E.A.P.D.
EUROPEAN ACADEMY OF PAEDIATRIC DENTISTRY

Organised by the Hellenic Society of Paediatric Dentistry

11th Interim Seminar & Guidelines Workshop

Conventional and modern dental imaging tools in paediatric dentistry. From intraoral radiographs to 3D technologies

2-4 May 2019 | CHANIA | CRETE | GREECE **Cultural Center of Chania**

Under the auspices
of Region of Crete and Municipality of Chania

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Final Program & Book of Abstracts

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Γιατί κάθε παιδί αξίζει να έχει υγιή δόντια!

Welcome Addresses

Welcome to the **11th Interim Seminar & Guidelines Workshop of the European Academy of Paediatric Dentistry**!

On behalf of the European Academy of Paediatric Dentistry, it is my great pleasure to invite and welcome you all to the 11th EAPD Interim Seminar and Guidelines Workshop in Chania, Crete, the largest and most popular of the Greek islands, where ancient history, amazing natural beauty, everlasting culture and science will come together in May 2019 for our meeting.

EAPD Interim Seminars are biannual International meetings developed to discuss in depth significant clinical topics in Paediatric Dentistry aiming at the production of best clinical practice Guidelines. Invited Keynote Speakers and other opinion leaders in addition to experts from every European country participate in these extremely important events for the EAPD.

The meeting is becoming more and more attractive as since the 8th Interim Seminar the scientific program of these events has been enhanced with more invited lectures on subjects related to the main theme and poster sessions were introduced.

The theme of the 11th Seminar is 'Dental Imaging Tools (Conventional and modern imaging tools in Paediatric Dentistry: from intra-oral radiographs to 3D imaging)', a very important subject related to the advancement of imaging technologies and the community concerns for their increased usage. I am sure that the efficiency and the competence of the speakers, the organising committee and the uniqueness of Crete will result in a fruitful seminar that will be remembered for many years to come.

Professor Jack Toumba
EAPD President

Welcome Addresses

Dear Colleagues,

On behalf of the Organising Committee and the Hellenic Society of Paediatric Dentistry, it is our great pleasure to welcome you all to the lovely and historical island of Crete in Greece to attend the 11th Interim Seminar and Guidelines Workshop of EAPD. The theme of the Seminar "Conventional and Modern Dental Imaging Tools in Paediatric Dentistry. From Intraoral Radiographs to 3D Technologies" is a very interesting and important topic, attracting great attention by the clinicians and the scientists in our field, given the advances in imaging technologies, the growing usage of modern diagnostic tools and the increased awareness of the public regarding radiology.

The aim of the 11th EAPD Seminar scientific programme is to present and review the current advances in dental imaging technologies. In addition, important and intensive scientific workshops will take place, revising and developing new guidelines for best clinical practice.

Worldwide prominent keynote speakers will lead the Interim Seminar and the workshops, in addition to distinguished invited lecturers that will cover the parallel scientific programme and chair the poster sessions. The excellent scientific program, the centrally located venue, the exciting social programme and the exhibition will attract great attention, and we expect a large number of our colleagues to participate.

Finally, location plays an important role in every EAPD event. Crete is an amazing place where any visitor can admire the remnants of many unique civilizations, explore glorious beaches, impressive mountain escapes, fertile valleys and steep gorges, and become part of the island's rich gastronomic culture.

We strongly believe that this Seminar will be one more very successful and memorable event in the long history of the EAPD Interim Seminars.

Dr Nick Lygidakis
Chair of the Organising Committee

Dr Sofia Gkeki
President of the Hellenic Society of Paediatric Dentistry

Scientific Program

Scientific Program | Thursday, May 2nd, 2019

EAPD Administration Meetings and ATHENA Masterclass

	REGISTRATION/ SECRETARIAT	KYDONIA Seminar Room	NEORIA Seminar Room	SOUDA Seminar Room	APTERA Seminar Room
08.30-12.00				**EAPD Board Meeting**	**ATHENA Masterclass**
12.00-13.30		**Education Committee Meeting**	**Editorial Board Meeting**		
13.30-14.30		Light lunch for the EAPD Board, Committees and Athena Seminar participants			
14.30-18.00	**Registration** and **Posters handing over**	**EAPD Council meeting** and Presentation of the updated EAPD Fluoride guidelines by **Prof Jack Toumba** *(sponsored by Oral-B)*	**Clinical Affairs Committee and Keynote Speakers**		**ATHENA Masterclass**
20.00		EAPD Board and Council Informal Dinner			

Scientific Program | **Friday, May 3rd, 2019**

Keynote Lectures and Invited Lectures take place in the main Amphitheatre 'Nikos Kazantzakis'

08.00-19.00	**Secretariat and information desk** (GROUND FLOOR FOYER)	
09.00-19.00	**Exhibition** (AMPHITHEATRE AND GROUND FLOOR FOYER)	**Poster Viewing** (KISSAMOS SEMINAR ROOM, 1st FLOOR)
1st SESSION	Chair: **Jack Toumba**	
08.30-10.00	**Welcome by the organisers and the regional authorities** **Keynote Lecture 1** ***Intraoral radiography in paediatric dentistry*** *(Johan Aps, Perth, Australia)*	
10.00-10.30	Coffee break	
2nd SESSION	Chairs: **Rita Cauwels - Elias Berdouses**	
10.30-12.30	**Keynote Lecture 2** ***Panoramic diagnostics in paediatric dentistry*** *(Kostas Tsiklakis, Athens, Greece)* **Keynote Lecture 3** ***Cone beam computerised tomography (CBCT) diagnostics in paediatric dentistry*** *(Keith Horner, Manchester, UK)*	
12.30-14.00	Lunch Buffet	Lunch and Learn Seminar (by LM-Dental, Aptera Seminar Room)
3rd SESSION	Chairs: **Norbert Kraemer - Goran Dahllof**	**INVITED ONLY PARTICIPANTS/EXPERTS** (SEMINAR ROOMS)
	Invited Lectures	**Workshops**
14.00-14.30	**Treatment options in cases of congenitally missing teeth** *Sotiria Gizani, Athens, Greece*	**Workshop 1** (APTERA SEMINAR ROOM) ***Intraoral radiography in paediatric dentistry***
14.30-15.00	**Diagnosis of common oral-medicine problems in children and adolescents** *Richard Steffen, Bern, Switzerland*	**Workshop 2** (KYDONIA SEMINAR ROOM) ***Panoramic diagnostics in paediatric dentistry***
15.00-15.30	**Radiographic diagnostics in hard dental tissues defects** *Nikos Kotsanos, Thessaloniki, Greece*	**Workshop 3** (NEORIA SEMINAR ROOM) ***CBCT diagnostics in paediatric dentistry***
15.30-16.00	Open discussion-Questions	
16.00-16.30	Coffee Break	
4th SESSION	Chairs: **Luc Martens - Constantine Oulis**	**INVITED ONLY PARTICIPANTS/EXPERTS** (SEMINAR ROOMS)
	Invited Lectures	**Workshops**
16.30-17.00	**Diagnosis and treatment options in cases of primary teeth ankylosis** *Nick Lygidakis, Athens, Greece*	**Workshop 1** (APTERA SEMINAR ROOM) ***Intraoral radiography in paediatric dentistry***
17.00-17.30	**Contemporary diagnostic and treatment approach in necrotic permanent teeth with open apices** *Rita Cauwels, Gent, Belgium*	**Workshop 2** (KYDONIA SEMINAR ROOM) ***Panoramic diagnostics in paediatric dentistry***
17.30-17.45	Open Discussion-Questions	**Workshop 3** (NEORIA SEMINAR ROOM) ***CBCT diagnostics in paediatric dentistry***
17.45-18.45	**Paediatric Dentistry postgraduate training: Future prospectives** *Education Committee Chair (K. Kavvadia) and Members*	
20.30	Gala Dinner and Night	

09.00-13.00	**Secretariat and information desk** **Exhibition** **Poster Viewing**	**(GROUND FLOOR FOYER)** **(AMPHITHEATRE AND GROUND FLOOR FOYER)** **(KISSAMOS SEMINAR ROOM, 1st FLOOR)**
5th SESSION	Chairs: **Sofia Gkeki - Paddy Fleming**	
	Invited Lectures	
09.00-09.45	**Radiation protection in paediatric dentistry** *Jakob Van Acker, Gent, Belgium*	
09.45-10.15	**Update of EAPD guidelines for fluoride usage** (sponsored by Oral-B) *Jack Toumba, EAPD President*	
10.15-10.30	**Open discussion - Questions**	
10.30-11.00	Coffee Break	
6th SESSION	Chair: **Monty Duggal**	
11.00-11.45	**Oral Presentation of the six short-listed for the EAPD Awards Posters**	
11.45-13.00	**Presentation of the guidelines (draft papers) by the keynote speakers and the moderators of the workshops** 1. Intraoral radiography in paediatric dentistry 2. Panoramic diagnostics in paediatric dentistry 3. CBCT diagnostics in paediatric dentistry	
13.00-13.30	**Closing Ceremony - Awards - Presentation of the next EAPD events**	

Keynote Lecturers and Workshops Leaders

Keynote Lecturers

Associate Professor Johan Aps

Johan Aps is currently Associate Professor at the University of Western Australia, where he is Divisional Head of Oral Diagnostic and Surgical Sciences and Discipline Lead for Dental and Maxillofacial Radiology. Johan obtained his dental degree (1993), his certificate in paediatric dentistry (1997) and his PhD (2002) from the University of Ghent in Belgium. Additionally, in 2008 he completed the training requirements and he obtained the master's degree in dental and maxillofacial radiology (2008) from the University of London in UK.

From 1993 till 2004, Johan Aps worked part-time in private practice and part-time at the Ghent University and Ghent University Hospital, in Belgium. In 2004 he became full-time faculty at the Ghent University (Hospital) and moved on in July 2012 to the University of Washington (Seattle, USA) as full-time faculty in dental and maxillofacial radiology. His current position in the University of Western Australia in Perth, Australia started in January 2018.

Johan Aps is the author of several peer-reviewed papers, book chapters and conference abstracts, and Associate Editor in the *Dentomaxillofacial Radiology* (official journal of the International Association of Dentomaxillofacial Radiology). His scientific and research interests are dosimetry, anatomy, artificial intelligence, imaging and local anaesthesia. He is co-founder and key-opinion-leader of the Dental Hi Tec Academy (intraosseous anaesthesia). His hobbies are photography and he would like to get better at playing golf as he keeps losing golf balls.

Professor Keith Horner

Keith Horner is Professor of Oral and Maxillofacial Imaging at The University of Manchester (UK) and a Consultant in Dental and Maxillofacial Radiology at Manchester University NHS Foundation Trust. Since 2016 he is also Adjunct Professor in the School of Dental Science, Trinity College Dublin, Ireland. He qualified in Dentistry in 1981 at Leeds University and did his specialist radiology training at King's College Hospital in London obtaining additionally a Master's Degree in Experimental Oral Pathology from the University of London. He joined the staff at the Dental School of the University of Manchester in 1988 and he obtained his PhD in 1997.

His clinical work includes provision of a hospital-based Cone Beam CT service, along with salivary gland diagnostic and interventional procedures. Professor Horner's research interests include aspects of Cone Beam CT, the dental aspects of osteoporosis and radiation protection in dental imaging. He has about 150 papers in refereed scientific journals. He has coordinated two European Framework projects, including SEDENTEXCT, dealing with safety and efficacy of dental Cone Beam CT (2008-11).

Professor Keith Horner has also a long-standing interest in clinical guideline development. He coordinated the development of European Commission-funded guidelines on Radiation Protection in Dental Radiology in 2004 and Dental Cone beam CT in 2012. He has also been co-editor of two editions of the FGDP(UK) "Selection Criteria for Dental Radiography" document, two editions of the British Society of Orthodontics guidelines on radiography and has also contributed to other UK national guidelines and European position papers.

Professor Kostas Tsiklakis

Kostas Tsiklakis is Professor and Chairman of the department of Oral Diagnosis and Radiology, School of Dentistry, University of Athens, Greece. He was elected vice Dean of the School of Dentistry, University of Athens from 2007 to 2011 and he was Director of the Postgraduate studies program from 2007-2011.

Professor Kostas Tsiklakis received his DDS and PhD degrees from the University of Athens. In addition, he obtained his MSc degree from the Loyola University of Chicago attending the two year Post Graduate Program in Oral Diagnosis and Radiology in the same University.

He is currently and has served as President of the Hellenic Society of Dentomaxillofacial Radiology for many years. He was a member of the European Union Committee for the study of Radiation Protection in Dentistry and for the development of the "European Guidelines" for Radiation Protection in Dental Radiology. He participated as senior scientist in the SEDENTEXCT European Project, for the development of the Evidenced Based Guidelines on Dental Cone Beam CT.

He was elected Vice-President of the "European Academy of Dentomaxillofacial Radiology for the years 2004-2006 and President of the same Academy, for the years 2006-2008. He is a member of the International Editorial Board of DentoMaxillofacial Radiology, official journal of the International association of DentoMaxillofacial Radiology.
He has published more than 130 papers in Greek and international scientific magazines, he is co-author in three scientific books and has participated as an invited speaker in numerous Greek and International Congresses.

Invited Speakers

Professor Rita Cauwels

Professor Dr Rita Cauwels graduated in 1980 as a general dentist at the Ghent University, Belgium and obtained in 1997 her MSc degree in Paediatric Dentistry and Special Care, including anaesthesia, traumatology and treatment of medical compromised children. She is author and co-author of several international manuscripts and chapters of books dealing with paediatric dentistry, traumatology and laser therapy. She is frequently an invited speaker at national and international congresses and other scientific events. She obtained her PhD acting on "Treatment improvement of traumatized immature teeth" for which she participated in scientific research at the university of Turku, Finland. She is currently Dean of the dental school at the university hospital of Ghent, Belgium being until recently the Chair of the department of paediatric dentistry and for many years fully involved in the EAPD accredited postgraduate master program in paediatric dentistry of the Ghent dental school. She has served the EAPD as member of various committees being elected President Elect in 2014. She is currently past-president of EAPD and Chair of the Credentials and Nominations Committees.

Associate Professor Sotiria Gizani

Sotiria Gizani obtained her Dental Degree from the University of Thessaloniki and then completed her postgraduate studies at the Catholic University of Leuven (Belgium) where she successfully finished her 6 years training program in Paediatric Dentistry as well as her 'Master of Dental Science' and doctorate (PhD) degrees. She then returned to Greece and she is currently tenure Assistant Professor in the Department of Paediatric Dentistry in the University of Athens being also owner of a private practice limited to paediatric dentistry.
She has given many lectures in Greece and abroad and she has published 42 papers in peer-reviewed scientific journals, 2 book chapters and numerous abstracts in International and local Congresses. Her scientific work has been cited more than 770 times in Google Scholar and Scopus and has received important international and local awards. She has been recently elected at the post of Secretary of the European Academy of Paediatric Dentistry while she has been a member of the Clinical Affairs of the European Academy of Pediatric Dentistry (EAPD) for the last six years, being actively involved in the scientific program and in the organization of the 9th, 10th and 11th EAPD Interim Seminars. Her research interests focus mainly on new methods of oral health prevention, methods and materials of caries treatment in young children, management of initial carious lesions in orthodontic patients, molecular techniques of microbial detection of the oral cavity, epidemiology and patients with special needs.
Finally, she is the editor of the Greek scientific journal PEDODONTIA, official journal of the Hellenic Society of Paediatric Dentistry and reviewer in many International scientific journals.

Associate Professor Katerina Kavvadia

Katerina Kavvadia qualified form the Dental School, University of Athens and she has Certificate in Pediatric Dentistry and Master's degree, University of Connecticut 1988, PhD University of National and Kapodistrian University of Athens, Greece 1994 and she is Diplomate of the American Board of Pediatric Dentistry 2014. More than 25 years' experience in Academics and currently Chair and Associate Professor at the Department of Paediatric Dentistry, University of Athens Greece and Chair of the Education Committee of the European Academy of Paediatric Dentistry. Former Associate Professor at the Dental School University of Maryland-Baltimore, USA and at the European University College, Dubai, UAE that she also served as Head of Paediatric Dentistry. Editor of the Journal 'Paedodontia' official Journal of the Hellenic Society of Paediatric Dentistry 2010-16 and has received awards for her work in International Conferences. She has been involved in several research programs and grants, her research interests include caries epidemiology, caries diagnosis, oral health education and dental treatment for the medically compromised.
More than 50 publications and has co-uthored a textbook for dental treatment for cancer patients.
Reviewer of several International and National journals. She has lectured as an invited speaker and has participated in over 180 oral presentations in Greek and International meetings and taught many continuous education courses.
Member of various International Scientific Societies and Associations.

Seminar Speakers

Professor Nikos Kotsanos

Nikos Kotsanos graduated from the Aristotle University Dental School in Thessaloniki in 1977 and obtained in 1982 his PhD on 'enamel caries susceptibility' from the University of Bristol in UK. He was trained in Paediatric Dentistry at the Dental School of New York University in 1990-91. Since 1984, he has been teaching in Aristotle University, currently as Professor and Head of the department of Paediatric Dentistry and Director of the postgraduate training program. He is also in private practice. He has published 57 papers in Greek and International scientific journals receiving over 500 citations. Five of his post-graduate students have won awards in European and World paediatric dental congresses.

Professor Kotsanos is the editor of a 21 chapters Paediatric Dentistry textbook in Greek language and currently is preparing another 23 chapters textbook in English. He has frequently been invited to speak abroad in several European countries, in Jordan, Korea and Japan. His scientific and research interests are focused mainly in child dental behaviour, dental anomalies including MIH, incipient caries and fluoride releasing materials, deep cavity management and pulp treatment of primary teeth.

Dr Nick Lygidakis

Dr Nick A. Lygidakis is working in Athens in a private practice limited to Paediatric Dentistry, Orthodontics and Oral Surgery and he has served for 20 years as Senior Consultant and Director in the NHS Dental Centre for Children in Athens. He is teaching in the paediatric dentistry postgraduate courses of the Universities of Giessen, Germany and Leeds, UK, in the latter being Honorary Reader (Associate Professor) since 2002. Following his Dental degree from the University of Athens and 2 years postgraduate attachment in Paediatric Dentistry, he was trained for 3 more years in England, in the Universities of Oxford and London. He holds a MScM in Genetics, a MScD in Child Dental Health and a PhD since 1992.

He has served as President of the European Academy of Paediatric Dentistry and the Hellenic Society of Paediatric Dentistry. In the former, being a founding member, he has been involved in the organization of a great number of European scientific activities, including the 'EAPD Hermes' and 'EAPD Athena' programs.

He has 57 publications in scientific journals, with more than 1400 citations, 350 abstracts and more than 300 invited lectures in Congresses and Seminars, local and International. He is referee in several International journals and Assistant Editor of the European Archives of Paediatric Dentistry succeeding Prof Jack Toumba as Editor in Chief in January 2019. His research and clinical interests are in the fields of dental anomalies, special needs patients treated under general anaesthesia, trauma, fissure sealants and interceptive orthodontics and he is frequently an invited speaker internationally on these subjects. He has been awarded with various distinctions, including the Fellowship of the Royal Society of Medicine in UK and the Membership of the American Association for the Advancement of Science and the New York Academy of Science.

Dr Richard Steffen

Dr. Richard Steffen WBA KZM SSO finished dental school at Basel University in 1985, made his doctorate degree in 1987 and fulfilled his specialist training in paediatric dentistry in 1991. Since 1991 he is working in his private paediatric dentistry office and since 1998 as a senior lecturer and staff member in the paediatric dentistry department University of Zürich. Recently he moved to Basel where he started working as an Assistant Professor at the Centre of Dental Medicine in the University of Basel.

Since 2003 he is a member of the scientific board of Swiss Paediatric Dental Society (SVK / ASP). From 2008 to 2014 he was Swiss Councillor in the Council of the European Academy of Paediatric Dentistry. In 2016 he was elected Board member and Treasurer of EAPD.

He has been in the organising committee of many scientific events, Swiss and European and he was Chairman of the organizing committee of the 14th Congress of EAPD in Lugano, in the summer of 2018.

His research and clinical interests are in the fields of MTA-Hydraulic Silicate Cements, Endodontics, Regenerative Endodontics, Sedation esp. with Nitrous Oxide, Stomatology and Oral Pathology and Traumatology. He has written more than 40 publications, most in German and several chapters in books.

He is responsible for the Swiss SVK/ASP education program in sedation and few years ago he initiated the highly successful education platform for stomatology and oral pathology in children and adolescents, www.stomatopedia.com that is circulated among others to the members of the European Academy of Paediatric Dentistry.

Finally, in 2008 based on his research he founded and he is co-owner of the company Medcem GmbH which develops products based on pure Portland Cement.

Seminar Speakers

Dr. Jakob Van Acker

Jakob Van Acker is since 2016 adjunct-Head of the clinic in the department for Paediatric and Special Care dentistry, Ghent University Hospital. During 2013-2016 he worked in private paediatric dentistry practice (50%) and academic assistant staff (50%) at Ghent university hospital, Belgium.
He studied dentistry in the University of Gent, Belgium and qualified in 2010. He then followed the postgraduate program for the Master of Advanced Dentistry in the discipline of Paediatric Dentistry and Special Care at Ghent University, Belgium during 2010-2013. In addition, he did a postgraduate internship in general dental practice while in 2012 he was certified for the use of nitrous oxide and the use of Cone Beam CT in dentistry, attending the relevant courses. During his postgraduate studies he won the academic price of the 'Most valuable Master student in paediatric dentistry' at Ghent University.
In 2012 he won the EAPD Young Scientist Research Award, during the 11th Congress of the European Academy of Paediatric Dentistry in Strasbourg, France with the paper entitled 'Inventory of the paediatric population for CBCT at Ghent University hospital, Belgium'. Dr Van Acker is also active member of the BAPD, IAPD, EAPD and IADMFR.

Guidelines Workshops participants
(in alphabetical order)

Workshop 1: Intraoral radiography in paediatric dentistry

Moderators:
Rajasekharan S. BELGIUM
Sobczak M. POLAND

Aps J. AUSTRALIA
Ashkenazi M. ISRAEL
De Grauwe A. BELGIUM
Emmanouil D. GREECE
Hess P. DENMARK
Hrynyshyn O. UKRAINE
Ivanovic M. SERBIA
Jacobsen A. NORWAY
Kandiah T. UNITED KINGDOM
Kavoura D. GREECE
Kokkinos N. CYPRUS
Lim LZ SINGAPORE
Ní Chaollaí A. IRELAND
Onisiforou C. CYPRUS
Sabel N. SWEDEN
Schiffer U. GERMANY
Selvi Kuvvetli S. TURKEY
Silvia C. ITALY
Tanase M. ROMANIA
Tomaževič T. SLOVENIA
Tong J. SINGAPORE
Vasakova J. CZECH REPUBLIC

Workshop 2: Panoramic diagnostics in paediatric dentistry

Moderators:
Anttonen V. FINLAND
Kuhnisch J. GERMANY

Arapostathis K. GREECE
Ashley P. UNITED KINGDOM
Bica C. ROMANIA
Billen R. BELGIUM
Brusevold I. J. NORWAY
Esclasson E. SWEDEN
Juric H. CROATIA
Kokkinos P. CYPRUS
Leban T. SLOVENIA
Lysak T. UKRAINE
Majorana A. ITALY
Mandinic Z. SERBIA
Merglova V. CZECH REPUBLIC
Özge Yilmaz D. TURKEY
Shmueli A. ISRAEL
Tsiklakis K. GREECE
Vasquez L. SWITZERLAND
Yfanti Z. GREECE

Workshop 3: CBCT diagnostics in paediatric dentistry

Moderators:
Duggal M. SINGAPORE
Stratigaki E. SWITZERLAND

Antohi C. ROMANIA
Bücher K. GERMANY
Dagassan D. SWITZERLAND
Davidovich E. ISRAEL
Dolhova M. UKRAINE
Fabrizio Ferrazzano G. ITALY
Finucane D. IRELAND
Friedlander-Barenboim S. ISRAEL
Hočevar L. SLOVENIA
Horner K. UNITED KINGDOM
Kaiferova J. CZECH REPUBLIC
Maniere M.-C. FRANCE
Mitsea A. GREECE
Monteiro J. UNITED KINGDOM
Schmalfuss A. J. NORWAY
Tabakcilar D. TURKEY
Theys S. BELGIUM
Van Nes K. NETHERLANDS
Wondimu B. SWEDEN

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Ιωάννης Τσαπράζης ΑΕ

Book of Abstracts

P 1 CBCT for diagnosis and management of complex jaw lesions in children

Dolhova M*, Duggal M, Solonko H, Dydyk N, Student V
Zablotskyy Clinic, Ukraine

INTRODUCTION: The use of CBCT in practice of Paediatric dentistry in recent years has improved the ability of clinicians to not only diagnose complex bony lesions in children, but has also facilitated their management. **BACKGROUND:** Three complex cases with potentially serious implications for the child's health and dentition are presented, where CBCT facilitated diagnosis and through accurate localization of the lesions with respect to surrounding anatomical structures, facilitated its management whilst reducing the co-morbidity of the surgical procedure **CASE REPORT(S):** All 3 patients presented with symptoms ranging from hard mandibular swelling, asymmetry of the face and deformation of anterior maxilla, and delayed eruption of teeth. In all cases radiographic examination with an OPG alone would not allow an accurate localization of the lesions for effective surgical management in relation to the surrounding anatomical structures. **FOLLOW UP:** The following diagnosis were made following CBCT: Case 1, Large complex Odontoma with displacement of mandibular canal; Case 2, Dentigerous cyst with loss of bone close to causing fracture and involvement of the inferior dental nerve; Case 3, Compound odontoma with 10 individual tooth shaped structures all encased in a single bony follicle. Surgical management was facilitated through the use of the CBCT images, with uneventful healing, and eruption of the unerupted teeth in case 3 **CONCLUSIONS:** Although there are concerns about the radiation dosage required for a CBCT examination, its judicious use aids in the diagnosis and effective management of serious and potentially life threatening conditions manifesting in the jaws in children.

P 2 Impacted maxillary canines and suspected incisor root resorption – are enough intra-oral radiographs taken prior to CBCT?

Weerasinghe S*, Horner K
Pennine Care Foundation Trust , United Kingdom

AIM: Determine whether orthodontic referrals for Cone Beam Computed Tomography (CBCT) to investigate patients with suspected upper incisor resorption are justified at Manchester Dental Hospital. **METHODS:** A retrospective audit of 40 orthodontic patients referred for CBCT to investigate maxillary incisor resorption between 2013-2016 was carried out. Patient records and radiographic software were evaluated to determine the conventional radiographs taken and perform parallax localisation of unerupted canine crowns. National and local guidelines were considered to set the following standards: 1. All patients should have two or more conventional radiographic views such as intra-oral periapical, occlusal or orthopantomogram prior to referral for CBCT; 2. Conventional radiographs should provide sufficient information to perform parallax localisation of the impacted canine crown and identify teeth at risk of resorption from the unerupted canine crown. **RESULTS:** 85% patients had two or more conventional radiographic views prior to CBCT. Using the conventional radiographs, parallax localisation could be carried out in 82.5% of patients. Furthermore, teeth at risk of resorption could be identified in 90% of patients from conventional radiographs. CBCT indicated 62.5% of patients had evidence of incisor root resorption. **CONCLUSIONS:** The standards set were not met, suggesting the increased use of intra-oral radiographs is indicated in this patient group. We recommend considering additional intra-oral radiographs at a different angulation when apices of adjacent teeth are difficult to visualise. We also recommend clearly displaying orthodontic CBCT criteria in the department and amending the CBCT referral form to indicate conventional views previously taken.

P 3 ALADA: As Low as Diagnostically Acceptable - An image quality assessment of three CBCT scanners

Dagassan D*
Department of Oral Surgery, Oral Radiology and Oral Medicine, UZB-University School of Dental Medicine, Basel, Switzerland

AIM: Evaluation of perceptibility of different anatomical landmarks with standard and low acquisition parameters in three CBCT scanners with medium to large volumes. **METHODS:** One entire Thiel-embalmed cadaver's head was scanned in three CBCT scanners. The largest available volumes of each scanner were used to acquire CBCT-datasets with standard to minimum scanning parameter. A micro-CT scanner was used as the gold standard. Five dentists evaluated the visibility of different anatomical landmarks and rated image quality with a 5-point rating scale. **RESULTS:** Voxel size, mA and amount of images (scanning protocol) influences image quality depending on the CBCT-scanner used. Inter-rater reliability varies between 0.48 to 0.97 (Cronbach-Alpha) for the CBCT-scanners. Anatomical structures like the mandibular canal can be visualized best with voxel sizes up to 400 µm, with 4 to 6mA and "high definition" or standard-protocols. **CONCLUSIONS:** CBCT images in paediatric dentistry are

only used individually concerning dose levels. Visualization of different anatomical landmarks requires different scanning protocols to support adequate perception of these structures. Not all minimal parameters are sufficient to visualize anatomical structures adequately. Therefore, clinical indications with clear questions concerning specific anatomical structures are needed to choose adequate scanning protocols to reduce dose in paediatric dentistry.

P 4 Panoramic assessment of mesio distal canine angulation in anterior open bite patients

Muntean A*, Simu MR, Suhani RD, Festila DG, Mesaros AS
Paediatric Dentistry Department, Faculty of Dental Medicine, University of Medicine and Pharmacy - I.Hatieganu, Cluj-Napoca, Romania

AIM: The objective of this study was to evaluate, through panoramic radiography, the mesiodistal axial angulation of the maxillary and mandibular canine, in patients with anterior open bite, before and after orthodontic treatment. **METHODS:** The experimental sample consisted of 30 white patients (5 male, 25 female) in permanent dentition, with anterior open bite (vertical discrepancy 3 mm) treated with fixed appliances, vertical elastics, functional reeducation therapy, without premolar extraction. Panoramic radiography of the patients were realized at the beginning (T1) and at the end (T2) of the treatment. We correlate canine mesiodistal axial angulation with patient age, gender and treatment duration. Data were analysed with Pearson and Spearman's correlation and the results were considered significant for p0.05. **RESULTS:** Orthodontic treatment change tooth position and angulation in order to achieve functional and stable occlusion. The mesiodistal axial angulation of the maxillary and mandibular canine differed between T1 and T2; the values were higher in upper arch without statistical significance. Patient gender have an effect on canine position and orthodontic mechanic. The mean values and differences of the mesiodistal axial angulation of the canine were higher in females than in males (p0.05).Treatment duration was positively correlated with malocclusion gravity (p0.05). **CONCLUSIONS:** The panoramic radiography is an effective tool to assess the axial canine angulation in everyday practice, before and after orthodontic treatment. Correction of anterior open bite in non-extraction cases, with continuous arch-wires and vertical anterior elastics, upright the canine and exert a positive effect on stability and aesthetics.

P 5 Prevalence and characteristics of supernumerary teeth among a pediatric population - A radiographic study

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AIM: To investigate the prevalence and characteristics of supernumerary teeth (SN) in a pediatric population. **METHODS:** A retrospective study analysed 5381 non-syndromic patients (2906 boys) age range 5-14 years (mean age 8.15 ± 2.73) presented for the first time at the Pediatric Dentistry Department of Carol Davila University, Bucharest between 2014-2019. Dental records of the patients have been used and diagnosis was based on radiographs. It was evaluated the number, morphology, topography and complications of SN considering age and sex. Chi- square test was performed (p≤0.05). **RESULTS:** 27 SN were found in 22 patients (17 boys) with an average of 1.22 teeth/patient. The SN prevalence was 0.41%, boys being more affected than girls (0.31% vs 0.10%; SS, p 0.05). Most of the SN were found in 6-7 years group (45.4%). 81.8% SN teeth were single, 18.75% double and 6.25% triple. 74.1 % of SN had conical shape, 11.1% were tuberculate, 11.1% supplemental and 3.7% odontoma. 96.3% of SN were located in the upper maxilla, 77.8% of them being mesiodens. 33.3% of SN were fully erupted within the arch, 29.6% were palatally located and 37.1% were impacted (26% in normal position, 11.1% inverted). The most common complication caused by SN was the midline diastema (27.3%). **CONCLUSIONS:** Early diagnosis using radiographs is very important in order to inform family about these dental abnormalities, to avoid complications in adjacent teeth and to allow the most appropriate interdisciplinary treatment planning.

P 6 Radiological evaluation of the root resorption pattern of primary teeth

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AIM: Root resorption (RR) is a process that involves the loss of dental hard tissue as a result of clastic cellular activity. It is a phenomenon associated both with a physiological process in primary teeth and a pathological one, in the primary and permanent dentitions. Radiological evaluation of the pattern of RR in primary teeth over a period of 2 years in the Paedodontics Department of the "Carol Davila" UMP, Bucharest, Romania. **METHODS:** The

study group of patients comprised 482 healthy subjects (mean age 6.99 ± 0.09 years). The study group of teeth comprised 878 dental units examined by periapical and panoramic X-rays. Chi-square test was performed (SS, p≤0.05). **RESULTS:** The radiographically examined teeth presented RR in 78.8% of cases (n=692). The physiological RR prevailed with 72.7% and its pattern was preponderant apical and symmetrical. Pathologic RR was found in 27.3% of teeth (n=188) as follows: external RR 38.1% (n=72), internal RR 21.2% (n=40) and mixed type 40.7% (n=77). The main cause of pathologic RR was chronic periapical periodontitis (p0.001). **CONCLUSIONS:** Pathological RR was found in about 1/3 of the studied teeth. The mixed pattern of RR (external and internal) predominated and its main causes were pulpal and periapical infection.

P 7 Cone-beam computed tomography: an optimal method for endodontic treatment planning of adolescents and young people

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AIM: Standard methods of radiological examination (intraoral radiography, orthopantomography) are mostly used in practice. However, cone-beam computed tomography (CBCT) is known to be more informative for planning the endodontic treatment policy. The aim was to study the informative value of CBCT for planning the endodontic treatment of permanent teeth in adolescents and young people. **METHODS:** 195 CBCT scans, 195 orthopantomograms and 300 radiovisiograms of 159 patients aged 12 to 24 years (a study group) and 36 patients aged 25-30 years (a control group) were examined. **RESULTS:** The clinical diagnosis was confirmed and the endodontic treatment in young patients was planned using orthopantomography in 60.2%, radiovisiography in 62.0 %, CBCT in 81.53%. CBCT allowed to study in greater detail the anatomical dental features (number of roots, channels, size and structure of pulp chamber), the angle and the radius of curvature of root canals. The method also permitted to assess the state of the surrounding bone structures; their relationships with the maxillary sinus; to objectify the stage of root formation (apical foramen width, periodontal fissure, root thickness). The average threshold values of the apical foramen width and the dentin densitometry of mature permanent teeth were determined. The endodontic treatment approach depended on the range of apical foramen widths and dentin density. **CONCLUSIONS:** CBCT has more informative value than other imaging techniques and should be widely performed as the first line method.

P 8 Prospects for microfocal radiography in paediatric dentistry.

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AIM: To increase the effectiveness of diagnosis and dental treatment quality assessment in children by using microfocal radiography. **METHODS:** The need to reduce radiation exposure in case of dental examination is of current importance especially in children. Meanwhile, the quality of informative value of the radiographic images shouldn't go down. Digital microfocal radiography in practical application leads to a wide range of examination methods due to lower radiation exposure. 34 patients aged 4-18 were examined during dental visits; 100 microfocal radiographic examinations were carried out using the X-ray diagnostic machine Pardus-Stoma (Russia) having the following characteristics: the tube voltage 50 κV - 65 κV, the focal spot – no more than 0,1 mm, the tube current – 150 mκA, the sensor resolution – 10 mkm. **RESULTS:** The clinical manifestations in the oral cavity and the radiographic picture of the disease were taken for comparison to assess the effectiveness of the method. The study included an inspection (intraoral examination) of the teeth with carious lesions and their X-rays (72), pulpitis (15) and periodontitis (13). The number of positive coincidences of clinical and radiographic diagnoses was 83%, the number of negative ones – 17%. The analysis of the effectiveness of microfocal radiography showed the following statistical indices: sensitivity (Se) 78,27%, specificity (Sp) 80,76%, accuracy (Ac) 79%, predictive value of a positive result (PVP) 92,06% and predictive value of a negative result (PVN) 43,24%. **CONCLUSIONS:** Microfocal radiography may be recommended for additional examination in paediatric dental practice because of lower radiation exposure and its high diagnostic effectiveness.

P 9 CBCT and Endodontics: Resolving a Diagnostic Dilemma

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INTRODUCTION: Intrusion injuries affect the periodontal ligament with the tooth being forced apically, causing significant damage to the pulp and surrounding structures. **BACKGROUND:** Immature teeth may re-erupt spontaneously, however 60% may become non-vital and root resorption is common. CBCT is emerging as a method for diagnosing endodontic problems, as it gives a detailed

view of anatomical structures in 3D. **CASE REPORT(S):** A 10-year-old boy presented with a sinus between the UL1/UL2, having suffered severe intrusion of these teeth a year previously. Spontaneous re-eruption occurred prior to his presentation at the department. He also had severe upper anterior crowding which made radiographic assessment tricky, as the roots were overlapping on the images. Sensibility tests revealed that the UL2 was non-vital, and endodontics was carried out on the UL2. Post-obturation, the sinus was still present. A periapical radiograph with a GP point in the sinus was not diagnostic (overlapping roots). Re-opening the UL2, by removing the gutta percha filling, showed a clean canal. A CBCT was taken showing internal/external resorption of the distal aspect of the root of the UL1. The UL2 appeared to be healthy, with no periapical pathology. Endodontics was carried out on the UL1. **FOLLOW UP:** The 3-month follow-up showed healing of the sinus and no periapical pathology. Long-term follow-up will be continued, particularly in light of the patient's need for orthodontic treatment. **CONCLUSIONS:** This case highlights the use of CBCT radiography as a valuable diagnostic tool in endodontic treatment of traumatised teeth.

P 10 Audit of pre-orthodontic radiographs with justification, reporting and image quality

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AIM: The aims of this audit were to assess the pre-orthodontic radiographs taken at Ashtown Gate, HSE Orthodontic Unit and to assess the justification, reporting and image quality of these radiographs. **METHODS:** All new patient assessments were evaluated over a six-month period from January to June 2018. The data was collated and analysed using an Excel spreadsheet. Pre-Orthodontic Radiographs: The Consultant and Specialist Orthodontists agreed that all patients should have an orthopantomogram (OPG) and patients with a significant skeletal discrepancy should also have a lateral cephalogram (LC). Radiographic Justification and Reporting: 100% of radiographs should be justified and reported (consistent with the statutory requirement set by the Irish Dental Council and National Radiological Protection Board (NRPB) guidelines, respectfully. Image Quality: Three grades (excellent, acceptable and poor) were used, in line the NRPB in the UK. **RESULTS:** Pre-Orthodontic Radiographs: OPGs, 100% standard was met. LC, 94% of cases had LCs (21% of these were class 1, i.e. no skeletal discrepancy, and therefore were not expected to have required a LC). 97% of OPGs and 97% of LC had justification. 44% of OPGs and 58% of LCs were reported on. No radiographs assessed had a poor image quality rating. **CONCLUSIONS:** As a result of the audit, we advised the following recommendations: 1. Refresh of BOS 2016 radiographic guidelines, in particular on LC. 2. A copy of the justifications be kept in the patients' records. 3. Recommend reporting to be completed. 4. Recommend a re-audit in 6 months.

P 11 Methods of dose reduction in paediatric patients during panoramic radiography

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AIM: The aim of this presentation is to demonstrate the current trends of dose reduction in paediatric patients during panoramic radiography and to evaluate the concept of radiation protection. **METHODS:** Electronic databases for the last ten years, were searched for methods and equipment that have been proposed for dose reduction in panoramic radiography. These methods include: the use of digital imaging, the segmentation of the radiographic field, the application of optimizing exposure settings for children and shielding protection such as thyroid collars. **RESULTS:** Although the use of a short collimator is an efficient way of reducing the dose in panoramic radiography, it is not routinely applied in daily practice. Recent literature indicates that the use of different collimator protocols can reduce the effective dose from 4.5% up to 59.7%, depending on the selected program. Also, the use of a short collimator in combination with size-based exposure settings for children could significantly reduce the effective dose at approximately 30%. The use of thyroid collar may also add an extra protective effect, but it cannot be adopted due to the image distortion of the mandible. **CONCLUSIONS:** Although the amount of radiation per panoramic radiograph is relatively small, radiation doses are cumulative. Nowadays, it is highly recommended that clinicians should sufficiently justify any radiographic examination prior to exposing a patient to radiation. Child-appropriate technique factors and shielding factors should be employed.

P 12 Long term radiographic follow-up results of treatment in a Papillon - Lefèvre syndrome case

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INTRODUCTION: Retrospective evaluation of a young patient suffering from Papillon - Lefèvre syndrome (PLS) and the association between peri-implantitis, loss of implants and PLS observed for over 26 years. **BACKGROUND:** The patient was diagnosed with PLS syndrome at the age of 15. He was treated periodontally, however he did not comply sufficiently with the periodontist's instructions and follow-up recalls. **CASE REPORT(S):** The lack of maintenance and compliance of the patient to oral hygiene instructions and the severe periodontal destruction caused by PLS resulted in the loss of all the teeth in both the maxillary and mandibular arches (age 25). After a period of 2 years with complete removable dentures it was decided to place surgically 5 external hex titanium implants in the maxilla and respectively 4 implants in the mandible, supporting cross arch screw-retained hybrid restorations. Ten years later, the patient was diagnosed with severe peri-implantitis which caused the gradual loss of all the implants that were placed. **FOLLOW UP:** Long term radiographic evaluation of a PLS patient registered at a private dental clinic with a follow-up of 26 years. **CONCLUSIONS:** Dental treatment planning of patients with PLS is considered to be of high-risk, especially because of the severe periodontal destruction that they suffer from, therefore treatment planning with implants must be carefully conducted and executed taking in consideration the possible loss of implant supported restorations due to peri-implantitis..

P 13 Incidental findings in children cone-beam computerized tomographies and orthopantomograms: a systematic review

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AIM: Cone-Beam Computerized Tomography (CBCT) has expanded the spectrum of diagnostic information that can be gained compared to Orthopantomograms (OPGs). However, CBCT also covers a much wider field of the children's head with acceptable clarity. This increases potentially the probability of incidental findings, which has not yet been assessed in an evidence-based manner. **METHODS:** Eight literature databases were search without any limitations up to February 2019 for diagnostic studies on incidental findings from CBCTs or OPGs. Study selection, data extraction, and risk of bias assessment were performed in duplicate by two independent assessors, followed by descriptive data synthesis, due to the few included studies. **RESULTS:** Out of the 283 initial hits, four studies were included: two on 725 OPGs and two on 350 CBCTs. Apart from dental incidental findings, in OPG there were discernable radiopacities or mucosal thickenings of the sinus lining in 8.7% of the patients. In CBCTs, apart from dental incidental findings, many other findings could be discerned, including findings of the paranasal sinuses (mucosal thickening [10.2%], pneumatization [3.9%], antral pseudocysts [3.0%]), of the nasal cavity (concha bullosa [8.9%], deviated septum [8.0%]), of the airways (adenoid hypertrophy [15.1%], tonsillar hypertrophy [11.5%]), of the temporomandibular joints (1.2%), of osseous structures (vertebrae defects [1.8%], high bone density [4.3%]), or other tissues (calcification of glands/ ligaments/ blood vessels [13.6%] and intracranial/extracranial findings [1.0%]). **CONCLUSIONS:** Dental radiography and especially CBCT can reveal various incidental findings on children and therefore should be carefully evaluated from maxillofacial radiologists independently of the initial consultation reason.

P 14 Diagnosis and treatment of impacted maxillary canines: the importance of using 3D image technologies

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INTRODUCTION: A case of impacted maxillary canines successfully positioned into the occlusion line is reported. **BACKGROUND:** Clinical and radiographic diagnosis of impacted canines is essential for reaching good clinical results. The treatment in this type of cases should combine an early paedodontic approach and surgical and orthodontic techniques. Creation of space is essential for a minimal surgical exposure as well as management of others anomalies such as agenesis and microdontia of lateral permanent incisors. **CASE REPORT(S):** A 12-year-old patient presented in clinical examination maxillary right temporary lateral incisor, left permanent lateral incisor and both maxillary temporary canines. Malocclusion with posterior crossbite and constricted maxillary arch was also detected. Radiographic examination with panoramic and cone beam computed tomography (CBCT) showed palatal impacted maxillary permanent canines in radicular central permanent incisors area with cystic formation as well as absence of right lateral permanent incisor. A complete treatment is presented: interceptive treatment for expanding maxillary arch, surgical exposure, bonding of an attachment and complete orthodontic treatment

with traction of both permanent canines. Absence of lateral incisor was treated with prosthetic Maryland bridge while microdontic lateral incisor was reconstructed with composite resins. **FOLLOW UP:** The case was treated and followed-up during five years. **CONCLUSIONS:** Canines were aligned, leveled and positioned in the occlusion line in spite of their complicated initial position. The esthetic, functional and periodontal results remained stable in the retention phase. Intra and extraoral radiograph as well as 3D images were essential for the diagnosis, treatment and follow up of the case.

P 15 The use of CBCT in a children population from the North-East region of Romania

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AIM: To identify the reasons for which the dental practitioners of various specialty referred the children for Cone-Beam Computed Tomography (CBCT). **METHODS:** The investigation was carried out on the database of one private radiological clinic from Iasi, Romania. The data of the children that were investigated with CBCT for a period of 2 years (January 2017-January 2019) were collected. In this period, a total number of 78 children aged 7 to 17 years old were referred first for panoramic radiography and then for CBCT (for reasons as supernumerary teeth, odontoma, follicular cyst, dental ankylosis, cherubism, clefts, etc). Statistical analysis was performed using the Pearson chi-squared test in the SPSS Program version 22. **RESULTS:** In our study sample, the main reason for CBCT referral was the presence of dental anomalies (48.7%) followed by a cleft of lip and palate (24.36%). Cases of cherubism and osteoma had the lowest percentage of the referrals (1.28%). Regarding techniques, 55.13% of the CBCT were taken with a small FOV (40x50 mm), the effective patient dose being of 14.4µSv. The rest of the children were investigated with a larger FOV that ranged from 85x55 mm to 200x170 mm (effective patient dose 14.7 µSv) due to the specific needs of their pathology (lip and palate clefts, cherubism, osteoma, etc.). **CONCLUSIONS:** The use of CBCT with different FOV in pediatric dentistry may improve the diagnostic approach and the chances for a successful treatment in the more complicated cases.

P 16 Performance of Pediatric Dentists in Detecting and Diagnosing Dental Traumatic Injuries based on 2D versus 3D Imaging

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AIM: To assess the performance of pediatric dentists in detecting and diagnosing Traumatic Dental Injuries (TDI) using two different imaging modalities, periapical radiographs (2D) and CBCT (3D). **METHODS:** Both 2D and 3D images of 20 dental trauma cases in young children were presented in random order to a panel of Belgian pediatric dentists. Observers received instructions for screening of the images for radiographic findings related to the dental trauma, using structured scoring sheets. Findings, entered into an Excel Microsoft (2013) worksheet, were compared to those recorded by two benchmark observers and included comparison of correctly detected and diagnosed findings, incorrectly diagnosed findings and missed findings. Proportions were compared using Chi-square tests with significance set at 5%. **RESULTS:** Information recorded by 9 observers was included in the analyses. Overall, more findings were detected on 3D than on 2D images, both by benchmark and pediatric dentists. Performance of individual observers showed wide variation. On 2D images, 184 (31.9%) findings recorded by the panelists were classified as correctly detected and diagnosed, 47 (8.2%) findings as correctly detected but wrongly diagnosed and 345 findings (59.9%) as missed. Corresponding figures for 3D images were 284 (38.0%), 49 (6.6%) and 414 (55.4%). Statistical significance was reached only for the difference in correctly detected and diagnosed findings (p=0.02), in favor of 3D. **CONCLUSIONS:** Visualization of the third dimension yields a higher number of diagnostic findings in patients with TDI. The impact of experience of the dentist with TDI and complexity of the traumatic event needs further exploration.

P 18 Prevalence and distribution of anodontia in the permanent dentition in a sample of healthy children in Bucharest. A radiological study

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AIM: To assess the prevalence and distribution of anodontia by gender, age, dental arch and topography in a sample of 5-14 years old children who have attended a paediatric dentistry service. **METHODS:** The retrospective study used the clinical observation charts and radiographs of children who presented themselves at the Paediatric Dental Clinic of Carol Davila UMP during 2014-2019. The study group of patients consisted of 5381 children (median age 8.29 ± 0.12 years) who did not have general disorders affecting odontogenesis and dental eruption. The statistical processing of the results was performed using PSPP 1.0.1 using the chi-squared test, the results being considered significant for values of $p \leq 0.05$. **RESULTS:** The prevalence of anodontia in the study sample was 0.6% (n=32). The prevalence of anodontia was higher in girls (0.45%, n=24) than in boys (0.15%, n=8). The highest frequency of anodontia was recorded unilaterally (59.3%, n=19), at the mandible (56.3%, n=18) and in the fourth quadrant (37%, n=17). Within the patients' study sample, 51 teeth with agenesis were identified, of which 82.3% (n=42) in girls, with an average of 2.33 teeth per patient. The most commonly missing tooth was the second mandibular premolar (52.9%, n=27). **CONCLUSIONS:** Anodontia of permanent teeth was recorded mainly in girls and at the mandibular arch. Systematic radiological examination may be useful in the early detection of anodontia and the establishment of an optimal therapeutic attitude.

P 19 Application of cone-beam computed tomography to study root formation in children's permanent teeth in Moscow

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AIM: to study root formation timing in children's permanent teeth using CBCT data. **METHODS:** studying root formation features was carried out in 2800 permanent teeth of children aged 6 to 15, CBCT being performed to them by orthodontic indications. For investigations, CBC tomograph1 CAT was used (USA, Imaging Sciences International Inc.).The root formation study was performed in sagittal, axial, coronary projections and arbitrary planes. **RESULTS:** Root formation in the upper jaw central incisors is completed at 9,3 years old but in those of the lower jaw - at 8,2. In lateral incisors of upper and lower jaws10 and 9 years old respectively form roots. Canine roots in the upper and lower jaws are formed at 12,3 and 11,9 years old respectively. First premolar roots complete formation at 12, 4 years old (upper jaw), while those in lower jaw - at 14, 2. In second premolars of upper and lower jaws roots are formed at 12, 6 and 12,8 years old respectively. First molar roots are formed by 9,8 (upper jaw) and 9 years old (lower jaw). Root formation in second molars is completed at 14 (upper jaw) and 13,3 years old (lower jaw). **CONCLUSIONS:** CBCT is an objective method allowing to visualize teeth of both jaws, determine root formation timing in children's permanent teeth with minimal radiation load and high accuracy in one study. Root formation stages are the determining factor to choose endodontic treatment for children's permanent teeth.

P 20 Dentists knowledge and attitude in primary and tertiary health care institutions in Serbia towards radiology in pediatric dentistry

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AIM: The aim of this research was to evaluate knowledge of primary and tertiary health care dentists concerning the use of radiology in pediatric dentistry. **METHODS:** Total of 256 dentists from across the Serbia participated in the research. A questionnaire was created in order to examine dentists' attitudes towards using radiology in pediatric dentistry. The questionnaire consists of 39 questions. All questions were analyzed in SPSS 24 statistical software. Statistical significance is defined by p0.05. **RESULTS:** Out of 256 examinees, 82.8% work in primary and 17.2% work in tertiary health care institutions. Dentists working in primary health care institutions, both private and public, answered in majority (71.2%) that they would not expose pregnant women to radiological diagnostics. Statistics show that a significantly higher percentage of dentists working in tertiary health care institutions have dental X-ray machines (54.5%) and use protective equipment such as a lead apron (p=0.004), protective thyroid collar (p=0.004) and radiation protective shields (p=0.002). The results show that a notably smaller number of primary health care dentists make more than 21 periapical radiographs per week (11.1%), but only 24.5% answered that they use dosimeters and 31.3% regularly check radiology equipment. **CONCLUSIONS:** Based on the

conducted survey and the obtained results, it is concluded that dentists working in tertiary health care institutions are better supplied in radiological equipment and overall radiological knowledge.

P 21 Knowledge and attitude of dentists working in primary health care institutions in Serbia towards radiology in pediatric dentistry

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AIM: The aim of this study was to examine dentist's knowledge and attitudes about radiological practice in pediatric dentistry, at the level of primary health care. **METHODS:** : The research involved 208 dentists (131 general practitioners and 77 specialists) who work in private practice (107 dentists) and national health services (101 dentists), from different cities in the Republic of Serbia. The questionnaire specially designed for the purpose of this research was used as a research instrument which provided information about the demographic characteristics of the dentists, radiographic equipment, techniques, radiation protection and indications for radiography. **RESULTS:** Higher level of knowledge about radiation protection (X-ray room covered with lead, a protecting barrier, a lead apron, a thyroid collar) were shown by dentists who work in national health services (p0.05). 64.2% dentists in private practice hadn't knowledge who takes the X-rays (p0.05). The attitudes of the respondents about indications for radiography (orthodontic anomalies, fracture fork) statistically significantly differ among dentists who practice in private practice, in favor of specialists. Only 26% dentists have a license for their X-ray equipment, but 18.5 % of them take panoramic radiographs from every patient and that 90% in private practice and 10% in national health services (p0.05). **CONCLUSIONS:** The results indicate that attitudes about radiological practice in pediatric dentistry directly depend on title and type of practice. Dentists should be improve their knowledge by attending meetings and reading dental journals.

P 22 CBCT versus retrodentoalveolar radiography in endodontology diagnostic and treatment plan

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AIM: was to assess the impact of using CBCT examination carried out according to the European Commission Guidelines versus retrodentoalveolar radiography in terms of diagnostic and treatment plan. **METHODS:** Our study includes 57 patients with teeth that have not been endodontically treated, diagnosed with pulp necrosis and 30 patients with periapical lesions, with or without symptoms. The examiners – two endodontics specialists and one general and dentomaxillofacial radiologist– carried out a preliminary diagnosis, after a clinical evaluation, considering the patients' history, clinical signs, diagnosis tests, retrodentoalveolar radiographs for each of the teeth presenting one of the above mentioned pathologies. **RESULTS:** The population included in the study consisted of 87 patients: 44 women – 51.2% and 43 men – 48.8%. The average age of the men was 33.69 ±11.774 and of the women 33.23 ± 11.287, without any statistically significant differences in terms of age or gender (p = 0.857) Among the 57 patients with pulp necrosis, periapical radiotransparency was diagnosed in 80 roots by using retrodentoalveolar radiographs, compared to 92 diagnosed using CBCT. Among the 30 patients with periapical lesions, 35 affected roots were found by using retrodentoalveolar radiographs versus 54 diagnosed by using CBCT. Using the CBCT-PAI index in order to evaluate the periapical lesions, the maximum value for the maxillary was S3 49.5% and for the mandible – S4 65.1%. Discussion: The CBCT examination revealed significantly more periapical lesions than retrodentoalveolar radiographs did. **CONCLUSIONS:** The diagnosis and treatment plan were changed for the teeth in which periapical lesions were found as a result of the CBCT examination.

P 23 The use of 3D imaging in diagnosing supernumerary teeth: a clinical and surgical approach

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INTRODUCTION: Supernumerary teeth (ST) , pathological formations and other anatomical structures may interfere or even stop the normal development and eruption of

teeth. When it comes to surgery, a precise imaging of the clinical situation is mandatory. **BACKGROUND:** In common practice, usual radiographic techniques (i.e. "Clark"/parallax/SLOB/panorax, etc.) involves more than one exposure and may be influenced and distorted by pathological or anatomical formations. Hence 3D imaging could be a proper tool for both diagnosing and locating any finding, needing all precaution principles in using ionized radiation to be followed for young children. To date, the CBCT is the indicated means. **CASE REPORT(S):** N.A., 10 years old, had both lateral permanent upper incisors already erupted, but missing clinically both central ones. Only a 3D imaging lead to a positive diagnosis of two ST adjacent to the central incisors, interfering with the eruption of the latter. Regular X-rays revealed no accurate finding. Due to the age, carriers risk and the nature of the surgical procedure, a comprehensive and full dental treatment under general anesthesia is hereby described. **FOLLOW UP:** Normal eruption, carries activity control and oral hygiene management over 14 months. **CONCLUSIONS:** 1) A great caution and proper selection of the imaging method involving ionized radiation in pediatric dentistry is to be followed and must meet at least the "ALARA" and "Stochastic Biological Effect" principles. 2) The interdisciplinary approach in pediatric dentistry should be the best common practice in young children, with both clinical and surgical dental needs.

P 24 The knowledge of dentists from Iasi, Romania, regarding the use of radiographic investigation in children

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AIM: To assess the level of dentist's knowledge for a correct prescription of dental radiography in children, in relation with current guidelines. **METHODS:** A questionnaire with 15 multiple choice questions was applied to a sample of 250 dental practitioners. The adjusted response rate was 80%. The study evaluated the correct prescription of periapical X ray, bite-wing radiography, occlusal radiography, orthopantomography (OPG), Cone Beam Computed Tomography (CBCT). The level of knowledge was evaluated according to dental specialty and gender. The Pearson's chi-squared test was used to measure the degree of association between variables (p value 0.05 was statistically significant). **RESULTS:** The majority of the dentists showed a high level of awareness in prescribing periapical radiography, bite-wing radiography and OPGs. The knowledge was moderate and poor for 52% of dentists for prescribing the CBCT. Regarding the prescription of occlusal radiography 20% of dentists had poor knowledge. There was a significant correlation between the levels of dentist's knowledge and their specialty training (educational level) in prescribing radiographic investigations in children. **CONCLUSIONS:** In our study sample, the majority of the dentists that have a specialty (pediatric dentists, orthodontists, endodontists) proved to know the guideline for prescribing radiographic investigation in children, but there are necessary further trainings in this area for general practitioners in order to permanently update their knowledge.

P 25 CBCT Imaging and Dental Management of a Cherubism Case: 3-Year Follow-up

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INTRODUCTION: Cherubism is a non-neoplastic, autosomal dominant inherited disease characterized by multilocular bone enlargement affecting both jaws. Lesions are generally located in angulus mandible and tuber maxilla. In conventional radiographs, lesions appear multilocular and well-defined. In addition, CBCT is used to determine the relation of the lesions with anatomical structures. **BACKGROUND:** Although some cases of cherubism are more aggressive, the treatment approach is mostly follow-up procedures since the lesions usually regress after puberty. Therefore, it is very important to monitor the lesions by CBCT for the accurate assessments. **CASE REPORT(S):** A 11-year-old male patient was admitted to the clinic with the complaint of swelling of the mandible. Clinically, no signs of pain, paresthesia or lymphadenopathy were detected, however multicystic bilateral areas like "soap bubble" appearance were detected on panoramic radiography. On CBCT imaging, lytic sclerotic areas were observed in ramus, condyle was not affected and there was no cortical bone destruction. Histopathological examination revealed the diagnosis of cherubism. In genetic analysis, SH3BP2 gene mutation was observed as in the majority of cherubism cases. **FOLLOW UP:** Although it was observed expansion in the jaws, cortical bone defects, periosteal reaction and displacement of the teeth in CBCT images at the 18th and 36th months, surgical excision was not done due to recurrence potential in pre-puberty. Progression pattern of the lesion will be monitored and the post-pubertal surgical treatment will be planned. **CONCLUSIONS:** Operative/surgical intervention does not change the progression of Cherubism lesions and pre-pubertal excisions result in recurrence. In monitoring these patients, use of CBCT imaging is recommended.

P 26 CBCT exam and family history. Essential tool for early diagnosis and cancer risk assessment to children with delayed dentition

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INTRODUCTION: Gardner syndrome is a rare genetic disease characterized by intestinal polyps, supernumerary teeth, multiple osteomas, and soft-tissue tumors. **BACKGROUND:** Dental abnormalities (supernumerary teeth, multiple maxillofacial osteomas, delayed in dental eruptions and hypercementosis) with soft tissue tumors associated with a family history should make the radiologist and the dental practitioner suspicious for the Gardner's syndrome diagnosis. **CASE REPORT(S):** We present a 14-year-old boy that did panoramic imaging for delayed dental eruptions of permanent teeth. The Pediatric dentist diagnosed delayed dental eruptions and supernumerary teeth and referred the patient for maxillofacial surgical consultation. The maxillofacial surgeons ask a CBCT imaging with a large FOV (200x170mm), and genetic consultation. CBCT revealed supernumerary teeth and craniomaxillofacial osteomas, that resulted to the differential diagnosis of Gardner's syndrome. Genetic consultation including detailed family history identified a dominant transmission of the disease and the diagnosis to Gardner syndrome was established, as the mother and their maternal grandfather have the typical signs for Gardner and died at 30 - 35 years old. **FOLLOW UP:** Colonoscopy that was performed at 3, 9 and 18 months after radiographic indication identified colon polyps and further genetic testing resulted to the diagnosis of a mutation in APC gene (Adenomatous polyposis coli), a key tumor suppressor gene. **CONCLUSIONS:** Early dental, radiological and genetic diagnosis and identification of high - risk individuals are important for the management of Gardner syndrome as in such cases is a high risk of colon cancer that can be prevented by establishing a preventive program based on repeated colonoscopy.

P 27 Are routine maxillary occlusal radiographs for children under general anaesthesia necessary?

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AIM: To investigate if it is justifiable to take routine maxillary occlusal radiographs for all children undergoing comprehensive oral rehabilitation under general anaesthesia (CORGA). **METHODS:** Participants were medically healthy children under the age of 14 years, who had a "routine" maxillary occlusal radiograph taken during their CORGA, between December 2015 to June 2018. The records were de-identified and affiliated with their demographic details, dmft, reason and source of referral. Patients who had a known anomaly identified prior to the GA were excluded from the sample, resulting in 311 records. Two calibrated examiners assessed the maxillary occlusal radiographs, and a third examiner was consulted where clarification was required. Radiographic technique errors and conditions of interest to the primary and permanent dentition were noted. Where anomalies were found the overall impact on the dental management was also noted and the data was analysed using Microsoft Excel. **RESULTS:** In the 80 cases where the maxillary occlusal radiograph was purely routine, a supernumerary tooth was identified in three patients (3.75%). **CONCLUSIONS:** The findings of the study highlight the importance of maxillary occlusal radiographs in identifying supernumerary teeth, especially during CORGA.

P 28 The Surgical Extraction of Impacted Maxillary Supernumerary Teeth with the Guidance of CBCT Imaging: 18-month Follow-up Study

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INTRODUCTION: Impaction of permanent maxillary incisors affect aesthetics and function in pediatric patients. The etiology of impaction is multifactorial and may be related to orthodontic profile, teeth crowding, supernumerary teeth, early loss of primary teeth, jaw pathologies, dentoalveolar trauma and other dental anomalies. **BACKGROUND:** Impacted maxillary incisors teeth are generally treated by the elimination of the etiological factors, surgical extraction of teeth, and paedodontic/orthodontic intervention. Moreover, CBCT imaging may be beneficial for the dentists in planning of surgical extraction of impacted teeth. **CASE REPORT(S):** A 7-year-old male patient was admitted to the clinic with the complaint of delayed eruption of anterior teeth. Panoramic radiograph revealed that impacted supernumerary teeth did not allow the eruption of underlying permanent central incisors. After the surgical extraction of supernumerary teeth with guidance by using CBCT images, case was followed regularly in terms of proper teeth eruption. A removable partial space maintainer was applied for the esthetics and space management. **FOLLOW UP:** The present case was recalled 6 month intervals. Anterior region was evaluated using periapical and panoramic

radiography on each appointment in addition to clinical examination. Once the teeth are erupted in dental arch, orthodontic intervention will be performed in case of crowding. **CONCLUSIONS:** The multidisciplinary treatment approaches allow the functional and aesthetic rehabilitation, thus reducing the patient's psychological impact caused by the lack of an anterior tooth.

P 29 Dental late effects of antineoplastic treatment of childhood cancer survivors: Radiographic findings

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AIM: The aim of the study was to report the radiographic late dental effects of antineoplastic therapy and associate them with the treatment received. **METHODS:** Twenty children and young adults aged 4-21 years, that have been treated at ages 0-10 years and have completed antineoplastic treatment at least 1year before the day of examination were included. Retrospective medical records and recent panoramic radiographs were examined. Dental defects were recorded and graded for severity according to Hollta's Dental Defect Index (DeI). Prevalence of each late dental effect was calculated and non-parametric statistics were used to associate them with different treatment variables. **RESULTS:** Most participants (90%) presented with at least one defect, with the most common being impaired root growth (84%) followed by arrested root growth, microdontia and agenesis. Mean value of DeI was 18, with almost half of the participants (45%) characterized as having severe defects. Radiotherapy increased the presence of impaired root growth, although radiation field and dose did not affect the prevalence of the defects. Antimetabolites and vincristine were associated with taurodontism and cyclophosphamide with impaired root growth, taurodontism and microdontia. Haemopoietic stem cell transplantation was associated with increased rates of taurodontism and agenesis. **CONCLUSIONS:** Dental defects are common in most childhood cancer survivors, with their severity varying according the treatment modality. Most common defect found was impaired root growth, strongly associated with a history of prior Radiation therapy.

P 30 Aggressive periodontitis: A century lasting riddle in dentistry

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AIM: Ever since the early twenties, aggressive periodontitis has been an issue of great controversy. The aim of this historical quest is to investigate the scientific evolution of our knowledge on this form of periodontal disease, whose diagnosis remains a grey area. **METHODS:** Extensive research of the bibliography at PubMed, Cochrane Library and Scopus research bases and different scientific collections. **RESULTS:** The first attempt of a clinical description appeared in 1938, setting 3 specific criteria for disease identification. However, the terminology and diagnostic pattern have changed in the many workshops that followed. A major factor for differential diagnosis is patient age, especially in association with alveolar bone loss and loss of attachment. Radiographic morphology of the defect can also be indicative, as well as symmetrical lesions and distribution at specific teeth groups. Furthermore, the presence of Aggregibacter actinomycetecomitans plays a key role in the etiology of juvenile periodontitis, guiding the therapeutic approach. The familial nature of the disease implies the need for examination of all siblings of a patient. Interestingly, the detection of the disease is sabotaged by a high prevalence of caries and gingivitis in children, as well as radiographic difficulties in the exposure of early bone loss. **CONCLUSIONS:** Rapidly evolving periodontitis has gone through a long course until the most recent change in 2018, when a whole different diagnostic approach has been suggested. Radiographic assessment remains particularly important, whereas CBCT evaluation seems to be very helpful for both diagnosis and surgical treatment.

P 31 Oral self-injury in institutionalized children: Report of a Case from Romania

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INTRODUCTION: Oral self-injury is often the first sign of a psychiatric disorder. In the Romanian orphanages, children usually grow up with a lack of basic feelings, fundamental for their normal mental development. Our aim is to report a case of oral self-injury in an institutionalized 14-year-old girl. **BACKGROUND:** Oral self-mutilation in institutionalized children occurs amid behavioral, emotional and mental disorders. Self-mutilation has been

defined as the deliberate damage or alteration of one's own body tissue without suicidal intent. The regions of the body that are frequently affected are the oral and perioral tissues, neck and hands. **CASE REPORT(S):** A 14-year-old girl was referred to the Department of Pediatric Dentistry, with laceration of the entire left half of the superior lip, self-inflicted by repeated biting with her frontal incisors and with multiple self-inflicted lacerations on her wrist. The patient had a history of mixed anxiodepression disorder. **FOLLOW UP:** We reassessed the present case after one week. The tissue of the upper lip presented a small healed wound. On the jugal mucosa, we observed small biting lesions correspondent to chronic cheek biting. We reexamined the patient after 1 year and a white colour „patch" with abrupt edges that looked like leukoplakia was noticed on the jugal mucosa, but in this case incisional biopsy is mandatory for obtaining the correct diagnosis. **CONCLUSIONS:** There is a requirement of continuous monitoring and evaluation of our clinical patient over time and interdisciplinary treatment. Dentists must be aware that self-inflicted oral injuries, although thought to be uncommon, are quite widespread.

P 32 Localised Juvenile Spongiotic Gingival Hyperplasia: A Case Series

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INTRODUCTION: Localised Juvenile Spongiotic Gingival Hyperplasia (LJSGH), first described in 2007, is a relatively new clinical and histopathological diagnosis. Presenting as a localised erythematous lesion of the anterior gingivae, it is often mis-diagnosed as 'puberty gingivitis'. **BACKGROUND:** Presenting in a peri-pubertal age, LJSGH presents as a vivid, erythematous papular lesion affecting a discrete area of the attached and free gingiva. The labial aspect of the anterior maxilla is most commonly affected. It is refractory to mechanical periodontal treatment, differentiating it from other gingival conditions. **CASE REPORT(S):** Case 1: 10 year old female presenting with a 12 month history of a localised erythematous lesion involving the upper left lateral incisor. Case 2: 10 year old male presenting with a 5 month history of a "spongy" lesion involving the gingiva of the upper left central incisor. Case 3: 9 year old female presenting with a 12 month history of a localised, erythematous, well-demarcated lesion involving the labial gingivae of the upper right lateral incisor. The lesions were asymptomatic with bleeding on brushing reported. All patients failed to respond to improved mechanical plaque control measures. Excisional biopsy was performed in all cases. **FOLLOW UP:** At review, ranging from 3- 18 months, there was no evidence of recurrence following excisional biopsy. **CONCLUSIONS:** LJSGH is an under-reported condition. Surgical excision is currently the favoured treatment modality with recurrence rates of 6-16% reported. Further research is required to confirm the aetiology and pathogenesis of this condition. Early recognition and referral is crucial for timely diagnosis, appropriate management and to prevent over-treatment.

P 33 WITHDRAWN

P 34 Genetic factors of dentophobia in children

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AIM: To analyze allelic polymorphism of gene Stathmin (STMN1) in children with irresistible fear of dental treatment. **METHODS:** DNA samples were obtained from 61 children with rampant caries (3 to 7 years) with and without fear of dental procedures (31/30). Treatment of children of experimental group were conducted under general anesthesia. A molecular genetic study of polymorphic locus c.2166TC of gene STMN1 was performed by using method of restriction enzyme analysis. Amplification of DNA sequences in vitro was performed using the method of polymerized chain reaction. **RESULTS:** The pronounced increase the proportion of heterozygous genotype STMN1 2166TC was observed in experimental group - 74.2% ($p = 0.05$). Low functional genotype STMN1 2166CC was determined twice as often compared to control group (12,9 and 6,7%, respectively). Thus, 72% of children with fear of dental procedures were determined with allele C of polymorphic locus c.2166TC of gene STMN1 in heterozygous state and nearly 13% in homozygous state. Genotype STMN1 2166TC has been found to increase the risk of fear by 4.31 times (CI 1.45 - 12.7). In contrast, the genotype STMN1 2166TT detects a probable protective effect: OR = 0.13, CI: 0.04-0.46. **CONCLUSIONS:** Conducted research of allelic polymorphism of locus c.2166TC of STMN1 gene in children with irresistible fear of dental treatment revealed that presence of genotypes 2166TC or 2166CC in STMN1 gene may imply existence of innate fear and might be an indication to treat of children under general anesthesia.

P 35 Efficacy of virtual reality distraction in reducing pain and anxiety during local anaesthesia in paediatric patients

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AIM: Current non-pharmacological approach intended for minimizing pain and anxiety levels related to the procedure, is presented by virtual reality devices, enabling immersive distraction during treatment. Aim of this study was to determine the efficacy of virtual reality (VR) in reducing injection pain and anxiety during local anesthesia (LA) with conventional syringe in paediatric patients. **METHODS:** The clinical trial is a randomized controlled crossover assignment. Included patients are 8-12 years old requiring BI for conservative treatment of two primary maxillary molars bilaterally. After dental fear registration on CFSS-DS eligible patients undergo two single-visit treatments with VR allocated to either first or second BI via computer-generated randomization sequence. Primary outcome measure is pain felt during BI, reported by patient on VAS. Secondary outcomes: pain-related behavior according to FLACC scale; self-reported anxiety on Facial Image Scale; heart rate; patient preference to BI method. Data (n=41) was analyzed by T-test for paired samples, hierarchical multiple regression and one-way ANOVA, p.05. **RESULTS:** Statistical analysis found significant subjective and objectively assessed reduction in pain perception and anxiety levels in benefit of VR-injection compared to traditional LA. VR-distraction during LA was preferred over conventional method. **CONCLUSIONS:** Preliminary results validate VR-distraction as effective and potentially beneficial non-pharmacological method for reducing injection pain and anxiety in paediatric dental patients.

P 36 Association between dental fear and anxiety and exposure to violence in teenagers

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AIM: To examine the association between dental fear and anxiety (DFA) and exposure to physical violence, sexual abuse, witnessing interpersonal violence and bullying in adolescents. **METHODS:** 4974 adolescents aged 15 to 18 years took part to a population-based survey in Södermanland County, Sweden. We analyzed answers regarding socioeconomic status (SES), DFA, self-perceived oral health SPOH, general health, self-reported psychological disorder and exposure to violence. **RESULTS:** In total, 8.4% reported DFA. Girls reported significantly more often DFA (10.2%) compared to boys (5.9%) (p0.001) whereas adolescents not identifying themselves as male or female reported the highest prevalence of DFA (25.2%, n=111). Adolescents with both parents unemployed reported significantly more often DFA (14.2%; p=0.017) as did adolescents living in family homes or foster care (16.4%; p0.001). DFA was significantly more prevalent among teenagers smoking (p0.001) and who use drugs (p=0.024). Poor SPOH was significantly more often reported among adolescents with DFA. Intimate partner violence, physical and sexual abuse were also significantly more often reported by adolescents with DFA. In a multivariate stepwise regression analysis controlling for SES, exposure to bullying (p=0.001), not living together with both parents (p=0.010) and exposure to physical violence (p=0.013) were independently and significantly related to DFA. **CONCLUSIONS:** Dental professionals should ask regarding social context and experience of violence and bullying when meeting adolescents with DFA.

P 37 The effect of television distraction versus Tell-Show-Do technique in children undergoing dental treatments

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AIM: We evaluated the effect of watching television during dental treatment on pediatric patients' anxiety and cooperation compared to the commonly used conventional Tell-Show-Do (TSD) behavioral management method **METHODS:** Sixty-nine pediatric patients were randomly divided into two intervention groups: a group that was managed by television distraction and a control group that was managed by TSD. Two dental treatment visits were provided for each patient. Anxiety was assessed by the Facial Image Scale (FIS) and cooperative behavior was assessed by Frankl's scale. Pulse rate and oxygen saturation were also measured during the treatment **RESULTS:** Behavioral management by television distraction was more effective than TSD in reducing children's anxiety, increasing their cooperation with the treatment and reducing their pulse rate during restorative dental treatments. Particularly, television distraction significantly alleviated anxiety and increased patients' cooperation during the administration of the anesthetic injection. There was no change in oxygen saturation during the treatment and it was similar in both intervention groups. **CONCLUSIONS:** Television distraction is an effective method for reducing anxiety and improving cooperative behavior in children during dental treatments

P 38 Dental management of a phobic patient with cystic fibrosis

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INTRODUCTION: CF is a complex, lethal, multisystem, autosomal recessive disorder, with an incidence of 1 in 2000. Patients with CF exhibit abnormal activity of exocrine glands, especially in the respiratory and alimentary system. **BACKGROUND:** General anesthesia is contraindicated when respiratory function is poor. **CASE REPORT(S):** A 13 years old girl, under treatment for pulmonary infection, was referred by the pediatricians to the dental clinic complaining of toothache. The medical history disclosed CF and colonization of the lungs with pseudomonas. Intraoral examination revealed dental abscess in tooth 36, cavities in 26,46,65 and residual roots of teeth 55,75,85. The patient had never visited a dentist before because of dental phobia, did not cooperate for drainage of the abscess, refused any dental treatment except antibiotics and asked for treatment under GA. Following consultation with the pediatricians and the anesthesiologists, GA was excluded due to the potential risk involved. The treatment and the procedure of the extractions were carefully explained to the patient, in an effort to establish her cooperation. The patient was subjected to surgical extraction of 36 and extractions in the 55,65,75,85 under IV sedation with 0,5mg midazolam. **FOLLOW UP:** The patient was treated in an ambulatory setting after the operation. Treatment included fillings of 26,46, pit and fissure sealants of 16,17,27,37,47 and fluoride application. Over a period of two years she is in good oral health. **CONCLUSIONS:** Interdisciplinary approach, behavior management and modifications in dental treatment are necessary in severe medical conditions like CF complicated with dental phobia.

P 39 Management of infraoccluded primary molars – A case series

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INTRODUCTION: Infraocclusion is the condition in which teeth cannot maintain their occlusal level and clinically appear lower than the adjacent ones. **BACKGROUND:** Infraocclusion can be mild, moderate or severe and it is diagnosed both clinically and radiographically. Although the main cause is ankylosis, the aetiology of infraocclusion remains unidentified. Infraocclusion of primary molars is often noted in premolar hypodontia cases but occasionally occurs in the presence of permanent successors. Infraocclusion can lead to a number of complications including ectopic eruption of permanent teeth, vertical bone loss, over eruption of the antagonists, impaction of successors and tilting or caries on adjacent teeth. Management may involve complex surgical and/or restorative treatments. **CASE REPORT(S):** The authors discuss five cases of infraoccluded primary molars, with different presentations, in children aged between 6 and 14 years. Distinct management approaches were adopted according to the age of the patients, presence or absence of permanent successors and the need for orthodontic treatment. Due to the severity of infraocclusion all cases involved simple or surgical extractions under inhalation sedation or general anaesthetic. Following this, space maintenance, orthodontic treatment to idealise available spaces or prosthetic tooth replacement with resin retained bridges were performed. **FOLLOW UP:** Periodic reviews have been arranged in order to monitor eruption of permanent successors or review/maintain resin retained bridges until implants can be considered. **CONCLUSIONS:** Multidisciplinary and timely management of infraoccluded primary molars is crucial, both in the presence and absence of permanent successors.

P 40 Severe ankylosis of deciduous molars resulting to impaction

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AIM: The aim of this study is to review the current literature on etiology, diagnosis, and treatment of severe ankylosis of the second deciduous molars that results to their impaction and to present characteristic cases. **METHODS:** A research based on the English literature published between 2004 to 2018 at the electronic databases PubMed and Scopus with the keywords severe ankylosis, secondary impaction, deciduous molars, children, has been conducted. **RESULTS:** The etiology of this condition remains unknown although it has been suggested that it is multifactorial. Local infection, mechanical, chemical or thermal irritation, insufficient potential of eruption, local metabolic disturbances, congenital absence of permanent successor and genetical predisposition have been considered as causative factors. The degree of ankylosis is defined as mild, moderate or severe. The diagnosis of severe ankylosis is established clinically and radiologically by the infraocclusion of the defective teeth at or below the cervical line of the adjacent teeth during the primary or mixed dentition's period. Severely ankylosed primary molars remaining untreated, may reveal serious consequences including marked inclination of the adjacent teeth, overeruption of the opposing teeth

and more rarely total impaction. In the latest cases, the recommended treatment includes surgical removal of the impacted primary tooth followed by orthodontic management. Surgical removal can be demanding and difficult, depending on the patient's age and degree of impaction, while in more severe cases general anaesthesia is required. **CONCLUSIONS:** Early diagnosis of severe ankylosis and the relevant treatment plan are the required steps to prevent serious consequences and avoid more complicated treatment approach.

P 41 Impact of surgery approach in impacted teeth in children on the gingival esthetic

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INTRODUCTION: We compared 2 children treated for impacted teeth. One with palatal position and one with vestibular position. **BACKGROUND:** Impacted teeth in children mostly require surgical approach which needs to be chosen accordingly to their position, children´s age and further treatment needs. Gingival attachment is important for the biological factor of a tooth. The appearance of gingiva is emphasized in frontal region. It has 2 main goals: functional and esthetics. **CASE REPORT(S):** Child with vestibular position of impacted canine was treated with open eruption approach-apically shifted flap. Child with palatal position of impacted canine was treated with open eruption approach-fenestration. Then orthodontic treatment with active orthodontic traction followed in both cases. The position of the teeth and the amount of attached gingiva were observed and documented before the treatment during the orthodontic procedure and within the time the tooth was fully in the dental arch. Any further surgery correction was written down. Hyperplastic gingiva was observed in apically shifted flap. **FOLLOW UP:** There were no periodontal pocket after both procedures, no pathological mobility in teeth. **CONCLUSIONS:** The open eruption approach in palatally positioned canine showed better gingival results then in vestibullary positioned one.

P 42 Complications in permanent dentition after primary tooth bud enucleation: variations within one family

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INTRODUCTION: Bud enucleation consists of the removal of unerupted primary canines and is also known as infant oral mutilation (IOM). Sub-Saharan African inhabitants believe in this traditional treatment, mostly undertaken by a traditional healer, as a cure for infantile illnesses such as diarrhea, fever and vomiting. This report presents four cases of IOM with varying complications. **BACKGROUND:** Several long-term dento-alveolar complications of IOM have been described in the literature. Complications may involve permanent canines and/or lateral incisors. Most frequently reported anomalies are dental enamel defects, dental malformations, eruptional disturbances, retention of primary lateral incisors or absence of permanent canines or lateral incisors. **CASE REPORT(S):** A Somali family with five children ranging in age between 9 and 14 years, was referred to the pediatric dental clinic of the University Hospitals of Leuven by a private practitioner because of severe fluorosis. Four out of five children had undergone bud enucleation in their first six months of life because of gastrointestinal problems. Clinical examination showed an absence of the lower permanent canines in three of the four siblings. Radiographical examination revealed varying complications ranging from severe malformation and transmigration to missing lower canines. The fourth patient presented normal clinical and radiographical findings. **FOLLOW UP:** Orthodontic tooth regulation was considered but not applied because of socio-cultural aspects, financial implications and presence of fluorosis. **CONCLUSIONS:** These cases confirm findings from literature describing a wide variation of complications in the permanent dentition following IOM. In patients with African immigration background it must be taken into account that they may have undergone these ritual practices.

P 43 An unusual presentation of a mandibular swelling in a 6 year old.

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INTRODUCTION: Bony expansion in children is unusual. Aetiology can be odontogenic or non-odontogenic,

ranging from cystic lesions to ameloblastoma, myxoma, fibroma, through to fibrous dysplasia and malignancy. **BACKGROUND:** A six year old boy was referred with an asymptomatic bony swelling of the lower right labial sulcus, present for over six months. **CASE REPORT(S):** Clinical examination revealed a hard swelling of the right mandible extending from the primary canine to the second primary molar. The orthopantomograph (OPG) revealed a large corticated, unilocular radiolucency in the body of the mandible, associated with the root apices of the lower right second primary molar and with the crowns of the unerupted permanent premolars. A CBCT provided more information regarding the size of the lesion and its relationship with the involved teeth. A biopsy was obtained and the lesion was marsupialised using an appliance with an intra socket acrylic plug. **FOLLOW UP:** The biopsy confirmed an inflamed squamous epithelial cyst lining consistent with a dentigerous cyst. Upon fourteen month review, there was an increase in bony infill and successful eruption of the first premolar, which has a hypoplastic area on the buccal surface. **CONCLUSIONS:** Appropriate investigations are essential in the management of bony swellings in children. 3D imaging to aid in diagnosis and treatment must be justified in children due to the increased radiation dose. In this case, the main justification for the 3D imaging was the relatively large swelling of a small mandible in a young child. Long term follow-up is required to identify consequences of pathology, including recurrence in children.

P 44 A case series of dense bone islands in five paediatric patients

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INTRODUCTION: Dense Bone Islands (DBI) are anatomic variants defined as radiopaque lesions often presenting as accidental findings. DBI can also be known as idiopathic osteosclerosis, bone whorl, focal periapical osteopetrosis, bone scar and enostosis. They are considered idiopathic and are asymptomatic, with no intra-oral manifestation and no bony expansion. These lesions may vary in size, outline, shape, and density, and can be fused to roots or separate from adjacent teeth. **BACKGROUND:** Prevalence of DBI ranges between 1.7 and 5.4%, with the mandibular, molar and premolar regions more frequently affected. The lesion may increase in size and may complicate orthodontic treatment or implant placement. Differential diagnosis includes periapical cemental dysplasia, osteoma, complex odontoma, cementoblastoma, osteoblastoma and hypercementosis. **CASE REPORT(S):** Five adolescents were referred for advice on management of radiopaque lesions of the mandible. The individuals referred were 3 boys and 5 girls, aged between 12 and 16 years old. Four had OPGs and one had a cone beam computed tomography (CBCT). All radiographic reports described DBI, with three reports advising caution with orthodontic tooth movement due to risk of root resorption. No intervention was recommended or undertaken. **FOLLOW UP:** One case had a two-year follow up by the orthodontist, during which orthodontic treatment was performed, with no root resorption noted. Liaison with orthodontic colleagues was undertaken on the remainder, followed by initiation of orthodontic treatment. **CONCLUSIONS:** DBIs seldom require treatment, however due to their rare complications and potential severity of differential diagnosis multidisciplinary care and accurate diagnosis are of utmost importance.

P 45 Primary failure of eruption of a lower primary incisor: case report of a 4 year old child

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INTRODUCTION: Primary failure of eruption (PFE) is a rare and poorly understood condition causing incomplete tooth eruption in the absence of trauma, ankylosis or obstruction to tooth movement. **BACKGROUND:** Failure of eruption may affect permanent or primary teeth, more frequently in the posterior segments. Aetiology remains uncertain, however, it is thought that genetic factors may be associated leading to disruption of the eruption process. Differential diagnosis includes single tooth ankylosis and mechanical failure of eruption. Management is challenging, often involving extraction of the affected tooth or no treatment but review. **CASE REPORT(S):** A three year old child was referred to the Eastman Dental Hospital in 2017 for management of an unerupted primary mandibular left central incisor (LLA). There were no relevant medical, dental histories and no family history of failure of eruption. Intra-oral examination revealed a primary dentition without pathology, except the failure of eruption of LLA, which had never been present intra-orally. **FOLLOW UP:** It was decided to monitor LLA for 6 months to allow spontaneous eruption, should it occur. The radiographic position of LLA did improve and periodic monitoring has continued since 2017. Future management includes monitoring of eruption of the permanent dentition with surgical and/or prosthodontic treatment if required. **CONCLUSIONS:** PFE can be regarded as an eruption defect, manifesting as complete failure of eruption or cessation of initial eruption with no obvious causative factors. Management should include not only clinical treatment, but also sequential radiographic monitoring to assess positional changes and to eliminate damage to adjacent structures.

P 46 Maxillary canine first premolar transposition

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INTRODUCTION: Transposition is an interchange in the position of two adjacent teeth. Reportedly, maxillary canine and premolar transposition is the most prevalent transposition in human dentition, with an incidence of 0.135–0.510%. **BACKGROUND:** The exact mechanism of canine transposition is still unclear. Treatment of this disturbance should consider features such as facial pattern, age, malocclusion, tooth-size discrepancies, stage of eruption, and the magnitude of the transposition. Mechanics for correction should be individualized, to reduce the risk of adverse outcomes. Although correction of the transposed tooth order is not advised after permanent tooth eruption, several case reports did use fixed appliances to correct the above malposition. A key point of long term clinical success should be lifelong retention. **CASE REPORT(S):** The first case describes the successful treatment of an adolescent patient with transposed maxillary canine and first premolar treated by extracting the latter. The correct tooth order was established on a functional Class I canine and Class II molar relationship. The second case describes the treatment of another adolescent who presented with transposition of maxillary canine and first premolar, partially established. It was corrected by fixed appliances ending in Class I molar and canine relationship. **FOLLOW UP:** Using retainers, treatment outcomes were stable up to the 1-year recall visit. **CONCLUSIONS:** The clinical success of the aforementioned cases is due to the individualized and well-executed treatment plan. The cases highlight treatment alternatives and advise on the most appropriate plan to fix the canine-premolar transposition.

P 47 Severely displaced and impacted maxillary central incisor in the presence of odontoma. Multidisciplinary treatment approach.

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INTRODUCTION: Eruption failure of maxillary central incisors can be a result of local aetiological factors, including supernumerary teeth, cysts, primary teeth trauma, odontomas, etc. It is clinical and radiographically diagnosed, following the delayed eruption of the affected tooth and/or the presence of over-retained primary predecessor. **BACKGROUND:** Appropriate treatment plan, following evaluation of the available eruption space, includes a) surgical removal of any obstruction and wait for spontaneous eruption in favorable cases and b) a one-step surgical obstruction removal and orthodontic traction initiation in less favorable cases. **CASE REPORT(S):** An 8-year-old girl was referred complaining of retained primary incisor and eruption failure of #11. Panoramic and CBCT examination revealed a horizontally impacted and ectopic #11 in the presence of a complex odontoma. The existence of the required eruption space and the striking unfavorable location of the impacted incisor led to the following treatment plan: a) surgical removal of odontoma without orthodontic traction b) radiographic review for a period of 10 months to allow the impacted incisor to move to a more favorable position c) second operation for exposure and orthodontic traction. Eight months later, the central incisor was in occlusion. **FOLLOW UP:** Patient has 8 years of follow-up and during that period, full orthodontic treatment has been completed. Final evaluation reveals a successful result without any clinical or radiographic pathology of the treated tooth. **CONCLUSIONS:** Although treatment of eruption failure of maxillary incisors, includes in unfavorable cases usually one operation, there are severe cases were two operations are required for successful management.

P 48 Odontogenic keratocyst in a 15- year old boy with medical history of chemotherapy

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INTRODUCTION: Children with dental abnormalities due to chemotherapy need frequent monitoring both clinically and radiographically. Early diagnosis can be critical in maintaining a healthy orofacial system. **BACKGROUND:** A 15 year- old male was referred to the postgraduate clinic of Pediatric Dentistry, for the evaluation and diagnosis of a panoramic radiograph. Past medical history revealed an optic pathway glioma, diagnosed at the age of 16 months and treated with chemotherapy. As a result of the treatment, root agenesis of upper incisors and upper first permanent molars, V-shaped roots of lower FPM, agenesis of second premolars and atypical germ morphology of first premolars was observed. **CASE REPORT(S):** The radiograph revealed, near the border of the base of the mandible, an extended multilocular, well circumscribed radiolucent lesion between the apices of teeth #36, 37.

After CBCT examination of the lesion, surgical removal was performed under local anesthesia. Histologic examination revealed an odontogenic keratocyst with areas compatible with central giant cell granuloma. **FOLLOW UP:** The patient is scheduled for a 6-month radiographic and clinical follow up. **CONCLUSIONS:** A large odontogenic keratocyst was diagnosed on a young patient treated previously with antineoplasmatic medication. A relationship between extensive root abnormalities and odontogenic keratocysts needs to be explored.

P 49 Management of Impacted Maxillary Central Incisor. Combined Surgical and Orthodontic Treatment - A Case Report

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INTRODUCTION: Impacted teeth are frequently encountered during the development of the occlusion. If the incisors have not been extracted or erupted at the expected time, it is challenging for the clinician to detect and manage the problem. Abnormal eruption paths may result in impactions. In these situations early intervention provides advantages ensuring the continuity of the occlusion development in impacted teeth treatment. The present case report attempts to highlight the importance of diagnosis and predictable treatment protocols for successful eruption of impacted teeth. **BACKGROUND:** 9 year-old male patient reported with the complaint of a unerupted maxillary right central incisor. In radiographic examination impacted central incisor was evident. **CASE REPORT(S):** Treatment objectives were included respectively in the first instance orthodontic space opening, secondly position correction and supporting eruption afterwards. Finally, crowns of the impacted teeth were brought into the arches with surgical orthodontic approach by closed forced eruption. **FOLLOW UP:** During the 2-year treatment period, the patient was followed up with photography and radiography. **CONCLUSIONS:** It is recommended that this protocol should be applied during growth and development with minimally invasive interventions using the potential for healing of the patient in impacted teeth.

P 50 Preliminary study: Supernumerary permanent teeth in children at The General University Hospital in Prague in 2008-2018

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AIM: To describe the distribution patterns and approaches to diagnostic and surgical treatment of supernumerary teeth in paediatric patients at The General University Hospital in Prague (GH), Czech Republic. **METHODS:** The available data as well as imaging methods were analyzed retrospectively in 2008-2018. The inclusion criteria were patients treated with at least one supernumerary permanent tooth extraction in GH up to age 18ys at the time of surgery. **RESULTS:** A total of 182 extra teeth in 135 patients were extracted. Female to male ratio is 1:1.93. There is 1 extra tooth per patient in 78.52% (n=106) and 1 extra tooth in 21.48% (n=29). The most frequent type is mesiodens (51.10%, n=93). The jaw distribution ratio is 3.44:1 in favor of upper jaw. 43.70% (n=59) of patients underwent more than one type of imaging methods. CB-CT or CT scan was taken in 32.59% (n=44) as a diagnostic option. Extractions were performed mostly in general anaesthesia (57.14%) following by some type of conscious sedation (23.08%) and only local anaesthesia was adequate for 18,13% of extractions. Regarding the type of surgical procedure surgical extraction (81.87%, n=149) was more frequent than simple extraction (18.13%, n=33). **CONCLUSIONS:** Our study reflects that males are more commonly affected than females. Jaw distribution in our sample shows not so strong jaw preference as usually seen in literature. Our sample is specific since our hospital treats mostly referred patients with more complex treatment or behavioral approach needed. Various pharmacological approaches allow us to choose the most adequate way of treatment in every individual.

P 51 Dental management of two siblings with Hereditary Gingival Fibromatosis. Case Series.

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INTRODUCTION: Hereditary gingival fibromatosis (HGF) is a rare benign oral condition characterised by slow and progressive non-hemorrhagic enlargement of free

and attached gingiva. Appears as an isolated disease, chromosomal abnormality, or as part of syndromes with prevalence 1:175.000. **BACKGROUND:** In HGF cases, clinical and radiological examination of the dentition is necessary. In children, oral hygiene, diet instructions and removal of dental plaque followed by conservative dental treatment appear sufficient in mild cases, while severe cases require periodontal surgery. **CASE REPORT(S):** Siblings of 4.5 and 8 years old were referred for dental examination. Their medical history was free, but their father and his homozygotic twin brother were diagnosed with HGF. Clinical and radiographic examination revealed multiple carious lesions and asymptomatic overgrowth of maxillary and mandibular gingivae, the older brother presenting more severe condition leading to masticatory impairment. Clinical findings and family history lead to the diagnosis of HGF, while genetic testing is pending for possible systemic associations. Intense individualised preventive program and dental restorations were initially applied in both patients. **FOLLOW UP:** 12 months later patients undergo regular follow-up. Neither further gingival overgrowth nor new caries were observed in the younger brother and oral hygiene was significantly improved. In the older brother, gingivectomy including biopsy was performed with histological findings compatible with HGF. Three months following gingivectomy, gingival condition and masticatory function were substantially improved. **CONCLUSIONS:** Diagnosis of HGF is based on family and medical history, clinical, radiographic, histopathologic findings and genetic testing. Treatment plan is related to the condition's severity.

P 52 Functional Rehabilitation of a Patient with Non-syndromic Oligodontia

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INTRODUCTION: Oligodontia is the congenitally absence of six teeth or more, excluding third molars. It can occur as an isolated trait or as a part of a syndrome. For the treatment planning; patient's age, the condition of retained primary teeth, the number of missing teeth should be taken into account. **BACKGROUND:** An 8-year-old boy was referred to Istanbul University, Clinics of Pedodontics with a complaint of unerupted teeth. **CASE REPORT(S):** There is no disease in the medical history of the patient and his family history. His radiographic examination revealed agenesis of multiple teeth. Clinically, impaired growth of alveolar process, reduced facial height and speech impairment were observed. Restorative treatment of molar teeth was completed. The removable prothesis with acrylic teeth was applied in the lower jaw. **FOLLOW UP:** Oligodontia has physiological and psychological consequences on the individual. Diagnosis and management should be performed as early as possible in order to minimize the unfavorable impacts and not to interfere with the craniofacial development of the child. **CONCLUSIONS:** The patients with oligodontia will be examined until the end of the craniofacial growth and then he will be reevaluated and forwarded for the final oral rehabilitation.

P 53 Mutations in COL1A1/A2 and CREB3L1 are associated with oligodontia in osteogenesis imperfecta

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AIM: Osteogenesis imperfecta (OI) is a heterogeneous connective tissue disorder characterized by an increased tendency for fractures. Autosomal dominant (AD) mutations in the COL1A1 and COL1A2 genes are causative in approximately 85% of cases. In recent years, recessive variants in genes involved in collagen processing have been found. Hypodontia (6 missing permanent teeth) and oligodontia (≥ 6 missing teeth) have previously been reported in individuals with OI. The present study investigated whether children and adolescents with OI and oligodontia and hypodontia also presented with variants in other genes with potential effects on tooth development. **METHODS:** The cohort comprised 11 individuals who we clinically examined and further genetically evaluated by whole-genome sequencing. We evaluated a panel of genes that were associated with non-syndromic and syndromic hypodontia or oligodontia. In downstream analysis of whole-genome sequencing data, we used this gene panel to investigate both single nucleotide and structural variants. **RESULTS:** We detected a de novo homozygous nonsense variant in CREB3L1, p.Tyr428*, c.1284CA in one boy previously diagnosed with OI type III. COL1A1 and COL1A2 were the only two genes among all cohort individuals which carried a variant. However, we found rare variants with unknown significance in several other genes related to tooth development. Among these was a missense variant in AXIN2. **CONCLUSIONS:** Our findings suggest that mutations in COL1A1, COL1A2, and CREB3L1 may cause hypodontia and oligodontia in OI. The findings also suggest that additive effects from other modifying or interacting genes may contribute to the severity of the expressed phenotype.

P 54 Management of Symphysis Fracture with Conservative Method in Pediatric Patient: A Case Report

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INTRODUCTION: Mandibular fracture is the most common fracture among the facial fractures. Anatomical complexity of developing mandible especially presence of tooth buds, eruption of deciduous, and permanent teeth governs treatment planning in children. **BACKGROUND:** Incidence of mandibular fractures in children is higher than that of midface fractures, of which condylar fractures are most often diagnosed followed by para-symphysis, angle and body fractures. There are various techniques which were utilized in management of pediatric fractures like Circumferential wiring, acrylic Splint, open reduction, modified orthodontic brackets, nickel titanium. **CASE REPORT(S):** Two months ago, a 1-year-old girl patient was referred to Karadeniz Technical University, Department of Pediatric Dentistry clinic due to dental trauma .Extraoral examination showed soft tissues injuries and the minimally displaced fracture on the mandible jaw area. As a result of clinical and radiographic evaluations was detected mandibular symphysis fracture. Under local anaesthesia fractures were repositioned followed by teeth was splinted and a glass ionomer cap splint applied. Oral hygiene instructions were given to the patient also antibiotic and analgesics were prescribed. After four weeks the splint was removed. **FOLLOW UP:** Postoperative monitoring was performed on a weekly and was favourable in both healing and function. Healing of the fracture site was observed after one month's follow up on the periapical radiography. **CONCLUSIONS:** The high osteogenic potential of the pediatric mandible allowed a successful management of the case with a high degree of compliance. The results of the fracture treatment showed us conservative methods like glass ionomer cap splint are usefulness in cases of mandibular symphysis fracture.

P 55 Combined autogenous bone and tooth transplantation in a child with Axenfeld-Rieger syndrome. A multidisciplinary approach

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INTRODUCTION: Axenfeld-Rieger syndrome (RIEG1, OMIM#180500) is an autosomal disorder primarily affecting the eyes caused by heterozygous mutation in the gene PITX2 on chromosome 4q25. Oral findings include maxillary hypoplasia, mild prognathism, microdontia, hypodontia and cone-shaped teeth. **BACKGROUND:** A six-year-old girl was referred to the department of pediatric dentistry at TkNN due to suspected RIEG and missing upper primary incisors. **CASE REPORT(S):** The girl presented with short philtrum, fibrous frenulum labii superioris, retrognathic maxilla and oligodontia (three maxillary primary incisors and twelve permanent teeth including all maxillary incisors and canines). The syndrome was confirmed after genetic testing at the University Hospital of Northern Norway, Tromsø. Two years later, a denture was made for aesthetic reasons, but little used because of phonation-difficulties. At the age of twelve, a multidisciplinary team decided an alternative approach to improve aesthetics and function. To gain premaxillary growth including more bone width, two autogenous bone blocks were transplanted from the mandibular ramus. Twenty weeks later, both lower first premolars were auto-transplanted to the upper central incisor regions. Using composite, the teeth were shaped into incisors. Orthodontic treatment was initiated due to functional and aesthetic considerations. Orthodontic and prosthodontic treatment including dental implants will be proceeded after completed skeletal growth. **FOLLOW UP:** During almost five years follow-up, the tooth transplantations were successful. The patient was delighted with the results. **CONCLUSIONS:** This case highlights the importance of multidisciplinary teamwork for patients with complex dental needs. In young patients with maxillary hypoplasia and oligodontia, combined autogenous bone and tooth transplantation might be considered.

P 56 Multidisciplinary approach for the management of two cases with gemination and complicated fusion of maxillary central incisors.

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INTRODUCTION: Fusion and gemination are rare dental anomalies of tooth shape. Their aetiology is multifactorial, while genetic influence has been suggested. **BACKGROUND:** Treatment is usually challenging, often leading to anomalous tooth extraction, while successful cases require multidisciplinary approach, including endodontic, restorative, surgical and periodontal treatment. **CASE REPORT(S):** A 9-year-old boy and a 12-year-old girl were referred complaining of the abnormal shape of their anterior teeth. Clinical and radiological examination of the boy revealed a geminated #11, while #21 presented with fusion

mesially with a supernumerary. CBCT revealed two separate root canals in #21, connected cervically and a single rooted #11. The girl presented with a geminated #11, while #21 revealed fusion distally with a supernumerary. CBCT showed no apparent connection of root canals in #21, while #11 was again single-rooted. In both patients, treatment of fused teeth included flap elevation, surgical section and removal of the fused supernumerary and sealing of root canal exposure with Geristore®. A week later, conventional endodontic treatment was completed. For the geminated teeth, treatment included flap elevation and surgical mesiodistal reduction of the enlarged crown. **FOLLOW UP:** Both cases have more than 2 years follow-up. Currently undergo orthodontic treatment with no clinical or radiographic pathology of the anomalous teeth. The fused tooth of the second case required additionally, internal bleaching due to discoloration. **CONCLUSIONS:** Successful treatment in fusion and gemination requires multidisciplinary approach and precise treatment plan. The use of CBCT for diagnosis is mandatory, facilitating the correct clinical management.

P 57 Bilateral Buccal Bifurcation Cyst: Case Report

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INTRODUCTION: Buccal bifurcation cyst (BBC) is a rare inflammatory odontogenic cyst that typically occurs at the buccal region of the first mandibular molar. **BACKGROUND:** BBC occurs in children between 4 and 14 years old and mostly at the mandibular first molar but it can also be seen on the mandibular second molar. Infection and pain can appear but the cyst is often asymptomatic. **CASE REPORT(S):** An 8-year old boy was referred to the pediatric dentistry specialist clinic because of an extraoral swelling on the right mandible remaining for over a month after a hit to the right mandible. Extraoral examination revealed swelling bilateral of the mandible without pain. Intraoral examination showed a swelling over the buccal gingiva over both his first permanent molars in the mandible, on the left side he felt pain on palpation. Periodontal pocket depth was 12 mm on the buccal side of both teeth 36 and 46. The radiographic examination was consistent with bilateral cystic lesions. The patient underwent a surgical treatment under general anesthesia with enucleation done of both cysts. Histological examination revealed a reactive cystic formation. **FOLLOW UP:** One year after the surgery, radiographs shows normal bone repair and the patient is asymptomatic. **CONCLUSIONS:** Bilateral Buccal Bifurcation cyst is a rare condition but nevertheless it is very important to make the correct diagnosis by a thorough clinical and radiographical examination.

P 58 Talon Cusp management using Biodentine® - A Case Series

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INTRODUCTION: Talon cusps are rare cusp formations projecting from the cingulum area or the cement-enamel junction of anterior teeth. These evaginations contain enamel, dentine and occasionally pulp tissue. **BACKGROUND:** Talon cusps may lead to a number of complications, following occlusal interference or aesthetic concerns, often requiring treatment. Management options traditionally include selective grinding or radical excision, depending on patient preference/compliance, the type defect and following multi-disciplinary discussion. Maintenance of tooth vitality is always of essence, regardless of the management approach. Radical removal traditionally involves placement of calcium hydroxide or mineral trioxide aggregate (MTA) following direct pulp cap or pulpotomy. However, fears of vitality loss and discolouration lead the authors to consider Biodentine® as an alternative for vital pulp treatment of talon cups. **CASE REPORT(S):** Four cases of type I maxillary, palatal talon cusps presented to the Eastman Dental Hospital's Paediatric Department. Following multidisciplinary discussion, the cusps were radically removed under rubber dam isolation, with direct or indirect vital pulp therapy performed, using Biodentine®. **FOLLOW UP:** Routine monitoring with sensibility testing and radiographic investigations was undertaken for a period of approximately 3 months for all cases. **CONCLUSIONS:** Biodentine is a suitable alternative to calcium hydroxide and MTA for vital pulp therapy following talon cusp removal.

P 59 Treatment and Follow up of a Fused Permanent Lateral Incisor

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INTRODUCTION: Fusion of anterior teeth are seen in primary and permanent dentitions and can be diagnosed with large crown and two separate roots. When two anterior permanent teeth combine the problem is typically esthetics whereas if a supernumerary tooth fuses with an anterior tooth then crowding eventually occurs additional to the esthetics. This case report describes the treatment of such a case. **BACKGROUND:** A 9-year-old girl was referred to our department for unusual appearance of a left lateral incisor and crowding in the premaxilla. Clinical examination revealed a T-shaped crown of #22 and radiological evaluation showed two separate roots and a fused crown of #22 and a supplemental tooth. A dental volumetric tomography

(DVT) was taken to make sure that no additional fusion occurred on the root pulps and/or surfaces of the teeth. **CASE REPORT(S):** The pulp tissues were extirpated from both canals and $CaOH_2$ medicament was initiated. Since the apices were open, the final root canals were obturated with reversed gutta-percha and a calcium-based root canal paste. Two months later, the separation of the crown of the teeth was done using a fine-diamond-bur, mesial part was gently extracted, the remaining crown was restored and the patient was scheduled in three months for the recovery. **FOLLOW UP:** Orthodontic treatment was initiated, and alignment achieved in 8 months using light forces. After 1 year of treatment, a final DVT did not show any sign of root resorption. **CONCLUSIONS:** Pediatric dentists have unique opportunity to diagnose and treat the developmental disturbance of the developing dentition as early as possible.

P 60 How do parents of children with Amelogenesis imperfecta experience their situation.

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AIM: To explore experiences and impact on daily life of being a parent to a child with severe forms of amelogenesis imperfecta. **METHODS:** Amelogenesis imperfecta (AI) is a hereditary developmental disorder affecting the enamel of teeth. Affected patients present with tooth hypersensitivity, rapid tooth wear or fractures of enamel as well as alterations in color and shape all of which compromise esthetic appearance and masticatory function. Parents to children and adolescents with severe AI, who previously had been treated with early crown therapy, participated in an interview with a psychologist. The transcribed interviews were analyzed using thematic analysis. **RESULTS:** Four main themes emerged from the interviews: Feelings associated with passing on a hereditary disorder, Knowledge decreases stress, Unfamiliarity with the diagnosis and Psychosocial stress. In these main categories we identified several subthemes. Feelings associated with passing on a hereditary disorder included the subtheme Guilt/Shame; Knowledge decreases stress included knowledge about diagnosis in the family and support from dental health care professionals; Unfamiliarity with diagnosis included missed diagnosis, fear of not getting correct treatment and insufficient pain control; finally, the subtheme Psychosocial stress included fear of child being bullied and emergency dental visits. **CONCLUSIONS:** Amelogenesis imperfecta impacts families in much the same way as other chronic and rare disease. It is obvious that dental health care to a greater extent needs to increase participation of parents in dental health care.

P 61 Conservative treatment of large odontogenic cysts – two case reports

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INTRODUCTION: Cystic lesions may occur as complications of primary teeth's pulp pathology. **BACKGROUND:** Odontogenic cysts are sometimes best approached with minimally invasive procedures. **CASE REPORT(S):** Case 1. Boy aged 7y11m, referred by surgeon for an odontogenic cyst. CT: large cystic cavity (14x12mm), enclosing the crown of unerupted 45 and pushing aside the crown of unerupted 44. Panoramic x-ray taken 14 months before referral: deep caries on 84, 85. Treatment: removal of deciduous molars under N2O and marsupialization of the cyst. Impressions were taken prior to surgery and a removable appliance was custom-made, with an acrylic piece fitted into the socket. Case 2. Autistic girl 10y9m with previous endodontic treatments on 75, 85 (done under GA). Panoramic X-ray: bilateral large odontogenic cysts enclosing crowns of 35, 45. Patient's general condition allowed no other investigation. Treatment: 75, 85 were extracted under GA, leaving large bone defects. No appliance was used. **FOLLOW UP:** Case 1. The in-socket piece was progressively reduced as the cystic cavity was shrinking. After 2 months, 44 regained upwards position and 45 moved towards correct eruption. After 20 months 44 and 45 are sound and correctly erupted; on the left side of the mandible deciduous molars are still in place. 46 remained unaffected. Case 2. 13 months after extraction, 35 and 45 are fully erupted and sound. **CONCLUSIONS:** Conservative treatment of large dentigerous cysts in young patients gives good results with minimal invasion, ensures preservation and physiologic development of teeth and good bone healing. Modern 3D imaging can substantially help, but is not always mandatory.

P 62 Children with osteogenesis imperfecta: case series on correlation of dental radiographic findings with medical parameters

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AIM: To present the radiographic dental findings in a group of children with osteogenesis imperfecta and correlate them with clinical, imaging and laboratory

medical parameters. **METHODS:** Twelve patients 5-16 years old (7males) with osteogenesis imperfecta underwent a comprehensive medical examination at the Department of Bone and Mineral Metabolism, Institute of Child Health, Athens, Greece and the following parameters were assessed: dietary calcium intake, growth (height, weight, BMI), fracture history, bone densitometry and metabolic bone markers performed during the same period (procollagen type I C-propeptide, PICP and urinary deoxypyridinoline/creatinine, DPD/Cr). These findings were correlated with presence or absence of pulp obliteration, cervical constriction, taurodontism, impacted teeth, dental agenesis and dental age assessed by panoramic x- rays. Descriptive statistics, t-test and Spearman Correlation Coefficients were used with statistical significance $p \leq 0.05$ **RESULTS:** The mean age of the group was 10.6 (SD 3.99) while mean dental age was 9.52 (SD 4.63) and there was no statistically significant difference between them ($p=0.583$). In these patients, 28% presented pulp obliteration, 57% cervical constriction, 50% taurodontism, 7% had impacted tooth and 7% dental agenesis. None of the above factors were found to correlate with sex, age or the medical parameters studied. **CONCLUSIONS:** Radiographic findings are common to patients with osteogenesis imperfecta and therefore radiographic examination should be part of the full dental examination of these patients. Clinical status, growth or bone metabolism, that consist common parameters evaluated during medical assessment of these patients were not found to be indicators for the radiographic dental findings.

P 63 Oral Rehabilitation of the Children with Ectodermal Dysplasia: Three Cases

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INTRODUCTION: Ectodermal dysplasia is a hereditary syndrome characterized by dysplasia of tissues of ectodermal origin and occasionally, dysplasia of mesodermally derived tissues. Clinically ectodermal dysplasia can be characterized by the classical triad of hypodontia, hypohidrosis and hypotrichosis with dysmorphic facial features. **BACKGROUND:** Early and extensive dental treatment is needed throughout childhood because of the agenesis of the deciduous and permanent teeth. A multidisciplinary team approach for the treatment is recommended. **CASE REPORT(S):** 5 year old girl, 6 and 9 years old boy children were referred to our clinic due to lack of teeth as well as speech and esthetic problems. During physical examination, all cases exhibited the typical features of hypohidrotic ectodermal dysplasia; sparse hair, saddle nose, dry skin, and increased pigmentation. Intraoral examinations showed the presence of conical-shaped primary incisors and canines, abnormal-shaped primary molars, absence of primary incisors and molars, thin alveolar ridge. Radiological examinations revealed the presence of oligodontia in permanent dentition. **FOLLOW UP:** In order to improve appearance, mastication, and speech; extracting slightly mobile primary central incisors in 5 and 6 year cases, fissure sealants, topical fluoride and partial prostheses were performed in all cases. Recalls were scheduled every 3 months to evaluate developing jaws and tooth eruption. The parents reported a significant improvement in terms of children's speech and mastication. **CONCLUSIONS:** Oral rehabilitation of the patients with ectodermal dysplasia is necessary to improve esthetics, speech, and masticatory functions. Recalls were scheduled to assess the need of reline or remake the dentures during the growth years.

P 64 Epidermoid Cyst in Sublingual Region: A Case Report

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INTRODUCTION: We report a case of a large epidermoid cyst, which despite regular preventive dental check-ups was diagnosed quite late. **BACKGROUND:** Epidermoid cysts are rare, slow-growing, benign, developmental cysts that are derived from abnormally situated ectodermal tissue. Epidermoid cysts may grow anywhere on the body and about 7% of them are located in the head and neck. **CASE REPORT(S):** A boy aged 15 yrs old was referred to our Paediatric Dentistry Dept. with a history of slowly growing sublingual swelling. The patient reported symptoms of dysphagia, but no pain. The swelling was diffuse and of 12months duration. On examination, sublingual swelling was present, oval in shape, approximately 5 × 3 cms in dimension. The swelling was freely movable, with no symptoms of pain or tenderness on palpation. CT scan showed cystic lesion in the sublingual region. CT scan and clinical assessments indicated the presence of epidermoid cyst and excisional biopsy of the whole mass was done in general anesthesia, via an intraoral approach. Histopathology of the specimen revealed unilocular cyst with thin cystic lining filled with cheesy grayish material of keratin and adipose tissue suggestive of epidermoid cyst. **FOLLOW UP:** Over a follow-up period of 18 months, no complications were recorded and complete healing was achieved. **CONCLUSIONS:** Epidermoid cysts of head and neck origin are quite uncommon in children. This diagnosis should be kept in mind when dealing with

painless, asymptomatic swelling in the sublingual region. Supported by the program of Charles University in Prague - PROGRES Q29

P 65 Management of Odontogenic Keratocyst in 7 year old: A Case Report

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INTRODUCTION: Odontogenic Keratocysts (OKC) are locally aggressive jaw lesions that occur singularly or in multiples, most commonly affecting the mandible, with peak incidence between 13.4 - 14.7 years. **BACKGROUND:** Management of OKC is focused on resolution of the lesion, preservation of maximum healthy tissue and ensuring that it does not recur. Radical treatment such as enucleation and en-bloc resection have lower recurrence rates, but these treatments are not always suitable for young children. Marsupialisation and decompression are more conservative and have been shown to have successful outcomes. **CASE REPORT(S):** A 7 year old girl presented at the Eastman Dental Hospital with a hard bony swelling on her left mandible. Radiographic and clinical examination revealed a cyst extending from LR1 to LLE with displacement of the LL3, LL4, and LL5. Under general anaesthetic, marsupialisation and drain placement was carried out, with diagnosis of OKC following histopathology. Subsequently, two customised designed appliances (Essix retainer and Denture) were produced to replace the extracted LLC and LLD and to keep the marsupialisation aperture patent. **FOLLOW UP:** Patient reported a decrease in size of lesion after 3 months. Plan is to allow cyst to shrink and excise remaining cyst lining. A multidisciplinary approach will be followed to attempt preservation of displaced teeth where possible. **CONCLUSIONS:** Marsupialisation of an OKC is a viable treatment option for young children. Use of an adapted dental appliance can be tolerated by young patients, keeping an aperture patent while marsupialisation occurs.

P 66 Development of a rapid access dental pathway for vulnerable children

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AIM: BACKGROUND: The inverse care law states that those in most need of medical care are least likely to receive it. We were concerned that many vulnerable children are not registered with a dentist and therefore lack a clear pathway into our service. AIMS: 1. To create a pathway for vulnerable children to be referred into our service for dental treatment 2. To collect data about the oral health of these children and the dental treatment that they require **METHODS:** A pathway was developed to allow direct referral from social workers, homeless health team members and members of the Paediatric Hospital team. There are no set criteria for referral as we deem the opinion of the referrer to think the child is vulnerable and in need of dental assessment to be adequate. Data regarding oral health and treatment need of these children was collected retrospectively and analysed with Microsoft Excel. **RESULTS:** Data has initially been gathered from 22 children, and data collection is on-going. Key findings include: a) 95% of children were deemed to have high caries risk; the remaining 5% had a moderate caries risk. b) 22% of the children received active monitoring, 9% had treatment under local anaesthesia, 14% had inhalation sedation, 46% had a day-case general anaesthesia and the remaining 9% required review to consider treatment options. **CONCLUSIONS:** It is clear from our data that these vulnerable children have a high index of treatment need. Our pathway has been well received and we are continuing to promote its development and use.

P 67 A case report of Takayasu Arteritis in a paediatric patient

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INTRODUCTION: Takayasu Arteritis (TA) is a rare inflammatory disease which affects the large arteries particularly the aorta. Vascular changes include stenosis, occlusion, dilatations or aneurysm formations. TA is also known as the "pulseless disease" due to vascular occlusion in the upper extremities and loss of a palpable pulse. **BACKGROUND:** TA is a disease of unknown aetiology with initial symptoms starting between 5 and 40 years of age. TA has been reported worldwide however epidemiological data suggest an increased prevalence in Asia. The female to male ratio of TA is 8:1. The disease has an acute inflammatory phase and a chronic phase, characterized by the symptoms of vascular occlusion. Treatment to relieve symptoms and prevent further damage uses a combination of immunosuppressant therapies and steroids. **CASE REPORT(S):** An 8 year old female with a diagnosis of TA was referred for the management of her carious primary dentition. She had changes to the abdominal, thoracic and infrarenal aorta and the left subclavian artery. Medication included aspirin, the immunosuppressant Humira (adalimumab) and methotrexate. Following discussion with her medical team dental management included intensive preventive therapy, restoration of the primary dentition with preformed metal crowns and adhesive

restorations. **FOLLOW UP:** Regular follow up is essential to prevent further dental disease. **CONCLUSIONS:** TA is a rare inflammatory disease which produces significant cardiovascular changes. The aim of dental management should be to prevent dental disease and liaise with medical colleagues when operative treatment is needed.

P 68 Developmental enamel defects in a 10-year-old girl with a history of respiratory disease. Treatment approach.

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INTRODUCTION: Ameloblasts are known to be very sensitive to various systematic and genetic disturbances during their secretory phase. **BACKGROUND:** Oxygen shortage in respiratory disease appears to affect amelogenesis and may result to developmental enamel defects. **CASE REPORT(S):** A 10-year-old girl was referred to the clinic with the chief complaint of discolored teeth. The clinical and radiological examination revealed mixed dentition and severe enamel defects. Hypoplasia was present with a symmetrical, chronological, ring-like defect around the incisal 1/3rd of 11, 21, 31, 32, 42, 41, the cusp tips of 33, 43 and on the occlusal surfaces of 16, 26, 36, 46, while enamel hypomaturation (demarcated opacities) was obvious in cusp tips of 14 and 15. No pain or sensitivity was mentioned. All FPM were decayed. The medical history revealed noticeable respiratory disease right after child's birth up to the age of 4, involving hospitalization and frequent inhaled and per os medication. Treatment plan included prevention, aesthetic rehabilitation of anterior teeth with composite resin, preformed metal crowns on mandibular FPM and built-ups with composite resin for 16 and 26. **FOLLOW UP:** Six months later, all restorations have been intact. Patient was scheduled for 6 months recalls for prevention and follow up of possible defects on the remaining erupting permanent teeth. **CONCLUSIONS:** Respiratory diseases the first years of life may lead to oxygen shortage that disrupts ameloblastic function resulting to developmental enamel defects in permanent teeth. Treatment approach depends on the extent of enamel defects, the aesthetic demands and the caries risk of the patients.

P 69 Effect of CPP-ACP on remineralisation of early caries lesions in primary teeth measured by QLF. A randomized clinical study

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AIM: The aim of this study was to assess the effect of twice daily application of CPP-ACP on remineralization of early caries lesions (ECL) in primary anterior teeth and compare its effect as a dentifrice to use of fluoride toothpaste alone or with sequential combination of both agents (fluoride, then CPP-ACP) in three groups over a 6-month period. **METHODS:** This was a double-blinded clinical trial. The sample (n=114, age 4-5 years) with high caries risk had at least one ECL (ICDAS 2-3) and was randomized into three groups that applied different agents twice daily; fluoride toothpaste (500 ppm, n=42), CPP-ACP (10% w/v, n=35), and combination group (n=37) applied fluoride, then CPP-ACP. Mineral changes in upper and lower anterior teeth (from canine to canine) were quantified at baseline, 3 and 6-months using QLF-system. **RESULTS:** Remineralization occurred at 3 and 6 months in all groups to different degrees as assessed by QLF parameters (ΔF/fluorescence, ΔQ/volume, lesion area), ($P \leq 0.05$). However, differences between groups were not significant (P0.05). **CONCLUSIONS:** The remineralization of ECL using CPP-ACP was not superior to remineralization from regular toothbrushing with fluoridated toothpaste alone, or in combination in primary anterior teeth of children with high caries risk over a 6-month period.

P 70 Dental age estimation in Turkish children

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AIM: Skeletal and dental age estimation in children is widely used methods for the assessment of growth and development in dentistry. Although various dental age estimation methods are used in several countries and gave meaningful results, in our country accurate dental age estimation method has not been identified yet. **METHODS:** This study is based on the panoramic radiographs of 293 subjects (ages 8-14 years) all of whom were treated in Istanbul University Faculty of Dentistry between the years of March 2010 and March 2016. Using two different methods (Demirjian and Haavikko methods), the dental ages of the individuals were assessed and compared with their chronological ages. The two researchers have

ensured that the panoramic radiographs selected are gender and age balanced. For the purpose of evaluating the researchers' self-coherence as well as the coherence between them, the IR and ICC (inter-rater and intra-class correlation coefficient) tests were conducted. The data were analyzed statically. **RESULTS:** It was found that the dental age was overestimated by 0.93 years on average when using Demirjian method (1.317 years for girls, 0.571 years for boys). The dental age was underestimated when using Haavikko method with a mean difference of -0.45 years (0.521 years for girls, 0.711 years for boys). There was a significant difference between the dental age and the chronological age calculated using both methods (p=0.005). **CONCLUSIONS:** Although both methods give inadequate results in the calculation of dental age of the Turkish population, especially in boys Haavikko method gave more accurate results than the Demirjian method.

P 71 Dental age in preterm children delivered with very low birthweight

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AIM: To establish differences between chronological (CHA), corrected (CA) and dental age (DA) in preterm children delivered with very low birthweight (VLBW), to compare DA of preterm and full-term children and to find an association between DA and gestational age (GA), birthweight and Apgar score. **METHODS:** The case-control study was realized in 48 eight- to ten-year-old children delivered preterm with VLBW. Birthweight and data were compared with 124 full-term children of the same age category. The data of GA, birthweight and Apgar scores were obtained from hospital records. Panoramic radiography was performed on each child for orthodontic reasons. The DA assessment was established using the method described by Demirjian. The legal guardians of each child signed informed consent for radiographic examination and participation in the study and approval from the ethical committee was obtained. The descriptive statistical methods, anova test and t- test were used for statistical evaluation with p 0.05 considered significant. **RESULTS:** The study revealed no statistical differences between CHA, CA and DA in the group of preterm children. There were no significant differences between DA in the case and control groups and no association between DA of the case group and GA, birthweight and Apgar scores. **CONCLUSIONS:** The DA in preterm VLBW eight- to-ten-year-old children does not differ appreciably from that in full-term children of the same age category. These findings indicate that preterm VLBW children have no late serious sequalae on dental development and maturation.

P 72 Dental age assessment in children with growth hormone deficiency (GHD)

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AIM: To investigate the effect of the substitutional hormone therapy on the dental age in children with GHD **METHODS:** The study includes children with GHD, who will be treated in the Paediatric Endocrinology Unit at the St. George University Hospital in Plovdiv, Bulgaria for approximately 3 years. Dental age assessment(DAA) is done by means of panoramic X- ray, according to Demirjian's system. The dental age is related to the biological age and the skeletal age. **RESULTS:** When this deficiency is treated the expected results are: the dental age will either become equal to the chronological age, or it will slightly improve. **CONCLUSIONS:** It is very important for both an endocrinologist and a paediatric dentist to collaborate with each other to diagnose the case and to evaluate the results of the treatment.

P 73 State of art on oral health in Autism Spectrum Disorder children: a challenge for dental practitioners.

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AIM: Autism Spectrum Disorder (ASD) is a neuro-developmental disease characterized by impaired social interaction, compromised communication skills and stereotyped interests. The current increase in the number of these patients makes urgent to assess baseline information about their oral health status to achieve efficient management. The aim of this review is to evaluate caries prevalence, periodontal problems, nutritional attitudes, oral microbiome alterations, parafunctional habits and dental trauma experience of autistic children. **METHODS:** Search was conducted through PubMed using as keywords: "ASD", "autistic children", "oral disease", "oral conditions", "oral health". Of the 260 results, 24 articles were included. **RESULTS:** While all studies agree on the poor periodontal and oral hygiene conditions in ASD children, current data regarding prevalence of caries are controversial. In fact, the majority of studies observed that autistic children had less or equal caries experiences than healthy children. Most of ASD children consumed sweet foods and soft drinks

regularly. Autistic children have a specific oral microbiome. Trauma due to self-injurious behaviour and bruxism were also recorded. Sensory sensitivities, which are typical of ASD, together with the invasive nature of dental practice, can represent an important limit to oral care access and increase the unmet dental needs. Because of their greater capabilities in visual-processing, picture cards and video technologies could be suitable tools to improve compliance in children with ASD. **CONCLUSIONS:** Autistic children have more periodontal problems than healthy ones. No correlation was observed with caries prevalence. Due to their special needs, individualized oral health programs should be implemented.

P 74 Oral health status of children with Cerebral Palsy in Vilnius (Lithuania)

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AIM: To evaluate gingival health, developmental defects of enamel and dental caries experience of children with Cerebral Palsy (CP). **METHODS:** The sample consisted of 53 randomly selected children with CP aged 4-18 years. Data about subject age, gender and CP type was collected from parents/caregivers. For each subject dmft, DMFT and gingivitis index (GI) according to Gjermo & Moe were assessed. Statistical analysis was performed using SPSS software. Descriptive analysis was presented using means, standard deviations and percentages. Also Kolmogorov-Smirnov, Mann-Whitney U and Kruskal-Wallis tests were used. **RESULTS:** There were no statistically significant differences in dmft, DMFT and GI indices between males and females (mean dmft 3.41±2.84 and 5.69±2.9, p=0.218; mean DMFT 1.7±2.25 and 1.95±1.87, p=0.387; mean GI 4.48±3.37 and 5.1±3.28, p=0.388 respectively) and CP (spastic, dyskinetic, ataxic, mixed) types (mean dmft 4.4±2.51, 4.75±3.3, 5.4±3.24, 3.33±3.27 p=0.640; mean DMFT 3.0±2.44, 1.0±0.82, 1.23±1.64, 1.18±1.40, p=0.103; mean GI 5.88±3.39, 3.66±2.34, 4.81±3.41, 4.0±3.35 p=0.232 respectively). There was no statistically significant difference between different dentition types (primary, mixed, permanent) in GI (3.89±3.02, 4.93±2.54, 5.03±3.79, p=0.575). Moreover, highest interim components in both dmft and DMFT indices were decayed teeth (mean values of d component 2.8±2.49 and D – 1.04±1.55). 18.87% of subjects have developmental defects of enamel. **CONCLUSIONS:** There were no statistically significant differences in dental caries experience and gingival health between gender and CP types, also between dentition types in gingival health. However, subjects with both primary and permanent dentition have dental treatment needs and developmental defects are also common between children with CP.

P 75 Dental treatment of children with special health care needs under general anesthesia

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AIM: It was a retrospective study of children with special health care needs, receiving dental treatment under GA at the University General Hospital of Heraklion, from 2016-2018. **METHODS:** Data, retrieved from the records maintained at the dental clinic, included gender, age, basic medical diagnosis, comorbidities and dental treatment modalities. **RESULTS:** Out of 111 patients treated under GA, 40 were children ranging in age from 5 to 16 years (mean age 11 years), 29 boys (72,5%) and 11 girls (27,5%). Among the patients 16 suffered from mental disability, 15 from autistic spectrum disorder, 5 from various syndromes, two from malignancies, one from cerebral palsy and one from attention deficit hyperactivity disorder. Scull radiographs were taken after the induction in anesthesia. The dental treatment included professional dental cleaning to all patients, 163 pit and fissure sealants, 15 amalgam restorations in deciduous and 66 in permanent teeth, 26 composite resin restorations in deciduous and 39 in permanent teeth, 71 extractions of deciduous and 24 of permanent teeth, 2 pulp treatments, 4 gingivektomies, 1 frenectomy and 2 surgical crown exposures. Impressions of the upper and lower teeth were taken in 2 patients. All the patients received topical fluoride application. The overall mean dmft/DMFT index was 5,75 (dmft=2,625, DMFT=3,125), which is higher than the mean dmft/DMFT indices of healthy children populations in various parts of Greece. **CONCLUSIONS:** Children with special health care needs experience higher prevalence of dental problems and dental treatment requirements comparing to healthy children. GA contributes to treat these needs.

P 76 Oral health knowledge among mothers from the Arab sector in Israel

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AIM: to assess the oral health knowledge (KOH) of pre-school children's mothers among the Arab sector in Israel. **METHODS:** The sampling group consisted of 170 mothers of children aged 2-4 years attending kindergartens in the Arab city Tamra. A questionnaire was distributed to the participants, and was comprised of 3 parts: Socio-demographic characteristics, 12 questions regarding their

knowledge towards their child's oral health and ranking of 6 food items according to their cariogenic potential. **RESULTS:** The average score of the 12-item questionnaire was 29.8 ± 14 out of a possible score of 100. Most of the mothers (78.2%) knew that it is necessary to replace toothbrushes every 3 months. Less than a half of them (44.7%) knew that the child's teeth should be brushed twice a day. Most of the mothers (69.5%) did not know the correct concentration of fluoride in the toddler's toothpaste. Salty snacks and cereals were ranked as the least cariogenic food item. Most of the mothers did not know that snacks should be consumed during the meals. The KOH was significantly related to the mother's education (p=0.001). Mothers who attended their dentist on a regular basis received significantly higher scores than those who did not (p=0.02). **CONCLUSIONS:** Mothers from the Arab ethnic minority in Israel, lacked basic knowledge of oral health issues.

P 77 An investigation of the pediatrician's role on children's oral health.

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AIM: Pediatricians are the first healthcare professionals that parents are in contact with during the first years of their children's lives. This classifies them as the main source of information regarding their oral health. The aim of this project is to investigate the extent to which pediatricians provide necessary information on oral health by evaluating the parents' knowledge on the subject. **METHODS:** A questionnaire was distributed to 160 parents of different socioeconomic backgrounds with children in nursery and kindergarten, aged 1-6 years old. Response rate was 63,75% (102 respondents). The questionnaire consists of 30 questions, 18 on Parents' oral health knowledge and 12 on Pediatricians' guidance on preventive dental care. **RESULTS:** Average correct answers on questions about children's oral health was 3,27 out of 7. 54% stated they had not yet visited a pediatric dentist and of those, the majority listed pediatricians as one of the main sources of information concerning their children's dental health. When asked if their pediatrician had ever performed an oral examination on their children, 60% responded "No". 32% stated that the pediatrician hadn't discussed the children's oral health at all. 67,6% of pediatricians discussed brushing habits with only half of them (53%) giving accurate instructions. Only 15,7% of the pediatricians discussed fluoride as a preventive measure and of those, just 12,5% provided accurate information. **CONCLUSIONS:** The results of the questionnaires indicate a lack of correct information provided by pediatricians regarding oral health and stress that educational efforts should be undertaken to improve their respective knowledge.

P 78 Correlation between Wilson's disease and oral health status in children

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AIM: Wilson's disease is an autosomal recessive disorder, which causes a deficient excretion of copper, primarily accumulated in the liver, brain and eyes. An early and lifelong therapy with chelators (penicillamine, trientine) or zinc is necessary to prevent the disease evolution. The purpose of this review is to find, in children and adults, a possible correlation between oral health status and Wilson's disease, and to investigate if this association is direct or motivated by the treatment with drugs or by copper accumulation in oral tissues. **METHODS:** A literature research was performed using the PubMed database to review any relevant articles. The results of this data search are 10 articles, selected from database by inserting, simultaneously, these key words: "Wilson's disease", "Penicillamine", "oral health". **RESULTS:** Many outcomes were rejected because they were not inherent to oral health. In the end, 6 articles were taken into consideration. In adults, they showed isolated events of bollous penfigoid, lichen planus, aphtous stomatitis, red lip papules, related to the long-term therapy with D-Penicillamine, which causes the deposition of abnormal elastic fibers. Instead, in children, only the craniofacial characteristics have been studied, but there are no significant differences with healthy patients, except for an increased palatal plane inclination in Wilson's disease children. **CONCLUSIONS:** Unfortunately, little is acknowledged in literature about the oral health status in patients affected by Wilson's disease, especially in children, and about copper accumulation in oral tissues. Hence, there is a need to further study this subject in depth.

P 79 A pilot study for monitoring sealants retention over time.

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AIM: The elaboration of an experimental system to obtain reproducible and comparable photographs of the occlusal surface to monitor sealants retention. **METHODS:** An intraoral camera connected to a computer was used to obtain photos of the occlusal surfaces. A specific software was utilized to perform measurements on archived pictures. An experimental two-part system, consisting of a dental arch support and a camera support, connected to each other through holes and pins, was made to obtain a standardised and reproducible placement of the camera in the mouth. In the first part, to test the degree of reliability of the procedure and the percentage of image distortion, 120 first molars were sealed and for each molar ten photographs were taken, using the intraoral camera connected with the dental arch support, the camera support and the dedicated software. In the second part, 165 first molars were sealed and photographed immediately after sealing (T0), 6 months (T1) and 1 year later (T2). With the software, the sealed areas were measured. The comparison of the selected sealed areas between T0 and T1, T0 and T2, T1 and T2 determined the percentage of sealant loss. **RESULTS:** In the first part, the experimental procedure showed a reliability of 96.85%. In the second part, the difference in the rate of lost sealant between T0-T1 and T1-T2 was statistically significant (p 0.001). **CONCLUSIONS:** Photographs, obtained through the experimental two-part system, allowing a reproducible positioning of the intraoral camera in oral cavity, could represent a standardised method to monitor sealants retention over time.

P 80 Dental caries and socioeconomic factors in preschool Italian children.

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AIM: The aim of this cross-sectional study was to study the association between socio-economic factors and dental caries in Italian preschool children. **METHODS:** 513 preschool children from 3 to 6 years old (280 males, 233 females; mean age 4.58 years) enrolled in nursery schools in central Italy, represent the population of the present study. The children underwent dental clinical examination and were divided into two groups (caries free and caries experienced). Non-parametric analysis and a univariate and multivariate logistic regression model were applied to evaluate the contribution of demographic, socio-economic and hygienic variables to the presence/absence of dental caries. **RESULTS:** Of the whole sample, 419 children resulted caries free and 94 children resulted caries experienced, showing that 18.4% of subjects had caries experiences. Different socio-economic and life habits factors resulted to be associated with the development of dental caries, especially the maternal foreign nationality seemed to be a strong predictive factor. **CONCLUSIONS:** Disparities in socioeconomic development, dietary habits, parental attention and attitudes in child oral hygiene and access to public dental health service represent important risk factors for the development of dental caries in preschool children. The data obtained from the examined sample are acceptably in line with what observed in northern Europe.

P 81 Caries patterns in 5 -6 12 -13yrs old Cretan children: 13 yrs follow up (2004/5-2017/18)

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AIM: To assess dental caries levels and characteristics in children in prefecture of Heraklion and compare them with the results of previous epidemiological study conducted in Greece 13 yrs ago. **METHODS:** 56 children aged 6 and 77 children aged 12 were examined in primary schools in 2017–2018, during the implementation of Oral Health Promotion Program by 7th Health Region of Crete. 4 trained and calibrated examiners (dentists at Heraklion Primary Health Center) visited 6 primary schools in Heraklion region. Examiners used the same protocol as in the 2004/5 epidemiological study by the Greek Dental Association/Dental School University of Athens. Data from the two studies were compared using IBM SPSS v20 software. **RESULTS:** In 2017 carries-free children were 44,6% for 6yr-olds, whilst 57,2% for 5yr-olds in 2004, and mean dmft was 2,46 (3,11) in 2017, compared to 1,77 (2,94) in 2004. In 2017 12yr-olds' mean DMFT was 1,77 (1,97) 44,2% were carries-free, while 13yr-olds' DMFT in 2004 was 2,05 (2,50) and 38,5% were decay-free. Rural population had higher decay indexes in 2017 (6 yrs-old: 4,9 (4,77) 12yrs-old: 3,57 (1,81)) , than urban (2,09 (2,71) 2,21 (2,41) relatively). **CONCLUSIONS:** It appears an increase in decay in younger children and reduction in older children, while rural population continues to have more caries compared to urban at all age groups. Dental health promotion programs in Crete should probably be targeted more towards younger and rural populations.

P 82 Pulpotomy of carious immature permanent molars using bioactive materials. A case series report

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INTRODUCTION: Preserving dental pulp vitality in immature permanent teeth presents a significant clinical and biological challenge. **BACKGROUND:** Vital pulp therapy is the treatment procedure which preserves pulp vitality, promotes root maturation and extent tooth survivability by preventing more complex endodontic and restorative care. Coronal/partial pulpotomy as a treatment of choice has shown favorable outcomes in immature permanent teeth when using bioactive pulp capping materials. **CASE REPORT(S):** The present case series describes the management of 7 carious immature permanent molars in 6 healthy young children, aged 7-8 years old, treated in the Postgraduate Clinic of Paediatric Dentistry, in the University of Athens. At baseline, extensive carious lesions were registered in 5 out of 7 teeth while 2 teeth were filled with temporary filling after incomplete caries removal by previous dentist. No history of pain or pain to percussion was noted. Periapical x-rays revealed incomplete root development with no signs of peri-radicular or other pathological lesion. Following carious lesions removal, pulp tissue was exposed. Full coronal (3) and partial pulpotomy (4) were considered as the treatment of choice mainly depending on adequate haemostasis potential. Bioactive material (MTA, Biodentine) was placed on the remaining exposed pulp. Stainless steel crowns were chosen for the coronal restoration due to increased longevity. **FOLLOW UP:** At 12 months recall, clinical and radiographic examination confirmed root formation and complete apical closure while the teeth had remained asymptomatic and functional. **CONCLUSIONS:** Immature permanent teeth with deep carious lesions can be successfully treated with partial/coronal pulpotomy when treatment protocol is strictly followed.

P 83 In vitro and in vivo phosphopeptide release during the chewing of gum fortified with a commercial casein hydrolysate.

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AIM: The kinetics of phosphopeptide release from gum fortified with a commercial casein hydrolysate in artificial and human saliva was studied. **METHODS:** Using mass spectrometry techniques, the caseinophosphopeptide (CPP) composition of the commercial casein hydrolysate compared with a standard tryptic casein digest from whole raw cow milk was determined. **RESULTS:** In vitro trials, the amount of CPPs released was always the same for each chewing time; in contrast, during in vivo chewing, a decrease of peptide levels was detected, from 10% after 5 min to 0.1% at 20 min, due to physiological swallowing. **CONCLUSIONS:** It is concluded that gums are a useful vehicle for CPP intake, owing to their functional role in bone health. However, their use is less satisfactory for prevention of dental caries, due to the brief contact with the enamel surface. Moreover, more calcium would need to be added to enrich the CPP fraction of the commercial hydrolysate.

P 84 Association between adverse birth outcomes and dental caries in preschool children

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AIM: Verify the association between adverse birth outcomes and dental caries in the offspring. **METHODS:** This cohort study included 74,748 children with at age 3 years. Were collected data on maternal age at delivery, SGA, LGA, microcephaly, resuscitation, Apgar score at 5 minutes, weeks of gestation, maternal smoking in pregnancy and maternal obesity. Forward stepwise binary logistic regression was done to analyze predictors of caries experience. Since there was no interaction between SGA and maternal smoking status, we did not stratify analysis based on maternal smoking status. Structural equation modelling was used to study the relationship between risk factors and dental caries. **RESULTS:** SGA was the only variable associated with caries experience. In a multivariate logistic regression analysis adjusting for gender, family income, maternal age at delivery and maternal obesity, SGA was still significantly associated with dental caries at 3 years of age. In the second model adjusting also for maternal smoking during pregnancy SGA was not significantly associated with dental caries. The result showed that maternal smoking during pregnancy is a prerequisite for the association between SGA and dental caries. **CONCLUSIONS:** Could not show an association between adverse birth outcomes and dental caries in children. Furthermore, there is an important association of maternal smoking and adverse birth outcomes. For children at high risk of developing caries, there is a need for preventive strategies during pregnancy and the first

year of life. Such strategies should focus on maternal health behaviors as well as early caries risk assessment in the offspring.

P 85 Minimal intervention dentistry: Enchanced detection and management of incipient carious lesions

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INTRODUCTION: The Minimal Intervention Dentistry (MID) concept emphasizes the need for early detection and treatment of dental caries, the most widespread oral disease. As a favorable consequence, conservative treatment options are gaining popularity. **BACKGROUND:** Visual detection has improved considerably with the technological advancements traveled by the latest transillumination devices. They have the ability to detect enamel defects that cannot be revealed using the classical methods, especially in less accessible areas such as the interproximal surfaces. Furthermore, unlike radiographic imaging, the procedure is completely non-invasive for the patient. **CASE REPORT(S):** In the present case report we will detail, with clinical examples, the protocol used in our clinic for diagnosis and treatment of incipient caries in both primary and permanent teeth, implying the use of a non-invasive imaging tool (DIAGNOcam™, by KaVo), resin infiltration therapy (ICON™ by DMG) for permanent teeth and Silver Modified Atraumatic Restorative Technique (SMART) for primary teeth. **FOLLOW UP:** Comparison of digital images obtained at different time interval follow-ups enlarges perspective over conservative treatment success. **CONCLUSIONS:** To our present experience, interception of incipient carious lesions by early detection corroborated with conservative treatments have proven effective means to stop the progression of dental caries.

P 86 Outcome after interproximal resin infiltration

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AIM: The aim was to investigate whether resin infiltration (RI) arrests progression of active of caries lesions. **METHODS:** The participants (n=20) were patients in the Dental Teaching Unit, City of Oulu, mean age was 26y (SD5.2). Indication for RI was radiographically diagnosed progressing Ekstrand 1-3 (ICDAS 1-3) interproximal lesions (n=54); the treatment were done in 2015-2017. In spring 2018, some participants had already follow-up bitewing radiographs taken; the rest were invited for control BW-radiography. Controls were initial lesions in the same BW-radiographs without RI or other treatment (n=24). The change in lesions was recorded surface wise in intervention and control groups as follows: deterioration, improvement from class 3, improvement from class 2, improvement per se, at follow-up lesion was less diffuse, no change. The changes parameters in each tooth surface were compared between intervention and control groups by using Chi-square test. Proportions of successful and failed surfaces were given. **RESULTS:** Mean age of participants was 26y (SD5.2). The mean length of follow-up period was 17.4m (SD7.2). Arresting of caries lesions (class 2 and 3) was distinctly better in RI group (63.0%) compared with the controls (29.1%). The situation progressed among one third of the controls (29.2%) whereas the respective figure among the intervention group was 14.8% . Progression of lesions was more distinct in all tooth groups in the control group. **CONCLUSIONS:** Resin infiltration seems effective in arresting progression of initial caries lesions.

P 87 Near-Infrared Light Transillumination (NILT) for in vivo detection of interproximal caries in primary and permanent teeth

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AIM: To evaluate the agreement between NILT, the visual inspection method (ICDAS) and Digital Bitewing Radiography (DBR) as a reference for the detection of clinically non cavitated interproximal lesions. **METHODS:** Respectively 122 and 63 interproximal surfaces in primary and permanent teeth from 35 patients were included. NILT images were obtained by using the DIAGNOcamTM (KaVo, Biberach, Germany) and scored by two calibrated examiners. A consensus diagnosis was reached for DBR whereas the ICDAS scores were obtained chairside by one calibrated examiner. Weighted Kappa (wκ) was used to evaluate inter- and intra-rater reliability for NILT and to evaluate the agreement between NILT, ICDAS and DBR. **RESULTS:** Inter- and intra-rater reliability for NILT exhibited substantial to almost perfect wκ values for both primary and permanent teeth (Inter prim: wκ= 0.79, Intra prim: wκ= 0.90/0.88, Inter perm: wκ= 0.69, Intra perm: wκ= 0.85/0.89). The agreement between NILT and DBR was moderate to substantial for primary teeth (Rater 1: wκ= 0.61 (95% C.I.= 0.49-0.75), Rater 2: wκ= 0.55 (95% C.I.= 0.41-0.69)) and fair for permanent teeth (Rater 1: wκ= 0.34 (95% C.I.= 0.15-0.53), Rater 2: wκ= 0.33 (95% C.I.= 0.08-0.58)). The agreement between ICDAS and DBR was moderate for primary teeth (wκ= 0.49 (95%

C.I.= 0.35-0.63)) and substantial for permanent teeth (wκ= 0.62 (95% C.I.= 0.32-0.92)). **CONCLUSIONS:** Inter- and intra-rater reliability for NILT was substantial to almost perfect. However the lower agreement between NILT and RBD suggests that it cannot be used as a single diagnostic tool for the diagnosis of interproximal caries.

P 88 Laser fluorescence devices in detection of approximal carious lesions: a literature review

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AIM: One of the keys in using the "minimal intervention dentistry" is the early detection of caries. Other than the common detecting methods (visual, tactile and radiographic evaluation), laser fluorescence (LF) devices can also detect caries lesions. The aim of this study is to review LF devices, their effectiveness in detecting approximal caries, their limitations and how are these devices accepted by patients. **METHODS:** Studies in English that were identified in the electronic database (MEDLINE) using key words such as laser fluorescence devices, caries detection and approximal caries were evaluated. **RESULTS:** The articles that had to do specifically with the detection of approximal caries using LF devices were 22, while only 1 article was found to assess how these devices were accepted by children patients. DIAGNOdent pen (DD pen) was the most mentioned device, followed by quantitative light-induced fluorescence-digital Biluminator (QLF-D) and Midwest Caries I.D (MW). All devices were evaluated for their sensitivity, specificity and accuracy. They showed similar results in detecting approximal caries in most cases and the acceptance by young patients was similar with the bitewing radiography. **CONCLUSIONS:** The majority of the researchers conclude that LF devices should not be used as the main diagnostic tool. Further studies are needed, especially for QLF-D and MW, in order to determine their efficiency and their acceptance, due to limited bibliography.

P 89 Oral Health in Children Attending an extended Postnatal Home Visiting Program

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AIM: To evaluate caries development and oral health habits in children attending an extended postnatal home visiting program in a disadvantaged area in Stockholm, Sweden. **METHODS:** In addition to the regular Child Health Program, all first-born children in the intervention area were offered five extra home visits before the age of 15 months, performed by a child health nurse and a parental advisor from social services. They provided the parents with a toothbrush and toothpaste at infant's age around 6 months. Caries development in the children participating in the extended postnatal home visiting programme was compared with a non-intervention group of children at 18 and 36 months of age. ICDAS II criteria was used for caries registration. The parents also answered a structured interview concerning dental background, dental trauma, dietary habits and tooth brushing. **RESULTS:** At 18-months of age, parental assistance with tooth brushing twice daily was significantly more common in the intervention group (p=0.045) and there were no children with decayed teeth (ICDAS 3-6) in the intervention group compared to 7 % in the comparison group (p=0.021). At 36-months of age, there were no significant difference in caries prevalence or tooth brushing habits between the groups. Pearson Chi-Square test was used for comparison of proportion. **CONCLUSIONS:** This study demonstrates that an extended postnatal home visiting programme in this cohort of children had a beneficial effect on caries prevalence and tooth brushing habits at 18-months. This effect did not persist at 36 months of age.

P 90 Building-up a new smile in a 4-Year-Old girl: A Case Report

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INTRODUCTION: Premature loss of teeth in children may lead to both functional and esthetic problems. Missing teeth in both anterior and posterior regions may cause malfunctions in mastication and proper pronunciation. Also ,considering the sensitive nature of children, loss of teeth may cause the development of insecurities and low self-esteem problems. **BACKGROUND:** Dentistry has advanced to a point where it is undesirable for children to be partially edentulous or to have unattractive anterior teeth. A variety of esthetic restorative materials are available for restoring primary incisors and molars in pediatric dentistry. Furthermore, variety of therapeutic modalities, from removable partial dentures to conventional fixed space maintainer can be used for the replacement of traumatically missing or carious lost primary anterior teeth. **CASE REPORT(S):** This is a case report of a 4-year-old girl, attended to my private pediatric dental clinic, with a chief complaint of pain in the upper anterior primary teeth, extracted upper primary canines on both sides and upper right first primary molar. The

parents and the girl were concerned about the esthetics too and asked for the replacement of extracted teeth. They were looking for a building up of a new smile. Patient was treated under general anesthesia by doing pulpotomies and anterior Zirconia Crowns for the upper central and lateral primary incisors. Also, a full upper jaw impression was taken **FOLLOW UP:** On her recall after two weeks, the missing deciduous canines and premolar were replaced by fixed partial denture. **CONCLUSIONS:** A build up to a new smile was achieved by combining restorative and fixed partial denture.

P 91 Qualitative evaluation of surface status of flowable composite submitted to acidic challenges

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AIM: of the study was to assess, using atomic force microscopy, the surface status of flowable composite resins after exposure to the Coca-Cola acidic drink under different immersion regimes. **METHODS:** The materials used were Filtek Ultimate Flowable Restorative (3M ESPE, USA) and Brilliant Flow (COLTENE Whaledent, Switzerland). 20 cylindrical samples of 5 mm diameter and 2 mm thickness were made from each material using plastic conformers placed on glass plates. The samples were light-cured for 40s on both sides through the glass plate. They were divided into two groups, one group for each material. Specimens of each group were then randomly divided into 5 subgroups: the subgroup A consisting of 4 control samples, maintained only in artificial saliva, and the B-E subsets consisting of 4 samples, one lot for each of the 4 immersion protocols in Coca Cola drink. The surface of all samples was analyzed by atomic force microscopy and the roughness parameters were calculated. **RESULTS:** The samples subjected to immersion in Coca-Cola were strongly corroded compared to control samples. The highest surface roughness value was determined for samples that were submerged 3 times/day in Coca Cola. Meantime, a higher Ra value was determined for the Filtek Ultimate Flowable composite than for Brilliant Flow. **CONCLUSIONS:** The evaluation of the surface condition of the samples, after immersion, revealed for both materials a pattern of pitting corrosion that consists of micro-holes and a preferential corrosion direction more obvious on the samples subjected to three immersions per day.

P 92 Bisphosphonate treatment and tooth development in children and adolescents with osteogenesis imperfecta

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AIM: Osteogenesis imperfecta (OI) is heterogeneous connective tissue disorder characterized by repeated fractures and skeletal disorders. Treatment with bisphosphonates (BP) is today golden standard. The aim of this study was to evaluate the effect of BP treatment on tooth development, resorption of primary teeth and eruption of permanent teeth in a cohort of children treated with BP. **METHODS:** Three groups of patients were studied: Group 1; patients with OI treated with BP. Group 2; patients with OI not treated with BP, and Group 3; age- and gender-matched healthy controls. The dental age/dental maturity was assessed on panoramic radiographs by the method described by Demirjian et al 1973. The stage of resorption was assessed by using the method described by Haaviko 1973, and tooth eruption was assessed for each patient. Differences between Dermirjian´s original score values and values for each patient treated with BP, not treated with BP and controls were analyzed with t-test for single means. Furthermore, the mean scores for patients treated with BP, not BP and controls were compared and analyzed with t-test for independent samples. **RESULTS:** Delayed tooth development was demonstrated in boys treated with BP when compared to healthy controls ($p=0.040$). No further significant difference in tooth development was demonstrated between any of the three groups. Regarding the stage of resorption of primary teeth and number of erupted teeth no statistically significant differences were demonstrated when comparing the three groups. **CONCLUSIONS:** Boys with osteogenesis imperfecta treated with bisphosphonates may have a delayed tooth development.

P 93 Cytotoxicity of NeoMTAPlus, ProRootMTA and Biodentine on human dental pulp stem cells

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AIM: The aim of this study was to evaluate the in-vitro cytotoxic effects of NeoMTAPlus, ProRootMTA and Biodentine on human dental pulp stem cells(hDPSCs). **METHODS:** Dental pulp was gently derived from impacted human permanent third molars of the patients.

Cells were cultured in DMEM supplemented with 5 ml fetal bovine serum, 500 µl penicillin under 5% CO2 in 95% humidified atmosphere at 37°C until confluency. The cells from the third passage were utilized. Materials were placed in an empty stainless steel mold and were ensured their polymerization for 15h. 5x105 dental pulp stem cells were plated in each well and exposed to the material extracts and DMEM. To assess the effect of materials extracts at 1st, 3rd and 7th days on hDPCs apoptosis, the percentage distribution of vital cells, initial apoptosis, late apoptosis, and necrotic cell populations were determined by flow cytometry using an Annexin V detection kit. **RESULTS:** All groups have similar cell viability with the control group on 1st, 3rd and 7th days and any apoptosis and necrosis of cells were not seen (p0.05). All materials were found biocompatible when compared by the control group (p0.05). Early apoptotic, late apoptotic and necrotic cells were evaluated for all groups, although Biodentine had more cell viability rates than other materials, there was no statistically significant difference between all days in terms of comparison (p0.05). **CONCLUSIONS:** Extracts from Biodentine, NeoMTA, and ProRootMTA weren't cytotoxic and didn't induce apoptosis in hDPSCs. These results suggest that all materials could provide positive outcomes when used as reparative biomaterials.

P 94 Effectiveness of NaOCl and Chlorhexidine gluconate in elimination of E.faecalis from the root canals of primary molars in vitro.

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AIM: To evaluate, in vitro, the effectivity of NaOCl 2.5% ,Chx 2% ,Chx 0.2% and sailine in eliminating E.faecalis from root canals of primary molars. **METHODS:** Root canals of extracted primary molars were prepared with K-fils and were autoclaved. Apical foramens were sealed with flowable composite. Root canals were infected with E.faecalis . After incubation period of 24 hours, root canals were irrigated with one of the mentioned solutions. Samples from root canals were collected immediately after irrigation and 24 hours later. Samples were cultured on blood agar plates, CFU's were calculated. **RESULTS:** NaOCl was found to be effective in eliminating the bacteria immediately and 24 hours after irrigation statistically significant. Chx 2% was more effective then Chx 0/2% in the immediate sample, but after 24 hours the difference was not significant. **CONCLUSIONS:** NaOCl 2.5% was found to be very effective in eliminating E. faecalis from root canals of primary molars. Chx 2% and 0.2% were found also to be effective but have delayed effect

P 95 Antibacterial activity of new hydrophilic sealants: An in-vitro study

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AIM: The purpose of this study is to evaluate the antibacterial activity of Embrace Wetbond Pit Fissure sealant - Pulpdent® and Ultraseal XT Hydro - Ultradent® against Streptococcus mutans and two probiotics: Streptococcus salivarius and Lactobacillus reuteri. **METHODS:** The antibacterial effects of sealants were tested in both a planktonic growth inhibition assay and an agar diffusion assay using Streptococcus mutans, Streptococcus salivarius and Lactobacillus reuteri. The materials were applied on the side walls of 96-well microtiter plates in the former and in disks directly in the Petri plate on the latter. **RESULTS:** All materials showed antibacterial effects in contact with the agar in the diffusion test. In the planktonic growth inhibition test, Embrace had a strong and broad antibacterial action against all the bacteria tested. Ultraseal, on the other hand, has demonstrated its antibacterial efficacy, though at a minimal rate, only against L. reuteri. Its antibacterial action, therefore, is not satisfactory. **CONCLUSIONS:** Within the limits of this in vitro research, it can be concluded that Embrace is able to inhibit the growth of both cariogenic bacterium and probiotics. It is therefore necessary, in order not to make two ineffective anti-prophylaxis manoeuvers (the seal with fluorine release and the action of the probiotic), to plan the timing for the administration of the one and the application of the other. Ultraseal has a minimal antibacterial action against the lactobacillus. It can be said, therefore, that it is possible to administer the probiotics studied while applying the Ultraseal sealant.

P 96 Computer-aided design and manufacturing crown on primary molars. An innovative case-report.

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INTRODUCTION: Crowns are applicable on primary teeth with extensive caries, cervical decalcification, developmental defects, interproximal caries extending beyond line angles and following pulpotomy or pulpectomy. **BACKGROUND:** Until now, prefabricated crowns, such as stainless-steel crowns (SSCs), pre-veneered SSC and all ceramic/porcelain/zirconia crowns have been available in a range of sizes to match first and second primary molar teeth. **CASE REPORT(S):** This case report illustrates a clinical use of computer-aided

design and manufacturing technology (CAD/CAM) for the fabrication of a crown for a decayed primary molar using a study model as a reference. Topical infiltrative anaesthesia was administered, the tooth was isolated with a rubber dam and the caries were removed with a high-speed handpiece and a carbide bur. Selective decay removal was performed with low-speed round burs until the remaining dentin was rigid and free of decay. The design mode of the restoration was completed using Biogeneric Copy and enabling the program to copy a primary tooth No 64 from a study children's model with a hybrid ceramic CAD/CAM block. **FOLLOW UP:** The tooth is vital and over a 12-month follow-up period, no pulpal, periodontal or periapical pathology was detected **CONCLUSIONS:** This approach has the advantage of the customization of the primary tooth in contrast to the previously mentioned prefabricated options. CAD-CAM technology applications on primary teeth could be considered as an alternative option for primary molar with extensive caries, having the advantage of limiting chairside time and a customized procedure.

P 97 Effects of dental treatment under general anaesthesia on quality of life and growth in uncooperative paediatric patients: a review

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AIM: Children with untreated caries suffer from infections, pain, psychological discomfort, disturbed sleep, behavioral changes, and inability to eat, which may lead to weight loss and can affect growth and the quality of life. This literature search aims to investigate the effects of dental treatment under general anesthesia (DTGA) on quality of life and growth in uncooperative paediatric patients with compromised oral health. **METHODS:** Search was conducted through PubMed using the following key words: "general anesthesia", "quality of life" ,"growth", "caries", "children". Studies were included if fulfilled the following eligibility criteria: to evaluate the oral health status of children; to be an observational study, a RCT, a meta-analysis, a review, a clinical trial, to identify a validate questionnaire on quality of life, to evaluate the association between DTGA and growth. From 217 articles, 21 were selected. **RESULTS:** For the evaluation of DTGA effects on quality of life, assessed through specific questionnaires, all articles agree that after DTGA there is a significant improvement in quality of life. For the evaluation of DTGA effects on growth, through the analysis of anthropometric parameters (body mass index (BMI), weight, height), assessed on percentile tables, results are contradictory: some studies found no association, whereas others found that DTGA resulted in a catch-up growth. **CONCLUSIONS:** While there is a clear association between DTGA and improvement of quality of life, future longitudinal studies can help determine whether there is a cause-and-effect relationship between DTGA and growth improvement.

P 98 Intravenous sedation for dental treatment in uncooperative pediatric patients: Review of the literature.

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AIM: Dental fear could impede dental treatment in children. Although behavioural techniques can be used to reduce anxiety, there is a part of paediatric patients who are unable to tolerate dental procedures and require an alternative approach such as intravenous sedation. Midazolam and propofol are the most used drugs for intravenous sedation. The aim of this review is to analyse the features of these drugs during dental treatments in paediatric patients. **METHODS:** The search for articles was conducted in PubMed using the key words "intravenous sedation", "paediatric dentistry", "midazolam", "propofol". Initial search retrieved 42 articles, out of which 22 were excluded because they are not inherent. Twenty studies were included for the review. Information on safety, side effects, onset and duration of action, time of recovery, level of sedation, vital signs, children and parents satisfaction was analysed. **RESULTS:** Significant differences about safety, side effects, duration of action and time of recovery were found. According to the studies, midazolam was safer than propofol because it had an antagonist if sedation had become deeper than expected. A majority of results indicated vomiting and nausea after procedures with midazolam and agitation after procedures with propofol. Moreover, midazolam showed the longest duration of action, while propofol had the shortest recovery. No significant differences could be found regarding onset of action, level of sedation, vital signs, children and parents satisfaction. **CONCLUSIONS:** The results showed both agents to be effective sedative agents, for short paediatric dental procedures with minimal side effects.

P 99 Sodium Hypochlorite Accident During Endodontic Treatment: A Case Report

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INTRODUCTION: Sodium hypochlorite (NaOCl) is used commonly in root canal treatment during irrigation of infected area. The reason for being preferred of this solution is that low price and powerful antimicrobial efficacy against infected root canal. **BACKGROUND:** Besides of these favorable effects, NaOCl that highly hypertonic and alkaline with Ph 10-14 can cause some complications because of accidentally oozing to soft tissue. **CASE REPORT(S):** An 11-year-old female patient presented to Istanbul University, Faculty of Dentistry, Department of Pedodontics with fractures and swelling on her teeth as a result of a previous trauma. During the treatment of the root canal, the vestibule perforation occurred and it was not noticed. Then NaOCl was given from this region as root canal irrigation solution. As a result, the patient experienced severe pain and swelling on the upper lip. **FOLLOW UP:** The patient was prescribed with Augmentin (amoxicillin + clavulanic acid) 1000 mg twice daily for 5 days, Avil (antihistamines) 2 ml ampul injection a day for 3 days, Parol (paracetamol) 500 mg tablet for pain killer twice day for 5 days, Dekort (corticosteroid) 0.5 mg tablet 8 mg bid for 5 days. For the first 3 days the swelling was spread over the entire face and then disappeared. Then MTA was placed into the perforation area and root canal were obturated with root canal sealer and gutta percha. Restoration were completed with composite resin. **CONCLUSIONS:** The patient was called for 3,6 months and 9 months follow-up. No problems were found in the CT and x-rays taken.

P 100 A case of Invasive Cervical Root Resorption (ICCR) in a 12 years old female patient.

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INTRODUCTION: ICRR has a poor known aetiology. It is often misdiagnosed, the resorption is due to periodontium cells penetrating the root's surface in the cervical region, spreading out throughout the dentin. It appears very aggressive, posing a high risk of tooth loss. **BACKGROUND:** ICCR is usually detected in the adulthood. In a small amount of cases is possible to observe ICCR on impacted permanent canines during the adolescence. **CASE REPORT(S):** In 2014 a 12 years old female patient presented all teeth, except 1.3. A CT scan showed the 1.3-1.2 overlapping and the actual position of the 1.3. First step of the treatment: impacted 1.3 was exposed and bonded to wire in order to be up-righted. Second step: an angular momentum was imprinted in order to ensure the 180° degrees axial rotation of the canine. Third step: vestibular shifting of the 1.3 followed by distalising and extruding process. After this date wasn't possible to imprint any further movement. In September 2016 an RX showed the distortion of the upper arch due to the 1.3 stuck in its position. **FOLLOW UP:** In the middle 2018 a surgical extraction of 1.3 was carried out. A microscopic examination confirmed the diagnosis of ICRR. **CONCLUSIONS:** Treatment strategies for ICRR are based on location, size and amount of involved tissue. Therapy goal is to eliminate resorptive tissues and blood supply, despite this a surgical approach is sometimes inevitable. According to several Authors special emphasis is placed on the role of cone beam tomography in the diagnosis and early detection of pathology.

P 101 Dental neglect and missed appointments- a matter of parental capacity

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AIM: To describe how dental neglect and no-shows are assessed when reported to the social services. **METHODS:** All reports on suspected child maltreatment written by a dental professional during six years in one region in Sweden were included in the study. All information gathered by the social worker that assessed oral health, dental status, oral health behaviors, communication between dentistry, parents, social services and child were included. Thematic analysis was applied to describe how children's oral health needs and failure to comply to treatment affect the social worker to make decisions on specific support or protection. **RESULTS:** The major theme " it is all about the parental capacity" encompass how the social worker conclude dental neglect and missed appointment as a parental factor and not with focus on the child's wellbeing. Three subthemes each describe different aspects of such perspective; "the unwanted support", "but now they attend" and "it is a parental responsibility". Each of these themes focus more on parents than the child's oral health needs. **CONCLUSIONS:** Merely relying on parental capacity to attend with their children are not enough to change a behavior that make the carious disease progress. Social workers and dental professionals should assess

parental capacity as well as specific oral health needs of the child.

P 102 Apexification of immature Fractured Teeth with MTA: Case Series

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INTRODUCTION: Apexification is a procedure for treating the immature permanent teeth with lost pulp vitality. Use of Mineral Trioxide Aggregate (MTA) followed by root canal obturation, limits bacterial infection and create an environment conducive to the production of mineralized tissue in the apical region. **BACKGROUND:** The purpose of this presentation is to report the treatment procedure and prognosis of immature teeth with MTA apexification. **CASE REPORT(S):** Five patients ages between 6-9 were referred to our clinic due to complicated crown fracture of central incisors. All cases had premature interruption of radicular development caused by a previous trauma and both had clinical and radiographic signs of pulp necrosis and apical periodontitis. Teeth were slightly tender to percussion. On electric pulp testing teeth were non-responsive. After calcium hydroxide dressing for 2 weeks in all patients, MTA was placed into the apical portion of the root canals as an apical barrier. MTA-CEM® was used in three of the patients, and MTA-ANGELUS® was used in other 2 patients in the directions of the manufacturer's recommendations. The remaining portion of the root canals were obturated with root canal sealer and gutta-percha. Restorations were completed with composite resin. **FOLLOW UP:** Both clinical and radiography follow-ups in the reported cases showed no pathology and discoloration. **CONCLUSIONS:** MTA has been proposed as a potential material to create an apical plug at the end of the root-canal system; with the added advantage of speed for therapy.

P 103 Testing dental neglect scale in preschool children

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AIM: To assess dental ignorance by using Dental Neglect scale and questionnaire and to associate it with oral health status among children 6 years old and their parents. **METHODS:** The study consisted of a convenient sample of 100 children aged 6 years old from four different kindergarten in Sofia, Bulgaria. Dental neglect scale and questionnaire was used for assessing dental neglect and home dental care. Clinical examination of the children was performed to assess dental caries (DMFT/dmf-t). **RESULTS:** The results revealed that dental neglect was greater among males, children with less educated parents who had not received dental care in the previous three years. The dental neglect variable was then dichotomised in order to examine its association with caries experience. Children with higher dental neglect score had significantly higher dental caries experience (DMFT/dmf-t with P=0.001). **CONCLUSIONS:** Dental neglect may be used to provide education among parents. Further research can help determine parents-child interaction in relation to dental neglect.

P 104 Postural evaluation and efficacy of a new elastic functional orthopaedic device in class III malocclusion

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INTRODUCTION: The aim of this study is to evaluate whether the treatment of the third-class malocclusion, through an innovative elastic functional orthopaedic device, allows an overall improvement of the postural and podalic support. **BACKGROUND:** Despite the lack of scientific recognition about a correlation between occlusion and posture, orthodontics is trying to treat malocclusions with an integrated approach during childhood **CASE REPORT(S):** A five-and-a-half-year-old patient with an Angle's III class malocclusion and anterior cross bite in deciduous dentition has been treated with a functional orthopaedic device (MSB class III) for 7 years. Evaluation of the plumb line in frontal and side vision has been performed, with stabilo-baro-podometric platform analysis, in order to record the podalic support discrepancy between feet both in static phase and in dynamic phase, at the beginning of the orthodontic therapy, at nine and twelve years old. **FOLLOW UP:** 7 years **CONCLUSIONS:** A global approach to the patient can successfully address both the malocclusion and the postural alterations.

P 105 Investigation of the preventive effects of matrix-metalloproteinase inhibitors on dental erosion: In vitro study

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AIM: The aim of this study is to investigate the effects of Chlorhexidine (CHX) and Epigallocatechin-3-gallate (EGCG) on dental erosion. **METHODS:** 55 recently extracted non-

carious human third molars were used in this study. The crowns were sectioned from the roots and dental slabs (4x4mm) were cut from the two surfaces under water cooling, mounted on acrylic blocks and ground flat with water-cooled carborundum discs. The specimens were randomly assigned in to five groups of 11 specimens each that differed according to the type of materials. Each specimen was immersed in 30 mL of Coke® for 1 min, 4 times a day, during 5d for erosive demineralization. For remineralization, specimens was immersed in 1,100 Sodium Fluoride (NaF), 0.61% EGCG, 0.12% CHX, 0.2% CHX and control group (distilled water) for 1 min, 4 times a day, during 5d. The change in the enamel surface was evaluated by using 3D non-contact optical profilometry with surface roughness (Sq,Ssk,Sku,Sp,Sv,Sz,Sa values). The enamel topographic characteristics were assessed by SEM. One-Way Anova, Tukey HDS and Bonferroni tests were used for statistical analyses. **RESULTS:** Statistically significant decrease was observed in the remineralization measurements of Sv and Sz values in the EGCG group when compared with the demineralization values (p0.05). According to the SEM evaluations, the remineralization images of ECGC were observed more regularly than the other materials. **CONCLUSIONS:** Although ECGC was found to be statistically more successful only in two surface measurements, it was found to be more effective in remineralization than CHX and NaF compared to SEM images.

P 106 WITHDRAWN

P 107 WITHDRAWN

Authors' Index

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