with different skeletal and dental malocclusions. The lecture will focus on the presentation and interpretation of the currently available research dealing with the effect of orthodontically indicated extractions on upper airways and the potential link to the obstructive sleep apnea syndrom.



ALEKSANDAR GRCHEV
Skopje, North macedonia

Dr. Aleksandar Grchev was born in Strumica on March 8, 1960. Graduated from dental faculty in 1985. Since 1989, is employed at the Clinic for Maxillofacial Surgery in Skopje. M.Sc. in 1993, and his doctorate in 2001. In March 2002, is elected as an assistant professor, 2007 as an associate professor and 2011 as a full-time professor in the field of maxillofacial surgery at the Faculty of Dentistry in Skopje. From 2005 to 2009 he was a Vice-Dean and from 2009 to 2012 he was Dean of the Faculty of Dentistry in Skopje. Since 2012 he is the president of the Association of Maxillofacial Surgeons of North Macedonia.

Disruptive Growth of the Mandibular Condyle During Childhood

Ankylosis and disturbance in the growth of the lower jaw, more precisely the hypoplastic growth of the ramus ascedens mandible with occlusion of the occlusion is most often apostrophied consequences of the fractures of the neck of the lower jaw in childhood. These fractures, fortunately, are not very common, but precisely because of their rarity, the protocols for the treatment of these injuries are rather mismatched and unspecified, both in the area of interest of maxillofacial surgery and in the part of the interest of orthodontics. The lack of indications of surgical treatment is the only point around which everyone agrees. But the modality of the conservative treatment and in particular the consequences of the fracture of the neck of the lower jaw in relation to the growth and development of the lower jaw are, for the time being, neither sufficiently explored nor accurately defined. The realization that with the injury itself, the joint center for growth will be affected, which in itself will cause shortening of the ramus and mandibular hypoplasia from the adequate side, is already abandoned and we can say that with good and active orthodontic treatment these consequences will not occur. The existence or non-existence of terminal occlusal stability is the determining factor for the occurrence of the consequences of the injury, as well as in terms of the healing of the heart and the growth disorder. The possibility of active water recovery is an additional moment in the design of an adequate protocol for the conservative treatment of the fracture. In any case, the role of the orthodontist in completing the protocol for the treatment of these injuries is crucial, especially due to the possibility of actively wound healing of the fracture and active wet development of the lower jaw by maintaining proper and defined occlusion relationships.



MAJA POP STEFANOVA-TRPOSKA
Skopje, North macedonia



Dr. Maja Pop Stefanova- Trposka was born in Skopje, where she graduated at the Faculty of Stomatology at the University “Ss. Cyril and Methodius” in 1986. She received her MSc degree in Dental sciences at the Faculty of Dentistry in 1992, and her PhD on the topic “Cervical vertebrae as indicators for determining mandibular growth”. In 1994 she specialised orthodontics in Skopje. She has 30 years of working experience, starting her professional career in 1989 at the Orthodontic Department as a clinician, where she works till the end of October 2013 as an assistant professor at the University Dental Clinical Center “St. Panteleimon”, Skopje. In September 2014 she became associate professor in orthodontics at the Faculty for Dentistry at the European University – Republic of North Macedonia, Skopje. During her studies and work, she participated in lots of seminars, courses and international congresses in her country and abroad with her own presentations and papers. She is author of one and co-author of two textbooks for dental students. She is author and co-author on over 70 scientific and specialized papers and presentations.

Dental Anxiety and Stress in Orthodontic Patients

Dental fear usually indicates an unpleasant emotional reaction to specific threatening stimuli occurring in situations associated with dental treatment, while dental anxiety is an excessive and unreasonable negative emotional state experienced by dental patients. The aim of this study was to evaluate anxiety and perceived stress in two groups of patients with orthodontic and dental problems. As psychometric instruments, we used 45 items Sarason's scale for anxiety, and 20 items simple Stress - test adapted for children. The study confirmed moderate anxiety and relatively normal stress level in school children undergoing orthodontic and dental interventions. The obtained scores for psychometric tests are significantly different according to age. No significant differences were obtained between mean values of scores in both groups of examinees and for both psychometric tests (t-test was > 0.05). Using the Sarason's anxiety test a very small positive, but not significant correlation was obtained for age and scores ($r = 0.13$; $r = 0.7$, respectively). Using the Stress-test, calculated correlations between age and scores differ: it was positive for dental ($r = 0.33$) and negative for an orthodontic group of patients ($r = -0.20$), but without statistical significance. Fear and anxiety of the dentist and dental treatment are widespread problems that results in a significant barrier to the receipt of dental care. It can cause treatment difficulties for the practitioner, as well as severe consequences for the patient. The level of stress can be evaluated directly or indirectly by psychometric tests.



OLIVERA SARAКINOVA
Skopje, North Macedonia

Dr. Olivera Sarakinova from the Clinic for Pediatric and Preventive Dentistry within the USKC St. Panteleimon and teacher at the Faculty of Dentistry at the First European University of the Republic of North Macedonia, has been dealing with various aspects of pedodontics especially in the field of pedodontics prevention for 30 years. Her PhD was in 2003 on the topic of Caries Evaluation, the protective effect of polyols through the action of xylitol.

In addition to the prevention, in the domain of her interest are the psychological aspects in the development of children and their implementation in everyday pedodontic practice. She is an active member of the Coordinative Body for preparation and implementation of the National Strategy for Prevention of Oral Diseases in Children 0-14 Years in the Republic of Macedonia within the Ministry of Health of the Republic of North Macedonia.

Coping Styles Used for Meditation Dental Anxiety and Stress in School Children

The ability to adapt to stress and adversity is a central facet of human development. Coping can be defined as a asset of cognitive and affective actions that arise in response to a particular disquiet.

The aim of this research was to evaluate coping patterns used to mediate anxiety and stress level in two groups of patients- orthodontic and dental.

Psychometric instruments applied in the research are – Sarason’s anxiety questionnaire Stress-test for children as well as A-Cope questionnaire.

Obtained scores confirmed important level of anxiety and moderate stress level. It was shown that coping mechanisms used for moderate stress and anxiety were productive and influenced the scores for stress level and anxiety to be diminished.

As far as our knowledge is concerned this is the first study for coping styles in children in our country.

PREDRAG JANOŠEVIĆ
Niš, Serbia



Dr. Predrag Janošević graduated and attained PhD at University of Niš, Medical faculty, Dental department. In 2014 he specialised orthodontics at University Dental Clinic in Niš.

Dr Predrag is employed as Assistant Professor at the Department of Orthodontics of Medical faculty of Niš. He participated in two scientific projects, and published many scientific papers. He is attending second year of clinical course of Tweed technique in Belgrade.

His main fields of interest are tweed and segmented technique as well as treatment of dentofacial deformities. He is member of European Orthodontic Society, Anthropological Society of Serbia and member of presidency of Serbian Orthodontic Society .

Vertical Control in Orthodontic Treatment

Vertical dimension of malocclusion was quite unimportant in orthodontic world for long period of time. Generally orthodontists realized that most of the maxillary- mandibular discrepancies were consequences of horizontal, sagittal growth deviations. Because of that orthodontic treatments were mostly using horizontal interventions without considering vertical growth and its implementations on position of mandible.

During diagnostic procedure it is very important to recognize vertical type of growth.

There is not small difference in treatment protocol of high and low angle patients. These two types of patients has different facial appearance, different occlusal and muscular characteristics. Treatment of high angle patients has always been greater challenge for orthodontists. It requires using of force system that ensure a good control of mandibular, occlusal and palatal plane which leads to better facial esthetics .

Occlusal plane angle is crucial in vertical control of orthodontic treatment. During therapy its value should remain the same or should be decreased. Increase of this angle especially in high angle patients leads to unstable result and relapse.



VIKTORIA GEORGIEVA GURGURIEVA **Sofija , Bulgaria**

Dr. Viktorija Georgieva Gurgulieva is Lecturer of undergraduate preclinical and clinical Orthodontics course at the Medical University, Faculty of Dental Medicine – Sofia, Department of Orthodontics.

She has DDS in 2007, MSc in 2013 and PhD in 2013. Her research interests are morphometric parameters and cephalometric soft-tissue analysis in 3D-images; combined orthodontic-orthognathic surgery treatment: indications; limitations and relapse; lingual orthodontics.

She is a member at BgDA – Bulgarian Dental Association, BlgOS – Bulgarian Orthodontic Society, Secretary of the Bulgarian Study Club of Lingual Orthodontics, EOS – European Orthodontic Society, AAO – Ambassador for Bulgaria of the American Association of Orthodontists, WFO – World Federation of Orthodontists.

The Natural Head Position – Old Principles Meet New Technology

Facial morphology is easier to evaluate when the head is oriented in anatomical alignment. In this alignment, a subject is erect and his head aligned with gravity. The head is not flexed, rotated or tilted. A patient's head can be placed in anatomical alignment using two different methods: natural head posture and observer-guided alignment. In natural head position (NHP), anatomical alignment is automatically attained by standing a patient and by asking him to look forward towards the horizon. In observer-guided alignment, an observer directs the patient to rotate her head until it attains what we perceive to be anatomical alignment. Although, most patients automatically place their heads into anatomical alignment when they stand in the natural position, many do not. It is particularly problematic in children and also in patients with severe maxillofacial deformities, deformities of the axial skeleton, torticollis.

An accurately recorded NHP is vital for clinicians in the diagnosis and treatment of patients with severe maxillofacial deformities and especially for patients with significant facial asymmetries.

The introduction of rotational axes into systematic description of dentofacial traits in addition to transverse, anteroposterior, and vertical planes of space significantly improves the precision of the description of craniofacial morphology and thereby facilitates quantification of maxillofacial deformities for surgical planning. A complete description requires consideration of both translation (forward/backward, up/down, right/left) in 3-D space and rotation about three perpendicular axes (pitch, roll, and yaw). Regarding orientation conventional 2-dimensional lateral cephalograms allow the measurement of pitch, but not of roll or yaw. Stand-alone frontal cephalograms only permit the measurement of roll.

As a result of recent advances in computer technology, 3-dimensional (3D) computed tomography (CBCT) is now routinely used in clinical practice. Recent transition from 2-dimensional to 3-dimensional imaging, and from analogue to digital technology renewed attention in finding a versatile method for the establishment of an accurate and reliable head position during the acquisition of serial records. Although natural head position has proven to be reliable in the sagittal plane, with an increasing interest in 3-dimensional craniofacial analysis, a determination of its reproducibility in the coronal and axial planes is essential.

Both the correct position of the patient's head and a standard system for the acquisition of images are essential for objective evaluation of the facial profile and the skull for preoperative, virtual planning and post-operative surgical treatment outcome, as well as longitudinal superimposition.

In the current study discuss clinical applications, and procedures to establish correct head orientation to evaluate facial form in patients with severe maxillofacial deformities and the significance for orthodontic treatment and orthognathic surgery planning with 3-dimensional imaging. We consider most practical methods for recording NHP during CBCT scanning and discuss 3D image orientation reproducibility.



VARUN KALRA
Pittsburgh, USA



Dr. Varun Kalra is Clinical Associate Professor at the Department of Orthodontics and Dentofacial Orthopedics, School of Dental Medicine, University of Pittsburgh. He is Dental Surgeon; B.D.S since 1975 and M.S. in Orthodontics since 1986.

He maintains a private practice limited to orthodontics. He was assistant Professor from 1986 to 1988 at the Department of Orthodontics, University of Connecticut Health Center, Farmington, Connecticut. Assistant Professor from 1988 to 1996 at the Department of Orthodontics, Case Western Reserve University (CWRU) School of Dentistry, Cleveland, Ohio. He was Clinical Associate Professor from 1997 until now at the Department of Orthodontics and Dentofacial Orthopedics, School of Dental Medicine, University of Pittsburgh, Pittsburgh, Pennsylvania. He was invited speaker and key note speaker and presenter since 1982 till now in the counters all over the world.

He is member at Edward H. Angle Society of Orthodontists, American Association of Orthodontists, Great Lakes Association of Orthodontists, Cleveland Society of Orthodontists, World Federation of Orthodontists, American Dental Association, Ohio Dental Association, Corydon Palmer Dental Society, Delta Sigma Delta Dental Society.

He published a lot of publication in eminent orthodontics journals and wrote a book chapters and contributions: Kalra, V.: Principles of biomechanics and appliance design. In Kharbanda, O.P.: Orthodontics: Diagnosis and management of malocclusion and dentofacial deformities. Elsevier – 2009, Kalra, V.: Accurate wax bite registration for functional appliances. In White, L.W.: Orthodontic Pearls – A Clinicians Guide. 2011

Anchorage Control of Space Closure in Extraction Cases to Achieve Best Facial Esthetics

Extraction cases can require maximum, moderate or minimum molar anchorage preservation. Different anchorage requirements obviously require different mechanics. Two separate arch wire designs will be presented that allow for: 1) Maximum anchorage preservation and simultaneous en masse retraction and intrusion of the six anterior teeth. 2) Moderate or minimum molar anchorage preservation with en masse space closure. These mechanics are effective, efficient and substantially reduce treatment time. In addition, the use of TAD's in complicated cases will also be presented.



JULIJANA NIKOLOVSKA **Skopje, North Macedonia**

Dr. Julijana Nikolovska D.D.S, PhD, holds Doctor of Dental science degree from Ss. Cyril and Methodius University, Skopje, Republic of North Macedonia. She is a specialist in prosthodontics and an associated professor at the Faculty of Dental Medicine in Skopje. Currently, Nikolovska teaches undergraduate, postgraduate and doctoral students in Ethics and Deontology and Dental Public Health. She participated at the postgraduate course: “New concepts in Dental Education and Public Oral Health”, organized by WHO Collaborating Centre, University Medical Centre St. Radboud, Nijmegen, The Netherlands. Doctor Nikolovska is a member of the European Association of Dental Public Health since 2006. She has extensively published in peer review journals, and is a member of international editorial board of Oral Health and Dental Management journal. She is the author of the book “Ethical aspects in dentistry” and one of the participating authors of additional two books edited by the Macedonian Dental Chamber: “Strategic plan for dental medicine development in the Republic of Macedonia for the period between the year 2011 and 2021” and “Diagnostic and therapeutic protocols in dentistry”.

Prof. Nikolovska is the principal investigator for North Macedonia in bi-national project with Republic of Slovenia titled: “Prefabricated Zirconia Posts with Retentive Coronal Shape for the Restoration of Endodontically Treated Teeth – In Vitro Assessment of Treatment Reliability”. She has participated in Interministerial working group on recognition of professional qualifications, Steering committee of the Project “Implementation of the legislation on mutual recognition of professional qualifications”, the Agreement on the Mutual Recognition of Professional Qualifications of doctors of medicine, dentists, architects and civil engineers for the Western Balkan six countries and the expert group on chapter 3 - “Service directive and points of single contact” under the Directive of the European Parliament and the Council (Directive 2006/123/EC of the European Parliament and the Council of the European Union).

The Conflict of Interest Between Professionalism (Caring Dentistry) and Commercialism (Selling Dentistry)

Advanced reconstructive aesthetic or ‘cosmetic’ procedures such as periodontal plastic surgery, dental implants, full ceramic crowns or veneers for aesthetic reasons, orthodontic therapy to improve appearance of anterior teeth and orthognathic surgery are increasingly being used for restoring and reconstructing aesthetically impaired dentitions, jaws and faces. The increasing number of these procedures may be beneficial and better for the dental practitioners but they are not necessarily for the patient.

At the heart of this problem are the two fundamental similes of dentistry - namely professionalism and commercialism. The primary goal of a profession is caring for the patient, whilst that of a business is to generate a profit. The core values of professionalism are thus in conflict with what is in the best interest of the business. As competition for business increases, the dentist may recommend more dental work than a patient actually needs. The patient’s needs and well-being can potentially be overlooked in the process of seeking financial gain. Additionally, the increased focus and demand particularly for aesthetic dentistry has also forced the profession to face the ethical dilemma of when does dental treatment in the name of improving appearance become necessary, or/and when it is deemed unnecessary or inappropriate?



IGOR KIROVSKI
Skopje, North Macedonia



Dr. Igor Kirovski has graduated in dentistry (Doctor of Stomatology, 1989) at the “Ss. Cyril and Methodius” University in Skopje. He had completed the postgraduate degrees: Specialist in Orthodontics (1996) and Master of Science in Orthodontics (2002) at the same University. He also holds the title Primarius (2007) presented by the Ministry of Health.

He had served as a Vice President of the Macedonian Dental Society and Vice President of the Macedonian Orthodontic Society. During the career, he had presented numerous papers in national and international scientific events, as well as national and international peer reviewed journals. His main fields of interest include the role of the hyoid bone, forensic dentistry and ethics in dentistry. Consequently, he has been engaged as a co-author of the Code of Ethics of the Macedonian Dental Society, and a contributor to the Ethics Manual of FDI World Dental Federation.

Dr. Igor Kirovski was engaged as orthodontist in the Military Hospital in Skopje (1993-2011), and later being in private practice.

Ethics and Dentistry

The importance of ethics increases on daily basis in many fields of human activity, as we move acceleratingly through the 21st century. Instead of being just an esoteric theme for philosophical discussions, ethics becomes an important and valuable tool to measure of and create both strategic and practical policies, by both institutions and individuals.

The presentation introduces in brief the basics of ethics, followed by the applicative importance of ethics in the dental profession. Ethical guidelines are numbered and explained. The relation between ethics and law is highlighted. An outlook to the relevance of ethics in the future is given.



JULIJA RADOJIČIĆ **Niš, Serbia**

Dr. Julija Radojičić, University of Niš, Serbia. DDS, PhD, Specialist in Orthodontics. Deals with cleft care on a broad basis, both in her scientific research as well as her clinical work. Provides orthodontic treatment to the majority of children born with cleft lip and/or palate, on the territory of Serbia, Bosnia and Herzegovina, and Kosovo. Is actively involved in improving the organization of cleft care in Serbia. She is a participant of four European projects regarding cleft care, was the host of ESF (European Scientific Foundation) psychosocial workshop and the NisEUROcleftNet meeting 2016. She is a member of the board of the European Cleft Organisation as well as in the Core committee of COST Action 16234 – ‘European Cleft and Craniofacial Initiative for Equality in Care. In February 2018, she was one of the European delegates at a meeting hosted by Sean Kelly, titled “Individuals and families with birth defects in Europe and the burden on inequalities” at the European Parliament in Brussels. Will be the host of the upcoming first conference of COST Action 16234 in September, 2018 in Nis.

Early Infant Orthopedics In Infant with Lobar Holoprosencephaly Joined with The Premaxillary Agenesis with Median Cleft Lip

The aim of this paper is to show the efficiency of the early orthodontic therapy in infants with lobar holoprosencephaly joined with the premaxillary agenesis and median cleft lip.

The paper shows the process of making of the stimulator of a specific construction on the basis of the taken two-phase impression of a greatly morphologically damaged structure of the upper jaw of the infant. The impressions are taken continually through specific time intervals (immediately after birth of the infant, a week afterwards, a month afterwards and then once a month). Plaster models which were cast were used for making the stimulator, a unique appliance in the world regarding its construction. The RBJ stimulator has active effects and it is without extraoral fixation. The morphological changes which appeared on the jaw after wearing the stimulator were monitored using the 3D (three-dimensional analysis). The surfaces of the plaster impressions of the upper jaw were digitalised, reconstructed and digitally analysed via CEREC in Lab 3D (scanner system BLUE CAM, Sirona Dental Systems Germany).

After the 3D analysis, the results showed a significant reduction of the cleft surface. Along with the orthodontic effects, the RBJ stimulator showed that it has significant effects in the natural way of feeding of the infant and the elimination of the nasogastric tube.

The RBJ stimulator has significant positive orthodontic effects in the presurgical treatment. The absence of the extraoral fixation of the stimulator has positive effects on the quality of life of the patient, and the advancement in its bodily development has motivating and optimistic effects on its parents.

RADMILA DIMOVSKA
Skopje, North Macedonia



Dr. Radmila Dimovska was born on May 21, 1971 in Skopje. She received her DMD and MSc in orthodontics from the Faculty of Dental Medicine at the University of "Ss. Cyril and Methodius" - Skopje. At the same faculty she became a specialist in orthodontics in 2002. In 2012 she received her PhD at the same faculty on the topic "Retrospective study for valorization of epidemiological characteristics and potential risk factors in patients with possible future development" (1996-2010) in the Republic of Macedonia".

In 2018 she was elected to Associated Professor in Orthodontics at the Faculty of Dentistry at MIT University in Skopje.

Dr. Dimovska is an active participant in two international projects of the European Union:

2014-2017 - COST Action - Appearance matters and 2017-2021 - COST Action-European Cleft and Craniofacial Group for Equality in Care.

She has published over 100 papers, study visits and trainings around the world, including the secrets of anti-aging medicine, aesthetics and laser dentistry.

She writes in several magazines. She is a member of ADA, BAOS, World Association for Anti-Aging Medicine, EOS, Business Council at the University of American College Skopje.

Secretary General of the Macedonian Orthodontic Society. Deputy Chief Editor of VoxDentarii.

She works in the Private Polyclinic KRUNA MS and at Faculty of Dental Medicine, MIT University, Skopje.

Measure Twice Cut Once : Orthodontic Management of Patients With Cleft Lip and Palate from Infancy to Adulthood

The management of patients with cleft lip and palate is complex and requires a multidisciplinary team with several interventions and long-term treatment. The regular timing of orthodontic and surgical treatment is important for a successful long-term outcome and for reducing the burden of caring for both the child and the family. This presentation will focus on the orthodontic treatment of patients born with cleft lip and palate from an early age to skeletal maturity. Management of patients with cleft lip and cleft palate requires extended orthodontic treatment and interdisciplinary approach in providing these patients with optimal aesthetics, function and stability. Orthodontic therapy in infant phase, primary, mixed and permanent dentition and after the end of growth will be discussed with an appropriate interdisciplinary approach in the planning of treatment and its timing during each phase of orthodontic and surgical treatment.



SABETIM CHERKEZI **Gostivar, North Macedonia**

Dr. Sabetim Cherkezi is born in 10/12/1969 in Gostivar. He received his Dental Degree from the Faculty of Dental Medicine, University "Ss. Cyril and Methodius", Skopje. He became specialist in orthodontics in 2010. He received his MSc (2012) and PhD (2017) at the same University.

From 2010 until now he is Assistant Professor at the Faculty of Medical Sciences Department of Dentistry at the University of Tetovo. He is teaching assistant for Morphology of jaws and teeth, Ergonomics and Orthodontics I and Orthodontics II.

From 1998 until now he works at private Dental Clinic „Vivadent“ Gostivar. In 2018 he was elected to Associated Professor in Orthodontics at the Faculty of Dentistry at MIT University in Skopje.

He published several papers and participated actively and presented at several seminars and congresses in his country and abroad, especially from the field of orthodontics in Tirana, India, Egypt and Macedonia.

He is one of the authors of the translation of the book Orthodontics from Milan Markovic from Serbian - Croatian to Albanian language "Ortodncial", (Mr. sci. Sabetim Çerkezi, and Prof. Ass. Milaim Sejдини); and one of the author of the Practicum in Orthodontics "Morphological-functional analysis and orthodontic diagnosis" (Mr. sci. Sabetim Çerkezi, Prof. Ass. Milaim Sejдини)

Impacted Maxillary Canine, Prevention and Treatment

Impacted teeth are teeth that are formed in the bone, but for some reasons they did not erupt in their place or in any other place of the dental arch or elsewhere.

Maxillary canines are often impacted and they take the second place immediately after the third molar. In this case, maxillary canines have special place who with their morphology and function are the only teeth in orofacial region. Aesthetics of the frontal teeth is in the interest of the patient and also of the dentist. Frontal healthy teeth are not aesthetic enough prerequisite, the teeth need to be well-aligned, the relationship between the gingiva and the teeth should also be acceptable.

From the etiologic point of view, the anomaly is related to the lack of space for tooth eruptions and genetic predisposition. Impacted canines do not erupt in time by staying in the jaw. The possibility of pulling these teeth requires interdisciplinary collaboration of orthodontists, oral surgeons, periodontist, pedodontists and dentists.

Clinical examination in the dentition of the deciduous teeth should find the symptoms of possible impacts, the lack of buccal rising in the gingival space over the crown of primary canine.

Differential diagnosis should be done through orthopantomogram or CTBC capture.

Only CBCT presents the entire area three-dimensionally, and can show the best abnormalities in the wrong direction, or impacted teeth, as well as ratios of the surrounding tissue and tooth.

Surgery-Orthodontic Therapy consists in the approach to display the canine crown, the gradual pulling of the tooth in its dental arch space. For successful treatment is understood the placement of canine in its place without losing the surrounding bone and the harmonious relationship of the gingiva and dental arch in the aesthetic frontal area.



ALEKSANDRA PODOLESHOVA
Skopje, North Macedonia



Dr. Aleksandra Podolshova received her dental training at the University "Ss. Cyril and Methodius", Skopje in 2001. From May 2002 until December 2011 she was working at the Department of Orthodontics at Dental Clinical Center "St. Panteleimon", Skopje, where she received MSc degree in Orthodontics (2009) and Specialty degree (2010).

During her work she attended courses, symposiums and congresses.

From 2011 until now she works together with her husband Dr. Nikola Podolshov in a private practice Biser-Dent fully oriented in esthetic orthodontics and restorative dentistry, interdisciplinary orthodontic treatments, placing labial and occlusal Edelweiss veneers with primary concentrations in dental occlusion, the temporomandibular joints and comprehensive esthetic orthodontics and restorative dentistry according to the Roth-Williams society (FACE) and Dawson Academy principles.

Bioesthetic and Biofunction with 2D Lingual Brackets-Predictable Results

Today, people are more aware that dental esthetic, a nice smile, and a good occlusion make an impact on the social performance of individuals. This realization led to increased demand for adult treatment. It has also required the development of new tools, materials, and techniques that allow esthetic and functional goals to be achieved in a shorter period of time and with a higher degree of comfort. So we can offer to our patients the benefits of a perfect smile without the obvious appearance of metal or ceramic brackets. Professions like sportsmen, public people cannot go under orthodontic treatment with buccal braces. Invisible (lingual) orthodontics is the only solution for them. Anterior smile esthetics is kept during the treatment and the orthodontist has good visibility on the position and morphology of the teeth. Through several case reports treated with Forestadent lingual brackets the author will present the challenge, experience, opportunities and the advantages using lingual orthodontics in a multidisciplinary practice.



LJUBO JOLEVSKI
Ohrid, North Macedonia

Dr. Ljubo Jolevski is an orthodontist since 1998. In his 20 years experience he faces numerous complex orthodontic cases, some of them published in the European congresses held in Portugal, Netherland, Turkey, Finland, Poland and our country. He is a member of the Macedonian Orthodontic Society, European Aligner Society and Deutsche Gesellschaft fur aligner Orthodontie. He participated the first EAS congress in Wien 2016, the fourth DGAO congress in Keln 2016, the first Aligner LAB in Wien 2017 and the second EAS congress in Venice 2018. These last years is involved in scientific researching.

Clear Aligners and Individual Myofunctional Appliances Using 3D Technology

The Clear aligner treatment is a technique, not a product. Clear aligners are the part of the larger picture of the digital age in medicine and dentistry. Once limited to correcting small amounts of crowding or spaces in fully erupted dentitions, it is now utilized by experienced clinicians in a broad spectrum of the comprehensive treatment of complex malocclusions.

The individual myofunctional aligners are entirely our own innovative product which enables correction of the alignment of the teeth, muscle balance when the muscles are resting and are functional, they correct functions like swallowing and breathing, and allows stabilization of the temporomandibular joint. Our product is a combination of a functional orthodontic appliance and an active orthodontic appliance made with 3D digital technology.



ELENA PETROVA
Skopje, North Macedonia



Dr. Elena Petrova is a clinical doctor, employed at the Clinic of Orthodontics in Skopje. She passed her Specialist exam on 25.10.1994. On May 30th 2002, she defended the master thesis titled “Morphological features of the juvenile progenic bite”. By 2010, she worked as a Senior Assistant at the same clinic. Since 2012, she is an Educator of the residents enrolled in the orthodontic specialty training program. On 25.02.2016 she defended the doctoral thesis titled “Comparative analysis of morphological variations in juveniles and adolescents with Class III malocclusion”.

A Little Bit of Everything – Do Not Miss the Lecture

Orthodontic therapy consists a wild field of procedures. Each case has it's own story.

We are here to create best smiles, casuse as on of my profesor's said “ the same as athletic is the queen of the sports, totally the same is orthodontic the queen of dentistry “. Shareing knowledge means multiplaying knowledge. That is why I would like to present you some nicely corrected interesting cases from my daily practice. Do not miss the lecture. You can see the aligment of impacted central incisor by privious extraction of 3 hyperdontic incisors on it's place., uprighting the first mandibular molars in a patient with missing premolars; autotransplantation of the third molar in the anterior maxilla where traumatized teeth were already been lost and correction of the bimaxillary crowding with a deep bite by clear aligners. At the end I would like to point that team work is a guarantee for a big success.





ORAL
PRESENTATIONS

TOPIC 1: ORTHODONTIC SOLUTIONS FROM BIRTH TO THE BEST AGE

OP 01: THE CORRECTION OF THE MIDLINE BY UPPER RIGHT CENTRAL TOOTH ACROSS THE MIDPALATAL SUTURE

Aydođdu S.¹, Güllü C.², Göymen M.², Güleç A.²

Private practitioner¹

Gaziantep university Faculty of dentistry orthodontics department²

Aim: The aim of study: At this case report upper right incisor tooth moved into the position of upper left incisor across the midline.

Material and Method: The female patient (16 years 2 month's age) whose main compliance was about anterior spaces between her teeth caused by missing 21 and 22 teeth visited our clinic. According to the intraoral examination upper midline of patient shifted to the left side 5 mm. Right Molars relationship was in Class II 4.5 mm while left molars relationship was in Class II 4.1 mm. Right canine relationship was 5.5 mm Class II and left canine relationship was also in Class II 8 mm. According to the treatment plan canines were considered laterals and premolars were considered canines Then 11 was moved into the position of 21 across the midline after that 12 was considered 11. Upper bonding was performed and the sliding mechanism started with light force using 0.018x25 SS arch wire and short chain. Class III elastics had also been used by both sides. After completing the sliding of the central incisor grade II mobility had been observed. Then the central was fixed in its new position with long wire ligatures and chain had been used from this tooth to the 12 for moving into the position of 11 as well.

Results: The sliding mechanism done successfully for central and lateral teeth. The treatment duration was 2 years and 2 months. At the end of the treatment grade I mobility had been obtained with no resorption of the roots of central and lateral and upper midline was corrected. Then the patient has been referred to prosthodontics department.

Conclusion: The orthodontic treatment could be shorter and more conservative by using this method.

OP 02: COMPARISON OF THE TREATMENT EFFECTS OF FORSUS FATIGUE RESISTANT DEVICE AND MONO BLOCK APPLIANCE IN GROWING CLASS II PATIENTS

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Aim: The aim of this retrospective study was to compare the treatment effects of Forsus FRD Device and Mono Block Appliance on craniofacial system with cephalometric measurements in growing Class II Division I patients.

Material and Method: The material of this retrospective study consisted of pretreatment and post treatment lateral cephalometric radiographs of thirty growing Class II Division I patients with a mean age of 13.2 years. 15 of the patients were treated with Forsus FRD after alignment of the teeth with fixed orthodontic appliances and 15 of the patients were treated with mono block appliance without fixed appliances. The functional orthopedic therapy of the patients lasted till the molar and canine relationships become super sınıf I. Mean treatment time was 81 months for both of the appliances. Pretreatment and post treatment cephalometric radiographs were analyzed for evaluating the skeletal and dentoalveolar treatment effects.

Results: Both of the appliances stimulated the sagittal mandibular growth increased mandibular length and eliminated increased overjet. However Mono Block appliance was more effective on mandibular growth so the profile improvement was more significant in this group. Lower incisor protrusion was similar between the groups but upper incisor retrusion were significantly higher in FRD group.

Conclusion: Both appliances were effective in correcting Class II malocclusion. Both the FRD and the Mono block induced maxillary and mandibular dentoalveolar changes skeletal changes were induced more significant by Mono Block.

OP 03: FACIAL DEFORMITY AND ORTHODONTIC-ORTHOGNATHIC SURGICAL TREATMENT HAVE LOW INFLUENCE ON SELF-ESTEEM AND AWARENESS OF FACIAL ESTHETICS

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Aim: The study aimed to assess the extent to which psychosocial and functional aspects are affected in orthognathic surgery patients.

Material and Method: Sample included 110 Caucasian subjects (73% females) aged 19-54 years: 55 patients with dentofacial deformities treated by combined orthodontic-orthognathic surgical treatment and 55 gender and age matched untreated controls. General oral health-related quality of life (GOHRQoL) oral function (OF) facial aesthetics concern (FA) social aspects (SA) awareness of facial esthetics (AW) and global self-esteem (SE) were assessed.

Results: Treatment induced significant changes in all psychosocial and functional aspects with large effect size ($p < 0.001$; $r = 0.5-0.8$). The major effect size was in decrease of FE followed by decrease of impairment of OF and GOHRQoL ($r = 0.8$). The lowest effect size was in decrease of AW and increase of SE ($r = 0.5$ and 0.6). In comparison to untreated subjects without dentofacial deformity patients before surgery had increased all aspects ($p \leq 0.006$) the largest effect size was in OF and GOHRQoL ($r = 0.7$) while the lowest in AW and SE ($r = 0.3$).

Conclusion: After surgery all aspects were similar as in untreated subjects. OF is most affected in subjects with facial deformities while FE most changed by surgery. SE and AW are the least affected by deformity and by treatment.

OP 04: INNOVATIVE TECHNIQUES FOR DIAGNOSING TRANSVERSE MAXILLOFACIAL DISCREPANCIES

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In orthodontic practice cephalometric radiography provides very good tools for diagnosing transverse facial discrepancies. For diagnosis of such discrepancies the main requirement is to take into account the transverse and vertical dimensions by means of linear angular and proportional measurements. With the advent of information technology computer applications based on the known analyses have been developed. They provide information about either the horizontal or the vertical component of the maxillofacial discrepancy only and this does not allow for determination of the exact localization of the discrepancies and definition of the problem.

Aim: To develop a computer diagnostic application for transverse maxillofacial discrepancies.

Material and Method: For the creation of the computer application applied graphic programs were used as well as the graphic methods of S. Krasteva: the differential diagnostic methodology for the position and morphology of the mandible and the graphical Concentric Arches Method for determining the exact localization of transverse maxillofacial discrepancies and facial asymmetry.

Results: The software application OrthoMup was created which simultaneously analyses the horizontal and vertical transverse facial discrepancies measured on frontal cephalometric radiographs using the two methods of S. Krasteva.

Conclusion: The software product OrthoMup eliminates measurement errors facilitates the identification of cephalometric landmarks and enables easy rapid and accurate analysis for the purposes of diagnosing transverse maxillofacial discrepancies and facial asymmetry.”

OP 05: ORTHODONTIC EXTRUSION OF INCISORS WITH SUBGINGIVAL FRACTURE

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Aim: The aim of this study is to present orthodontic possibilities in extrusion of fractured teeth.

Material and Methods: Cases in mixed and permanent dentition will be presented treated with removable and fixed appliances. Before orthodontic treatment in roots was placed metal or fiberglass pins which allowed insertion of extrusion force.

Results: Only after orthodontic extrusion of subgingivally fractured teeth is possible to reconstruct the crown with all functional and esthetic demands.

Conclusion: Prosthetic or conservative reconstruction of fractured teeth is very difficult if fracture line is subgingival. In that case is necessary to extrude the root enough to make fracture line visible.

OP 06: IMPORTANCE OF DISTALIZATION AND EXTRACTIONS - CASE SERIES

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ORTO4U ¹

Aim: Case presentations when distalization is a method for space utilization in the maxillary arch and cases when extractions are needed- borderline patients.

Material and Method: Patients were analyzed and diagnosed with the philosophy of Tweed with the accent on anterior midarch and posterior space analysis and the esthetics of the profile line. Tweed mechanics were used during treatment and TAD's were implanted for additional anchorage.

Results: Comparison of results before and after treatment with fixed appliances expressed with Tweed analysis. Enhancement of occlusal relationship parodontal status and facial esthetics is gained after treatment.

Conclusion: Focusing on exact diagnostic parameters can give precise indications for distalization or extractions in the maxillary arch.

OP 07: OUR LEANING CURVE IN TREATING CLASS III MALOCCLUSIONS IN ADULTS

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Rezonanca – Medical College⁴

Class III malocclusion adult patients more and more are seeking orthodontic treatment. However very rarely they accept combination with orthognathic surgery. We used different modalities to facilitate orthodontic treatment without surgery.

Aim: The aim is to report few cases of adult patients presenting Class III skeletal pattern with concave facial profile using different treatment modalities

Material and Method: All presented patients refused to undergo orthognathic surgery; therefore orthodontic camouflage treatment was undertaken using elastics power chains and lower premolar extractions in some cases

Results: In some cases a Class I and canine relationship was achieved in some didn't while anterior cross bite was corrected in all cases. We recorded errors while using heavy elastic forces. We found improvement of patient's facial profile and increased exposure of maxillary incisors resulting in upper lip fullness as well. The smile was improved esthetically.

Conclusion: Prolonged use of class 3 elastics result in extensive retroinclinations of lower mandibular incisors. Opening new spaces for adding lost tooth in maxilla or additional spaces to be continued with prosthodontics work later contributed more in fullness of upper lip and smile esthetics.



TOPIC 2 : ETHICAL CHALLENGES IN THE 21ST CENTURY

OP 08: THE FUTURE OF ORTHODONTIC SERVICES IN THE PUBLIC HEALTH CARE SYSTEM: BASED ON ETHICAL PRINCIPLES AND SCIENTIFIC EVIDENCE

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Aim: Regulation of orthodontic services in public health care programs is crucial to the quality of care provided. Current public health care programs throughout Europe involving orthodontic care are still exclusively based on the clinical professional practice standard. Evidence suggests however that professional practice standards may not respect sufficiently patient preferences or requirements of evidence based medicine.

Material and Method: Hence criteria for assessing treatment need (access); quality control and payment method may fail to provide patient centered quality of care as expected by the public and health policy.

Results: First access to the provisions of orthodontic treatment is regulated mainly by objective indexes more often based on morphological criteria than on patient's preferences. Potential consequences could be preference misdiagnosis and over diagnosis. Second quality control of orthodontic treatment focuses on process quality i.e. on the formal performance of procedures and not on treatment value or patient centered outcome. Third the most common payment method used in orthodontic care is "fee-for-service" a method known for his financial incentives for orthodontists to treat more than necessary whereby patients have to bear higher financial risk as compared to the provider.

Conclusion: We conclude by suggesting that health authorities and providers should have to implement in future strategies and reforms based on both ethical principles as well as scientific evidence. Thus access to treatment should involve instruments assessing patient's preferences in addition to objective indexes. Quality control of treatment processes should be assessed according to evidence based clinical practice guidelines for informed consent diagnostic and treatment procedures. At least payment methods should be organized by some principle of justice distributing equally the financial burden and financial risk thereby reducing negative financial incentives.

OP 09: CHIRURGIA ORTOGNATICA E “SURGERY FIRST”

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Aim: If osteotomy jaw surgery was no longer orthognathic but physiognomic and functional what levels of occlusal compromise would be desirable at the end of the combined treatment?

Materials and Method: The authors present a series of cases of maxillo-mandibular osteotomies performed to modify the physiognomy and to cure obstructive sleep apnea syndrome (OSAS) in both these situations orthodontics was performed after surgical treatment in order to optimize the compensation of the occlusion and to establish favorable conditions for the prosthesis of the edentulous sectors without aiming at the objective of the occlusal orthodontics.

Results: Increasingly the demand for this type of surgery comes from patients who are not candidates for a traditional orthodontic-surgical treatment because they are adults for dental conditions for serious functional needs (OSAS) and for the request for a physiognomic change that does not necessarily cover the mutual position of the dental arches in ideal occlusion. Are osteotomy techniques applicable in a morally acceptable manner to surgery that is not centric orthognathic or is there still a cultural reserve that prevents people from leaving the traced track long ago? How does the concept of “surgery first” fit into this context?

Conclusion: The authors wish through the cases presented to contribute to the interesting conference theme.

OP 10: ORTHODONTIC ISSUES IN FORENSIC ODONTOLOGY EDUCATION IN DENTAL FACULTIES OF TURKEY

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The basic education in dental faculties of Turkey consist of ten semesters. Students receive theoretic and practical educations during this period and they are graduated with a Master of Science degree. The dentists want to be specialized in the field of forensic odontology may attend to a related doctorate program of the Universities nevertheless there is no dental school with a specific yer bulmak department for forensic odontology.

Aim: The aim of this study was to evaluate the content of orthodontic issues in forensic odontology lessons in dental faculties of Turkey.

Material and Method: In the study the content of forensic odontology lessons of the oldest fifteen dental faculties were investigated and the qualifications of the lecturers were observed too.

Results: The forensic odontology lessons exist in fourteen of fifteen faculties. In twelve faculties forensic odontology lessons are prepared and presented by forensic medicine specialists. In remaining two lessons are given by forensic odontologists. In all fourteen faculties lectures are given in 9th semester. In twelve faculties lessons have just theoretical contents and and mainly composed of the topics of classical forensic medicine. The remaining two faculties have content of lessons according to requirements of the country and legal applications related to dentistry. In these two faculties basically identification bitemarks and distinguish of complication and malpractice in the fields of dentistry are lectured. Orthodontics in forensic odontology were more dominant than other dental diciplines. In the lectures because of long treatment periods deep and effective treatment extents orthodontics covers more areas in forensic odontology.

Conclusion: Because of the requirements and the interests orthodontics in forensic odontology is more visible than other dental fields. As orthodontics has a special status in dentistry it has special stance in forensic odontology curriculum too.

TOPIC 3: NOVEL TREATMENT STRATEGIES

OP 11: CAMOUFLAGE TREATMENT OF SKELETAL CLASS III MALOCCLUSION WITH UNILATERAL CROSSBITE USING MINISCREW ANCHORAGE

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Aim: This case report presents the camouflage treatment which includes SARPE mini screws and Class III elastics of a 23-year-old girl who has Class III malocclusion with unilateral crossbite and upper missing left lateral incisor.

Material and Method: Because of unilateral crossbite the treatment started with surgically assisted rapid palatal expansion. During the SARPE operation also two mini screw implants 7mm in length were placed in the buccal region between the canine and first premolar of the mandible. After 4 days latency period the patient activated the expander twice a day ($0.25 \text{ mm} \times 2 = 0.5 \text{ mm}$) and at the same time she wore Class III elastics between the miniscrew and the hooks of the rapid palatal expander. After 4 months non-extraction treatment with a 0.022-in slot preadjusted Roth appliance was applied. An implant space was opened in the left posterior region. The total treatment time was 24 months.

Results: The unilateral crossbite was resolved. Maxillary incisors were proclined and the mandibular incisors were retroclined. Ideal esthetic and functional result was achieved.

Conclusion: This case report suggests that the protraction of the maxillary arch with SARPE mini screw and Class III elastics can be considered as an alternative treatment in skeletal Class III malocclusion.



OP 12: RETRACTION OF UPPER INCISORS WITH ORTHODONTIC MINI IMPLANTS

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Aim: to present orthodontic therapy of severe cases. Where we need an absolute anchorage for the retrusion of frontal teeth to avoid mesial movement of molars instead of Headgear Nanse and palatal bar we can use the mini screws – mini implants. Also we can use them in preprosthetic orthodontic movements of some teeth and in therapy of impacted canines and transposition of teeth.

Material and Methods: Some of the patients were adults with no growth potential and with severe Class II division 1 malocclusion. After cast and X – ray analysis we decide to extract first upper premolars implant the mini screws and retract frontal teeth.

Results: When patients achieve the contact between upper and lower incisors the implants were removed and the extraction spaces if remind were closed. Other patients were adults with need to achieve enough space for adequate prosthodontics solution. In the third group of patients we treated impacted and transpositioned teeth with absolute anchorage.

Conclusion: Orthodontic mini implants are very effective as absolute anchorage and we can avoid unwonted movement of teeth and finish the treatment much easier and faster.

OP 13: EARLY CLASS III TREATMENT WITH MINISCREW SUPPORTED HYBRID HYRAX AND MENTOPATE COMBINATION: CONE BEAM COMPUTERIZED TOMOGRAPHY ANALYSIS

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Aim: The purpose of this study was to describe the skeletal dental and soft tissue effects in Hybrid Hyrax and Mentoplate Combination in early aged skeletal class III patients.

Material and Method: A total of 10 patients (5 boys and 5 girls) with Class III malocclusion were investigated by means of commencing treatment (T0) and finish of the orthopaedic phase (T1). Patients were treated with hybrid hyrax-mentoplate combination therapy which 2 palatal miniscrew supported hybrid hyrax placed to maxilla and metoplate placed to mandibular symphysis region and force applied with class III elastics.

Results: SNA angle improved 3.05 degree ANB has changed 3.81 degree and SNB has changed -079 degree. A Wits improvement of 614 mm and an overjet reduction of 497 mm were found. Upper Incisor inclination did not change (055 degree) significantly during treatment in both groups.

Conclusion: Modified hyrax-mentoplate combination might be useful to correct class III malocclusion with negligible effects on the mandible facial vertical dimension and the incisor angulations. A controlled clinical study with larger sample sizes and is needed.

OP 14: 3D ASSESSMENT OF THREE CLEFT LIP AND PALATE CASES TREATED WITH ARCHWISE DISTRACTION APPLIANCE

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Okan University³

Aim: Alveolar distraction osteogenesis is becoming an alternative option in treating CLP cases.

Material and Method: In this case series three cases with severe CLP problem that treated with a novel appliance called ArchWise Distraction Appliance (AWDA) were presented and skeletal soft tissue effects and airway changes were evaluated on CBCT images using prototyping software.

Results: As a result after distraction nasal air volume of the patients increased. ANS point moved forward and upward. Distance between aperture piriformis increased. Cleft width narrowed. Nose tip moved upward and forward 1mm on average.

Conclusion: The AWDA treatment was found to be very effective in both narrowing the cleft space and correcting the sagittal relationship of the maxilla and mandible. Nasal airway space increased in both patients where vital limited increase in oropharyngeal airway volume was observed.

OP 15: THE EFFECTS OF SINGLE AND CUMULATIVE WAVELENGTH LASER THERAPY ON THE ORTHODONTIC INDUCED ROOT RESORPTION DURING RETENTION PERIOD: AN EXPERIMENTAL STUDY IN RATS

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Aim: The aim of this study was to investigate the preventive and/or reparative effects of single- wavelength and cumulative-wavelength low-level laser therapy (LLLT) applications on the orthodontically induced root resorption (OIRR) during the retention period of orthodontic tooth movement in rats.

Material and Method: Twenty-eight Wistar albino rats were divided into four groups as the negative control (NC) positive control (PC) single-wavelength low-level laser therapy (SW-LLLT) and cumulative-wavelength low-level therapy (CW-LLLT). In all groups except the NC group the left and right maxillary first molars were moved mesially by 50 gr force for 10 days. After the experimental orthodontic tooth movement retention was achieved using a special apparatus for 15 days. During the retention phase maxillary molars were irradiated for 9 minutes at 1-day intervals in the laser-irradiated groups. In the SW-LLLT group LLLT was applied at a single-wavelength as 655 nm red laser while in the CW-LLLT group the cumulative-wavelength laser therapy was obtained using 532 nm blue laser 655 nm red laser and 940 nm infrared laser at the sequential days of the retention period. At the end of the retention period the rats in the all groups were sacrificed for resorption lacunae evaluation on micro-ct analysis and determination of the cyclooxygenase-2 (COX-2) mRNA expression level OPG/RANKL ratio using PCR analysis.

Results: Low-level laser therapy applications significantly decreased the number of resorption lacunae ($p < .050$) and percentage of resorption/root ($p < .001$) in comparison with PC group. However no significant difference was detected between SW-LLLT and CW-LLLT groups. The COX-2 mRNA expression values significantly increased in the PC groups than other groups ($p < .05$).

Conclusion: Low-level laser therapy has significant reparative effects on OIRR regardless of the single or cumulative wavelength application protocols.

OP 16: EFFICACY OF LASER THERAPY IN THE MANAGEMENT OF TEMPOROMANDIBULAR DISORDERS

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Pzo 'Dr.Jolevski' ¹

Temporomandibular joint disorder (TMD) is a broad term for an array of clinical manifestations that affect the masticatory muscles the temporomandibular joint and other associated structures. Pain and dysfunctional symptoms or signs such as limitations in opening asymmetric jaw movements and TMJ sounds are the most common findings.

Aim: This problem may interfere with the adequate restorative or orthodontic treatment and there is a need of proper diagnose and early treatment.

Material and Method: Non-surgical treatment of TMDs continues to be the most effective way of managing over 80 % of patients which include psychotherapy or behavioral therapy pharmacotherapy occlusal splint therapy and various physical therapies like thermal therapy acupuncture electrical stimulation physiotherapy and low intensity laser therapy. Light amplification by stimulated emission of radiation (laser) is one of the most recent treatment modalities in dentistry. Low-level laser therapy (LLLT) is suggested to have biostimulating and analgesic effects through direct irradiation without causing thermal response.

Results: This case report here will evaluate the performance of LLLT with a diode laser for temporomandibular pain and joint cracking during mouth opening in three patients. LLLT will be performed with a 904 nm Infrared probed diode laser that has an energy density of 62J/cm² three times a week for one month and application time was 3 min per joint (904 nm 30 mW 30 s 1168 Hz and 6.2 J/cm²) (SIX LASER TS C Atlantis Ltd.medical and laser equipment).

Conclusion: The treatment protocol and laser expose was decided according to the literature. According to other studies we expect achieving long term effects in pain relieve and crepitation's loss after the treatment.

TOPIC 4: FREE TOPIC

OP 17: LONG TERM STABILITY AS A TREATMENT GOAL

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Spec. stom. ord. za ortodonciju dr. Marko Perković¹,
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Problem of relaps after orthodontics treatment has been noted by orthodontists since since the beginig of our specialty. It has always drawn our attention. especially recently.

Aim: to present the factors that lead to relaps: Growth of our body's age, habits, un satisfactory orthodontic treatment.

Material and Method: Throw presentation of the clinical cases we describe factors that lead to relaps. Not one part of our body has avoided changes-related to growth and early development to aging. Famous Japanese orthodontist dr. Asai once said that the biggest reason for relaps is wrong orthodontic treatment before all others named above.

Results: What are the factors that bring us to facial harmony and stability? 1. Anterior teeth torque control. 2. Control of skeletal component (vertical and sagital). 3. Transversal control. 4. Occlusion. 5. Profile and smile. 6. Surrounding tissue. What are the key diagnostic and treatment mechanics what guide lines to follow to achieve stability of our orthodontic treatments and have less relapse as possible? This lecture will give answers to these questions.

Conclusion: Technological development of orthodontics raised the need and desire to follow up of our treated patients for 5, 10, 15 and more years in retention and after retention.

OP 18. EVALUATION OF THE EFFECTS OF INCISOR INTRUSION ON DENTAL ARCH USING BURSTONE SEGMENTAL ARCH TECHNIQUE: 2 CASE REPORTS

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Dental deep bite which is defined as increased overbite in centric occlusion can be treated by intrusion of maxillary or mandibular incisors extrusion of buccal segments or a combination of these two methods.

Aim: to present technique for incisor intrusion and axial inclination control.

Although there are different mechanics used for intrusion of upper incisors in individuals with increased incisor appearance at rest and deep spee curve it is known that incisor intrusion mechanics used in Burstone technique allows axial inclination control of teeth and measurable force systems between the anterior and posterior dental segments.

Material and Method: In this case series two patients who applied to Gazi University Faculty of Dentistry Orthodontics Clinic and treated with Burstone segmental arch technique were examined. Pre and post intrusion intraoral photographs dental casts lateral cephalometric periapical and panoramic radiographs were recorded. Pre and post intrusion dental casts were scanned digitally and lateral cephalometric radiographs were traced by hand drawing.

Results: Superimpositions were done and effects of Burstone segmental arch technique on posterior segments during upper incisor intrusion and changes on dentoalveolar and skeletal structures were evaluated.

Conclusion: Functional position of the upper lip relationship between gingival margin and level difference between anterior and posterior segments are among criterias that determine the need for intrusion of upper incisors.

OP 19: RETENTION AND RETAINERS

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Retention is arguably the most challenging and unpredictable stage of orthodontic treatment. Retainers are commonly fitted at the end of orthodontic treatment to reduce the chances of relapse. The choice of retainers is controversial with a wide variety of different retainer choices reported across the world.

The **aim** of this presentation is to discuss 3 common types of retainers with their pros and cons. Whether removable or fixed retainers are used it is important that they do not compromise the patient's periodontal health.

OP 20: PAIN INTENSITY AND PAIN MEDICATION USE AFTER FIXED ORTHODONTIC APPLIANCE BONDING: COMPARISON BETWEEN UPPER AND LOWER JAW

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Pain is one of the most common side effects during orthodontic treatment and almost every patient felt some pain during therapy. Empirically patients claim that pain is of greater intensity after bonding of lower fixed orthodontic appliances still the literature is scarce regarding this question.

Aim: The aim of this study was to investigate and compare pain intensity and use of pain medication in between upper and lower jaw.

Material and Method: Data was collected from 95 patients treated by orthodontic specialist at Department of Orthodontics School of Dental Medicine University of Belgrade from April 2017 until February 2018. Each patient was treated by the same doctor. After bonding patients received questionnaires and they were asked to complete them at home preferably each day at the same time starting 24 hours after bonding until day 7. In each of the questionnaires subjects were asked to record pain experience using a visual numerical scale (VNS) as well as any of analgesic use by answering 'yes' or 'no'.

Results: Statistically significant difference ($p < 0.05$ Wilcoxon test) was observed between VNS scores between upper and lower jaw from Day 1 until Day 5 with highest VNS scores on Day 1 as expected. Mean VNS on Day 1 for upper jaw was 3.95 ± 0.26 and 5.12 ± 0.28 for lower jaw suggesting more intense pain in the lower teeth. Also only 28% of patients used some pain medication after upper appliance bonding compared to 44% after bonding in the lower arch.

Conclusion: The pain intensity was confirmed to be higher in upper jaw after fixed orthodontic appliance bonding compared to lower jaw. Also pain medication consumption was proven to be higher in patients with upper appliance.

OP 21: AN ASSOCIATION BETWEEN DIMENSIONS AND BRIDGING OF THE SELLA TURCICA AND DENTAL ANOMALIES

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Aim: The aim of this study was to determine the incidence of bridging of the sella turcica and the dimensions of the sella turcica in subjects with dental anomalies (transpositions hypodontia and supernumerary teeth) and to compare them to controls.

Material and Method: Lateral cephalograms from 25 patients with dental transposition 88 patients with hypodontia and 26 patients with supernumerary teeth were evaluated. The shape length depth diameter and bridging of the sella turcica were determined from radiographs and compared to those of control group (n = 52). For statistical analysis one-way analysis of variance a Tukey post hoc test a chi-squared test and a T-test (to evaluate the influence of craniofacial growth) were used.

Results: The frequency of complete calcification of the sella was greater in the group with supernumerary teeth (23%) and in the group with hypodontia (14.7%) while partial calcification of the sella was more frequent in the control group (77%) and in the group with supernumerary teeth (73%) (p<0.05). The depth of the sella was greater in the group with dental transposition (p<0.05). Oval and round sella shapes were more frequent in all groups and a flat sella was rarely seen (p<0.005). In terms of the influence of growth on the dimensions of the sella there was no statistically significant difference between pre- and post-treatment radiographs.

Conclusion: Significant relationships were found between dental anomalies and bridging and shape of the sella. The sella was also significantly deeper in patients with dental transposition. The bridging and shape of the sella may therefore be useful in diagnosis of dental anomalies in early childhood.

OP 22: EVALUATION OF THE BACTERIAL BIOFILM ON THE MINI SCREWS INSERTED INTO PALATAL ANTERIOR AND POSTERIOR REGION OF THE MAXILLA

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Aim: The aim of this study was to analyze bacterial biofilm on mini screws inserted into palatal anterior and posterior region of the maxilla for skeletal anchoring functions and to improve oral hygiene recommendations on the use of appliances in the mouth according to the results.

Material and Method: The study included 15 individual (8 females 7 males) with mini screw-supported appliances in the palatal region of the maxilla. These individuals whose ages ranged from 11 years and 5 months to 22 years and 8 months had a total of 40 mini screws in their maxilla 20 in the palatal anterior region and 20 in the posterior region. The mini-screws used were standard LOMAS mini screws with 2x7 mm dimensions (Mondeal Medical Systems GmbH Tutlingen Germany). Screws removed under appropriate conditions were examined in laboratory steps necessary for detection of different microorganisms without being infected. Microorganisms to be detected were determined as *Prevotella intermedia*, *Porphyromonas gingivalis*, *Aggregatibacter actinomycetemcomitans*, *Treponema denticola*, *Prevotella nigrescens*, *Parvimonas micra*, *Tannerella forsythia*, *Veillonella parvula*. Statistical evaluations were made using parametric (ANOVA) and non-parametric (Kruskall-Wallis Mann-Whitney U) tests.

Results: As a result of biological investigations it was determined that some types of microorganisms were detected only from the screws located in the posterior region and some from the screws located only in the anterior region. However some microorganisms (*Streptococcus salivarius*, *Streptococcus mitis*, *Streptococcus anginosus*) were detected in screws removed from both anterior and posterior regions.

Conclusion: In this study different microorganisms were isolated from mini screws applied to different places in palatal region. It is useful that to improve oral hygiene recommendations on the use of appliances in the mouth according to the results.

OP 23: YOUTUBE™ AS A SOURCE OF INFORMATION ON CLEAR ALIGNERS

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Aim: The aim of this study was to evaluate the quality reliability and content of the videos about clear aligners on YouTube™.

Material and Method: By using “Google™ Trends” web site it was determined that the most commonly used search term for clear aligners was “Invisalign”. A search was made by using the keyword “Invisalign” on YouTube™ to evaluate the information about clear aligners. One hundred videos were selected to be analyzed from the first 140 results according to inclusion criterias. Selected videos were evaluated by using a 13-point score which was used for classifying low and high content video groups. The global quality score (GQS) and video information and quality index (VIQI) were applied to determine the quality of the videos. For reliability of information an adapted form of DISCERN tool was used. The Mann-Whitney U-test and Chi-square test were calculated for statistical evaluations.

Results: Thirty-three videos were classified as high-content and 67 videos as low-content. Most of the videos were uploaded by laypeople (73%) and most of the uploaders were woman (71%). In terms of content; instructions were the most commonly discussed topic (65%) followed by procedure (57%) and pain (52%). According to the GQS most of the videos were evaluated as moderate quality (51%). Compared to the low-content group the high-content video group was shown significantly higher GQS and VIQI scores ($p=0.003$ $p=0.004$). There was no statistically significant difference between the low and high content groups in terms of information reliability ($p=0.772$).

Conclusion: The content of videos was generally insufficient. Most of the videos mentioned instructions but only few videos discussed the biomechanics. The quality of videos was moderate but the reliability of information was generally poor. The majority of videos were created by patients to share their own experiences which explain this result.

OP 24: INVESTIGATION OF SMARTPHONE APPLICATIONS USED FOR ORTHODONTIC CLEAR ALIGNER TREATMENT

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Aim: Today the use of technology is an integral part of our lives and smartphone applications make it easier for the clinician to integrate their patients into the treatment while providing the patients' information about their treatment and facilitate the treatment process. The aim of this study was to generate an overview of the current clear aligner applications and to investigate the use of these applications in the orthodontic field.

Material and Method: The keywords 'clear aligner' and 'Invisalign' were searched on application stores of two smartphones with different operating systems (Apple and Android). English applications related to these keywords were analyzed and non-clear aligner individual clinic applications and games were excluded. Applications were grouped according to their category and target audience and were reviewed for their content and metrics.

Results: Out of 22 applications that met the criteria 10 5 and 7 were on Apple Google Play Store and in both stores respectively. Most of the applications were related to patients (%82) while less was related to clinicians (%18). Applications were categorized according to their area as health and fitness (%41) medical (%41) work (%9) education (%4) and lifestyle (%4). Applications for clinicians included a digital scanner (%25) meetings (%25) education (%25) and diagnosis (%25) applications. Patient applications were related to many tasks at the same time such as aligner wear reminder and timer (%59) treatment progress tracker (%18) and even orthodontic consultation (%32) and aligner production and delivery (%14).

Conclusion: Although some applications may be useful for patients and clinicians in clear aligner treatment the information provided is often unverified and therefore the clinician should direct the patients to the applications containing useful information. Applications with accurate and updated information need to be developed by orthodontic professionals.

OP 25: DIAGNOSIS OF TEMPOROMANDIBULAR COMPLICATIONS THROUGH SHORT CLINICAL SCREENING PROCEDURE

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In everyday practice dentists often face with functional disorders of the masticatory system which have implications for nearly all oral and maxillofacial medicine sub disciplines from conservative dentistry and periodontology to prosthodontics orthodontics and maxillofacial surgery.

Aim: To present screening for temporomandibular disorders (TMD) before starting any type of dental treatment as standard diagnostic procedure.

Material and Methods: Ahlers and Jakstat developed short clinical screening battery for TMD called "CMD-check" with six easy to perform clinical tests each of which requires a simple "Yes" or "No" response. The six test items are as follows: 1.Asymmetrical mouth opening 2.Limited mouth opening 3.Joint sounds 4.Occlusal sounds 5.Pain on muscle palpation 6.Traumatic eccentric occlusion.

Results: Our research is based on this screening battery. We used Ahlers and Jakstat screening test to evaluate a group of 20 patients with and without temporomandibular disorders.

Conclusion: From the results that we received our conclusion was: 12 of the patients were with 2 or more positive answers that mean they have possibility for TMD and 8 patients were with 1 or without positive answer that means there is a small possibility for TMD. The possibility of TMD is greater if the number of positive answers increases.



POSTER
PRESENTATIONS

TOPIC 1: ORTHODONTIC SOLUTIONS FROM BIRTH TO THE BEST AGE

PP 01: ORTHODONTIC CAMOUFLAGE MALOCCLUSION CLASS III
- A CLINICAL CASE REPORT

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Aim: To determine an alternative treatment for patients who do not have the possibility of having orthognathic surgery.

Material and Method: A 15-year-old female patient meso facial biotype with pronounced concave profile with Class III Skeletal by mandibular prognathism anterior crossbite anterior crowding and large mandibular body molar class and canine III. In the upper tooth arch, there was a lack of space for the right second premolar.

Results: SWA technique brackets were placed; premolar extraction was planned in lower jaw. Once the case was completed the correction of the anterior crossbite was achieved thanks to the use of the spaces that existed at the beginning of the treatment and also that a correct distalization of canines and retraction of the lower anterior segment were performed.

Conclusion: Orthodontic camouflage is an alternative treatment for angle III malocclusion since patients cannot opt for orthognathic surgery. It being clear that correction will be achieved at the dental level and not at the bone complex.

PP 02: ORTHODONTIC-SURGICAL TREATMENT OF CLASS III MALOCCLUSION (HYPOPLASIO MAXILLAE) - A CASE REPORT

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Aim: To establishment of a treatment plan based on efficiency and easy application by the clinician and acceptance by the patient. Treatment of patients with Class III malocclusion (hypoplasio maxillae) might require orthognathic surgery especially when the deformity is severe with a significant impact on facial esthetics.

Material and Method: We report here the case of a 14-year-old boy who had a skeletal Class III malocclusion leading to remarkable deviation of the maxillary midline; this was his chief complaint.

Results: Treatment included rapid maxillary expansion followed by extraction first upper premolars leveling alignment correction of compensatory tooth positioning and orthognathic surgery to correct the skeletal Class III malocclusion because of the severe maxillary deficiency.

Conclusion: This treatment approach allowed correction of the maxillary dental midline discrepancy to the midsagittal plane and establishment of good occlusion and optimal esthetics.

PP 03: PREDICTION OF MAXILLARY ARCH PERIMETER CHANGE AFTER RAPID EXPANSION IN BULGARIAN GROWING PATIENTS

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Aim: The purpose of the present study was to find the amount of arch perimeter increase after transverse expansion and create a prediction new model of the arch perimeter change.

Material and Method: Dental casts of 74 patients were obtained before treatment and nine months after maxillary expansion. Measurements of intermolar width interpremolar width intercanine width arch length and arch perimeter were made with a digital caliper on the dental casts. Change in values before treatment and after treatment was examined for statistical significance. A multiple linear regression model was used to explore the changes in the upper arch perimeter.

Results: The results showed significant predictors of arch perimeter increase interpremolar expansion and arch length alteration with R-square of 53.25%.

Conclusion: The approximate value of arch perimeter alteration after rapid maxillary expansion with Hyrax expander can be predicted using new prediction model combining the sum of 0.78 times the interpremolar expansion and 0.82 times the arch length alteration.



PP 04: INFLUENCE OF AGE AND SEX ON THE DEVELOPMENT OF GINGIVAL RECESSION IN PATIENTS WITH COMPLETE DEVELOPMENT OF THE DENTITION AND ANTERIOR CROSSBITE

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In modern society the frequency of occurrence of gingival recession is defined as significant and increases with advancing age.

Aim: To establish the influence of age and sex on the occurrence of gingival recession in patients with complete development of the dentition and anterior crossbite.

Material and Method: 80 patients aged 18-52 with anterior crossbite of single teeth or a group of teeth were examined - a total of 960 teeth of which 501 had recession. The patients were divided into three age groups. The presence of recession was recorded according to the position of the corresponding tooth in the anterior segment vestibular and/or lingual in a clinical setting. Statistical methods: continuous and dichotomous variables. One-way analysis of variance (one-way ANOVA) is used to compare the mean values.

Results: The sex ratio (55% males and 45% females) and the median age of the patients (males - 249 ± 904 years females - 2742 ± 1143 years) are both of no statistical significance ($p=0.277$). Our sample is considered homogeneous with respect to these demographic variables. The mean values of teeth with recession for the two sexes in the three age groups showed no significant difference ($p=0.325$). The percentage distribution of patients with and without recessions in the three groups showed similar results ($p = 0.575$).

Conclusion: The age and sex of the patients in our sample did not have a statistically significant effect on the presence of gingival recession.



PP 05: ORTHODONTIC SURGICAL THERAPY IN PATIENT WITH CLASS III MALOCCLUSION AND FACE ASYMMETRY – CASE REPORT

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Class III malocclusion with face asymmetry belongs to the group of severe skeletal deformities of craniofacial region and usually can be treated by combined orthodontic surgical therapy.

Aim: The aim of this study was to show the results of multidisciplinary approach to the treatment of patients with III class malocclusion and laterognathia.

Material and Method: A patient P.M. 19 years of age with mild mandibular prognathism and pronounced laterognathia of mandible to the left with esthetic and functional problems was treated at the Dental Clinic in Nis he received orthodontic-surgical treatment. Face analysis: Class III profile with pronounced deviation mandible to the left. Intraoral analysis: the narrowness of maxillary dental arch with spacing which is the result of an early extraction of permanent molars deviation of mandible to the left followed by reversed overbite and left unilateral crossbite. Analysis of orthopantomogram: present pronounced asymmetry in the development of mandible. There is a difference in the size of gonial angles (left 145 right 136) Cephalometric analysis: skeletal class III with mild maxillary retrognathism with dominant mandibular prognathism (SNA 80 SNB 84) normal inclination of the upper and retroinclination of the lower jaw posterior type of growth with a high gonial angle upper incisors protrusion and lower incisor retrusion.

Results: The patient received combined orthodontic-surgical treatment. Presurgical orthodontic treatment included fixed appliances and correction of transversal relations and leveling of dental arches. Surgical correction: bilateral sagittal split osteotomy with the rotation of mandible into the right. Postoperative orthodontic treatment: fine occlusal adjustment in order to obtain maximum intercuspation. Retention: functional appliances combined with fixed retainers.

Conclusion: Satisfactory aesthetic and functional results were achieved by a combined orthodontic surgical treatment.

PP 06: THE USE OF FUNCTIONAL REGULATOR (FR-3) FOR THE CORRECTION OF III CLASS MALOCCLUSION DURING EARLY MIXED DENTITION- CASE REPORT

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Class III malocclusion represents the existence of skeletal discrepancy in the development of upper and lower jaw. Successful application of orthodontic therapy is possible in maxillary retrognathism in the period of deciduous dentition and early mixed dentition in order to improve occlusal relationships and create better conditions for further growth.

Aim: The aim of this paper was to show the therapeutic outcome of Functional regulator III (FR-3) during the early mixed dentition.

Material and Method: A patient R.M. 7 5 years of age with prognathous profile came to the Dental Clinic in Nis. Face analysis: dominant Class III profile with short distally positioned upper lip as well as anteriorly positioned lower lip and chin. Intraoral results: occlusal ratio ½ Class III reversely overbite there is a positive incisal step (2mm) with upper incisor protrusion and lower incisor retrusion. Cephalometric X ray analysis: a combination of maxillary retrognathism and mandibular prognathism (SNA 76 SNB 85) normal inclination of upper and mild retroinclination of lower jaw anterior type of growth with high gonial angle as well as protrusion of upper and retrusion of lower incisors.

Results: Since it was impossible to stop the growth in the lower jaw the only realistic plan of the treatment was to influence the growth of the upper jaw by means of the functional regulator III (FR-3). Within three months reversed incisor overlap was fixed. The cephalometric x-ray analysis after the treatment showed that the changes were primarily of dental nature.

Conclusion: During the treatment there was a great improvement in the profile of the patient regular overbite was achieved as well as better conditions for further growth. It is necessary to monitor the patient during the growth period.

PP 07: RELATIONSHIP AMONG LOWER ARCH LENGTH, ARCH WIDTH AND ARCH PERIMETER IN CROWDING AND NON-CROWDING GROUPS

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Aim: The purpose of the present study was to examine the relationship between arch length, arch width and arch perimeter in crowded and non-crowded arches, as well as to make comparison of the right and left sides between them and to find out the contributing factor in lower arch crowding.

Material and Method: The study groups consisted of 60 subjects aged 16 to 21 years. First group consisted of 30 pairs of dental study models with class I normal occlusion. The second group consisted of 30 pairs of study models with class I crowding. Measurements of arch length and width were made as defined by Lavelle and Foster, using Korkhaus callipers. Arch perimeter was measured by Lundstrom method's using manual calliper with sharp points.

Results: Differences between these measurements were made by Mann-Whitney U test (Z/U).

Conclusion: According to our study, the arch length and arch perimeter were not associated factors in contribution to lower arch crowding. In association of contributed factors on the lower arch crowding, we could mention the width of the arch, because the differences between the two groups was significantly different.

PP 08: NONSURGICAL ORTHODONTIC TREATMENT OF A YOUNG ADULT PATIENT WITH MAXILLARY TRANSVERSAL DEFICIENCY

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Aim: This case report describes the nonsurgical treatment of a patient with unilateral posterior crossbite and maxillary midline deviation.

Material and Method: A 17 year old male patient with aesthetic complaints about maxillary dental midline deviation and end to end incisor relationships referred to our clinic. In clinical examination concave profile Class III subdivision molar relationship unilateral posterior crossbite on the right side and a tendency to an anterior open bite were observed. Upper dental midline was 25 mm deviated to the left side while the mandibular dental midline was symmetrical with the facial midline. Also, hand wrist radiography revealed that the patient's skeletal maturation was at RU stage.

Results: Non-surgical rapid maxillary expansion was achieved with an asymmetric rapid maxillary expansion device after 45 days active expansion period a Hawley appliance was used for the retention period for 6 months. Fixed orthodontic appliances were applied for alignment and levelling of the teeth for 6 months and also during this stage Class II midline and Class III intraoral elastics were used together for the midline correction. After removal of the orthodontic appliances upper anterior teeth of the patient were restored with composite material for improving the aesthetic appearance by the restorative dentistry department.

Conclusion: Unilateral posterior crossbite anomalies can be treated with asymmetrical expansion devices and the surgery decision for the expansion can be made after trying conventional methods for young adults. The patient's functional and aesthetic expectations were successfully achieved with non-surgical interdisciplinary treatment procedures.

PP 09: CLASS III ELASTICS WITH RAPID MAXILLARY EXPANSION DEVICE

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Aim: The aim of this case report is to describe orthodontic treatment of a patient with Class III malocclusion and maxillary transversal deficiency.

Material and Method: A 16 year old male patient with a chief complaint of dental crowding was referred to our clinic. In clinical examination straight profile Class III molar relationships lingually positioned maxillary lateral teeth and slightly protrusive mandibular incisors were observed. Upper dental midline was 2 mm deviated to the right side of the face and mandibular dental midline was symmetrical with the facial midline. Hand wrist radiography revealed that the patient's skeletal maturation was at Dp3U stage.

Results: A rapid maxillary expansion device was applied to the maxilla and fixed orthodontic appliances were applied to the mandibular teeth. During the expansion period Class III elastics were used from mandibular teeth to the expansion device for preventing severe protrusion of the lower anterior teeth and treating the Class III relationships. Rapid maxillary expansion device was removed after 3 months and a transpalatal arch which attached to the molar bands was applied. Fixed orthodontic treatment of the patient continued with alignment of the upper teeth. The total treatment duration of the patient was 11 months.

Conclusion: Usage of the Class III elastics with rapid maxillary expansion device may be useful for preventing mandibular anterior teeth's severe protrusion and reducing the treatment time of slight Class III patients with maxillary transversal deficiency.



PP 10: FUNCTIONAL ORTHODONTIC TREATMENT OF A CLASS II PATIENT WITH SEVERE CROWDING

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Aim: The aim of this case report is to describe functional orthodontic treatment of a Class II patient with severe crowding.

Material and Method: A 13 year old patient with a chief complaint of retrognathic mandibula and severe crowding in especially mandibular arch was referred to our clinic. In clinical examination; a convex profile with a retrognathic mandibula a quite long face transversal deficiency of maxillary arch Class II molar relationships and increased overjet (10 mm) were observed.

Results: The treatment plan was to stimulate mandibular sagittal development with a Twin Block appliance and controlling the vertical dimensions with the usage of occipital headgear appliance. A transversal expansion screw was placed to the upper part of Twin Block for the expansion of maxilla. In the mandibular arch first premolars were extracted before the functional treatment stage and labiolingual springs were placed to the mandibular part of Twin Block for lingually positioned mandibular canines. Total functional treatment duration of the patient was 8 months.

Conclusion: Extraction of premolar teeth during functional orthopedic treatment of Class II patients with severe crowding will be useful for alignment of the teeth and reducing the orthodontic treatment duration.

PP 11: TREATMENT OF CLASS II MALOCCLUSION – CASE REPORT

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Private practice²

Class II malocclusion is anomaly which is present at almost 20% of population in our country. Protocols of its treatment depend on the age type of distal malocclusion and position of maxillary incisors and etiology factors responsible for its occurrence as well.

Aim: to present the treatment of Class II Division 1 malocclusion at teenage girl (14 years at the beginning of the treatment) without previous orthodontic treatment.

Material and Method: We conducted the necessary examinations including extraoral and intraoral photographs, X-ray, cephalometric analysis, and analysis of dental casts as well. They revealed skeletal Class II division 1 with proclination of Maxillary incisors prognathism of upper jaw normognathism of lower one and anterior type of growth rotation favorable for the distal occlusion.

Results: Treatment plan consisted of non-extraction protocol placement of fixed appliance in maxillary and mandibular dental arch with Class II intermaxillary traction. After 20 months of treatment the appliances were removed and mobile plates were applied for retention of the achieved results.

Conclusion: Therapy for Class II division 1 with hypodivergent type of growth is characterized at most cases with non- extraction protocol and the treatment plan is essential for creating balanced profile functional occlusion and satisfied patients.

PP 12: 3-STEPS EARLY ORTHODONTICS AS CLASS II SOLUTION

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Aim: To present the effectiveness and the essentiality of early orthodontic treatment of developing Class II malocclusion

Material and Method: In this study we will present four cases at the age of 6 and 7 years old with developing Class II malocclusion admitted at the Department of Orthodontic at Dental Clinic in Skopje. During the extraoral clinical examination of patients expressive convexity of the face profile was registered as well as extreme overjet and deep bite intraorally. Recordings were made for every patient on orthopantomograms, cephalograms and study models. The treatment was performed in three stages using the Myobrace for Kids system appliances. The patients were given proper instructions to use the appliances: during the night and another hour throughout the day. The myofunctional treatment in patients has been monitored through regular check-ups by clinical examination and mandatory intraoral and extraoral photographs. Results:

Results: The results of the orthodontic myofunctional treatment with Myobrace for Kids appliances showed a reduction in the overjet and deep bite correction of the occlusal relationship and skeletal discrepancies in our patients even during the first phase. After one year of follow-up due to regular wear of Myobrace appliances all three phases of the system are maximally used and there has been a tendency of establishing normal values of the overjet and overbite. According to the photographs extraoral improvements are also noticeable in fact straightening of the face profile is achieved.

Conclusion: According to the results we can conclude that the Myobrace for Kids system shows successful effects in the treatment of developing Class II which if not treated at early age can develop into a more severe form of malocclusion Class II and a more complex treatment will be needed.

PP 13: THE SIGNIFICANCE OF THE PERIOD OF GROWTH AND DEVELOPMENT IN THE CORRECTION OF IRREGULAR OROFACIAL FUNCTIONS

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Aim: To present the most adequate and most successful period for myofunctional therapy in growing dentition.

Material and Method: As a material and method we selected 40 respondents 20 of whom aged 5 to 8 and 20 respondents aged 9 to 13 subjected to a myofunctional therapy with myobrace.

Results: The results showed a significant difference in the success of the correction of swallowing and breathing in favor of the first respondent group.

Conclusion: The correct orofacial functions have a crucial importance in the correct jaw and facial skeletal growth and development.

PP 14: INTERDISCIPLINARY TREATMENT OF IMPACTED MAXILLARY CANINE

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Aim: The aim of this case report is to present the treatment of impacted canine and the possibilities for a definitive aesthetic solution using modern restorative materials.

Material and Method: A 10 year old patient with atypical maxillary lateral incisors and delay eruption of maxillary left canine was referred to our clinic. After clinical examination, the diagnosis of canine impaction was confirmed on orthopantomogram. We performed gnatometric analysis on dental casts and made plan for orthodontic treatment with fixed appliance.

Results: fixed appliances treatment was performed in order to provide space in the maxillary dental arch for the placement of the impacted canine followed by a surgical opening with a closed flap method. After 32 months of successful treatment of the impacted canine it is placed in the dental arch and aesthetic restoration of atypical lateral incisors is made.

Conclusion: Results indicate the importance of interdisciplinary approach in the treatment.

PP 15: ORTHODONTIC TREATMENT OF A 12-YEAR OLD PATIENT WITH SEVERE ERUPTION PROBLEM

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Aim: The aim of this study was to demonstrate orthodontic treatment of a patient with eruption problems of one maxillary and two mandibular incisor teeth.

Material and Method: A 12-year old female patient referred to our clinic with eruption problems of multiple anterior teeth. No trauma history and no systemic disease were reported by the patient. Intraoral examination revealed that the patient has Class I molar relationships dental midline was compatible with facial midline and also maxillary left central incisor and mandibular left central and lateral incisors were impacted. Panoramic radiography and CBCT images of the patient were also examined.

Results: The treatment plan was to surgically open the site where the teeth were located and to apply chained buttons to the impacted teeth. The patient was in mixed dentition period so a modified lip bumper appliance with buttons on it was designed and applied to the upper arch for treatment of the impacted anterior teeth with closed eruption technic. Impacted maxillary incisor was directly attached to the lip bumper with a ligature wire and intraoral elastics were applied by the patient from impacted mandibular incisor teeth to the modified lip bumper appliance. Force magnitudes of the elastics and eruption directions of the teeth were examined in every 3 weeks. All of the impacted teeth were appeared in the oral cavity in a short time as 3 months. Fixed orthodontic treatment mechanics will be applied for the final alignment of the teeth.

Conclusion: Modified lip bumper appliance can be used for the eruption of impacted teeth in patients with inadequate dental support in mixed dentition.

PP 16: SACRIFICING RESTORED SECOND MOLARS FOR IMPACTED THIRD MOLARS: BIOMECHANICS AND CASEPRESENTATION

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ORTO4U¹

Adult patients often present with deep restorations endodontic treatment or even absence of some teeth. Even though impacted wisdom teeth are often condemned to extractions if second molars are severely damaged or poorly positioned their extraction is a viable alternative to be considered. Spaces gained with extraction of second molars are used for up righting the wisdom teeth and lining them in the arch.

Aim: Describe an orthodontic therapy result of a case with deep restorations on second mandibular molars and impacted teeth where the extractions of second mandibular molars were indicated.

Material and Method: Alongside standard orthodontic treatment an additional wire was bent for up righting the mandibular third molars. Initial Tweed cephalometric analysis showed that the patient had values of SNA angle 85 SNB 81 and ANB of 4. FMIA was 66 FMA 16 and IMPA 98. Tweed posterior space analysis showed deficit of space. Required space was 10mm for the second molar and mesiodistal width of 10.5mm for the third molar. Available space was measured from the distal point of the first molar alongside the occlusal plane to the anterior border of the ramus with the value of 14mm. Additional estimate of posterior length was excluded because patient is an adult and no longer growing. Second molars were extracted and gained space used for up righting the third molars.

Results: At the end of the treatment all extraction spaces were closed and mesiodistal contacts between all teeth were achieved in both dental arches.

Conclusion: Every patient must be individually assessed and with the use of right biomechanics the best option for oral rehabilitation should be chosen.

PP 17: A CASE OF IMPACTED MAXILLARY CENTRAL INCISOR AND ITS MANAGEMENT

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Aim: to demonstrate importance of early detection and treatment of a patient with impacted maxillary central incisor.

Material and Method: A case of 11-year-old female with an impacted central incisor in the maxillary anterior region and a supernumerary tooth (dens medianus) which was preventing the eruption of the permanent incisor.

Results: The supernumerary tooth was surgically removed. The surgical treatment was combined with application of an orthodontic force and the impacted right maxillary incisor was put on its proper way of eruption.

Conclusion: Impaction of maxillary permanent central incisor is not a frequently reported case in dental practice but its treatment is challenging because of its importance to facial esthetics.

PP 18: SMALL “SACRIFICES” FOR BIG “WINS”

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Preservation of milk teeth is of a big importance above others in creating a correct eruption path for the permanent teeth. Interceptive orthodontics offers a wide range of possibilities allowing the improvement the clinical situation in the time when the malocclusion has just started appearing.

Aim: The aim of this presentation is to show that in specific cases we make some small minimally invasive interventions to these deciduous teeth in order to improve the permanent dentition's situation.

Material and Method: Several clinical cases will be shown. In different ways minimally invasive interventions have been applied in milk teeth thus creating a beneficial situation for the eruption and alignment of permanent teeth.

Conclusion: Even though we always try our best to save the milk teeth in situ there are specific cases where we can apply “small adjustments” on them in order to achieve “great improvement” in the permanent dentition.

PP 19: INTERDISCIPLINARY APPROACH IN AN ADULT PATIENT WITH UNILATERAL CLEFT LIP AND PALATE

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Cleft lip and palate is the most common congenital facial anomaly. The oral rehabilitation of this patients is always a challenge for the orthodontist and requires a multidisciplinary team.

Aim: The aim of this case report was to underline the importance of the interdisciplinary approach in the correction of functional and esthetic problem in a patient with unilateral cleft lip and palate.

Material and Method: The patient B.Q 18 years old boy with repaired unilateral cleft lip and palate required orthodontic treatment in our private practice with the main concern his facial esthetic. After careful evaluation and the proper diagnose placement a joint clinic with the maxillofacial surgeon orthodontist ENT surgeon and the dentist was held to discuss the treatment plan. The overall treatment was 28 months.

Results: The orthodontic treatment consist in maxillary expansion with Quad helix and presurgical orthodontic treatment with fix braces. After presurgical orthodontic treatment patient underwent orthognathic surgery Le Fort 1 osteotomy with maxillary advancement. The post-surgical orthodontic treatment consists in the stabilization of the result opening the space for the prosthetic restoration and retainers. The ENT surgeon completed septorhinoplasty before orthognathic surgery due to the nose asymmetry. After debonding patient had composite restoration in his front teeth.

Conclusion: Satisfactory results regarding functional occlusion dental and facial esthetic were achieved after the treatment



TOPIC 2: ETHICAL CHALLENGES IN THE 21ST CENTURY TOPIC

PP 20: THE ETHICAL SALES AND COMMUNICATION AND MARKETING IN ORTHODONTICS

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PHO "D-r Iliev"¹

Aim: As a goal we set the objectivization of the satisfaction and success of the treatment of patients through defined procedures and a protocol for the offer and sale of the orthodontic services.

Material and Method: As a material and method we selected 60 respondents 40 of whom were offered a treatment plan according to a pre-determined protocol and procedure for offering a sale and 20 respondents accepted the treatment plan primarily guided by the wishes of the patients without disrupting the orthodontic justification of the treatment.

Results: The results will show a significant difference in the satisfaction of the patients who have accepted the treatment following the offer accorded to the defined procedure and protocol.

Conclusion: The commercialization and financial incentives of the healthcare institutions have often led to a collision of the interests of the healthcare institutions and patients their satisfaction even to a deviation of the justifications of the medical interventions.



3: NOVEL TREATMENT STRATEGIES

PP 21: THE USE OF DIGITAL 3 - D ANALYSIS OF ROOT RESORPTION DURING ORTHODONTIC-SURGICAL TREATMENT OF IMPACTED MAXILLARY CANINES

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Root resorption of permanent maxillary incisors occurs nearly of 50% of children between 9 and 15 years of age with unerupted maxillary canines.

Aim: To examine the positions of maxillary impacted canines with pathological pathway of eruption and their effects on the resorption of the roots of adjacent teeth on CBCT images.

Material and Method: 60 CBCT images of patients with ectopic maxillary canines both sexes and different life ages were analyzed. The level of resorption was made on the scale of Ericson and Kurol: 1. no resorption 2. low resorption up to the half the thickness of dentine to pulp 3. moderate resorption above half of the thickness of dentine to pulp 4. resorption with the exposed pulp. The positions of the maxillary canines and the contact points of the impacted teeth with pathological root resorption were recorded

Results: In relation to all investigated patients in 18 (30%) patients with a severe impaction of the maxillary canines were diagnosed a total of 24 impacted canines. More frequent resorption was found in female patients in 10 (55.5%) than male patients 8(45.5%). In 6 (33.3%) patients a bilateral maxillary impaction of the canines was noted. In the 63.5% of impacted canines 2nd stage of root resorption of the lateral incisor's root was observed. In 36.5% cases of resorption distal areas were affected in the middle of the root of the lateral incisors due to contact with the palatal surfaces of the crowns of the impacted canines.

Conclusion: It was found that 30% of patients with ectopic maxillary canines showed severe impaction of maxillary canines. Root resorption of the 2nd degree was in 63.5% on the distal areas on the middle part of roots of lateral incisor. Early diagnosis of tooth root resorption with CBCT analysis



PP 22: EXPLORING THE FACIAL ASYMMETRIES BETWEEN CROATIAN MALES AND FEMALES STEREO PHOTOGRAMMETRIC SHELLS

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Aim: To explore extent of the asymmetry between the facial shapes of the Croatian male and female subjects.

Material and Method: The sample consisted of 73 white Croatian (52% females average age 23 years); subjects were scanned with their head in natural position with neutral face expression with a non-invasive stereo photogrammetry face scanner. The total of 21 landmarks was positioned and used for creation of the face shells of each subject. Facial shells were divided into 8 regions (forehead right eye left eye right cheek left cheek nose upper lip and philtrum lower lip and chin); surface based comparison explored differences between those regions. All comparisons were performed for male and female groups. The ANOVA was used for between groups comparison at $p < 0.05$.

Results: There were no significant differences between the regions on the males' and females' facial shells. The match within the tolerance of 0.75mm for the mirror shell was $72.97\% \pm 10.15\%$ for the females and $71.19\% \pm 9.52\%$ for the males. Highest percentage for the match within the tolerance of 0.75mm was in the region of upper lip for both females ($87.13\% \pm 10.27\%$) and males ($80.51\% \pm 15.59\%$).

Conclusion: There are no significant differences in the amount and direction of facial asymmetries between Croatian males and females.

PP 23: THREE DIMENSIONAL EVALUATION OF PONTICULUS POSTICUS CLASSIFICATION IN UNILATERALLY AND BILATERALLY MAXILLARY IMPACTED CANINE CASES

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Ponticulus posticus (PP) is an abnormal bony bridge on the atlas. Head and neck skeletal anomalies or normal variants might predict the occurrence of maxillary impacted canines (MIC).

Aim: The purpose of this study was to determine the prevalence and characteristics of PP in patients with unilaterally or bilaterally MIC using cone beam computed tomography (CBCT).

Materials and Method: G1 group has 20 patients with unilateral MIC G2 group has 20 patients bilaterally MIC. CBCT images were used for evaluation of PP. Classification of the PP was determined as full shaped PP (FSPP) and partially shaped PP (PSPP) on right (R) and left (L) side.

Results: The patients' mean age was 173 years at G1 group 172 years at G2 group. In G1 group RFSP:0 LFSP:1 RPSPP: 5 LPSPP: 6; in group G2 RFSP:3 LFSP:0 RPSPP: 3 LPSPP: 6 was found.

Conclusion: PP is an important anomaly and the presence of FSPP or PSPP is may be important for IMC patients. The association between PP and IMC sides might be important.

PP 24: EVALUATION OF THREE DIFFERENT PALATAL MINISCREW AIDED MAXILLARY ORTHODONTIC APPLIANCES TREATMENT OUTCOMES

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Aim: This study aimed to evaluate treatment outcomes of three different palatal miniscrew aided maxillary orthodontic appliance.

Material and Method: Study sample were included 3 patients pretreatment and post treatment data and cases were divided into five according to the type of palatal miniscrew aided maxillary orthodontic appliance: 1. case was hybrid RME device with two palatal miniscrews 2. case was hybrid RME device with four palatal miniscrew 3. case was palatal distalization appliance group with two palatal miniscrew

Results: According to the posteroanterior cephalometric analyses four palatal miniscrew aided RME was showed sutural and skeletal expansion in post adolescent patient. Palatal distalization appliance case was showed adequate first molar distalization for performing Class I relationship.

Conclusion: According to the study results palatal miniscrews may be helpful for enhancing the maxillary skeletal anchorage. In addition to this they are useful for maxillary molar distalization in Class 2 subjects as an alternative to premolar extraction.

PP 25: APPLICATION OF ORTHODONTIC TECHNIQUE IN THE TREATMENT OF MEDICATION RELATED OSTEONECROSIS OF THE JAW

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Aim: To evaluate the effect of tooth exfoliation by using orthodontic elastics as an alternative technique for atraumatic tooth extraction in patients at risk of MRONJ and therefore raise the awareness about the disease among dental practitioners.

Material and Method: The study is a systematic review of case reports. The following data bases were searched: Cochrane Library MEDLINE via PubMed ScienceDirect. Due to the scarce literature available a grey literature search was performed up to March 2019. During literature search the following terms were used: orthodontic elastics osteonecrosis of the jaw bisphosphonates orthodontics tooth exfoliation. The following data from the reports were extracted and evaluated: patient pharmacological therapy and co-risk factors for MRONJ duration of tooth exfoliation outcome.

Results: In the study two case reports that fulfill the inclusion criteria were included. The technique was applied to 12 patients that underwent bisphosphonate treatment. In total 25 roots of 21 teeth were exfoliated. The duration of tooth exfoliation in the case report that present exfoliation of 6 roots was 26.2 weeks. The second case report that presented exfoliation of 19 roots was 5.8 weeks. All patients had positive outcome resulting in soft tissue healing no signs to controlled periodontitis and no bone exposure on the extraction site. During the follow up period none of the patients developed additional cases of MRONJ.

Conclusion: Tooth exfoliation by using elastics is safe alternative technique to tooth extraction and minimize the risk of MRONJ. The advantage is continuation of the BP treatment and no sutures or administration of antibiotics is required. The major disadvantage is the extended time until tooth exfoliation and need of patient cooperation. The method has been regularly mentioned in the literature and applied in the clinical practice but the limited size of patients must be seen critically and further research is mandatory.

PP 26: T-SCAN III SYSTEM ANALYSIS OF OCCLUSION AT THE END OF FIXED ORTHODONTIC TREATMENT AND IN PERIOD OF RETENTION

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Aim: The aim of this study is to analyze the occlusal balance parameters in position of maximum intercuspitation protrusion and left and right laterotrusion at the end and after active fixed orthodontic treatment in period of retention.

Material and Method: T-Scan III System evaluation in 60 subjects divided in two groups subjects with normal occlusion after active fixed orthodontic treatment as experimental group and subjects with normal occlusion without previous orthodontic treatment as control group in three-time intervals right after the orthodontic treatment and in period of retention three months and twelve months after fixed orthodontic treatment.

Results: Although the patients from the experimental group achieved normal occlusion at the end of the fixed orthodontic treatment their teeth in the anterior region received more occlusal force compared to the control group patients with normal occlusion without previous orthodontic treatment. Occlusal interference prevalence in the posterior segment was higher in the region of the second molars and occlusion and disocclusion time during lateral movements was bigger in the experimental group patients.

Conclusion: Asymmetrical contacts during time are getting more balanced. With decreasing the disocclusion time and absence of occlusion interference during protrusion and laterotrusion the overall occlusion in the retention period is improved.

TOPIC 4: FREE TOPIC

PP 27: FACIAL ORTHOPEDICS AS A TREATMENT OPTION IN CLASS III GROWING PATIENTS

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Aim: Developing Class III Malocclusion in most of the cases affects dentofacial appearance the goal of this study is to investigate the changes in the facial appearances in treated patients with Face mask orthopedic treatment and untreated Class III patients.

Material and Method: The sample consisted of 49 patients (boys and girls) who had a Class III Malocclusion with an anterior crossbite and a component of maxillary deficiency. 28 of them were treated with protraction Face mask - Delair mask (petit type) and the other 21 were presenting the control group consisted of untreated Class III Patients. In treated group pretreatment and posttreatment cephalometric radiographs from 28 patients (15 males and 13 females) were analyzed and compared with the results of cephalometric analyzes in untreated group (observation period of 1 year).

Results: from these study showed forward displacement of maxilla (SNA $p < 0.05$) increasing of maxillary length (Co-A $p < 0.05$) correction of maxillary-mandibular relationship (ANB $p < 0.05$) in treated group while in untreated group values for the parameters in the upper jaw and inter jaw relationship before and after the observation period of 1 year showed no statistically significant changes ($p < 0.05$) pointing to the negative impact of incorrect skeletal terms in Class III growing patients.

Conclusion: Based on our findings we can concluded that in Class III patients there is a big motivation for orthodontic treatment because their dentofacial appearance deviates from sociocultural norms. Therefore, an important objective of accepting maxillary protraction treatment in Class III malocclusion is providing nonsurgical alternative in the treatment and improving the physico-social wellbeing and appearance of the patients especially during their teenage years.



PP 28: SKELETAL PATTERN OF CLASS III MALOCCLUSION: ORTHODONTICS OR SURGERY

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Skeletal Class III Malocclusion is easy to identify but is often difficult to treat with the various etiology from the long mandible forward placement of glenoid fossa, short or retrognathic maxilla short anterior cranial base with a strong genetic basis. A treatment plan still depends on cephalometric analysis which is best way to make the quick decision within the class III phenotypes because there are three management options for this type of malocclusion: from growth modification to dentoalveolar compensation (orthodontic camouflage) and orthognathic surgery. In each case the decision must be made on the basis of many occlusion objectives and the needs of the patient. Orthodontic - surgery treatment for these patients is both predictable and stable in proportion to how much maxilla or mandible has been moved.



PP 29: AN ASSOCIATION BETWEEN DIMENSIONS AND BRIDGING OF THE SELLA TURCICA AND DENTAL ANOMALIES

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Aim: The aim of this study was to determine the incidence of bridging of the sella turcica and the dimensions of the sella turcica in subjects with dental anomalies (transpositions hypodontia and supernumerary teeth) and to compare them to controls.

Materials and Method: Lateral cephalograms from 25 patients with dental transposition 88 patients with hypodontia and 26 patients with supernumerary teeth were evaluated. The shape length depth diameter and bridging of the sella turcica were determined from radiographs and compared to those of control group (n = 52). For statistical analysis one-way analysis of variance, a Tukey post hoc test a chi-squared test and a T-test (to evaluate the influence of craniofacial growth) were used.

Results: The frequency of complete calcification of the sella was greater in the group with supernumerary teeth (23%) and in the group with hypodontia (14.7%) while partial calcification of the sella was more frequent in the control group (77%) and in the group with supernumerary teeth (73%) ($p < 0.05$). The depth of the sella was greater in the group with dental transposition ($p < 0.05$). Oval and round sella shapes were more frequent in all groups and a flat sella was rarely seen ($p < 0.005$). In terms of the influence of growth on the dimensions of the sella there was no statistically significant difference between pre- and post-treatment radiographs.

Conclusion: Significant relationships were found between dental anomalies and bridging and shape of the sella. The sella was also significantly deeper in patients with dental transposition. The bridging and shape of the sella may therefore be useful in diagnosis of dental anomalies in early childhood.



PP 30: ASSOCIATION OF MALOCCLUSION AND TEMPOROMANDIBULAR DISORDERS IN ORTHODONTICS A LITERATURE REVIEW

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Aim: The aim of this study is to define the correlation of temporomandibular disorders (TMD) with orthodontic treatment and all kinds of malocclusion (e.g. Angle's class I/class II/class III malocclusion skeletal open bite severe overjet anterior/posterior crossbite etc.).

Materials and Method: Search of the literature was conducted in the databases PubMed Cochrane Google Scholar Scopus and ScienceDirect using the keywords "temporomandibular disorders" "orthodontic treatment" and "malocclusion". The search has been conducted in English with no limitations on date of publication or level of evidence.

Results: According to the inclusion criteria there were numerous articles relating TMD with malocclusion. These studies presented various results some of which associated symptoms or signs of TMD with existing sorts of malocclusion. More specifically TMD symptoms were recorded higher among patients with untreated crowding of teeth crossbite or severe overjet. However, the majority of the studies failed to depict a statistically significant correlation.

Conclusion: Associations between specific types of malocclusions and the development of significant signs and symptoms of TMD could not be verified. The differentiation of patients including variables such as muscular endurance and psychological conditions indicate a more increasing need for a specific diagnostic system for future research. Orthodontic treatment seems to be neither a major preventive nor a significant cause of TMD. There is no indication of any negative causation. More longitudinal studies are necessary on the topic.



PP 31: TREATMENT OF CROWDING IN PATIENT WITH SKELETAL CLASS I - CASE REPORT

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Aim: The aim of this study was to show that distal and deep bite can be successfully treated by upper and lower fixed appliances.

Material and Method: Female patient (19 years of age) was diagnosed with dentoalveolar Class II deep bite and crowding in upper and lower dental arch. Lateral cephalometric showed bimaxillary retrognathism skeletal Class I (ANB 2) skeletal deep bite (B18) and forward facial rotation (Bjork 390). Before the orthodontic treatment all four wisdom teeth were extracted. The treatment with fixed appliances lasted for 26 months and in the final stage intermaxillary elastics for Class II were used. After the removal of fixed appliances positioner was made.

Results: At the end of the treatment stable Class I occlusion was achieved overjet was 3 mm and overbite 3 mm. Patient is now in period of retention without signs of relapse and wears positioner every night.

Conclusion: Successful treatment of distal deep bite can be achieved by upper and lower fixed appliances and intermaxillary Class II elastics.

PP 32: CEPHALOMETRIC APPRAISAL OF THE EFFECT OF CLASS II INTERMAXILLARY ELASTICS IN THE TREATMENT OF DISTAL BITE

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One of the most common clinical modalities for the correction of distal bite in patients treated with fixed appliances is the application of class II intermaxillary elastics.

Aim: The aim of the study was to determine the change in radiographic values on a lateral cephalogram before and after utilizing intermaxillary traction.

Material and Method: The investigation included 16 patients (10 women and 6 men) aged between 14 and 28 years with distal bite and non-extraction treatment with fixed technique and intermaxillary elastics. Lateral cephalograms were made and traced before applying class II intermaxillary elastics and after reaching class I molar relationship. The parameters included in the study were SNB angle ANB angle and the angle between the occlusal plane and base of the skull - OcP/Sn. The Statistical Package for the Social Sciences (SPSS) Version 25 (2017) was used to analyze the data. The assumption of normality was observed in all variables (Kolmogorov-Smirnov p-values > 0.05). The extent of change in SNB ANB and OcP/Sn values was examined through paired-samples t-tests.

Results: The results showed a significant reduction ($p = 0.009$) in the mean value of the ANB angle after the treatment as compared to that before the treatment ($4.31^\circ \pm 1.87$ before vs. $3.37^\circ \pm 1.23$ after). A significant increase in the mean OcP/Sn value was observed ($p = 0.008$) after the treatment ($14.25^\circ \pm 4.46$ before vs. $16.0^\circ \pm 3.86$ after). The extent of change in the SNB angle was not significant (76.22 ± 3.55 before vs. 76.32 ± 3.59 after) $p = 0.068$.

Conclusion: The orthodontic treatment was found effective in reducing the ANB angle and increasing the OcP/Sn parameter.

PP 33: PATIENTS PERCEPTION AND SATISFACTION FROM ORTHODONTIC MINI IMPLANTS

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Orthodontic mini implants are an inseparable part of the modern treatment of dental defects. The greatest advantage of the mini-implants is that they allow the movement of several teeth without loss of anchorage.

Aim: The main aim of this research was to evaluate patients' perception of mini-implants in context of pain hygiene aesthetics and benefits of their usage.

Material and Method: Total number of 12 patients with mini implants was examined. All the mini-implants were placed between maxillary first premolars and first molars. Adequate questionnaire containing questions about pain perception during mini-implant placement and use difficulty with cleaning un-aesthetic appearance difficulty with eating and the benefits was used.

Results: After analyzing the data we noted that the factor with the most negative impact on orthodontic mini-implant placement is pain and discomfort during placement followed by the difficulty with cleaning. The factors that had the least negative impact were unaesthetic social appearance and difficulty with eating. Score for benefits and advantages observed by the patients was very high indicating very good satisfaction with the end result.

Conclusion: Although some patients evaluated aspects of orthodontic mini-implants usage negatively the mean score for benefits observed are very high indicating good patient satisfaction with treatment. Keywords: Mini-implants Orthodontic mini-implants benefits of treatment advantages of treatment

PP 34: SURGICAL-ORTHODONTIC APPROACH IN THE TREATMENT OF IMPACTED LATERAL MANDIBULAR INCISOR - CASE REPORT

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The eruption of the teeth is the finishing stage in the long and complex process of teeth development. Under the influence of general and local etiological factors the process of teeth eruption might be stopped at any of the eruption process levels which causes an appearance of dental anomaly like dental impaction.

Aim: The aim of this study is to show an exceptionally rare case of a retained mandible lateral incisor in 11 years old patient with a review of its etiology frequency diagnostics and treatment plan as well as treatment procedures.

Material and Method: The treatment options of impacted teeth is very complex and depends on the type of impaction the etiology factor patient's age occlusion and periodontal condition of the teeth.

Results: Various therapeutic methods can be applied such as extraction reimplantation or surgical exposure of the tooth and the use of fixed orthodontic appliance with continuous extrusion force to fit the impacted tooth in the tooth arch.

PP 35: BILATERAL IMPACTED MAXILLARY CANINE WITH ROOT RESORPTION OF LATERAL INCISORS – CASE REPORT

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The impaction of maxillary canine is most frequent after impaction of third molar. Canines are more frequently palatal impacted (85%) while vestibular canine impaction is rare (25%). Diagnosis is based on clinical and radiographic testing (dental radiographs and 3D scans). Ectopic canine can be accompanied by root resorption of adjacent teeth more often of lateral than central incisors.

Aim: To present a treatment options in impaction case, compromised with tooth resorption.

Material and Method: A patient S.A. 14 years of age came to Dental Clinic in Nis because of both sided impaction of maxillary canines followed by advanced root resorption of lateral incisors. After a detailed diagnosis we have made a plan of treatment: surgical release (closed procedure) of impacted canines with the application of attachment on vestibular teeth surface.

Results: The aim of this treatment was to separate the canines from roots of lateral incisors in order to stop resorption and place them into dental arch. Fixed appliances were used in this treatment SWA technique Rott022 and it lasted for two years and six months. The achieved functional and esthetic results are satisfactory. Maxillary incisors are well positioned in the dental arch and lateral incisors resorption is stopped with retained vitality.

PP 36: TREATMENT OF UNILATERAL MISSING TOOTH IN AN ADULT PATIENT (CASE REPORT)

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Tooth agenesis if left untreated for a long time in adult patient may lead to compromises at the final treatment.

Aim: The aim of this presentation is to show our experience in the multidisciplinary treatment of unilateral missing tooth in an adult patient.

Material and Method: The patient A.A is a girl of 24 years old. The chief complaint was the improvement of the dental aesthetics. The clinical examination and panoramic X-ray confirmed: agenesis of tooth 12 peg shaped tooth 22 ectopic position of tooth 15 and extracted tooth 35 and 45 some years ago. After a multidisciplinary consultation it was decided to start with the orthodontic treatment to align the maxillary dental arch and to create the needed space for the missing tooth. Later this tooth would be substituted by dental implant.

Results: The orthodontic treatment was finished after 16 months. After the orthodontic treatment a dental implant was inserted for tooth 12. After 19 months the case was totally finished successfully. To compensate the discrepancy and maximize the aesthetics crowns were applied on teeth 13 and the peg shaped tooth 22.

Conclusion: The preliminary discussion between specialists of different fields in the case of patients with agenesis is the best way to determine the adequate therapeutic plan.

PP 37: ORTHODONTIC TREATMENT OF HYPODONTIA OF UPPER LATTERAL INCISORS: AN INTERDISCIPLINARY APPROACH

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Successful treatment of hypodontia has been always an orthodontic challenge. Orthodontic management of these patients includes many procedures from space management uprighting and aligning teeth to retention and stability. Patients with hypodontia of upper lateral incisors must be seriously planned within the interdisciplinary team. The orthodontic treatment plan may involve two ways of solving the spaces: one option is to open space for the prosthetic replacement of the missing lateral incisor while the other option is to completely close the space and set up the occlusion for canine substitution. Selecting the right treatment approach is not as simple as it sounds depends on the patient's malocclusion growth pattern profile smile line and the size shape and color of the canines. Also, the age of a patient influences the choice of the treatment. The period of early adolescence is the best time for it. The orthodontic management of the cases with missing lateral upper incisors together with an interdisciplinary approach and open communication can produce predictable and esthetic treatment results with a bright outcome over a long period.

PP 38: THE FREQUENCY OF BUCAL AND PALATAL IMPACTION MAXILLARY CANINES

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Maxillary canines are usually impacted teeth the second after third molar. Frequency of impacted maxillary canines is about 1 to 2% of population (in 85% of the cases palataly and in 15% of the cases buccally)

Aim: The aim of this research was to find the frequency of buccal and palatal impacted maxillary canines in relation to sex and position of impacted tooth.

Material and Method: We analyzed three-dimensional computed tomography images (CBCT) of 64 examinees (aged 12 to 33 years) with 80 unerupted maxillary canines to plan the orthodontic therapy.

Results: Among 64 examinees with impactions 80 impacted maxillary canines are diagnosed. The average age of all respondents in the survey is 163 ± 43 . Of 64 examinees in research 41 (641%) were female which is significantly more important than the representation of male examinees whose number was 23 (359%). Frequency of unilateral impactions of maxillary canines is three times higher 48 (75%) in comparison to bilateral impactions 16 (25%). Of total 80 impacted maxillary canines 19 (2375%) were buccal impacted 3 (275%) in the middle of alveolus and 58 (725%) palatal. With the buccal and palatal impaction usually was represented partially vertical impaction (70%); completely horizontal impaction (10%) was represented only in the palatal impaction.

Conclusion: The analysis of CBCT images of maxilla shows a statistically significant frequency of partially vertical unilateral and palatal localized impacted maxillary canines.

PP 39: MULTIDISCIPLINARY APPROACH IN TREATING HYPODONTIA CASE-CASE REPORT

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Aim: to present interdisciplinary treatment approach of patient with hypodontia.

Material and Method: Patients with missing permanent teeth who refer to our clinic due to mastication problems, periodontal damage, lack of alveolar bone growth and reduced chewing ability. Many of them need rather costly and challenging multidisciplinary treatments.

Results: We had treated patient with diagnosed hypodontia firstly with orthodontics treatment - metal brackets (STW). Opening spaces for upper first premolars and lower second premolars. After finished orthodontics treatment cantilever bridge was made for closing spaces for missing teeth resulting with stabile occlusion with a dental Class I. Active orthodontics treatment time was 25 months.

Conclusion: Orthodontic hereditary anomaly-hypodontia might negatively affect both the esthetics and function. One of the possible therapies in treating hypodontia case is multidisciplinary approach (orthodontic - prosthetics treatment).

PP 40: NICKEL RELEASED DURING ORTHODONTIC TREATMENT INDUCES DIFFERENT EFFECTS ON ANTIMICROBIAL SUSCEPTIBILITY OF VARIOUS COMMENSAL BACTERIA

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Aim: To explore the interaction effect of antibiotic ciprofloxacin and nickel on the growth of *Enterococcus faecalis* and *Staphylococcus aureus*.

Material and Method: *Staphylococcus aureus* strain ATCC (American Type Cell Culture) 29213 and *Enterococcus faecalis* ATCC 29212 were used. Solutions of $\text{NiCl}_2 \times 6\text{H}_2\text{O}$ and ciprofloxacin were prepared. After determining the Minimum Inhibitory Concentrations (MIC) for nickel and ciprofloxacin a checkerboard method was used to assess their cumulative effect on bacterial growth. Microtiter plates were read with a microplate reader. Exponential phase of bacterial growth was evaluated by constructing a logarithmic line and determining the linear function $y=ax$ where “a” is the slope of the line i.e. growth rate. Interaction between the metal and antibiotic was assessed by Fractionary Inhibitory Concentration (FIC).

Results: MIC for ciprofloxacin for *E. faecalis* was 0.31 $\mu\text{g}/\text{ml}$ and 0.62 $\mu\text{g}/\text{ml}$ for *S. aureus* respectively. MIC for nickel was 1000 $\mu\text{g}/\text{ml}$ for both bacteria. Concentration of ciprofloxacin significantly decreases growth rate of *S. aureus* with very large effect size and threshold concentration 0.62 $\mu\text{g}/\text{ml}$ in comparison to 0.31 $\mu\text{g}/\text{ml}$ (0.037 ± 0.032 vs. 0.149 ± 0.024 ; $p < 0.001$; $\eta^2 = 0.938$). For *E. faecalis* the threshold concentration was 0.31 $\mu\text{g}/\text{ml}$ (0.043 ± 0.075 ; $p < 0.001$; $\eta^2 = 0.729$). FIC ranged from 1–2 for *S. aureus* demonstrating an additive effect and 2 – 5 for *E. faecalis* demonstrating antagonism.

Conclusion: An antagonistic effect of nickel and antibiotic ciprofloxacin was observed in *E. faecalis* while an additive effect of same agents was seen in *S. aureus*.

PP 41: WHITE SPOT LESIONS IN ALIGNER THERAPY

Yagci A.¹, Özsaygılı M.¹
Erciyes University¹

Aim: There are many studies concerning the incidence of white spot lesions (WSL) in patients with treated with fixed appliance therapy but there is not enough information concerning incidence of WSL with aligner therapy. Therefore, the aim of present study was to assess the incidence of WSL formation in subjects treated with aligner therapy.

Material and Method: This study was conducted on pretreatment and posttreatment quantitative light induced fluorescence images of 10 orthodontic patients (4 males 6 females) treated with aligner therapy. The labial surfaces of 200 teeth on pre- and posttreatment QLF images records were analyzing QA2 software. The images analyzed and fluorescence changes (DF DQ) were recorded. For statistical analysis Sigma STAT 3.5 software was used. The evaluation of the data obtained pre- and posttreatment was done by Paired-Samples t test.

Results: The incidence of WSLs was similar maxillary and mandibular teeth. When the records taken pre and posttreatment were evaluated there was no statistically significant difference between the jaw quadrant.

Conclusion: Orthodontic treatment with clear aligner therapy showed a low incidence of newly developed WSLs. Funding: This work was supported by Research Fund of the Erciyes University. Project Number: TDH-2017-7774.



PP 42: THE INFLUENCE OF ORTHODONTIC METAL BANDS OR TUBES ON PERIODONTAL HEALTH STATUS

Atanasova S.¹, Petrovski M.¹, Carceva Salja S.¹, Papakoca K.¹, Terzieva-Petrovska O.¹
University "Goce Delchev", Shtip, Faculty of Medicine, Department of Dentistry¹

Orthodontic appliances can cause periodontal inflammation. In theory the use of buccal tubes instead of bands should minimize periodontal health changes due to the fact that the tubes are positioned away from the gingival margins.

Aim: The main aim of this study was to assess the periodontal health status of orthodontic bands compared with tubes in the first three months of orthodontic treatment.

Material and Method: 20 patients 10 males and 10 females with mean age 13.6 ± 1.21 years were examined. Clinical assessment of periodontal health status was done with two parameters: presence or absence of bleeding on probing and probing depth. These measurements were done the start of treatment and after three months of treatment.

Results: A statistically significant increase in the bleeding on probing between the start of the treatment and after three months for bands was observed. The difference in the probing depth in bonded teeth at the start of treatment compared with three months of treatment was not statistically significant. It must be noted that the difference in the average values between the banded/bonded molars was statistically significant.

Conclusion: In the early stages of orthodontic treatment molar bands are associated with greater negative influence of periodontal health compared with molar tubes.



PP 43: PERIODONTAL INDEXES AMONG PATIENTS WITH ORTHODONTIC RETAINERS

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Fixed retainers are most commonly used to stabilize dental elements after orthodontic treatment.

Aim: The main aim of this study was to make short-term assessment periodontal tissue health status of lower incisors of patients with fixed mandibular retainers.

Material and Method: Total number of examined subjects were 40 20 male and 20 female patients with fixed mandibular retainers. Before placing the retainer, an oral hygiene session was performed for all patients. All the subjects were monitored after 3 and 12 months. The following indexes were taken into consideration: gingival index (GI) plaque index (PI) the probing depth and the presence of gingival recession on the six inferior frontal teeth.

Results: Mean score for the Plaque Index (PI) after three months was 1.08 and after 12 months was 1.74. The mean Gingival Index (GI) after 12 months was 1.24 and after three months was 1.01. Periodontal sockets and presence of gingival recession was not found. In our study was found a statistically significant difference for the Plaque Indexes ($P > 0.05$) in both groups with higher scores among subjects having retainers for 12 months.

Conclusion: From the analysis of the data obtained in our study we can conclude that for a period from 3 to 12 months the effects of the orthodontic retainers on the periodontal health are minimal.



PP 44: ASSESSMENT OF ELECTROLYTE DEPOSITS IN SALIVA IN PATIENTS WITH CERAMIC AND METALLIC ORTHODONTIC BRACKETS

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Faculty of Dental Medicine, University "Ss. Cyril and Methodius" Skopje, Department of Oral surgery²

Aim: Literature data indicates that under the influence of saliva and bacteria from the oral cavity the metal ions of orthodontic devices can corrode. The goal of the study is to examine the level of electrolytes in the saliva in patients with fixed orthodontic devices.

Material and Method: The titanium (Ti) nickel (Ni) chromium (Cr) and zinc (Zn) were followed in saliva in 40 patients of which 20 with ceramic bracelets and 20 with conventional metal brackets before being placed and after 6 months of placement.

Results: The results showed that the level of titanium increased after 6 months in patients with metallic and non-metallic brackets. There is no statistically significant difference in the level of nickel titanium chromium and zinc in the saliva between patients with ceramic and metal brackets.

Conclusion: We can conclude that the level of titanium in saliva was significantly increased after 6 months of setting brackets in contrast to the level of nickel zinc and chromium which were lower than before six months of setting regardless of the type of brackets.



PP 45: ASSOCIATION OF ORAL HALITOSIS WITH FIXED AND MOBILE ORTHODONTIC APPLIANCES

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Aim: Aim of this study was to evaluate and determine presence of halitosis in orthodontic patients undergoing fixed and removable appliance treatment.

Material and Method: Total 36 patients were included in study which were divided in two groups: group I (18) fixed mechanotherapy and group II (18) removable appliances. In all patients the index of gingival inflammation Loe Sillnes was determined and organoleptic testing was performed. Statistical analysis was done with Statistica 7.1 for Windows and SPSS 17.0.

Results: Mild and moderate inflammation was observed in 38.9% of patients with fixed appliances while 22.2% had severe inflammation. In 11% of patients with a mobile device a healthy gingiva was registered 66.7% mild inflammation and 22.3% moderate inflammation. The percentage difference registered between the two groups in terms of registration of mild and moderate inflammation of the gingiva was not statistically significant for $p > 0.05$. The percentage difference was statistically significant between the smell registration of 10 cm versus no odor and smell registration at a distance of 1m for $p < 0.05$ in both groups.

Conclusion: The preliminary study showed that in both groups of patients undergoing orthodontic therapy gingival inflammation was present and followed by an unpleasant breath. In the group of patients with braces the halitosis was much more frequent and of greater intensity and is result of a pronounced inflammatory response due to the increased accumulation of biofilm and the difficulties in maintaining oral hygiene.

PP 46: ALLERGIC-SENSITIVITY TO DENTAL MATERIALS CASE-(STUDY)-REPORT

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University Dental Clinical Center -” UKC-Ljubljana” R. Slovenia³

Aim: To point out the more frequent allergic hypersensitivity to the growing number of dental materials through:

Material and Method: 61 year old man “did-not-tolerate” acrylic+metal-(alloy) mobile-maxillary-partial-denture complains of pain burning-oral-sensation and gingival-hyperemia (in the place of contact with his mobile prosthesis). Epicutaneous-Patch-tests showed skin sensitivity to nickel chromium palladium.

Results: After elimination of all intraoral-restorations and previous-dentures(containing alloys of allergizing-metals)were prepared for maxillary-arch: combination of titanium-(dental-circles +porcelain-fused-titanium: fixed and partial-(denture)-prosthesis and from mandibular-arch was removed prior mobile partial-prosthesis(from an allergenic-alloy)and replaced with porcelain-fused-titanium fixed-prosthesis which stopped the difficulties and ensure better-functionality even-aesthetics(and satisfactorily-using-them over-past 5-years).

Conclusion: No metal or alloy (nor any-other biomaterials) are-not absolutely inert in vivo nor-universally-biocompatible. Dentists-(practitioners) should be educated about early and late effects of applied dental materials (including allergic-hypersensitization) to be able to predict recognize-(diagnose) and treat (or send-them to specialized-institutions).

PP 47: WHITE SPOT LESIONS IN ORTHODONTIC PATIENTS: FORMATION PREVENTION AND TREATMENT

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Aim: White spot lesions (WSLs) may appear on the teeth as undesirable situation during fixed orthodontic treatment. The white spot lesions are defined as areas of demineralization of tooth enamel that can occur during the treatment with fixed orthodontic appliances around brackets tubes or orthodontic rings.

Material and Method: Their location is mostly on the labio - gingival part of the tooth crown. The white spots can be seen even after 1 month of bonding fixed appliances and in some patients after 6 or 12 months. This state of demineralization of enamel is a complication of orthodontic treatment and represents a major clinical problem that can compromise the results of successfully treated case. Orthodontist won't to improve not only function but also the aesthetic appearance of patients so during the treatment these complications should be minimized. The most common reason for their appearance is inappropriate and poor oral hygiene.

Results: In this paper there is the contemporary review of risk factors for the formation prevention and successful treatment of WSLs. For avoiding side effects of wearing orthodontic braces for each patient before bonding fixed orthodontic appliances training is required for maintaining excellent oral hygiene.

Conclusion: In literature there are numerous studies for the prevention and treatment of white spot lesions. The use of fluoride (in toothpaste gels and solutions for the mouth in bonding materials for orthodontic braces fluoride varnish) Case in phosphopeptide-amorphous calcium phosphate (CPP-ACP) in topical crème and micro abrasion can greatly contribute to the process of remineralization of enamel and successful treatment of WSL

PP 48: DENTAL PLAQUE CONTROL WITH CHLORHEXIDINE MOUTH RINSE AT PATIENTS WITH FIXED ORTHODONTIC APPLIANCES

Stefanovska E.¹, Zabokova-Bilbilova E.², Ristoska S.¹, Mindova S.¹, Mitikj K.¹

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Faculty of Dental Medicine, University "Ss. Cyril and Methodius"-Skopje, Department for Pedodontics²

Dental plaque is the primary etiological factor in the development of gingivitis. Orthodontic brackets lead to prolonged accumulation of dental plaque which contributes to the development of an inflammatory process. In addition to improper hygiene gingivitis and gingival hyperplasia are frequently considered the main consequences produced by orthodontic treatment on the periodontium. Clinically plaque formation and its accumulation are exacerbated by patient's difficulty cleaning the teeth surfaces.

Aim: The purpose of this study was to evaluate the effect of chlorhexidine rinsing solution on plaque and gingival bleeding in orthodontic patients with fixed appliances.

Material and Method: This study included 40 patients divided into a control group of 20 patients which were brushing the teeth and an examined group of 20 patients (brushing + chlorhexidine mouth rinse). The parameters used were dental plaque index (DPI) and index of gingival inflammation (IGI) recorded at the beginning of the study one month and three months later.

Results: Plaque index and gingival inflammation scores showed statistically significant differences ($p \leq 0.05$). Adding chlorhexidine mouth rinse to the daily oral hygiene regimen reduces plaque and gingivitis development. Orthodontists have to instruct their patients to rinse with chlorhexidine mouth wash once a day in addition to daily brushing.

Conclusion: When damage caused to the periodontium is considerable the benefits of orthodontic treatment can be questionable. Results of this investigation reveal the benefits of the effect of chlorhexidine rinsing solution on plaque and gingival bleeding in orthodontic patients with fixed appliances.

PP 49: IMMUNOHISTOCHEMICAL LYMPHOCYTIC PROFILE IN GINGIVAL TISSUE IN ORTHODONTIC PATIENTS WITH ALLERGY ON TITANIUM AND/OR NICKEL

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University of Rijeka, Faculty of Medicine, Department of Orthodontics¹

Due to oral corrosion of alloys during orthodontic treatment allergic reactions on titanium and/or nickel can occur. Mechanisms of delayed-type hypersensitivity reactions are mostly studied in allergic contact dermatitis and allergic reaction to orthopaedic implant metals but not in orthodontic patients. Delayed type of hypersensitivity reactions are mediated by antigen-specific T lymphocytes. Th1 cells control cellular immunity by recognizing antigens and releasing IFN- γ to activate effector cells. Even though delayed type of hypersensitivity is mostly related to Th1 lymphocytes other phenotypic T cells can also be involved such as cytotoxic lymphocytes.

Aim: The aim was to analyze the immunohistochemical profile of lymphocytic infiltrate in gingival tissue of patients undergoing orthodontic treatment and to compare it to patients' titanium and/or nickel allergy status.

Materials and Methods: External gingivectomy of enlarged gingiva was performed. Immunohistochemical profile of lymphocytic infiltrate was analyzed using antibodies against CD3 (lymphocytes T) CD20 (lymphocytes B) CD4 (Th1 lymphocytes) and CD8 (cytotoxic lymphocytes) molecules on 26 formalin fixed and paraffin embedded gingival tissue samples. Seven patients had confirmed allergy on titanium and/or nickel and 19 were non-allergic and used as control group. The density of a particular lymphocyte type was determined as a percentage of the surface of the stroma where the infiltrate was present using x10 objective lens.

Results: There was a tendency towards an increase in CD3 CD4 and CD20 while a decrease in CD8 in allergic patients. Also increased CD3/CD20 ratio and decreased CD4/CD8 ratio is observed in allergic patients. But the differences were not statistically significant.

Conclusion: Results indicate that gingival tissue reaction to titanium and/or nickel engages more T than B lymphocytes and also more helper lymphocytes than cytotoxic ones.

PP 50: MASTICATION TYPE AND MASTICATORY EFFICIENCY-IS THERE A CORRELATION?

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Private Dental Practice "Jankulovski", Skopje²

Aim: To determine whether there is a correlation between the type of mastication (temporal and masseteric) and the masticatory efficiency i.e. The functional state of the masticatory system.

Material and Method: The examinations were conducted at the Institute of Medical and Experimental Physiology at Faculty of Medicine in Skopje. The study included 96 respondents (males n=35 females n=63). The type of mastication was determined by examining the biopotentials of the masseter and temporal muscles of the respondents. Subsequently their masticatory efficiency was determined using a specially constructed instrument ELECTROMASTICIOGRAPH which graphically processes and records movements of the mandible and the masticatory muscles during the masticatory act. The mechanical efficacy was determined by the number of chewing cycles and the time of mastication. As a test-food for the examinations nuts with a precise weight of 2.5 grams were used.

Results: The obtained results from this study showed that subjects with masseteric type of mastication performed the mechanical crushing of the food in 3.64 milliseconds and during 2 chewing cycles. Also, these subjects perform their grinding phase of the food in a period of 2.55 milliseconds and 3 chewable cycles. On the other hand, subjects with temporal type of mastication perform the mechanical crushing phase in 6.16 milliseconds and during 3 chewing cycles. These subjects performed their grinding phase in a period of 4.06 milliseconds and 2.31 chewing cycles. Their correlation was calculated by linear regression coefficients.

Conclusions: The results that were gained in this study showed significant differences in the masticatory efficiency of both examined groups. In fact, the speed of the masticatory act is greater in subjects with masseteric type compared to those with temporal type of mastication.

PP 51: MUSCLE RESPONSE TO MYOFUNCTIONAL TREATMENT OF CLASS II: CASE REPORT

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Private Dental Practice “Jankulovski”, Skopje¹

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Faculty of Dental Medicine, University “Ss Cyril and Methodius” Skopje, Department of Prosthodontics³

Faculty of Dental Medicine, University “Ss Cyril and Methodius” Skopje, Department of Orthodontics⁴

Aim: To present the influence of myofunctional appliances as pre-orthodontic treatment in order to achieve adequate functional occlusion and to correct jaw relationship in subjects with early mixed dentition and with presence of myofunctional dysfunctions and bad habits.

Materials and Method: The treatment of patient with dysfunctional influence of the forces of the soft tissue structures and myofunctional habits with Class II malocclusion is presented in this study. Patient was treated at the Clinic for Orthodontics in Skopje using Myobrace for Kids appliances for correction of crowding and occlusal discrepancies with malocclusion Class II. The muscle response to myofunctional treatment was determined using bilateral electromyography during performing a precise masticatory task. Several parameters were assessed including mandible rest position clenching and AHCR (automatic habitual chewing rate).

Results: Electromyographic examination shows that there is significant deference in the muscle activity before and after the treatment with Myobrace for Kids appliances. By implementation of myofunctional therapy improvement of muscle performance correction or reduction in maxillary incisors protrusion and overjet reduction in class I as well as optimal jaw alignment and noticeably improved facial profile are just few of the positive results of the pre-orthodontic treatment that may prevent surgical intervention in the future.

Conclusion: Bad oral habits and oral dysfunctions in children with mixed dentition may develop future severe forms of malocclusion. Proper identifying of soft tissue dysfunction and proper treatment of these problems enables better performed myofunctional orthodontic treatment. By establishing muscular balance and eliminating oral dysfunctions these myofunctional appliances are remarkable tools that offer the greatest benefits for the patients in the most effective way. Patient’s motivation is essential for great success of the myofunctional therapy.

PP 52: ORTHODONTIC DIAGNOSIS BASED ON CEPHALOMETRIC SCHWARZ ANALYSIS AMONG BULGARIAN POPULATION

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Department of Orthodontics Faculty of Dental Medicine Medical University-Plovdiv Bulgaria¹

Aim: The aim of our research is to present orthodontics diagnosis based on cephalometric Schwarz analysis among Bulgarian subjects with class II subdivision 1 malocclusion in mixed dentition.

Material and Methods: We studied 140 lateral cephalometric radiographs of Bulgarian subjects with class II subdivision 1 malocclusion in mixed dentition. The following cephalometric indicators were estimated: S-N–linear measurement for assessment of the cranial base; A1-PNS–linear indicator for assessment of the maxillary base; Go- Pog1 – linear indicator for assessment of mandibular base. The Schwarz method was used for the cephalometric analysis. The lateral cephalometric radiographs were calculated using the AudaxCeph software. Database were processed with statistical package SPSS 19.0. For the level of significance in rejecting the null hypothesis was chosen $p < 0.05$

Results: The analysis of the lateral cephalometry showed that the mandibular base appears shorter and the maxilla is normal in 2 14 % of the subjects; the mandible is of normal size but the maxillary base is longer in 34 29 % of case and the combination is observed in 63 57 % of cases.

Conclusion: The position and size of the maxillary base and mandibular base require an individual assessment consistent with the type of growth to derive an optimal plan of orthodontic treatment. Proportional cephalometric analyses based on cranial base correlations are a significant predictor of interceptive treatment in mixed dentition.

PP 53: PROVISION OF ORTHODONTIC SERVICES IN THE PUBLIC HEALTH CARE SYSTEMS OF MACEDONIA AND CROATIA

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University „Goce Delcev“ – Stip, Faculty of Medicine, Department of Dentistry¹
Private Orthodontic Practice, Germany²

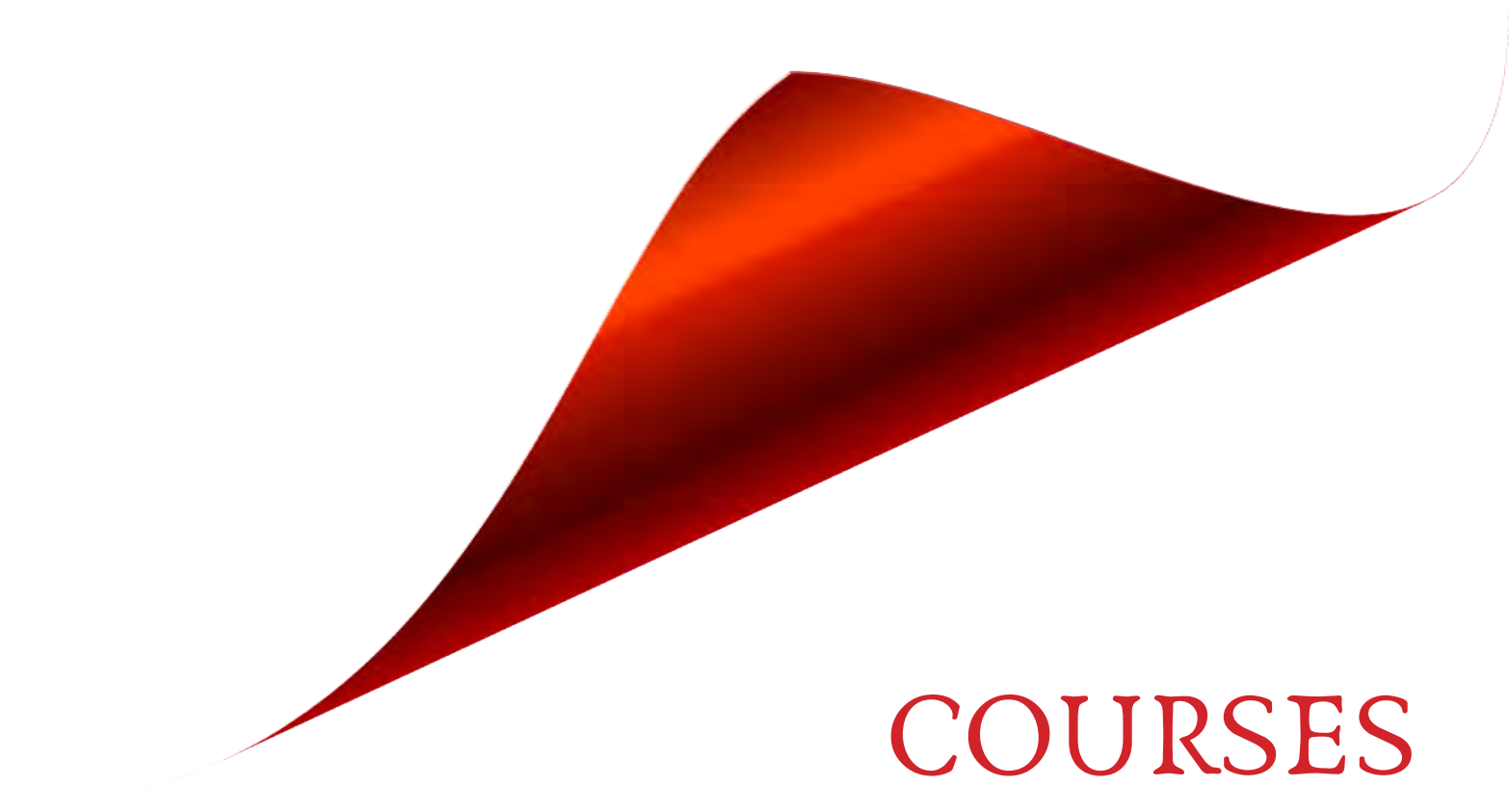
Understanding the regulation of orthodontic services in public health care systems is critical to ensuring quality of care.

Aim: The aim of this research is to review and compare the regulation of orthodontic services in the public health care systems of Macedonia and Croatia related to access to treatment quality control and payment method.

Material and Method: A review of the legal regulatory framework governing the provision of orthodontic services in the public health care systems of Macedonia and Croatia has already been done. In addition, personal communication with decision-makers was undertaken to more fully understand the regulatory frameworks of interest. In both Macedonia and Croatia access to orthodontic treatment is granted to individuals up to the age of 18.

Results: Whereas in Macedonia treatment need is measured by subjective criteria of the orthodontist in Croatia individuals are eligible for treatment if the Index of Orthodontic Treatment Need is Grade 4 or 5. Grade 3 is covered only if it's associated with Grade 8-10 from Aesthetic Component of IOTN. Fee-for-service is the main payment method in Macedonia as well as in Croatia. Whereas in Macedonia the orthodontist is reimbursed up to maximum of three removable appliances in Croatia each diagnostic or treatment procedure has a distinctive code with related imbursement. Variation in the regulation of orthodontic services in the Macedonian and Croatian Public Health Care Services points to different degrees of regulatory intensity. However, the lack of instruments of quality control is a challenge for both Macedonia and Croatia.

Conclusion: By the virtue of comparison between two different systems the study of the above subjects should estimate the impact of different regulatory mechanism and associated processes have on the quality of care provided to patients.



COURSES



PRE - CONGRESS COURSE



Wolfgang Grüner

Karlsruhe, Germany

Dr. Wolfgang Grüner; D.D.S is well known in field of orthodontics as a distinguished lecturer who introduced many colleagues with the secrets of different orthodontic secrets and skills.

After the high school graduation in Oak Park, USA and in Schramberg, Germany, he continued his education in Dental Medical School at Freiburg University and become a Doctor of dental Sciences in 1982.

Attended postgraduate studies at the same University where he worked as an Assistant at the University Hospital Tübingen and he finished his specialization in Orthodontics at Tübingen University in 1987.

He realizes himself as a founder of his own orthodontic practice in 1987, but he didn't stop there. From 1991 he becomes a lecturer for Post Graduate Studies in Orthodontics and Consultant for the Department of Orthodontics at Dentaurum.

Since then he had frequent lecturing on various Orthodontic Topics in Germany and many European Countries. Some of them are:

- typodont course I - Straight Wire Arch technique I - with many practical exercises - ideal for beginners
- Typodont course II - Straight Wire Arch Technique II - with many practical exercises - optimally as a build-up training for Typodont course I
- Typodont course III - Classification of displaced teeth - how to avoid extraction therapy
- Typodont course IV - special bending course
- Tomas®-pins - skeletal anchorage - advanced options in orthodontics

PRE - CONGRESS COURSE

Orthodontic Treatment with the Modular Lingual / Palatal Appliance

Hands- on workshop to learn in practice and in theory

The traditional orthodontic treatment in all of Europe during the deciduous phase of tooth development consists of removable appliances. Besides the use of functional appliances, for intra- maxillary tasks still today, although Aligners win more and more space in orthodontics, active plates are on a wide scale used for early interceptive purposes. The compliance of our young patients wearing active plates is declining though. An alternative has been described as “modular orthodontics”. Lingual or palatal wires mostly fixed only to the first molars are much easier to get used to, and since they cannot be removed by the patient, are more efficient than removable appliances.

In the workshop 3 different designs of lingual sheaths (vertical / horizontal and curved sheath), which are available on the market, will be introduced and described. The practical part consists of bending – exercises and will be executed with DENTAURUM’s Orthorama® modules (straight horizontal sheath) on both upper and lower plastic casts.

Biomechanics will be explained with clinical examples, and the Orthorama® - modules will be prepared, adapted and activated as discussed on casts as shown on the following pictures.



Orthorama® - Multiaction- Palatal Bar



Orthorama® - Multiaction- Lingual Bar

BRIEF DESCRIPTION OF THE COURSE:

Lingual/palatal arches can be used instead of removable appliances. Typical tooth movements like protruding an incisor, tipping a premolar to the baccal side, solving a molar cross-bite can be done without depending of the patient cooperation.

Lingual/palatal arches can also help tooth movements with multy bracket appliances. The control can be gained from the transversal dimension in the molar section of the initial arch.

Torque provided only by the rectangular arch wire of the multi-bracket appliance is not very effective. The effect can be increased by lingual/palatal arches. Asymmetric sagittal movements and of course the increasing of sagittal anchorage can help to correct the bite.

In the course the various preformed lingual/palatal arches are introduced and examples are presented and how you can achieve benefits from them. You will learn how to adapt them properly, so the patient has least discomfort and how to activate the arches to have the desired ones.

NECESSARY INSTRUMENTS FOR THE COURSE:

- Mathieu needle holder (Dentaurum 000-030-00)
- Arch forming plier (Dentaurum 003-185-00)
- Flat plier (Dentaurum 013-522-00)
- Loop forming plier medium (Dentaurum 003-053-00) or
- Loop forming plier Maxi (Dentaurum 003-233-00) or
- Angle wire bending pliers (Dentaurum 004-139-00) or
- Angle wire bending pliers standard (Dentaurum 004-139-00)
- Young loop bending pliers (dentaurum 012-074-00)

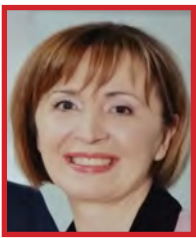
PROGRAM OF THE COURSE

9.30-11.00	Typical tooth movements Torque Asymmetric sagittal movements
11.00-11.30	Coffee break
11.30-13.00	Lingual/palatal arches Sagittal anchorage
13.00-14.00	Lunch break
14.00-16.00	Workshop Bending – exercises 3 different designs of lingual sheaths (vertical / horizontal and curved sheath)

iTop COURSE

individual training in oral prophylaxis

Prof. Dr. Snezana Pesevska
Assoc Prof. Sonja Mindova
Assoc Dr. Emilija Stefanovska
Dr. Katerina Gavrilovic



Dr Snezana Pesevska received her MSc and PhD in oral pathology and periodontology at the Faculty of Dentistry Skopje – Ss Cyril and Methodius University in Skopje. She is currently Professor at the Department of oral pathology and periodontology at the Faculty of Dentistry Skopje and is involved in the education and research activity of graduate, post-graduate and doctoral students.

Her main areas of interest are periodontology, laser therapy and prevention of periodontal health. Since 2012 she is instructor at iTOP-Individually Trained Oral Prophylaxis seminars.

iTOP incorporates practical, hands-on learning and a focus on the motivation needed to implement this knowledge daily so that patients can be set up for a lifetime of oral health.



Associate Prof. Dr. Sonja Mindova, specialist in the field of periodontics and oral pathology was born in 1958. Defended the master thesis on the topic: “Periodontitis and coronary heart disease principled relationship or association.

Assessment of oral health in children with mental disabilities”. 2007

Doctoral dissertation in the field of periodontology with topic: “Smoking:modifying risk factor in etiopathogenesis of periodontal disease.Inflammatory cytokines and their role in modulating the clinical expression of plaque-induced gingival inflammation” .2011

Has published more than 100 papers in domestic and foreign journals.

She is the author and co-author of 5 specialized scientific books in the field of dentistry. Her experience in i-Top teaching educational course, introductory and advanced, for dental practitioners and dental students spans over 10 years.

She has incorporated practical, hands-on learning with a focus on the motivation to implement redefined skills and knowledge of oral hygiene. She puts emphasis on the daily improvement of oral health by practicing proper techniques and using the right tools.



Prof. Dr. Emilija Leveska Stefanovska, specialist in the field of periodontics and oral pathology was born in 1972.

Defended the master thesis on the topic: "Assessment of oral health in children with mental disabilities".

Doctoral dissertation in the field of periodontology with topic: "Inflammatory cytokines and their role in modulating the clinical expression of plaque-induced gingival inflammation".

Has published more than 100 papers in domestic and foreign journals.

She is the author and co-author of 5 specialized scientific books in the field of dentistry. Her experience in i-Top teaching educational course, introductory and advanced, for dental practitioners and dental students spans over 10 years.

She has incorporated practical, hands-on learning with a focus on the motivation to implement redefined skills and knowledge of oral hygiene. She puts emphasis on the daily improvement of oral health by practicing proper techniques and using the right tools.



Dr. Katerina Gavrilovic

iTOP CONCEPT

iTOP - individual training in oral prophylaxis is a systematic way to learn how to maintain optimum oral health through Touch to Teach and the use of appropriate means and techniques. The iTOP is a widely accepted, effective and aturamic way of learning to maintain good oral hygiene. It is the principle of daily practice of our knowledge of ourselves, and ultimately for patients.

Step by step. Skill by skill. In short: individual oral hygiene means oral health for a lifetime. It is the goal-philosophy of iTOP.

Through iTOP, we become mentors for our patients. We not only manage their oral health habits, but train them to benefit from our knowledge. There is always room for learning and improvement.

The iTOP concept consists of four levels: Introductory- Introductory, Advanced- Advanced, Recall- Reminder, Teacher-Teacher, and is designed for all dentists and oral hygienists.

iTOP Introductory- Introduced

One-day seminar

iTOP Introductory is an initial level that provides the basis for all subsequent seminars.

The Intro program explores the current failures in daily dental prophylaxis. The seminar teaches how to improve oral health by practicing appropriate techniques and appropriate means.

The aim at this level is to ensure that participants learn the basic theory and philosophy of the iTOP and can apply their knowledge to themselves, the family and the patients.

PROGRAM OF THE COURSE

11.30-13:00 Theoretical part

- Introduction, Biofilm, Plak - reasons
- Errors in everyday practice
- Criteria for choosing the right means for oral hygiene
- Criteria for selecting the right technique

13:00 – 14:00 Lunch

14:00 – 16:00 Practical part group work (6-8)

- Touch to teach
- Bass Tech (CS 5460, CS smart)
- Solo technique (CS 1006)

POST-CONGRESS COURSE



Nunzio Cirulli

Bari, Italy

Nunzio Cirulli has many fields of interest and his biography is fulfilled with many accomplishments. He graduated with honors in Dentistry and Dental Prosthetics at the University of Bari in 1995, became Master of Science in Orthodontics at University of Insubria – Varese, Italy in 1999 and his PhD degree in “Orto-Fonato-Rino-Gnatodonzia”, University of Bari (Italy) in 2004 with the thesis: Lingual orthodontic treatment, fixed prosthetic therapy and splint therapy in patients with advanced periodontal disease: a clinical and radiological study.

Other fields of interests are low-friction orthodontic techniques, use of nickel-titanium auxiliaries for intrusion in fixed orthodontics, osteoblastic activity- effects on the reabsorption-deposition (coupling) sequence, aesthetics of oral and perioral tissues.

He attended the Orthodontics departments of the Montefiore Medical Center in New York, the University of Ulm and the University of Santiago de Compostela. He has participated in clinical and research work in many national and international congresses and he is an author of publications in national and international specialized journals and he is a member of the Editorial Board of the Journal “Progress in Orthodontics” and “Journal of Pathology” from 2007. He has held Orthodontic Courses in various Italian and Foreign Universities.

He was Professor a.c. at the University of Padua for 2008/2009, at the University of L'Aquila in 2009/2010, at University of Bari for 2015-2017.

Private Practice limited to Orthodontics in Bari, Italy.

He is a member of the Italian Society of Orthodontics, of the European Society of Lingual Orthodontics, of the Society Italian Linguistic and Aesthetic Orthodontics, of the EOS and World Orthodontic Society,

PROGRAM OF THE COURSE

New chances in orthodontic therapy: CAD-CAM, miniscrews, corticotomy, aligners, lingual orthodontics

9.30-10.30 3D management in orthodontics using CT Cone beam and intraoral scanner:

10.30-11.00 3D planning for orthodontic vestibular and lingual treatments

11.00-11.30 Coffee break

11.30-12.00 Project of custom digital orthodontic devices

Different way to cooperate with dental Labs

12.00-13.00 Use of miniscrews in daily practice:

- How and when
- New biomechanic

Corticotomy with piezosurgery:

- How and when

13.00-14.00 Lunch break

14.00-15.00 Aligners:

- Opportunities and limits

15.00-16.00 Lingual orthodontics





3RD CONGRESS OF THE BALKAN ASSOCIATION OF ORTHODONTIC SPECIALISTS
4TH CONGRESS OF THE MACEDONIAN ORTHODONTIC SOCIETY



“THE HIGHS AND LOWS OF ORTHODONTICS – OUR LEARNING CURVE”

SCIENTIFIC PROGRAMME



SEPTEMBER 12-15, OHRID, NORTH MACEDONIA





SCIENTIFIC
PROGRAMME





3RD CONGRESS OF BAOS & 4TH CONGRESS OF MOS



SCIENTIFIC PROGRAM

THURSDAY, 12TH of SEPTEMBER

CONFERENCE ROOM "D" (OHRID HALL)

PRE CONGRESS COURSE

Dr. WOLFGANG GRUNER

Orthodontic Treatment with the Modular Lingual / Palatal Appliance
Hands - on workshop to learn in practice and in theory

09:30 – 16:00 with Coffee Breaks and Lunch



CONFERENCE ROOM "A" (BILJANA HALL)

18:00 – 19:00

OPENING CEREMONY

19:00 – 20:00

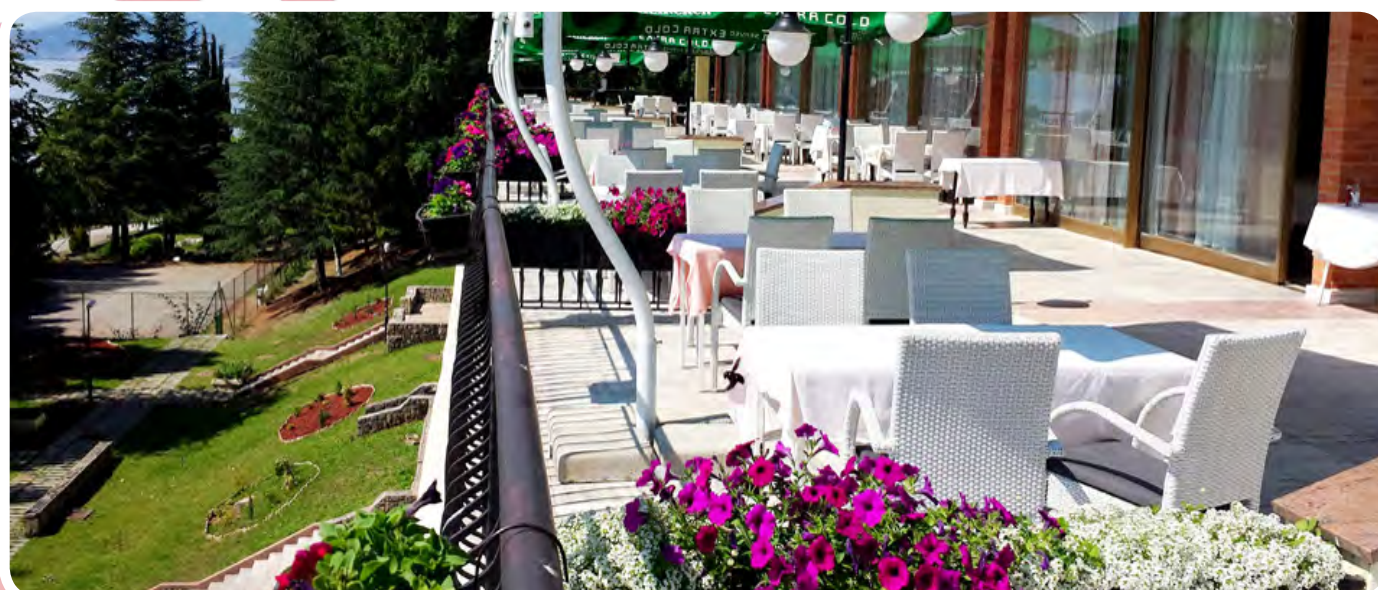
KEYNOTE LECTURE

VASKA VANDEVSKA-RADUNOVIC

Highs and Lows of Impacted Maxillary Incisors

20:00 – 23:00

GET TOGETHER COCKTAIL PARTY - HOTEL METROPOL TERACE



General
Sponsor



3RD CONGRESS OF BAOS & 4TH CONGRESS OF MOS







SCIENTIFIC PROGRAM

FRIDAY, 13TH of SEPTEMBER

CONFERENCE ROOM "A" (BILJANA HALL)



KEYNOTE LECTURES

SESSION 1

TOPIC: Orthodontic Solutions from Birth to the Best Age

CHAIRMAN: MOSCHOS A. PAPADOPOULOS, RAFI ROMANO

9:00 – 9:40

ATHANASIOS E. ATHANASIOU

Diagnosis and Management of Face Asymmetries

9:40 – 10:20

ABBAS R. ZAHER

Management of Difficult Canine Impactions and Transposition

10:20 – 11:00

NEJAT ERVERDI

What do we Know About Class III Malocclusion: Diagnosis, Treatment and Retention

11:00 – 11:10

Discussion

11:10 – 11:30

Coffee break

SESSION 2

TOPIC: Novel Treatment Strategies

CHAIRMAN: ATHANASIOS E. ATHANASIOU, NEJAT ERVERDI

11:30 – 12:10

RAFI ROMANO

CAD/CAM in Orthodontics: from Customized Brackets to Full Digital 3D Treatment Planning and Implementation

12:10 – 12:50

SASIL POONNEN

Smart Orthodontics: How to Make Your Straight Wire Appliance Answer all Your Clinical Needs

12:50 – 13:00

Discussion

13:00 – 14:00

Lunch







SCIENTIFIC PROGRAM

SESSION 3

TOPIC: Orthodontic Solutions from Birth to the Best Age

CHAIRMAN: VASKA VANDEVSKA – RADUNOVIC, ABBAS R. ZAHER

14:00 – 14:40

MOSCHOS A. PAPADOPOULOS

Multidisciplinary Orthodontic Treatment of Complex Dental Cases

14:40 – 15:20

HALUK İŞERI

Maxillary Expansion And Mandibular Widening In Growing And Non-Growing Patients

15:20 – 16:00

CESARE LUZI

Asymmetric Class II Malocclusions: from Differential Diagnosis to Individualized Treatment Mechanics

16:00 – 16:10

Discussion

16:10 – 16:30

Coffee break

SESSION 4

TOPIC: Orthodontic Solutions from Birth to the Best Age

CHAIRMAN: HALUK İŞERI, GABRIELA KJURCHIEVA CHUCHKOVA

16:30 – 17:10

ANA ANGELOVA VOLPONI

Translating Stem Cell Research into Clinical Solutions (Regenerative Dentistry Approaches)

17:10 – 17:30

STJEPAN SPALJ

Orthognathic Surgery – The Patients' Perspective

17:30 - 17.50

ALEKSANDAR GRCHEV

Disruptive Growth of the Mandibular Condyle During Childhood

17:50 – 18:00

Discussion







3RD CONGRESS OF BAOS & 4TH CONGRESS OF MOS



SCIENTIFIC PROGRAM

CONFERENCE ROOM "E" (BUSSINES 1)

18:30 – 19:00

3RD Meeting of the Council of BAOS

19:00 – 19:30

3RD Meeting of the General Assembly of BAOS



20:30

GALA DINER (Hotel BELLEVUE)







SCIENTIFIC PROGRAM

SATURDAY, 14TH of SEPTEMBER

CONFERENCE ROOM "A" (BILJANA HALL)

INVITED SPEAKERS

SESSION 1

TOPIC: Orthodontic Solutions from Birth to the Best Age

CHAIRMAN: IRINA ZETU, ANA ANGELOVA VOLPONI



9:00 – 9:20

AYŞE TUBA ALTUĞ

Orthognathic Surgery and Pharyngeal Airway

9:20 – 9:40

NEDA STEFANOVIC

To Extract or Not to Extract – What do the Airways Suggest?

9:40 – 10:00

GABRIELA KJURCHIEVA-CHUCHKOVA

Highs and Lows of Hyoid Bone

10:00 – 10:20

VIKTORIA GEORGIEVA GURGURIEVA

The Natural Head Position – Old Principles Meet New Technology

10:20 – 10:40

JULIJA RADOICIC

Early Infant Orthopedic In Infant with Lobar Holoprosencephaly Joined with The Premahillary Agenesis with Median Cleft Lip

10:40 – 11:00

RADMILA DIMOVSKA

Measure Twice Cut Once: Orthodontic Management of Patients with Cleft Lip and Palate From Infancy to Adulthood

11:00 – 11:10

Discussion

11:10 – 11:30

Coffee break







SESSION 2

TOPIC: Novel Treatment Strategies

CHAIRMANS: LAURA ANDREEVA GURGURIEVA, LIDIJA KANURKOVA

11:30 – 11:50

VARUN KALRA

Anchorage Control of Space Closure in Extraction Cases to Achieve Best Facial Esthetics

11:50 – 12:20

PREDRAG JANOŠEVIĆ

Vertical Control in Orthodontic Treatment

12:20 – 12:40

ALEKSANDRA PODOLESHOVA

Bioesthetic and Biofunction With 2D Lingual Brackets-Predictable Results

12:40 – 13:00

LJUBO JOLEVSKI

Clear aligners and individual myofunctional appliances using 3D technology

13:00 – 14:00

Lunch

SESSION 3

TOPIC: Ethical Challenges in the 21st Century

CHAIRMANS: AYŞE TUBA ALTUĞ, STJEPAN SPALJ

14:00 – 14:20

IGOR KIROVSKI

Ethics and Dentistry

14:20 – 14:40

JULIJANA NIKOLOVSKA

The Conflict Of Interest Between Professionalism (Caring Dentistry) And Commercialism (Selling Dentistry)

14:40 – 15:00

MAJA POP STEFANOVA-TRPOSKA

Dental Anxiety and Stress in Orthodontic Patients

15:00 – 15:20

OLIVERA SARAČINOVA

Coping Styles Used for Meditation Dental Anxiety and Stress in School Children







SCIENTIFIC PROGRAM

Oral Presentations

15:20 – 15:30

ALEXANDER SPASSOV

The Future of Orthodontic Services in the Public Health Care System: Based on Ethical Principles and Scientific Evidence

15:30 – 15:40

EDLIRA BARUTI

Chirurgia Ortognatica E “Surgery First”

15:40 – 15:50

HUSEYIN OZKAN

Orthodontic Issues in Forensic Odontology Education in Dental Faculties of Turkey

15:50 – 16:00

Discussion

16:00 – 16:30

Coffee break

SESSION 4

TOPIC: Orthodontic Solutions from Birth to the Best Age

CHAIRMAN: MAJA POP STEFANOVA TRPOSKA, ŽELJKO MILOSAVLJEVIĆ

KEYNOTE LECTURE

16:30 – 17:10

NAZAN KUCUKKELES

Long Term Results of Rapid Maxillary Protraction Using Corticotomy and Skeletal Anchorage

INVITED SPEAKERS

17:10 – 17:30

SABETIM CHERKEZI

Impacted Maxillary Canine, Prevention and Treatment

17:30 – 17:50

ELENA PETROVA

A Little Bit of Everything – Do Not Miss The Lecture

17:50 – 18:00

Discussion







SATURDAY, 14TH of SEPTEMBER

CONFERENCE ROOM "B" (LABINO HALL)

ORAL PRESENTATIONS

SESSION 1

10:00 – 11:10

TOPICS: Orthodontic Solutions from Birth to the Best Age

Novel Treatment Strategies

CHAIRMANS: CELJANA TOTI, SOFIJA CARCEVA SALJA, STIPICA POPOVSKI



10:00 – 10:10

CIHAN GULLU

The Correction of The Midline By Upper Right Central Tooth Across The Midpalatal Suture

10:10 – 10:20

ESRA BOLAT

Comparison of The Treatment Effects of Forsus Fatigue Resistant Device and Mono Block Appliance in Growing Class II Patients

10:20 – 10:30

SILVYIA KRASTEVA

Innovative Techniques For Diagnosing Transverse Maxillofacial Discrepancies

10:30 – 10:40

MARTIN KRALJ

Facial Deformity and Orthodontic - Orthognathic Surgical Treatment Have Low Influence on Self - Esteem and Awareness of Facial Esthetics

10:40 – 10:50

ŽELJKO MILOSAVLJEVIC

Orthodontic Extrusion of Incisors with Subgingival Fracture

11:00 – 11:10

ŽELJKO MILOSAVLJEVIC

Retraction of Upper Incisors with Orthodontic Mini Implants

11:10 – 11:30

Coffee break

SESSION 2

11:30 – 13:00

TOPICS: Novel Treatment Strategies

CHAIRMANS: NEDA STEFANOVIC, SABETIM CHERKEZI NATASHA TOSHESKA SPASOVA

11:30 – 11:40

BILJANA REBA

Importance of Distalization and Extractions – Case Series

11:40 – 11:50

JETA KISERI KUBATI

Our Leaning Curve in Treating Class III Malocclusions in Adults







11:50 – 12:00

HATICE KÜBRA OLKUN

Camouflage Treatment of Skeletal Class III Malocclusion with Unilateral Crossbite Using Miniscrew Anchorage

12:00 – 12:10

FATIH KAHRAMAN

Early Class III Treatment With Miniscrew Supported Hybrid Hyrax and Mentoplate Combination: Cone Beam Computerized Tomography Analysis

12:10 – 12:20

GÜLDEN KARABIBER

3D Assessment of Three Cleft Lip and Palate Cases Treated with Archwise Distraction Appliance

12:20 – 12:30

TANER OZTURK

The Effects of Single and Cumulative Wavelength Laser Therapy on the Orthodontic Induced Root Resorption During Retention Period: An Experimental Study in Rats

12:30 – 12:40

EMILIJA STOJANOSKA

Efficacy of Laser Therapy in the Management of Temporomandibular Disorders

12:40 – 13:00

Discussion

13:00 – 14:00

Lunch

SESSION 3

14:00 – 16:00

TOPIC 4: Free topic

CHAIRMANS: PREDRAG NIKOLIC, MIRJANA JANOSEVIC, BILJANA DZIPUNOVA

14:00 – 14:10

SEVIL AKKAYA

Evaluation of the Effects of Incisor Intrusion on Dental Arch Using Burstone Segmental Arch Technique: 2 Case Reports

14:10 – 14:20

MARKO PERKOVIC

Long Term Stability As A Treatment Goal

14:20 – 14:30

JASNA PETROVSKA

Retention and Retainers

14:30 – 14:40

DINA VASOVIC

Pain Intensity and Pain Medication Use After Fixed Orthodontic Appliance Bonding: Comparison Between Upper and Lower Jaw







SCIENTIFIC PROGRAM

14:40 – 14:50

SEDEN AKAN

An Association Between Dimensions and Bridging of the Sella Turcica and Dental Anomalies

15:00 – 15:10

MEHMET UGURLU

Evaluation of the Bacterial Biofilm on the Mini Screws Inserted Into Palatal Anterior and Posterior Region of the Maxilla

15:10 – 15:20

MARIJA SIMONCHESKA

Diagnosis of Temporomandibular Complications Through Short Clinical Screening Procedure

15:20 – 15:30

GOKAY USTDAL

Youtube™ As A Source of Information on Clear Aligners

15:30 – 15:40

YASEMIN NUR KORKMAZ

Investigation of Smartphone Applications Used For Orthodontic Clear Aligner Treatment

15:40 – 16:00

Discussion

16:00 – 16:30

Coffee break

SATURDAY 14TH of SEPTEMBER

CONFERENCE ROOM "D" (OHRID HALL)

iTop COURSE

individual training in oral prophylaxis

Dr. Snezana Pesevska

Dr. Sonja Mindova

Dr. Emilija Stefanovska

Dr. Katerina Gavrilovic

11:30 – 16:00 with Coffee Break and Lunch

CURAPROX







3RD CONGRESS OF BAOS & 4TH CONGRESS OF MOS



SATURDAY, 14TH of SEPTEMBER
CONFERENCE ROOM "C" (CAR SAMOIL HALL)

POSTER SESSION

16:30 – 17:30

**CHAIRMANS: SNEZANA PESEVSKA, PREDRAG JANOŠEVIĆ,
JULIJANA NIKOLOVSKA**



SOCIAL PROGRAM SATURDAY NIGHT DISCO FEVER (HOTEL BELLAVUE)



SUNDAY 15TH of SEPTEMBER
CONFERENCE ROOM "D" (OHRID HALL)

POST CONGRESS COURSE

Dr. NUNZIO CIRULLI
CAD-CAM, Miniscrews, Corticotomy, Aligners, Lingual Orthodontics

09:30 – 16:00 with Coffee Breaks and Lunch



LEGEND

EXHIBITORS

1. Promediika (Dentaurum) – General sponsor

2. Vik-Dental (RMO)

3. Dentomed (Forestadent)

4. Interdental (Curaprox)

5. OrtoDentaeS

6. Dr. Jolevski

7. Begodent

8. Dr. Iliev

9. Mintas

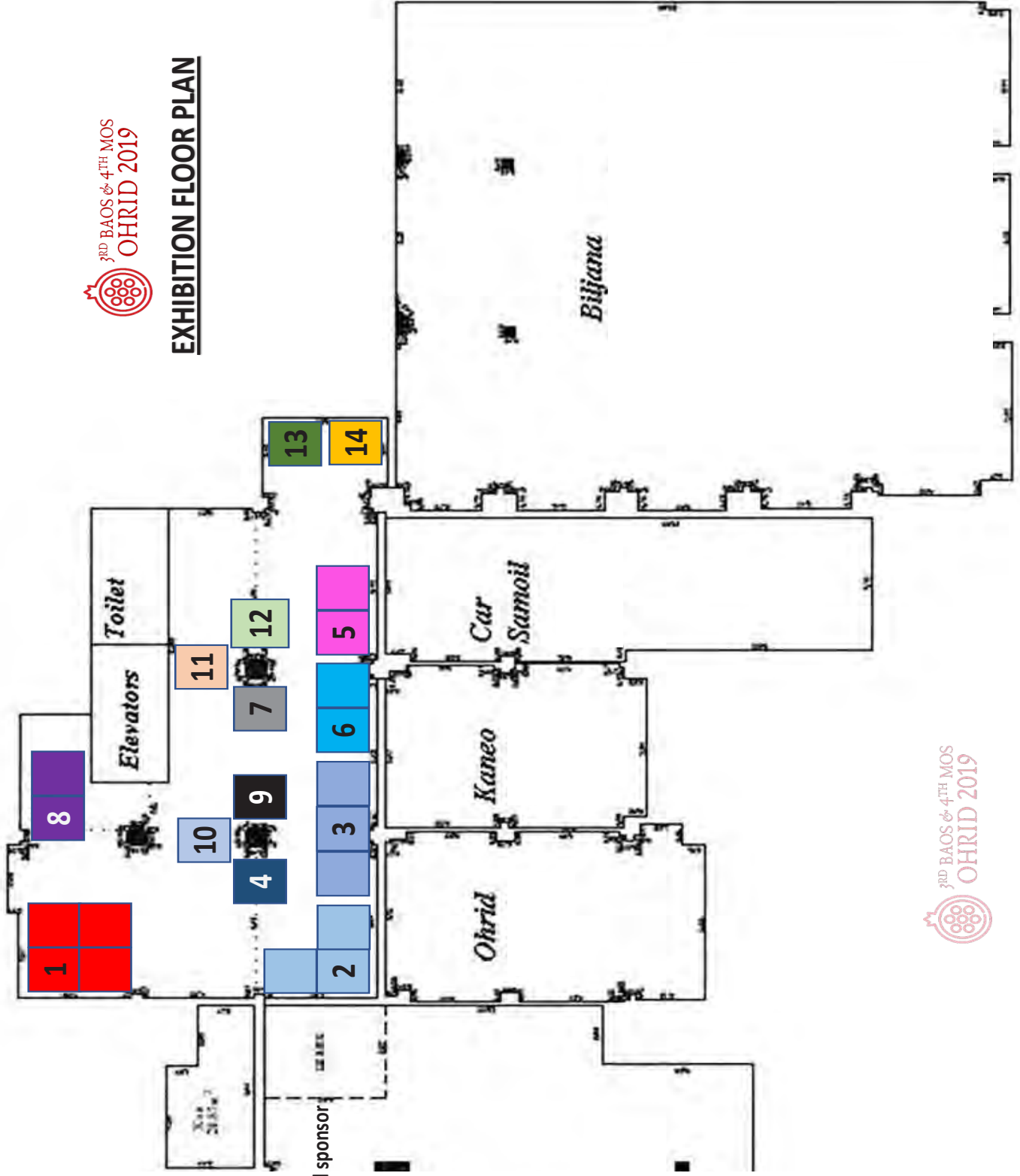
10. Philips

11. Borden

12. Makmedika

13. Listerin

14. KrunaMS

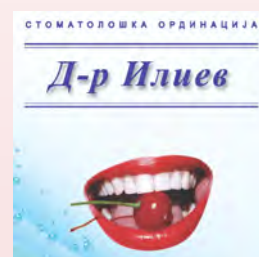
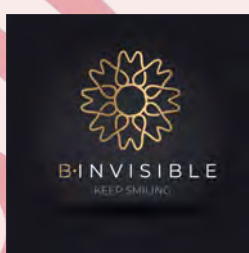
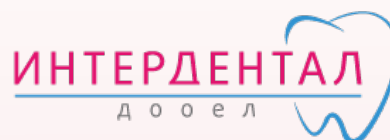




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GENERAL SPONSOR



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