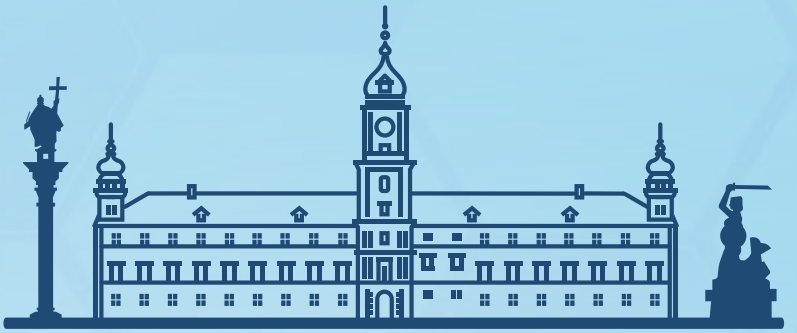


WCDT 2026

BOOK OF ABSTRACTS

The 23rd World Congress on Dental Traumatology

Warsaw, Poland

3-5 September 2026

BOOK OF ABSTRACTS
The 23rd World Congress on Dental Traumatology (WCDT 2026)

Mastering Dental Traumatology: Multidisciplinary Treatment & Technology
3-5 September 2026, Warsaw, Poland

Scientific Committee (Editors):

Michał Sobczak, DDS, PhD, FIATD
Specialized Dental Practice, Warsaw, Poland
Polish Academy of Paediatric Dentistry (PASD),
International Association of Dental Traumatology (IADT)

Clinical Professor Bill Kahler, DClinDent, PhD, FRACDS, FICD, FADI, FPFA
Department of Restorative and Reconstructive Dentistry, The University of Sydney, Sydney Dental School, Australia
International Association of Dental Traumatology (IADT)

Prof. Fabricio Teixeira, DDS, PhD
Department of Endodontics,Texas A&M University, Dallas, United States
International Association of Dental Traumatology (IADT)

Prof. Paweł Plakwicz, DDS, PhD
Private Practice in Periodontology and Oral Surgery, Warsaw, Poland

Agnieszka Wal-Adamczak, DDS, PhD
AN54 Specialist Medical and Dental Clinic, Warsaw, Poland
Polish Academy of Paediatric Dentistry (PASD)

Anna Pantelewicz, DDS, PhD
Department of Dental and Maxillofacial Radiology
Faculty of Medicine and Dentistry
Medical University of Warsaw, Poland
AN54 Specialist Medical and Dental Clinic, Warsaw, Poland
Polish Academy of Paediatric Dentistry (PASD)

Proofreading, Typesetting & Cover Design:
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Aleja Niepodległości 54/42
02-626 Warsaw, Poland
pasd.sekretariat@gmail.com | https://pasd.edu.pl

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The Authors are solely responsible for the substantive content, factual accuracy, and linguistic correctness of their abstracts.

Dear Colleagues and Friends,

It is a great pleasure to present this Book of Abstracts from the 23rd World Congress on Dental Traumatology, held in Warsaw, Poland, on 3–5 September 2026. As Chair of the Organizing Committee, I look back with gratitude on the opportunity to bring our international community together and to welcome colleagues from around the world to Poland.

The congress theme, *"Mastering Dental Traumatology: Multidisciplinary Treatment & Technology,"* reflected our shared ambition to connect scientific knowledge, clinical experience and technological advances in the service of patients. Through lectures, practical workshops, oral presentations and poster discussions, the meeting provided opportunities to examine established approaches, explore emerging ideas and discuss the questions that continue to challenge us in daily practice.

Published after the congress, this volume preserves the scientific contributions shared in Warsaw and makes them available for continued reading, reflection and discussion. Behind each abstract are the efforts of colleagues seeking to answer a research question, understand a clinical problem or share experience that may help others. I hope that these contributions will encourage further investigation, stimulate constructive debate and create opportunities for collaboration. I am particularly grateful to the early-career researchers and clinicians who contributed their work; supporting their development is essential to the future of our field.

My sincere thanks go to all authors, speakers, workshop leaders, session chairs and reviewers for their contributions to the scientific programme. I also extend my appreciation to the International Association of Dental Traumatology, the Polish Academy of Paediatric Dentistry, my fellow Organizing Committee members, and the congress team, partners and sponsors whose commitment made this meeting possible. Above all, I thank our participants for their engagement, curiosity and willingness to exchange knowledge.



Michał Sobczak DDS PhD FIADT
Chair, Organizing Committee
23rd World Congress on Dental Traumatology

23rd World Congress on Dental Traumatology (WCDT 2026)

Mastering Dental Traumatology: Multidisciplinary Treatment & Technology

3-5 September 2026, Warsaw, Poland

Event Description

The 23rd World Congress on Dental Traumatology brought together clinicians and researchers to advance evidence-based, biologically informed and multidisciplinary care for patients with traumatic dental injuries. The scientific programme combined invited lectures, oral and poster presentations, and expert discussions, complemented by pre-congress workshops and hands-on courses.

The programme addressed the acute and long-term management of traumatic injuries in both the primary and permanent dentitions, including critical appraisal of the IADT 2020 guidelines considering subsequent scientific evidence. Core themes included preservation of pulp vitality, regenerative endodontic treatment, management of immature permanent teeth, and the diagnosis and treatment of tooth resorption. Attention was given to the new classification of tooth resorption and associated conditions developed by the International Association of Dental Traumatology and the Dental Trauma Guide.

Interdisciplinary sessions explored restorative challenges, including crown–root fractures, the clinical applications and limitations of bioactive materials, and the management of complex dentoalveolar injuries. Tooth autotransplantation and orthodontic space closure were considered alongside strategies for preserving alveolar bone, including decoronation and root submergence. Biological healing, prognosis and long-term complications informed discussions of treatment selection and follow-up.

Diagnostic imaging, including cone beam computed tomography, was addressed in relation to clinical assessment and treatment planning. Scientific communications also explored epidemiology, prevention and emerging applications of digital technologies and artificial intelligence. Patient-centred care was reflected in discussions of the psychological and behavioural consequences of dental trauma, communication with children and families, and the dental professional’s role in recognising and responding to suspected domestic abuse.

Pre-congress workshops provided opportunities for practical learning in emergency management, splinting, pulp therapy, apical barrier techniques, autotransplantation, intentional replantation, direct composite restorations, mouthguard fabrication and CBCT interpretation. Throughout the congress, scientific presentations and discussions encouraged critical evaluation of evidence, recognition of unresolved clinical questions and identification of priorities for future research.

Educational Objectives

1. Apply evidence-based recommendations to the assessment and acute management of traumatic dental injuries in primary and permanent teeth, while critically evaluating evidence published since the IADT 2020 guidelines.
2. Compare the indications and limitations of vital pulp therapy, regenerative endodontic treatment and apical barrier techniques, taking account of pulp status, root development and prognosis.
3. Use contemporary tooth resorption classification and terminology to support diagnosis, treatment planning and long-term monitoring of resorption and associated conditions.
4. Formulate multidisciplinary treatment plans integrating restorative, endodontic, orthodontic and surgical approaches, including options for tooth preservation, replacement and maintenance of alveolar bone.
5. Evaluate the clinical applications and limitations of bioactive materials and diagnostic imaging, including CBCT, in the management of traumatic dental injuries.
6. Integrate preventive measures, patient-centred communication and psychosocial considerations into dental trauma care, particularly for children, adolescents and their families.
7. Identify possible signs of domestic abuse and outline appropriate professional responses, including patient support and referral.
8. Critically appraise emerging research and technologies, including digital and artificial intelligence applications, and assess their potential relevance and limitations for clinical practice

Organizing Committee:

Prof. Bill Kahler
Dr. Anna Pantelewicz
Prof. Paweł Plakwicz
Dr. Michał Sobczak *Chair, Organizing Committee 23rd WCDT 2026*
Prof. Fabricio B. Teixeira
Dr. Agnieszka Wal-Adamczak

Reviewers:

Prof. Paul Abbott
Prof. Hong-Keun Hyun
Prof. Bill Kahler
Dr. Amandeep Kaur
Dr. Anna Pantelewicz
Prof. Paweł Plakwicz
Dr. Michał Sobczak
Prof. Fabricio Teixeira
Dr. Agnieszka Wal-Adamczak

PASD
Polish Academy of Pediatric Dentistry

The Polish Academy of Pediatric Dentistry (PASD) is a national scientific society founded in 2013 to advance pediatric dental care through education, research, and professional collaboration. Bringing together clinicians, academics, and specialists across Poland, PASD promotes evidence-based practice, supports scientific exchange, and strengthens interdisciplinary cooperation. The Academy organizes an annual national conference, workshops, and educational initiatives, contributing to high standards of care for children and adolescents and actively engaging in international projects.

IADT
International Association of Dental Traumatology
Esthetics · Biology · Compassion
Since 1989

The International Association of Dental Traumatology (IADT) is a global organization committed to improving the prevention, diagnosis, treatment, and long-term management of traumatic dental injuries. Through collaboration with dental and medical professionals, educators, public health institutions, sports organizations, industry partners, and governmental agencies, IADT works to elevate standards of care and increase global awareness of dental trauma. The Association promotes both clinical and experimental research, develops evidence-based treatment recommendations, and supports the integration of dental trauma management into undergraduate and postgraduate education. The IADT has produced Guidelines for the Treatment of Traumatic Dental Injuries, widely recognized as the gold standard by dental societies and clinicians worldwide.
In 2015, the IADT introduced the Fellowship in Dental Traumatology, a professional credential that acknowledges advanced expertise and commitment to excellence in dental trauma care. Every two years, the Association hosts the World Congress on Dental Traumatology, a leading international forum for scientific exchange, professional development, and multidisciplinary collaboration in the field.

WCDT 2026

The 23rd World Congress on Dental Traumatology

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Invited Speakers



Prof. Paul Abbott



Paul Abbott is Emeritus Professor of Dentistry at The University of Western Australia. He is a Specialist Endodontist with over 45 years of clinical practice experience. Prior to taking a full-time University position in 2002, he spent 17 years in private specialist endodontic practice and he also held part-time academic positions at The University of Western Australia and the University of Melbourne. He was Dean and Head of the School of Dentistry at The University of Western Australia and Director of the Oral Health Centre of Western Australia from 2003-2009. He has presented over 1700 lectures and courses in 54 countries. He has over 430 publications with 270 articles in refereed journals, 25 textbook chapters and 50 Newsletter articles. From 2015-2022, he was the Editor-in-Chief of the international journal Dental Traumatology. Prof. Abbott's main research and clinical interests revolve around dental traumatology, tooth resorption, and the diagnosis and management of pulp, root canal and peri-radicular conditions, with particular emphasis on pain control and disinfection of the root canal system. He has won numerous awards for his teaching, research and service to the dental profession, including the Jens O. Andreasen Award for Lifetime Achievement in Dental Traumatology from the International Association of Dental Traumatology (2024) and the Louis I. Grossman Award (2025) from the American Association of Endodontists for cumulative publications of significant research studies that have made an extraordinary contribution to endodontology. Prof. Abbott was also appointed by the Governor-General of Australia as an Officer of the Order of Australia in 2015.

The Dental Traumatology Journey: Then, Now and Where to Next?

The field of dental traumatology has come a long way since the pioneering and visionary work of Dr. Jens Andreasen. He recognised early in his career that dental traumatology lacked evidence, consensus and direction with the result that many patients had less than ideal treatment of their injuries. Dr Andreasen's vision in the 1950's and 1960's led to the establishment of a database where detailed clinical records were compiled and subsequently analysed. Numerous articles based on this database have been published over the last six decades and they largely form the basis of our current guidelines for the management of dental traumatic injuries (TDIs). Despite this, there are many dentists around the world who do not feel confident in managing TDIs and/or they admit that they lack the depth of knowledge required to manage these injuries. As a specific discipline within the dental profession, our responsibility is to address these issues but how can we do so and where do we go from here? These issues will be explored during this presentation.

The New IADT/DTG Classification of Tooth Resorption and Associated Conditions

Numerous classification systems have been used in the dental literature over the years to describe the various types of tooth resorption. However, there has been no consensus and the dental profession has not adopted any particular classification for universal use. Compounding this problem has been the use of different, conflicting, confusing, unclear and inconsistent terminology to name the same condition which leads to uncertainty amongst clinicians, researchers and students regarding the diagnosis and management of resorbing teeth. The International Association for Dental Traumatology (IADT) and the Dental Trauma Guide (DTG)

have recently collaborated to develop a new, comprehensive classification of tooth resorption and its associated conditions. This new classification will be outlined along with explanations and justification for the use of specific terminology. Each type of resorption will be defined and examples will be shown to enable dentists to adopt this classification with confidence.

Prof. Zafer Cehreli



Dr. Zafer Cehreli is a Professor of Pediatric Dentistry at Istanbul Health and Technology University. He has contributed extensively to the field through scientific publications, book chapters, and editorial service for numerous respected journals. His research has been recognized with awards at both national and international levels. Within the IADT, Dr. Cehreli has held several key leadership roles, including Director (2018–2024), Chair of the Education Committee (2016–2022) where he led the development of the ToothSOS App, and President-Elect (2022–2024). He is also an active member of the American Academy of Pediatric Dentistry (AAPD), the International Association of Pediatric Dentistry (IAPD), and the International Association for Dental Research (IADR), and has contributed to clinical guideline development for both the IAPD and IADT. His research interests include minimally invasive restorative dentistry, dental traumatology, pediatric endodontics, and esthetic dentistry in children. Dr. Cehreli has delivered more than 200 national and 100 international invited lectures and training programs.

Restorative Challenges Post-Trauma: Clinical Considerations and Strategies from Simple to Complex Cases

Traumatic dental injuries in children extend beyond physical damage: it often impacts self-esteem and social confidence, making the esthetic restoration of lost tooth structure essential for improving oral health-related quality of life. This presentation will explore the complex restorative challenges posed by traumatized teeth, offering practical, evidence-based strategies for clinicians. Key topics will include effective isolation of traumatized teeth, contemporary adhesive techniques, and management of enamel microcracks, whether isolated or associated with crown fractures. Through a series of well-documented clinical cases, the presentation will deliver insights into predictable solutions for a variety of injuries ranging from simple crown fractures to more complex crown-root fractures and offer actionable approaches for achieving durable and esthetic restorations in most challenging scenarios.

Prof. Ewa Czochrowska



Graduated as a dentist from the Dental Faculty in Warsaw, Poland. She finished a postgraduate training in orthodontics at the University in Oslo, Norway in 1997 then worked as a Research Fellow at the Orthodontic Department, Dental Faculty in Oslo until 2002. In 2003 she was awarded a PhD from the University in Oslo for a thesis on autotransplantation of teeth. For the publication from this work she received the American Journal of Orthodontics and Dentofacial Orthopedics Dewel Orthodontic Award in 2002. In 2014 she was awarded a habilitation in medical science from the Medical University in Warsaw on her work related to orthodontic treatment of patients with periodontitis. Prof. Czochrowska was the President of the European Orthodontic Society and she host the EOS Congress in 2014 in Warsaw. She is the President of the Polish Orthodontic Society and the Active Member of the Angle Society of Europe and the European Board of Orthodontists. Prof. Czochrowska has organized and co-organized 4 international congresses on tooth transplantation from 2016 until 2024. Received the Distinguish Teacher Award from the European Orthodontic Society in 2021 and the Sheldon Friel Memorial Lecture award in 2023. At present, she is a full-time Professor at the Department of Orthodontics Medical University of Warsaw, Poland and 7 doctoral theses were completed under her supervision. In addition, Prof. Czochrowska maintains a private orthodontic practice in Warsaw since 1997. Prof. Czochrowska has authored and coauthored 11 book chapters and over 90 scientific articles. She has lectured extensively worldwide on interdisciplinary treatment related to orthodontics.

Premolar transplantation versus orthodontic space closure in the anterior maxilla: an orthodontic perspective.

Patients with missing maxillary incisors often require interdisciplinary treatment planning and coordination of different specialists. In growing patients there are limited possibilities to substitute a missing tooth, because it should adapt to the dentofacial growth changes. Therefore, an orthodontist is included to evaluate these changes regarding indications for autotransplantation of premolars and orthodontic space closure. Selection of a donor premolar, pre-surgical orthodontics to open adequate space at the recipient site and achieving a stable occlusion including space closure at the donor site are important orthodontic considerations. Mesialisation of a lateral incisor is a valid alternative to premolar transplantation and it requires a comprehensive orthodontic treatment planning and biomechanics.

In the presentation, the indications for orthodontic space closure and autotransplantation of premolars following trauma to maxillary incisors in both primary and permanent dentition will be discussed. A very important aspect is orthodontic repositioning of the transplanted premolar or the lateral incisor to achieve the best match of the final restoration to the missing central incisor. It will be shown during the lecture including limitations of both options. The long-term outcomes of treatment using these methods will also be presented, based on various clinical cases and the authors' own research. The summary of pros and cons of both treatment alternatives aiming at strengthening clinically relevant decisions including patients' perspectives will conclude the presentation.

Prof. Monty Duggal



Prof Duggal obtained his dental degree and MDS in Paediatric Dentistry from India. He then immigrated to the United Kingdom and obtained his FDSRCS from the Royal College of Surgeons of England and his PhD from University of Leeds. He was appointed Professor and Chair of Child Dental Health at University of Leeds, Leeds Dental Institute in 1999 where he oversaw a large postgraduate programme in Paediatric Dentistry which has international acclaim. In January 2017 he was appointed as Professor and Head of Paediatric Dentistry in Faculty of Dentistry, National University of Singapore and then as the Vice Dean and Faculty Research Director of the National University Centre for Oral Health, Singapore (NUCOHS). In January 2021 he was invited to become the Inaugural Dean of the first College of Dental Medicine in Qatar, Qatar University. He has served in several senior leadership positions, and was President of the European Academy of Paediatric Dentistry from 2014-2016 and has served on the board of EAPD for last 10 years. Professor Duggal has published over 200 research papers in international journals and is author of "Restorative Techniques in Paediatric Dentistry, which has been published in 7 languages and has sold over 16,000 copies worldwide. He has has Co-Edited "Paediatric Dentistry" by Oxford, now in its 5th edition and is the most widely followed textbook in Paediatric dentistry in the world. More recently he authored "Paediatric Dentistry at a Glance", published by Blackwell Willey. He has administered research grants totaling over seven million pounds and is an internationally recognised researcher and clinician with main research interest is Cariology and Translation Research in Clinical Paediatric Dentistry, including dental traumatology and regenerative endodontics and auto-transplantation. Apart from Paediatric Dentistry his main interest is playing and watching cricket and any time spare from work and family is devoted to this important activity.

A few snippets and lessons learned from 30 years experience of managing complex dento-alveolar trauma in Children and Adolescents

Severe dental trauma, such as avulsion, and intrusion may lead to teeth being lost in a young child or adolescents. Early loss of teeth can lead to the loss of bone and further atrophy in the dento-alveolar region in a growing child. Infraocclusion also has similar negative consequences for the alveolar bone. It is imperative that clinicians who manage dental trauma in children understand growth and development and when ankylosis and infraocclusion are diagnosed, take appropriate steps to preserve or regenerate bone in that region. This talk will aim to discuss various techniques that are at our disposal to preserve bone after complex traumatic injury to the dental alveolar region.

Replacement of missing or teeth lost due to dental trauma can also be challenging in a young child. One of the techniques that give an excellent, biological and a sustainable outcome is autotransplantation. In this talk the speaker will present the indications and pitfalls of autotransplanation learnt over the years, the technique and follow up protocols. Long term outcomes will be presented with detailed discussion of several clinical cases managed from the time teeth are lost or ankylosed, through bone preservation and autotransplantation.

Prof. Bill Kahler



Bill maintains a full-time specialist private practice restricted to Endodontics and is a Clinical Professor at the University of Sydney. He is a Board member and Treasurer of the International Association of Dental Traumatology and is an author of the 'IADT Guidelines for management of traumatic dental injuries'. He graduated DClinDent (Endo) from the University of Adelaide and has a PhD from the University of Sydney as well as numerous Fellowships. Bill has published more than 100 papers in international dental, material science and engineering journals. Bill is an author for 9 book chapters on endodontic outcomes, vital pulp therapy, and dental trauma, including the iconic North American and European texts, "Pathways of the Pulp" and the "Textbook and Color Atlas of Traumatic Injuries to the Teeth". He has lectured extensively nationally and internationally and has international research collaborations in every continent. In 2024 Bill received the Australian Dental Association Distinguished Service Award for his contribution to endodontics as a clinician, researcher and educator.

Management of Acute Dental Trauma in the Permanent Dentition. What is new from last guidelines – different perspectives

The International Association of Dental Traumatology guidelines were first introduced in 2001 and then updated in 2007, 2012 and 2020. New guidelines developed as research showed improvements in patient care and clinical practice in the management of dental traumatology. The IADT guidelines have been the standard of care in the management of dental traumatology for a quarter of century but as research develops the guidelines must stay current with the times. This essay will probe potential changes to the next guidelines and where patient care can be improved. Let's start that conversation in Poland at the 23rd World conference in Dental Traumatology.

Prof. Liran Levin



Prof. Liran Levin is a Professor of Periodontology and the Associate Dean for Research and Graduate Studies at the College of Dentistry, the University of Saskatchewan, Canada. He is also a visiting professor at the Harvard School of Dental Medicine, Boston, MA. Prof. Liran Levin was previously the Head of Periodontology at the University of Alberta, Canada, and the Head of Research at the School of Dentistry, Rambam Health Care Campus, and Faculty of Medicine – Technion IIT Haifa, Israel. Prof. Liran Levin received his DMD degree with distinction at Tel Aviv University and completed his Post Graduate Periodontology Program at the Department of Periodontology, Rambam Health Care Campus. He also received his Periodontology Specialist Certificate from the European Federation of Periodontology as well as a Fellow of the Royal College of Dentists of Canada in Periodontology. Prof. Liran Levin has published more than 400 articles and book chapters in the international professional literature and is involved in research mainly in periodontology, dental implants and dental trauma. His papers received more than 20,000 scientific citations. He has been lecturing extensively both nationally and internationally in the fields of dental implants and periodontal diseases. Prof. Levin serves as the Editor-in Chief of Dental Traumatology, an Associate Editor for the International Dental Journal, Scientific Associate Editor for the Quintessence International and as an Editorial Board Member and a manuscript reviewer for some of the leading international professional Journals in the fields of periodontology, dental implants, dental trauma and general dentistry. Prof. Levin is the President of the Periodontal Research Group of the International Association for Dental Research (IADR). He is currently the President of the International Association for Dental Traumatology (IADT) and was chairing the 2020 IADT dental trauma guidelines committee as well as the 2024 joint IADT and ASD guidelines for prevention of traumatic dental injuries committee.

Domestic abuse: Don't be another link in the chain of silence!

Domestic abuse, defined by the World Health Organization (WHO) as the intentional use of physical force or power against another person, results in injury, death, psychological harm, or deprivation. This pervasive issue affects individuals across all cultural, racial, and socioeconomic backgrounds. Domestic abuse encompasses various forms of abuse, including physical, sexual, emotional, and financial mistreatment, with traumatic dental injuries and maxillofacial trauma being common in victims. Dental professionals are uniquely positioned to identify signs of domestic violence, as they often see patients regularly and can detect oral trauma associated with abuse. However, studies show that dental professionals face significant barriers in addressing this issue, including a lack of training and knowledge regarding signs of abuse, how to document cases, and the legal protocols for reporting. Furthermore, research indicates the need for better integration of public health policies and education in dental training to address domestic abuse effectively.

This lecture will focus on understanding the extent of the problem and on efforts to equip dental professionals and other healthcare providers with the tools necessary to identify, respond to, report, refer and support victims of suspected domestic abuse.

Learning objectives:
1. Understand the extent of domestic abuse in the general population.

2. Recognize signs of domestic abuse and the role of dental professionals in supporting victims and survivors.
3. Develop strategies to identify, respond to, report, refer and support victims of suspected domestic abuse.

Prof. Nastaran Meschi



Nastaran became cum laude dentist (University of Brussels, Belgium) in 2006. In 2012, she graduated magna cum laude as Master of Science in Endodontology (KU Leuven, Belgium). From 2014-2022, while exercising exclusively endodontology in private practices in Brussels and Leuven, she was also a part-time researcher at BIOMAT KU Leuven and an instructor (clinical and research) in endodontology at the Department of Oral Health Sciences (KU Leuven). In March 2021, she obtained the degree of Doctor in Biomedical Sciences at KU Leuven. So far, Nastaran published several scientific articles and book chapters and presented her research in several international meetings. Since 2023, she is a visiting professor in endodontology at Ghent University (Ghent, Belgium) and in 2025 she joined the Université Libre de Bruxelles (Brussels, Belgium) as a lecturer in endodontology. She serves the European Society of Endodontology as a member of the Research Committee and Benefits of Endodontics Committee.

Decoronation and Root Submergence: on the Quest for Bone Preservation

Nearly one in five children worldwide have a history of dental trauma before the age of twelve. Generally, the immature permanent upper front teeth get injured, often resulting in pulpal inflammation or necrosis and arrested root development. Not only the dental pulp is at peril post trauma, but also the periodontal ligament (PDL) could be damaged by severe luxative injuries, resulting in an inflammatory process on the external root surface. By losing the protection of the PDL, the tooth is prone to ankylosis and replacement resorption. In adults, such teeth might be monitored or replaced. Nevertheless, in growing individuals un-aesthetic ridge deformity and tilting of adjacent teeth due to infraposition might be the sequelae of trauma. Hence, leaving such cases untreated in children and growing individuals is not an option. An arsenal of treatment options is available nowadays: composite build-up, surgical repositioning, bone distraction, autotransplantation, extraction and orthodontically closing the gap, and decoronation and root submergence. The latter are a combined treatment modality aiming to preserve the alveolar bone by means of root preservation, firstly described by Malmgren et al.in 1984.

The current presentation will discuss the following regarding decoronation and root submergence, based on the available scientific evidence and clinical cases: procedure, etiology, indication and outcome.

Prof. Shanon Patel



Shanon divides his time between specialist practice and at teaching at King's College London Dental Institute. His main research interests are CBCT, root resorption and treatment outcomes. He has supervised 70+ Masters and PhD students. As a clinical academic he is known for his high impacy clinical research. Shanon's background as a clinical academic has resulted in him publishing over 120 papers. He is recognized internationally as a leading authority on 3D (CBCT) imaging and root resorption and was lead author of 5 European Society of Endodontology position statements (CBCT 2014, 2019 and External Cervical Resorption 2018, Root resorption 2023, Cracked teeth 2025). Shanon has been a keynote speaker at over 175 international meetings spanning 5 continents and has co-authored 6 textbooks which have been translated into 5 different languages.

External Cervical Resorption-Diagnosis & Management

The prevalence of External Cervical resorption (ECR) is increasing due to increased awareness. However, the management of ECR can be challenging. This presentation will summarise cutting edge clinical research on treatment options of ECR.

The aim of this presentation is to give an update on management strategies of ECR.

Learning objectives:
- Recognise how to diagnose ECR
- Understand the impact of CBCT in the treatment of ECR
- Appreciate the different management strategies for ECR

Prof. Paweł Plakwicz



Prof. Plakwicz graduated from the Dental Faculty, Medical University of Warsaw. He was an assistant lecturer at the Department of Oral Surgery at the same university. He completed postgraduate training in autotransplantation of teeth at the University of Oslo, Norway in 2000. In 1996, he established a private practice in Warsaw, focused on the oral and periodontal surgery. In 2001, he qualified as a specialist in Oral Surgery and in 2009 defended his PhD. In 2015 he gained his PhD with habilitation. In 2017 he received his MFDS ad eundem from the Royal College of Surgeons of England. In 2023 he became a full professor. Until 2024 he has worked at the Department of Periodontology, Medical University of Warsaw. His main research interests are in the treatment of growing patients with missing teeth, eruption disturbances, teeth autotransplantation and treatment of mucogingival deformities. During the last decade, he authored and co-authored over 70 scientific articles and chapters in the books. He has performed and followed-up more than 700 autotransplanted teeth. Prof. Plakwicz lectures and conducts courses nationally and internationally in Europe, Africa and in the United States (where he was appointed Adjunct Professor at the UNC in Chapel Hill, NC in 2019).

Autotransplantation of teeth to the anterior maxilla: surgical technique and healing of the transplanted teeth.

The periodontal response to dental trauma depends on the nature of damage and varies from spontaneous healing to severe or late complications. Some types of root resorption can be successfully treated while other types are progressive and may eventually lead to tooth loss. In young patients the presence of teeth is essential for development and growth of the alveolar process. Tooth loss always leads to alveolar bone loss and later any type of treatment becomes a challenge, with often limited success.

However, hopeless anterior teeth may often be replaced by developing teeth autotransplanted from other regions of the oral cavity. Premolars with developing roots are optimal donors with reported success over 90 per cent. Autotransplantation of developing premolars to maxillary anterior region will be presented during the lecture.

The lecture will provide information about the surgical technique for autotransplantation of developing teeth to replace hopeless or lost maxillary incisors. Alveolar bone preservation and regeneration is an important and extremely promising aspect of this treatment modality. It will be demonstrated, using clinical examples, that developing premolars may in many cases serve as a natural providers of bone growth and may help in regeneration of the alveolus in anterior maxilla. This advantage seems to be the most strategic factor in favour of performing tooth autotransplantation in child to avoid the need for compromised implant in the future.

Prof. Sivaprakash Rajakseharan



Prof. Dr. Sivaprakash Rajasekharan BDS, MSc Paediatric Dentistry is currently working as Professor at the Department of Paediatric Dentistry and Special Care, Ghent University, Belgium and is the co-ordinator of the paediatric dentistry specialization programme. He is head of 'Team Research' for the Department of Oral Health Sciences at Ghent University, Belgium. He completed his post graduate in 2013) and PhD thesis on the material properties, cytotoxicity and clinical efficacy of tricalcium silicate based cements in 2017. He has received funding from the Flanders Research Foundation to work as a postdoctoral researcher Ghent University for 3 years. He is the recipient of the "Young investigator award" from the European Academy of Paediatric Dentistry (EAPD) in 2014. He is currently also an associate editor for the European Archives of Paediatric Dentistry. His research interests include tricalcium silicates, bioactive materials, paediatric endodontics and regenerative therapy.

Biomaterials in Dental Traumatology: From Functional Repair to Biological Regeneration

This lecture will explore how biomaterials are redefining the management of dental trauma, moving the field from conventional repair toward biologically driven regeneration. Traumatic dental injuries present a unique clinical challenge, involving simultaneous damage to hard and soft tissues within a dynamic oral environment. The lecture will examine how next-generation biomaterials are being engineered to actively interact with the biological milieu, promoting tissue-specific healing rather than mere structural substitution.

Particular emphasis will be placed on how these materials can modulate cellular behaviour through controlled ionic release, mechanical signaling, and biochemical cues, thereby enhancing stem cell recruitment, angiogenesis, and odontogenic differentiation. The lecture will also address the emergence of smart and responsive biomaterials, capable of delivering growth factors or anti-inflammatory agents in response to environmental triggers such as pH or enzymatic activity being especially relevant in post-traumatic settings. In addition, the integration of photobiomodulation, mechanobiology, and digital manufacturing technologies will be discussed as enabling platforms that enhance biomaterial performance and clinical precision in trauma management.

Ultimately, this lecture will provide a comprehensive overview of how biomaterial innovation is reshaping dental traumatology, presenting translational pathways that unify bioengineering principles with clinical realities. The overarching goal is to illustrate how strategic material design can restore not only form and function but also biological continuity and regenerative potential in traumatized dental tissues.

Dr. Marga Ree



Marga Ree, DDS, MSc obtained her degree in dentistry from the University of Amsterdam in 1979 and completed her residency in endodontics in 2001. She is a popular speaker for dental and endodontic conferences, and has given over 300 presentations and hands-on courses in more than 30 countries all over the world. She is the primary author of many articles published in national and international journals and has contributed to several books on endodontics and restorative dentistry. From 1980 till 2020 she maintained a private practice in Purmerend, which for the last twenty years was dedicated to endodontics. She is presently working at a multidisciplinary dental practice in Amsterdam.

Crown-root fractures, endodontic and restorative aspects

Tooth fracture can occur at any age due to falls, sports, traffic accidents or foreign objects striking the teeth. The consequence of such an impact on a tooth varies from mild enamel chipping to complex crown-root fractures that require a multi-disciplinary approach.

Crown-root fractures usually occur obliquely from the labial to the palatal side, and therefore it's common to see the fracture line extending to the subcrestal aspect on the palatal side. Treatment options include surgical crown lengthening, orthodontic or surgical extrusion. Surgical extrusion is a recognized treatment option, but this technique has not been widely adopted, probably because extraction of a severely compromised tooth may be difficult to achieve in a gentle and predictable way. Regarding the restorative approach, a diversity of clinical solutions is available, varying from re-attachment of the original fragment to restoring with composite or ceramics.

Marga Ree will discuss a variety of clinical procedures to preserve fractured teeth that would otherwise be deemed unrestorable, including the decision process when and how to interfere.

Dr. Michał Sobczak



Dr Michał Sobczak, is a full-time specialist in Paediatric Dentistry. He graduated from the Dental Faculty of the Medical University of Warsaw, where he completed specialist training in Paediatric Dentistry and defended his PhD thesis in dental traumatology.
He is the co-founder and Medical Director of a multidisciplinary dental centre, where he leads a specialised team providing advanced care for patients with complex needs. His clinical expertise includes the management of dental trauma, dental caries, disorders of enamel and dentine mineralisation, as well as developmental and genetic anomalies affecting the dentition.

Dr Sobczak is a co-founder and, since 2013, a Board Member of the Polish Academy of Paediatric Dentistry (PASD).
In 2016, he was awarded the title of Fellow of the International Association of Dental Traumatology (FIADT), recognising his advanced competencies in dental traumatology.
In 2023–2024, he served as Board Member and Treasurer of the European Academy of Paediatric Dentistry (EAPD).
From 2021 to 2024, he served as a Member of the Board of Directors of the International Association of Dental Traumatology (IADT).
In 2025, he was elected President-Elect of the IADT.

Alongside his clinical practice, he is actively involved in postgraduate education and is a recognised national and international lecturer in dental traumatology and paediatric dentistry.
He is also a member of numerous national and international scientific societies.

Traumatic Dental Injuries in the Primary Dentition – Do the IADT 2020 Guidelines Need Updating?

The 2020 IADT Guidelines introduced a distinctly conservative, child-centred approach to traumatic dental injuries in the primary dentition. Subsequent evidence has largely supported this philosophy rather than challenged it. This presentation will review the most relevant post-2020 evidence and identify areas where future guidelines may require refinement. Attention will be given to intrusive and lateral luxation, risk of developmental disturbances in permanent successors, radiographic follow-up, splinting, traumatic pulp exposure and contemporary hydraulic calcium silicate cements. Current evidence supports continued conservative management of many luxation injuries but suggests a need for better risk stratification according to injury severity, age and developmental stage, more clearly defined injury-specific follow-up, and improved evidence for radiographic surveillance and splinting. Overall, the next update should represent refinement, preserving the fundamental shift from treating the injured tooth to treating the injured child.

Prof. Fabricio B. Teixeira



Dr. Fabricio Teixeira serves as Professor and Chair of the Department of Endodontics at Texas A&M University in Dallas, TX. Before joining Texas A&M, he spent 11 years as an Endowed Professor and the Chair of the Department of Endodontics at the University of Iowa, including more than four years as Program Director. He remains an adjunct faculty member at both the University of Iowa and the University of North Carolina at Chapel Hill, where he previously held the position of Tenured Associate Professor. Dr. Teixeira began his academic journey at the State University of Campinas (UNICAMP), Brazil, earning his Master's and PhD degrees and later serving as an Associate Professor. He received his Endodontic Certificate from the University of Texas at San Antonio, where he also served as Program Director and was honored as the first recipient of the Carlos del Rio Distinguished Professorship Endowment. Dr. Teixeira is a Diplomate and former Director of the American Board of Endodontics (ABE) and has held numerous leadership positions within the AAE, including organizing annual meetings and serving on key committees. He currently serves as Secretary of the International Association of Dental Traumatology, CODA commissioner, and Chair of the Endodontic Review Committee. Dr. Teixeira is a member of the OKU National Dental Honor Society and a Fellow of both the American College of Dentists and the International College of Dentists. He spent nine years as Associate Editor of Endodontic Topics and is currently an advisor to the Journal of Endodontics, in addition to serving on several editorial boards. Actively engaged in clinical research, Dr. Teixeira has presented at numerous national and international conferences. He is a prolific author, having published over a 100 peer-reviewed manuscripts, abstracts, and chapters in leading textbooks such as "Pathways of the Pulp" and "Endodontics: Principles and Practice."

Pulp Management in Dental Traumatology

Emerging evidence suggests various treatment approaches to enhance pulp tissue survival following traumatic dental injuries (TDIs). Notably, these injuries pose a significant concern for young permanent teeth with incomplete root development. Different treatment options have been proposed for both vital and necrotic pulps. The most compelling evidence indicates that clinicians should employ a combination of approaches tailored to the specific tooth's condition, the clinical situation, and the patient's preferences. However, the circumstances surrounding TDIs necessitate immediate and meticulous interventions to achieve optimal patient-centered outcomes. Professionals may encounter challenging conditions when managing patients and making treatment decisions from a treatment planning perspective, as overtreatment is frequently observed and can adversely affect long-term prognosis. This presentation will review pertinent literature, present clinical evidence, and consider the indications and contraindications for potential interventions.

After this program, the participant should be able to:

- Describe the etiological factors leading to pulpal necrosis.
- Recognize distinct treatment alternatives for each condition.
- Understand the pros and cons of different materials used in these cases.

Dr. Nitesh Tewari



Dr. Nitesh Tewari has been active in Pediatric Dentistry, Dental Traumatology, and Evidence Based Medicine with 190 publications and eight test-book contributions. He has lectured in 175 events in 23 countries and conducted dental traumatology and systematic review workshops. His works have been awarded by International Association of Dental Traumatology, International Association of Pediatric Dentistry, Craniofacial Research Foundation, International Association of Dental Research, Japan Dental Association, International Federation of Endodontic Associations, Royal College of Surgeons of Glasgow, and several other associations. He is a fellow of six societies and presently serves as the Communication Officer of the International Association of Dental Traumatology, General Secretary of the Indian Society of Dental Traumatology, secretary of the Evidence-based dentistry network of IADR, and Professor of Pediatric Dentistry at the All India Institute of Medical Sciences, New Delhi, India. Presently he is doing doctoral research on combination injuries at Karolinska Institutet, Sweden.

Managing the traumatized permanent teeth with “guarded prognosis”: the evidence-based practice of not giving up

Traumatic dental injuries result in a number of long term or delayed complications in permanent teeth. They result from progressive deterioration of the pulp or periodontal tissues after series of failed attempts of recovery from the traumatic insults. These conditions include pulp necrosis, tooth resorptions, discolorations, marginal bone loss, peri-radicular degeneration, or tooth fractures. A deeper influence of dental injuries on the psychological well-being of the affected individuals has also been noted. The common factors leading to delayed complications are the time elapsed from trauma to appropriate emergency care, adequacy of treatment, age of the patient, and severity of injury. Due to late detection and aggressive nature of the condition, teeth with these complications suffer from guarded prognosis and often termed “hopeless”. Over the years, a more conservative approach has emerged from translational research and better understanding of the biological responses. A tailored approach with dynamic prognostic treatment planning is needed when attempting to save or restore the form and function of the traumatized teeth with delayed complications.

Prof. Matthias Widbiller



Prof. Dr. Matthias Widbiller began his academic career in 2013 after completing his dental studies at the University of Regensburg. He then worked both as a dentist and as a research assistant at the Department of Conservative Dentistry and Periodontology at the University Hospital of Regensburg, where he obtained his doctorate in 2015. Matthias Widbiller is a lecturer in conservative dentistry and a certified university teacher. His interest in research and continuing education led him to the University of Texas Health Science Center at San Antonio (UTHSCSA), USA, as a postdoctoral fellow from 2017 to 2018. During this time, he joined the renowned research laboratory of Dr. Kenneth M. Hargreaves and Dr. Anibal Diogenes. He worked intensively on tissue engineering of dental pulp, bioactive materials and bioactive proteins of the dentin matrix. As a clinical expert, Dr. Widbiller has particular expertise in dental traumatology, vital pulp therapy and regenerative endodontic procedures. Since 2016, he has coordinated the Centre for Dental Traumatology at the University Hospital of Regensburg, and since 2021, he has been the head of the research department. In 2023, Dr Widbiller was appointed by the university as full professor of endodontics.

Bioactive Materials in Dental Trauma: Challenges, Chemistry, and Clinical Evidence

Vital pulp therapy following traumatic dental injuries poses unique biological and clinical challenges. In traumatized teeth, vascular disruption combined with microbial threats can significantly compromise the pulp's regenerative capacity. Modern bioactive materials are therefore essential for supporting healing in cases of both indirect and direct pulp exposure. However, their effectiveness depends on far more than just sealing.

This lecture will focus on the use of bioactive materials in trauma-related scenarios involving both mature and immature teeth, emphasizing the biological mechanisms underlying material–tissue interactions and the relevant chemistry, and how these factors influence clinical outcomes. The handling, cost, discoloration, and long-term success of current generations of calcium silicate cements are critically appraised.

Participants will gain a comprehensive understanding of the advantages and limitations of contemporary biomaterials, equipping them to make evidence-based decisions when managing acute and follow-up trauma cases while balancing biological considerations with practical clinical requirements.

Dr. Alina Wikström



Dr. Alina Wikström is a specialist in endodontics and her field of special interest is providing treatment to young individuals with combined endodontic and sedation needs. She graduated from the Medical University of Warsaw in 2000 and moved to Sweden. After completing her post-graduate residency at Karolinska Institute, she received her specialization in endodontics in 2016 at the Public Dental Health Services, Eastman Institute Stockholm. Since then, she has been employed at the Department of Endodontics at Eastman Institute in Stockholm as a senior consultant. Dr. Wikström completed her PhD-studies at Karolinska Institute in 2025. Her PhD project evaluated the treatment options available for children and adolescents with traumatized immature necrotic teeth. Among those are clinical, radiographical and microbiological outcomes of regenerative endodontic treatment and the long-term outcomes of apexification techniques. Currently, Dr. Wikström combines clinical practice at Eastman Institute with post-doctoral research at Karolinska Institute within an intyernational research group specializing in the field of dental traumatology.

Regenerative endodontic treatment – how do we achieve predictable outcomes?

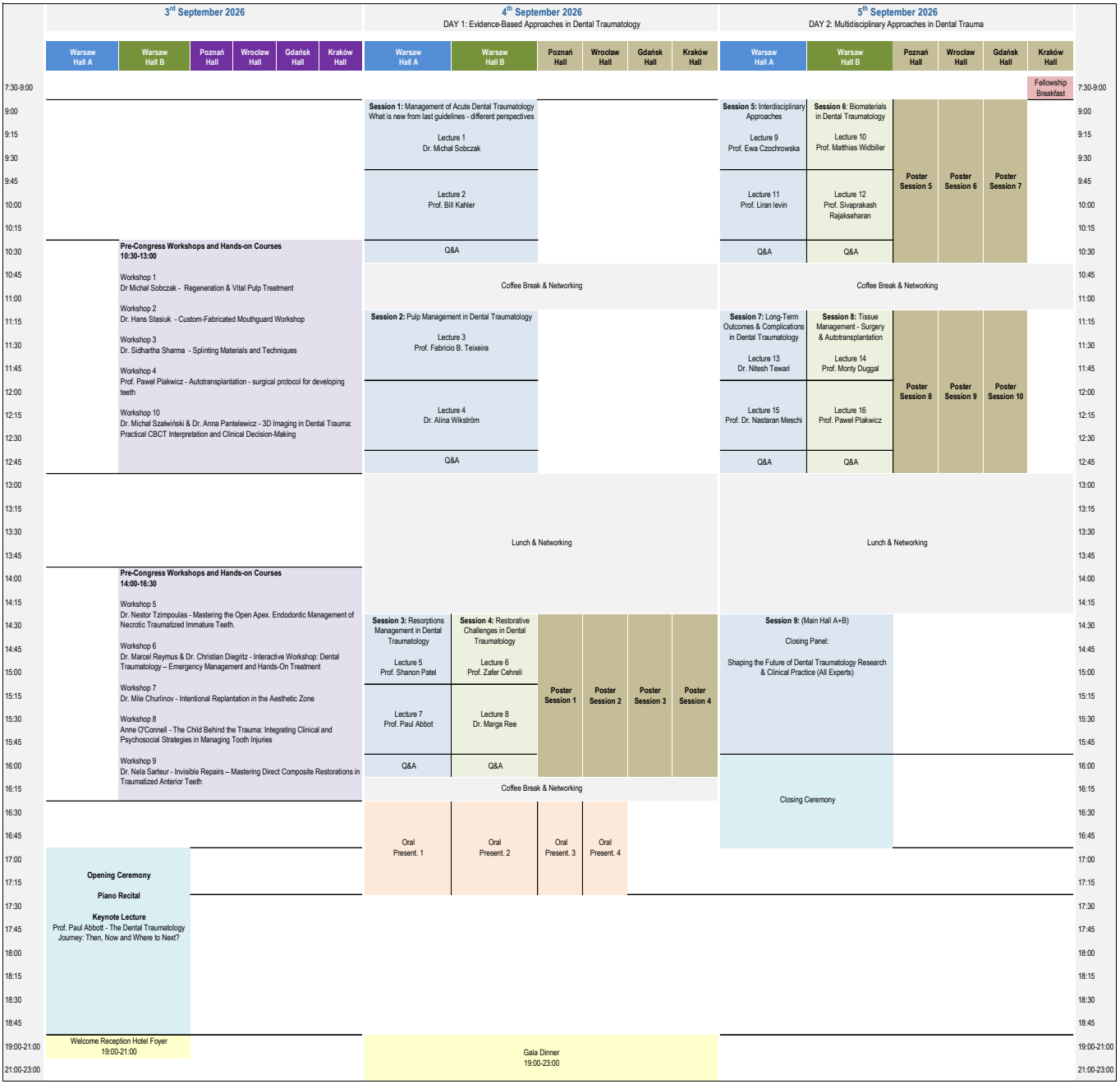
The subject of this lecture is to provide an evidence-based evaluation of regenerative endodontic treatment for the management of pulpal and periapical disease in permanent teeth with pulp necrosis with or without periapical disease.

Considerable uncertainty exists as to whether regenerative endodontic treatment may be considered a suitable alternative or even a replacement for conventional endodontic apexification treatment in immature teeth. Moreover, the lecture provides a discussion if mature teeth are suitable to treat with regenerative endodontics.

Different aspects regarding the procedure are going to be discussed. These are the clinical challenges, the outcome measures, the definition of success and failure, decision-making and the current scientific evidence for the effectiveness of regenerative endodontic treatment compared to other treatment options.

World Congress of Dental Traumatology, Warsaw Poland 3-5 September 2026
Mastering Dental Traumatology: Multidisciplinary Treatment & Technology

Programme at at glance



3 SEPTEMBER 2026

10:30 - 13:00 | a. Warsaw Hall B-1 [WH level], Warsaw Hall IV

Workshop 1 – Regeneration & Vital Pulp Treatment

Vital Pulp Therapy and Regenerative Endodontics – Hands-on Workshop

10:30 - 13:00 | b. Gdańsk Hall [M1 level]

Workshop 2 – Custom-Fabricated Mouthguard Workshop

JUST WEAR IT! – Protect Those Winning Smiles

10:30 - 13:00 | c. Kraków Hall [M1 level]

Workshop 10 – 3D Imaging in Dental Trauma: Practical CBCT Interpretation and Clinical Decision-Making

3D Imaging in Dental Trauma: Practical CBCT Interpretation and Clinical Decision-Making

10:30 - 13:00 | d. Wrocław Hall [M2 level]

Workshop 3 – Splinting materials and techniques

Splinting Materials and Techniques

10:30 - 13:00 | e. Poznań Hall [M2 level]

Workshop 4 – Autotransplantation – surgical protocol for developing teeth

Autotransplantation – surgical protocol for developing teeth

14:00 - 16:30 | a. Warsaw Hall B-1 [WH level], Warsaw Hall IV

Workshop 5 – Mastering the Open Apex. Endodontic Management of Necrotic Traumatized Immature Teeth.

Mastering the Open Apex. Endodontic Management of Necrotic Traumatized Immature Teeth

14:00 - 16:30 | b. Gdańsk Hall [M1 level]

Workshop 7 – Intentional Replantation in the Aesthetic Zone

Intentional Replantation in the Aesthetic Zone

14:00 - 16:30 | c. Kraków Hall [M1 level]

Workshop 8 – The Child Behind the Trauma: Integrating Clinical and Psychosocial Strategies in Managing Tooth Injuries

The Child Behind the Trauma: Integrating Clinical and Psychosocial Strategies in Managing Tooth Injuries

14:00 - 16:30 | e. Poznań Hall [M2 level]

Workshop 6 – Interactive Workshop: Dental Traumatology – Emergency Management and Hands-On Treatment

Dental Traumatology – Emergency Management and Hands-On Treatment

14:00 - 16:30 | f. Warsaw Hall B-2 [WH level]

Workshop 9 – Invisible Repairs – Mastering Direct Composite Restorations in Traumatized Anterior Teeth

Invisible Repairs – Mastering Direct Composite Restorations in Traumatized Anterior Teeth

17:00 - 17:45 | 1. Warsaw Hall A [WH level]

Opening Ceremony

17:45 - 18:15 | 1. Warsaw Hall A [WH level]

Frederic Chopin Piano Recital by Marek Bracha

18:15 - 19:00 | 1. Warsaw Hall A [WH level]

Keynote Lecture

The Dental Traumatology Journey: Then, Now and Where to Next? ***Prof. Paul Abbott***

19:00 - 21:00 |

Welcome Reception

4 SEPTEMBER 2026

09:00 - 10:45 | 1. Warsaw Hall A [WH level]

Session 1: Management of Acute Dental Traumatology. What is new from last guidelines – different perspectives

Session Chair: Prof. Liran Levin

Traumatic Dental Injuries in the Primary Dentition – Do the IADT 2020 Guidelines Need Updating? ***Dr. Michał Sobczak***
Management of Acute Dental Trauma in the Permanent Dentition. What is new from last guidelines – different perspectives ***Prof. Bill Kahler***
Q&A

10:45 - 11:15 |

Coffee Break & Networking

11:15 - 13:00 | 1. Warsaw Hall A [WH level]

Session 2: Pulp Management in Dental Traumatology

Session Chair: Prof. Anne O'Connell

Pulp Management in Dental Traumatology ***Prof. Fabricio B. Teixeira***
Regenerative endodontic treatment - how do we achieve predictable outcomes? ***Dr. Alina Wikström***
Q&A

13:00 - 14:30 |

Lunch & Networking

14:30 - 16:15 | 1. Warsaw Hall A [WH level]

Session 3: Resorptions Management in Dental Traumatology

Session Chair: Prof. Bill Kahler

External Cervical Resorption-Diagnosis & Management ***Prof. Shanon Patel***
The New IADT/DTG Classification of Tooth Resorption and Associated Conditions ***Prof. Paul Abbot***
Q&A

14:30 - 16:15 | 2. Warsaw Hall B [WH level]

Session 4: Restorative Challenges in Dental Traumatology

Session Chair: Prof. Paweł Plakwicz

Restorative Challenges Post-Trauma: Clinical Considerations and Strategies from Simple to Complex Cases ***Prof. Zafer Cehreli***
Crown-root fractures, endodontic and restorative aspects ***Dr. Marga Ree***
Q&A

14:30 - 16:15 | 3. Poznań Hall [M2 level]

Poster Presentations 1 – short oral presentations – Epidemiology, Education and Social Aspects in Dental Traumatology

Session Chairs: Maria El Kyhour, Marcel Reymus

(0083)

Impact of helmet use on the pattern and severity of maxillofacial injuries in two-wheeler accidents: Evidence from North India
Authors: Amandeep Kaur

(0036)

Dental hygienists' knowledge in dental traumatology: an educational intervention within the Public Dental Services of Western Norway

Authors: Andjelka Cvijic, Knut Helge Midtbø Jensen, Georgios Tsilingaridis, Anne Nordrehaug Aastrom, Athanasia Bletsa

(0101)

First Contact, Critical Gap: Medical Nurses' Preparedness for Emergency Management of Traumatic Dental Injuries in a Tertiary Care Setting

Authors: Apurva Mishra, Dipanshu Kumar, Shailesh Kumar, Srinivasa TS

(0146)

Lost to follow-up: The Hidden Gap in Dental Trauma Outcomes

Authors: Dr Divya Khanna

(0014)

A Digital Platform Leveraging Artificial Intelligence for Epidemiological Research and Education in Dental Traumatology

Authors: Georges El Achkar

(0063)

Parent's knowledge of emergency management of traumatic dental injuries in Sweden

Authors: Georgios Tsilingaridis, Asma Malak, Reem Issa, Alina Wikström, Nitesh Tewari

(0040)

Paediatric Oral and Maxillofacial Injuries Requiring Inpatient Care: A Population-Based Registry Study in Northern Finland (2016–2024)

Authors: Jenni Pasuri, Tarja Tanner, Riitta Lithovius

(0001)

Knowledge about mature permanent tooth avulsion and its management among dentists in Rabat, Morocco

Authors: LAILA AZZAHIM, SANAA CHALA, FAIZA ABDALLAOUI, NISSRIN BASSIM

(0042)

Awareness and Sense of Urgency in Dental Avulsion Management: Knowledge Gaps Among Dutch Teens and Students

Authors: Maxim Chan

(0089)

Prevalence and patterns of multiple injuries affecting a single permanent tooth (combination injuries): a systematic review and meta-analysis

Authors: Nitesh Tewari, Alina Wikström, Eva Lauridsen, Vijay Mathur, Partha Haldar, Lars Andersson, Georgios Tsilingaridis

(0137)

Evaluation of Knowledge Levels of Dental Students Regarding Dental Trauma Management

Authors: Özlem Nur Yilmaz, Didem Odabaşi, Hüseyin Şimşek

(0090)

Statistical models for assessing the risk of pulp necrosis in teeth after trauma.

Authors: Patrycja Proc, Julia Piotrowska, Damian Mikulski, Monika Lukomska-Szymanska

14:30 - 16:15 | 4. Wrocław Hall [M2 level]

Poster Presentations 2 – short oral presentations – Acute Dental Trauma Management, Healing, Complications and Long-Term Outcomes

Session Chairs: Sidhartha Sharma, Nastaran Meschi

(0057)

Traumatic Avulsion and Lateral Luxation in an Adolescent Patient: Clinical Approach and Early Outcomes

Authors: Agnieszka Malik, Małgorzata Jamka-Kasprzyk, Iwona Gregorczyk-Maga

(0073)

Case report of Complicated Crown-Root and Crown Fractures in a pediatric patient – long-term follow-up.

Authors: Agnieszka Zielinko, Agata Markowska, Elżbieta Łuczaj-Cepowicz

(0069)

Treatment Outcomes and Prognostic Factors in Permanent Incisors with Uncomplicated and Complicated Crown Fractures

Authors: Arif BOLACA, Fatma Irmak CILDIR, Yıldırım ERDOGAN

(0117)

Conservative approach for treating complex crown-root fracture initially indicated for extraction and implant installation: An 8-year follow-up.

Authors: Bruna Ferreira Soares, Caroline Garcia Orsi, Carlos José Soares, Priscilla Soares, Camilla Moura

(0150)

Effect of splint rigidity on tooth displacement and stress distribution in horizontal root fractures: an experimental and finite element study

Authors: Carlos José Soares, Paulo César Junqueira, Caroline Orsi, Airin Rondón, Maribí Isomar Lozada, Nitesh Tewari, Georgios Tsilingaridis, Priscilla Soares

(0119)

Dental splints in dentoalveolar trauma: an overview of public healthcare services in Brazil

Authors: Caroline Garcia Orsi, Roberta de Oliveira Alves, Liran Levin, Carlos José Soares, Priscilla Barbosa Ferreira Soares

(0078)

Comparative Evaluation of Splint Types and Removal Techniques on Enamel Microhardness Following Dental Trauma

Authors: Ceren Sağlam, Aslı Aşık, Dilşah Çoğulu, Yağmur Lena Sezici

(0115)

Management of an Avulsed Immature Maxillary Left Permanent Central Incisor: A Case Report

Authors: Ceyda Ipek Isseven, Figen Eren

(0032)

Severe Intrusion in the Mixed Dentition: Multidisciplinary Management of a Complicated UL1 Injury.

Authors: Dalal Alsallal, Carly Dixon, David Waring

(0047)

Antimicrobial Photodynamic Therapy and Photobiomodulation in Delayed Replantation of Avulsed Teeth: A 7-Year Follow-Up

Authors: Flávia Monari Belmonte, Emilio Carlos Paschoal, Luciane Hiramatsu Azevedo, Celso Luiz Caldeira, Patricia Moreira de Freitas

(0135)

Delayed Replantation to Decoronation: Managing Replacement Resorption and Aesthetic Rehabilitation in an Anxious Growing Child

Authors: Gowry Paramasivam, Shani Ann Mani, Nabihah Dziaruddin

(0109)

Regenerative Endodontic Treatment of Immature Permanent Teeth Following Trauma: An Effective Alternative Treatment Approach to Conventional Apexification

Authors: Hanna Sobczak-Zagalska, Marek Olejniczak, Adriana Goczewska, Aleksandra Molska

14:30 - 16:15 | 5. Gdańsk Hall [M1 level]

Poster Presentations 3 – short oral presentations – Endodontic Management of Traumatic Dental Injuries

Session Chairs: Peter Day, Nabihah Dziaruddin

(0153)

PCO following initial trauma management: Cases, decisions and follow-up

Authors: Alejandra Salinas

(0007)

Root Resorption and Tooth Loss Following Endodontic Management of Traumatic Dental Injuries in Permanent Teeth: A Systematic Review and Meta-analysis

Authors: Aman Kumar

(0030)

Delayed Reimplantation in a Class III Malocclusion: A Multidisciplinary Approach to Complex Trauma

Authors: Amenah AlSheikhosien, Carly Dixon

(0133)

Strategic Tooth Preservation After Failed Regenerative Endodontic Treatment for Traumatised Immature Permanent Incisors in a Growing Patient

Authors: ANIS MARLINA IBNE WALID, LILY AZURA SHOIAB

(0052)

FROM ACUTE TRAUMA to LATE COMPLICATIONS: MULTIDISCIPLINARY MANAGEMENT of TRAUMATIC DENTAL INJURIES - Two Case Reports

Authors: Betul USLU, Arzu KAYA MUMCU

(0072)

Management of Complex Anterior Crown Fractures with Delayed Pulpal and Periapical Complications: Two Case Reports

Authors: BİLGE AKDANA, Safa KURNAZ, Furkan KURUÇAY

(0141)

Managing External Root Resorption in Traumatized Permanent Teeth Using PRO-PRF–Based Regenerative Endodontic Therapy: A Four-Case Series

Authors: Anahi de Paula Melo, Nellys Guillermina Lanz de Contreras, Bruna Ferreira Soares, Priscilla Barbosa Ferreira Soares, Carlos José Soares, Camilla Christian Gomes Moura

(0087)

Antimicrobial Activity and Biocompatibility of AntibioticLoaded chitosan nanoparticles as a Potential Scaffold in Regenerative Endodontic Treatment

Authors: Abdulrahman Al-Majed, Maha ALGHOFAILY, Basmah Almaarik, Eram Eram Eltahir, Fadilah Sfouq Aleanizy, Fulwah Yahya Alqahtani

(0088)

Effect of liquid platelet-rich fibrin (PRF) on periodontal ligament cell viability in avulsed teeth after 3–4 hours of dry time

Authors: Everdan Carneiro, Tatiana Carvalho Kowaltschuk, Mariana Martins Juglair, Daniel Grigolo, Fabiane Barchiki, Lorena Bortolini Navarro, Ulisses Xavier da Silva Neto, Vânia Portela Dietzel Westphalen

(0081)

Short-, Medium-, and Long-term Management of Complications After Bilateral Maxillary Central Incisor Avulsion in a 6-Year-Old Patient: A Case Report

Authors: Sofía Grano de Oro Saavedra, Eugenio Carlos Grano de Oro Cordero, David Rubio Flores, Gloria Saavedra Marbán

(0076)

Poor Initial Prognosis, Successful Long-term Outcome: 12-year Follow-up of Avulsed Maxillary Central Incisor in a Pediatric Patient

Authors: Eugenio Carlos Grano de Oro Cordero, Sofía Grano de Oro Saavedra, Gloria Saavedra Marbán

(0147)

Same Injury, Different Outcomes: The Impact of Timely Management on Complicated Crown Fractures
Authors: Hadeel Alshemmari, Hussa Albahar, Sherifa Almukhaizeeim

14:30 - 16:15 | 6. Kraków Hall [M1level]

Poster Presentations 4 – short oral presentations – Aesthetic, Restorative and Prosthetic Rehabilitation after Dental Trauma & Treatment Planning and Orthodontic Management

Session Chairs: Nabil Ouatik, Ewa Czochrowska

(0113)

Conservative Treatment of a Complicated Crown Fracture with an Associated Vertical Root Fracture: A Case Report
Authors: Berre UZUN PEKİNTÜRK, Nilüfer ÜSTÜN, Pırıl BOZKAN URAS, Zafer Cavit ÇEHRELİ

(0110)

Aesthetic Rehabilitation of Post-Traumatic Enamel Hypomineralization in a Permanent Incisor Using Resin Infiltration: A 3-Year Follow-Up
Authors: Daryna Tolkachova

(0106)

Aesthetic and Functional Rehabilitation After Traumatic Tooth Loss in Adolescents Using Ceramic Cantilever Fixed Dental Prostheses: A Three-Case Series.
Authors: Jan Sobczak, Michał Sobczak

(0074)

Conservative Management of Traumatic Subgingival Crown-Root Fracture in Mixed Dentition via Light Orthodontic Forced Eruption : A Case Report
Authors: Min Young Park, Dong Hwan Shin, Hyung Jun Choi, Ko Eun Lee

(0151)

Biological oriented preparation technique for functional and aesthetic rehabilitation after dental trauma: a clinical case
Authors: Nicolas Obtel, Corentin Illand, Lise Valtaud, Grégoire Chevalier, Franck Decup, François Ferré

(0065)

Orthodontic Management of a Severely Intruded Permanent Incisor: A 12- year long - term follow up
Authors: Deepesh Prajapati

(0098)

Managing Traumatic Dental Injury During Active Orthodontic Treatment: The Importance of an Interdisciplinary Approach: A Case Report
Authors: Faris Alshammari, Katherine O'Donnell, Cian Lowney

(0149)

Clinical evaluation of post-traumatic maxillary permanent incisors treated with orthodontic forced eruption: a case series
Authors: Małgorzata Bilińska- Stajno, Michał Sobczak

(0131)

When Orthodontics Meets Trauma: Management of Lateral Luxation of Mandibular Incisors During Active Orthodontic Treatment
Authors: Marcin Derwich, Elzbieta Pawlowska

(0017)

Early Orthodontic Intervention in a Replanted Avulsed Incisor Before Complete Ankylosis
Authors: SUNG CHUL CHOI

16:15 - 16:30 |

Coffee Break & Networking

16:30 - 17:30 | 1. Warsaw Hall A [WH level]

Oral Presentations 1 – Endodontic Management of Traumatic Dental Injuries & Aesthetic, Restorative and Prosthetic Rehabilitation after Dental Trauma

Session Chairs: Alina Elzbieta Isabella Wikstroem, Nestor Tzimpoulas

(0145)

Endodontic microbiota of necrotic traumatized permanent teeth: A Cross-Sectional Study

Authors: Juliana Bastos

(0066)

Balancing Disinfection and Regenerative Potential: Effects of Irrigation and Intracanal Medicaments on TGF-β1 Release in Immature Teeth

Authors: Zeynep Yağmur Özdemir Tekin, Arzu Kaya Mumcu, Derya Berikten, Fatih Kar

(0012)

Long-term Outcomes of Restorations for Crown Fractures in Permanent Anterior Teeth of Children: A Retrospective Study

Authors: Guangyun Lai, Kai Sheng, Shimin Zhao, Jun Wang

(0043)

Enamel Adhesion of Newly Developed Composite Splinting Materials: Is Universal Adhesive Pretreatment Necessary?

Authors: Hong-Keun HYUN

(0084)

Fragment Reattachment in Crown Fractures: A Retrospective Survival Analysis

Authors: Jasna Ferko, Rok Kosem

16:30 - 17:30 | 2. Warsaw Hall B [WH level]

Oral Presentations 2 – Diagnostic Imaging and Artificial Intelligence in Dental Traumatology & Acute Dental Trauma Management, Healing, Complications and Long-Term Outcomes

Session Chairs: Malin Brundin, Nitesh Tewari

(0143)

Radiographic Healing Patterns After Regenerative Endodontic Treatment in Traumatized Immature Permanent Incisors with Pulp Necrosis Using a Blood Clot Scaffold and Biodentine

Authors: Michał Sobczak, Anna Pantelewicz, Joanna Kowalska

(0079)

Does Prompt Structure Matter? Effects of Prompting Strategies on Artificial Intelligence Responses in Dental Avulsion Management

Authors: Şevval Çakıcı, Safa Kurnaz

(0092)

Pulpal–Periodontal Metaplasia Following Luxation and Avulsion Injuries in Immature Permanent Incisors: An Uncommon but Potentially Stable Healing Outcome

Authors: JAIME DIAZ, ANDREA SEIFFERT, MACARENA VILLAR, CAMILA FIGUEROA

(0006)

Management of Soft Tissue Injuries in Dental Trauma: A Retrospective Observational Study of Dental Records

Authors: Lotte van der Hoek, Maxim Chan, Renee Helmers, Ellen Van Cann, Eelco Bergsma, Leander Dubois

(0100)

Documentation quality of traumatic dental injuries in pediatric patients: a retrospective audit based on IADT guidelines.

Authors: Natalja Greķe, Ilona Viduskalne, Ieva Ivanova, Natalja Protasa

16:30 - 17:30 | 3. Poznań Hall [M2 level]

Oral Presentations 3 – Epidemiology, Education and Social Aspects in Dental Traumatology

Session Chairs: Ewa Krasuska-Sławińska, Olga Tishkina

(0039)

How Children Sustain Traumatic Dental Injuries: A 13-Year Review of Injury Mechanisms
Authors: Ryan Sympson, Paul Casamassimo, Erin Gross, Daniel Claman, Riya Saini, Ehsan Azadani

(0058)

Co-designing patient-centred resources to improve care following traumatic dental injury
Authors: Van Bui, Julie Kilgariff, Wei Sea Mavis Ting

(0144)

Improving Documentation of Traumatic Dental Injuries in a Paediatric Dental Service: A Quality Improvement Project
Authors: Zahraa Alhabib, Aysha Alsaif, Rawan Alkhuwaiteem

16:30 - 17:30 | 4. Wrocław Hall [M2 level]

Oral Presentations 4 – Acute Dental Trauma Management, Healing, Complications and Long-Term Outcomes

Session Chairs: Katarzyna Emerich, Hani Nazzal

(0031)

Do Surface Treatment for Late Replantation of Avulsed Permanent Teeth Prevent Ankylosis and Root Resorption? A Systematic Review of Animal Studies
Authors: Elif Kuru, Ahmed Elkhadem, Nitesh Tewari, Ece Eden

(0026)

Prognostic markers of post-traumatic external inflammatory root resorption in children: evaluation of pulpal blood flow and gingival crevicular fluid biomarkers
Authors: Małgorzata Jamka Jamka-Kasprzyk, Iwona Gregorczyk-Maga

(0041)

Organisation of Dental Emergency Care In The Netherlands: Perspectives from General Acute Care
Authors: Maxim Chan

(0023)

From Avulsion to Survival: A Multicentric Retrospective Study of Prognostic Determinants in Replanted Permanent Teeth in Children
Authors: Sumaiyya Saleem, Dhanraj Kalaivanan, Deepesh Prajapati

(0096)

Multidisciplinary Management of a Subgingival Crown-Root Fracture in a Patient with Autism Spectrum Disorder: A Case Report
Authors: Zabairachna Polina

19:00 - 23:00 |

Gala Dinner

5 SEPTEMBER 2026

07:30 - 09:00 | 6. Kraków Hall [M1level]

Fellowship Breakfast (by invitation only)

09:00 - 10:45 | 1. Warsaw Hall A [WH level]

Session 5: Interdisciplinary Approaches

Session Chair: Prof. Malin Brundin

Premolar transplantation versus orthodontic space closure in the anterior maxilla: an orthodontic perspective ***Prof. Ewa Czochrowska***
Domestic abuse: don't be another link in the chain of silence! ***Prof. Liran Levin***
Q&A

09:00 - 10:45 | 2. Warsaw Hall B [WH level]

Session 6: Biomaterials in Dental Traumatology

Session Chair: Prof. Fabricio Teixeira

Bioactive Materials in Dental Trauma: Challenges, Chemistry, and Clinical Evidence ***Prof. Matthias Widbiller***
Biomaterials in Dental Traumatology: From Functional Repair to Biological Regeneration ***Prof. Sivaprakash Rajakseharan***
Q&A

09:00 - 10:45 | 3. Poznań Hall [M2 level]

Poster Presentations 5 – short oral presentations – Epidemiology, Education and Social Aspects in Dental Traumatology & Diagnostic Imaging and Artificial Intelligence in Dental Traumatology

Session Chairs: Małgorzata Jamka-Kasprzyk, Timothy Kirkpatrick

(0029)

Knowledge of Dental Trauma among Taiwanese Dentists and Auxiliary Members based on the International Association of Dental Traumatology guidelines: Preliminary Results
Authors: Po-Yuan Jeng, Cheng-Mei Yang, Paul Abbott, Wan-Chuen Liao, Chia-Tze Kao

(0121)

When Seconds Matter: Perceived Barriers to Managing Tooth Avulsion Among Sports School Educators - A Qualitative Study
Authors: PUTERI NUR AMEERAFARAHIN BINTI MD AMIN, Nabihah Binti Dziaruddin, Shani Ann Mani, Sabri Bin Musa

(0067)

A descriptive register study of paediatric facial fractures in Northern Finland
Authors: Riitta Lithovius, Jenni Pasuri, Tarja Tanner

(0142)

Evaluation of the Knowledge Levels and Attitudes of Physicians Working in Hospital Emergency Departments Regarding Dental Trauma
Authors: Rüveyda Yılmaz, Didem Odabaşi, Nihal Beldüz Kara

(0051)

Traumatic Dental Injuries in Eastern Bavaria: Characteristics, Injury Patterns, Diagnostic Findings, and Initial Management from the Regensburg Dental Trauma Registry
Authors: Sevgi Arabulan, Karolina Müller, Gunnar Huppertz, Martyna Smeda, Michael Koller, Sophia R. Lindner, Torsten E. Reichert, Wolfgang Buchalla, Matthias Widbiller

(0091)

Emergency Preparedness for Dental Trauma Among Medical Students: A Cross-Sectional Study of Knowledge and Clinical Decision-Making

Authors: Tamara Pawlaczyk-Kamieńska, Bartosz Jastrzębski, Olesya Marushko, Olena Marushko, Weronika Kamieńska, Patrycja Kamieńska

(0154)

Prevalence of traumatic injuries in patients who attended the Dental Trauma Unit at the Department of Endodontics, FOUBA.

Authors: Lorena Cabirta, L. Pinasco, V. Panetta, D. Sala, E. Miklaszewski, T. Lee, P.A. Rodríguez

(0097)

CBCT-guided management of delayed external inflammatory root resorption

Authors: Dilyana Joffe-Sokolova

(0050)

Development and Biological Evaluation of a Novel Storage Medium to Improve Periodontal Ligament Fibroblast Survival in Avulsed Teeth

Authors: Amrita Chawla, Vishal Kumar, Madhu Nath, Thirumurthy Velpandian, Sidhartha Sharma, Vijay Kumar, Ajay Logani

(0068)

Effect of Air Vents on the Molding Characteristics and Fit of Mouthguards Fabricated on 3D-Printed Resin Models

Authors: Gen Tanabe, Katarzyna Mańka-Malara, Chihiro Takahashi, Abhishekhi Shrestha, Kaito Togawa, Hiroshi Churei, Tomoya Sano, Ken Haku-Mizuhara, Toshiaki Ueno

(0004)

Prevalence of Dental Trauma and Mouthguard Use in Motocross Athletes: A Pilot Study

Authors: Yessenia Valverde Ingersoll

09:00 - 10:45 | 4. Wrocław Hall [M2 level]

Poster Presentations 6 – short oral presentations – Acute Dental Trauma Management, Healing, Complications and Long-Term Outcomes

Session Chairs: Apurva Mishra, Juan Eduardo Onetto Calvo

(0045)

Complications of trauma to a permanent tooth with incomplete root development- case report

Authors: Izabela Ziękiewicz

(0002)

Successful conservative treatment of a fractured and luxated tooth after a bike accident in an adolescent patient: a three-year observation.

Authors: Julia Sieczak, Anna Kokot, Beata Wilk-Sieczak

(0114)

Management of Complicated Crown Fracture of Tooth 21 Using Biodentine: A Case Report

Authors: Kateryna Zhmurko

(0064)

Socket-Shield–Based Partial Extraction Therapy for Alveolar Ridge Preservation Following Traumatic Root Fracture in a Growing Patient – A Case Report

Authors: Maciej Bodal, Hanna Sobczak-Zagalska

(0129)

Healing Beyond Trauma: A Three-Year Follow-Up of Subluxation and Lateral Luxation in Immature Incisors

Authors: Nicholas Li Jie Thong

(0059)

Dental trauma case in primary dentition: alveolar bone fracture and lateral luxation trauma followed by two additional traumatic episodes.

Authors: Nicolina Kyriacou, Eirini Koutagia, Konstantina Taoufik, Rodoula Pitrou

(0127)

External Inflammatory Root Resorption Following Intrusive Trauma in an Immature Incisor: A Case Report

Authors: NUR ADLINA DIYANA BT MD ISMAIL

(0003)

Replacing an Avulsed Canine with a Third Molar Root Autotransplant: A Clinical Report

Authors: Olga Tishkina

(0124)

Inverted mesiodens in traumatized dento-alveolar area - various considerations

Authors: Agata Koprowicz

09:00 - 10:45 | 5. Gdańsk Hall [M1 level]

Poster Presentations 7 – short oral presentations – Endodontic Management of Traumatic Dental Injuries

Session Chairs: Alejandra Salinas, Eva Lauridsen

(0102)

Clinical Dilemma in the Management of Intrusive Luxation in Pediatric Patients with Difficult Behavior

Authors: Hind Tallab

(0038)

Delayed Pulpal and Periapical Complications Following Dental Trauma in an Adolescent: A 6-Year Follow-Up Case Report

Authors: Katarzyna Białoszewska

(0016)

Cervical Root Resorption: From Silent Destruction to Conservative Preservation

Authors: Georges El Achkar

(0005)

From traumatic pulp necrosis to root maturation: Revitalization procedure in a young patient following lateral luxation

Authors: Dr. Shirin El-Sayed, Dr. Florian Leciejewski

(0035)

Surgical treatment of advanced external inflammatory resorption

Authors: Yu-heng Lin, Huei-Yu Lin

10:45 - 11:15 |

Coffee Break & Networking

11:15 - 13:00 | 1. Warsaw Hall A [WH level]

Session 7: Long-Term Outcomes & Complications in Dental Traumatology

Session Chair: Prof. Yuli Berlin-Broner

Managing the traumatized permanent teeth with "guarded prognosis": the evidence-based practice of not giving up ***Dr. Nitesh Tewari***

Decoronation and Root Submergence: on the Quest for Bone Preservation ***Prof. Dr. Nastaran Meschi***

Q&A

11:15 - 13:00 | 2. Warsaw Hall B [WH level]

Session 8: Tissue Management – Surgery & Autotransplantation

Session Chair: Dr. Michał Sobczak

A few snippets and lessons learned from 30 years experience of managing complex dento-alveolar trauma in Children and Adolescents ***Prof. Monty Duggal***
Autotransplantation of teeth to the anterior maxilla: surgical technique and healing of the transplanted teeth ***Prof. Paweł Plakwicz***
Q&A

11:15 - 13:00 | 3. Poznań Hall [M2 level]

Poster Presentations 8 – short oral presentations – Acute Dental Trauma Management, Healing, Complications and Long-Term Outcomes

Session Chairs: Amandeep Kaur, Georgios Tsilingaridis

(0053)
The conservative management of posttraumatic ankylosis after severe tooth intrusion
Authors: Peggy Herrmann, Nadine Schlueter, Anne-Katrin Luehrs, Ralf Krug

(0118)
Biomechanical performance of different rigidity of steel wire/resin composite splinting for treating dental trauma with bone alveolar fracture.
Authors: Priscilla Soares, Daniela Quevedo, Caroline Orsi, Paulo Cesar Junqueira, Camilla Moura, Carlos José Soares

(0070)
Management of persistent occlusal pain in traumatized maxillary anterior tooth following delayed treatment
Authors: Qiang Li

(0148)
Management of a Combined Avulsion and Uncomplicated Crown Fracture of Tooth 21 in an 8-Year-Old Patient using extraoral endodontic treatment – case report with 5 months follow-up
Authors: Ramiar Karim, Hiba Modawi, Christian Heinz Splieth, Julian Schmoeckel

(0116)
Delayed Replantation of an Avulsed Maxillary Incisor After 48-Hour Extra-Oral Dry Storage: Management Using a Bioceramic Sealer — A Case Report
Authors: ouaret sarra, MEBARKI amina, METREF salim

(0140)
Against All Odds: Survival of Repeated Avulsed Teeth
Authors: SITI KHADIJAH SHUHAIMY BASHA

(0134)
Immediate Management and Two-Year Outcome of Cvek Pulpotomy in a Traumatised Immature Permanent Incisor.
Authors: Su Reen Liew, Shani Ann Mani

(0130)
A Tooth That Wouldn't Let Go
Authors: W Siti Norzuraihan W Mahmood

(0136)
Management of Complicated Crown Fractures in Permanent Incisors: A Three-Case Report of Partial Pulpotomy
Authors: Yaren Yener, Bilgenaz Eyuboglu Armagan, Yonca Bircan Ercin, Arzu Pinar Erdem

(0126)

Management of Intrusion and Subsequent External Inflammatory Root Resorption in a Paediatric Patient

Authors: YOON CHEN JAMES LIAN

(0128)

Management of a Fractured Tooth via Autotransplantation: A 12-Year Longitudinal Follow-up

Authors: Yu-Chen Lee

11:15 - 13:00 | 4. Wrocław Hall [M2 level]

Poster Presentations 9 – short oral presentations – Pediatric and Developmental Aspects of Dental Trauma

Session Chairs: Zafer Cehreli, Agnieszka Wal-Adamczak

(0020)

Treatment of Trauma-Induced Ankylosed Upper Incisor with an Open Apex: 11-Years Follow-up

Authors: Aysel Toprak Akbulut, Yılmaz Umut Aslan, Ali Menteş

(0108)

Follow-Up–Oriented Management of Periodontal Tissue Injuries in Children: A Three-Case Report

Authors: Bilgenaz Eyuboglu Armagan, Arzu Pınar Erdem

(0138)

Treatment of Unilateral Condylar Fracture in a Pediatric Patient: A Case Report

Authors: Ece Öksüz Şahin, Yeliz Güven

(0049)

Spontaneous Healing of Root Fractures in Immature Permanent Teeth with Preserved Pulp Vitality: A Case Report

Authors: Juyun Kim, Taesung Jeong, Jonghyun Shin, Eungyung Lee, Soyoung Park

(0010)

Long-term Outcomes Following Primary Tooth Intrusion: A Case Report

Authors: Katarzyna Brzeń, Iwona Gregorczyk - Maga

(0024)

Distant complications in the hard tissues of the maxillary incisors of an 8 – year–old girl after an injury in early childhood.

Authors: Katarzyna Cichoń, Katarzyna Rudolf - Urasińska, Ewa Krasusuka - Sławińska

(0008)

Appropriate use of CBCT in management of complex dental injuries in a 12-year-old patient

Authors: Louise Barry, Anne C O'Connell

(0132)

Multidisciplinary Management of an Infected Gutta Percha Obturated Ankylosed Tooth: Removal, Regeneration, and Rehabilitation in a Growing Patient

Authors: Nurmimie Abdullah

(0062)

Unfavourable Outcomes Following Loss of Central Incisors: Two Case Reports

Authors: Rebecca Courtney, Anne C. O'Connell

(0048)

Managing Ankylosed Incisor by Orthodontic Space Closure and Anterior Tooth Substitution in Growing Patient

Authors: Wonjoo Seo, Taesung Jeong, Jonghyun Shin, Eungyung Lee, Soyoung Park

11:15 - 13:00 | 5. Gdańsk Hall [M1 level]

Poster Presentations 10 – short oral presentations – Oral and Maxillofacial Surgery, Transplantation and Implants in Dental Trauma Management

Session Chairs: Hong-Keun Hyun, Mile Churlinov

(0103)

Dentigerous cyst leads to autrotransplantation

Authors: Dagmar Marandi

(0054)

Digitally Assisted Autotransplantation of an Immature Molar to Replace a Damaged Premolar. Case Report`

Authors: Halina Szkutnik-Gunia, Małgorzata Jamka-Kasprzyk

(0071)

Digital-Assisted Autotransplantation of a Traumatized Maxillary Anterior Tooth: A 30-Month Follow-Up

Authors: Shao Xiao

(0104)

Optimizing Management of Impacted Incisor with Immature Root: Autotransplantation for Rapid Aesthetic Rehabilitation in a Child

Authors: Yan Mei Ng, Mohamad Haziq Muhammad Zawawi, Nik Nur Farahiyah @ Hidayah Nik Zainal Abidin, Jian'an Saw

13:00 - 14:30 |

Lunch & Networking

14:30 - 16:00 | 1. Warsaw Hall A [WH level]

Session 9: Closing Panel – Shaping the Future of Dental Traumatology Research & Clinical Practice (All Experts)

16:00 - 17:00 | 1. Warsaw Hall A [WH level]

Closing Ceremony

WCDT 2026

The 23rd World Congress on Dental Traumatology

Warsaw, Poland

3-5 September 2026

ABSTRACTS
Topic 1

Epidemiology, Education and Social Aspects in Dental Traumatology



0067

A descriptive register study of paediatric facial fractures in Northern Finland

Riitta Lithovius[1]
[1]University of Oulu, Department of Oral and Maxillofacial Surgery, Research Unit of Population Health, Oulu, Finland
[1]Oulu University Hospital, Department of Oral and Maxillofacial Surgery, Oulu, Finland
Jenni Pasuri[2]
[2]University of Oulu, Research Unit of Population Health, Oulu, Finland
Tarja Tanner[3]
[3]University of Oulu, Department of Cariology, Endodontology and Pediatric Dentistry, Research Unit of Population Health, Oulu, Finland

Background
Paediatric facial fractures are relatively rare due to the elasticity of children´s bones. Boys are generally more prone to trauma, but this difference is not clearly reflected in the incidence of facial fractures.

Objective
The aim of the study was to examine the prevalence of facial fractures and to compare their distribution by sex, fracture location, and mechanism of injury.

Methods
A retrospective cohort study was conducted on paediatric patients diagnosed with jaw fractures between 2016 and 2024 at Oulu University Hospital, Finland. Inclusion criteria were maxilla and mandible fractures in patients under 16 years of age. Data regarding fracture type, sex, age, dental traumas and trauma mechanism were collected from the ESKO electronic patient record system in 2025. Incidence of facial fractures was calculated from the data, and the material was examined using descriptive analyses.

Results
The overall annual facial fractures incidence in the age group 0-15 years old in 2016-2024 was 5.6 per 100 000 population. Of the 45 study subjects, 26 (58 %) were male and 19 (42 %) were female. Mandibular fractures were most detected in both sexes, with 18 cases in males and 16 in females. Fracture prevalence grows with age and is most common in adolescents aged 13-15. Among males, the most common trauma mechanisms were falling (31 %) and sport accidents (27 %) whereas in females, bicycle (32 %) and motor vehicle accidents (26 %) were most typical mechanisms. Associated dental injuries occurred in 40 % of cases.

Conclusion
Fortunately, facial fractures are rare in children. The most common mechanism of injury among boys was falling, whereas among girls it was bicycle accidents. Nearly half of the facial fractures were accompanied by an associated dental injury. Future research should focus on identifying factors that predispose children in Northern Finland to facial fractures.

Keywords: Paediatric facial fractures, Sex distribution, Mechanism of injury

0014

A Digital Platform Leveraging Artificial Intelligence for Epidemiological Research and Education in Dental Traumatology

Georges El Achkar[1]
[1]Saint-Joseph University, Endodontics, Beirut, Lebanon

Background:
Despite evidence-based guidelines from the International Association of Dental Traumatology (IADT), a persistent gap separates recommendations from practice. Epidemiological research in this field has been held back by fragmented records and a lack of practical analytical tools, while dental education has struggled to keep pace with evolving guidelines. Artificial intelligence offers a promising path forward on both fronts.

Objective:
To develop a digital platform that unites AI-powered epidemiological analysis and structured educational tools within a single system, designed for university dental trauma clinics.

Methods:
A web-based Electronic Dental Record was built around the Andreason classification and current IADT guidelines. As clinicians document injuries; including type, cause, demographics, and outcomes, data flows into an anonymized analytical layer where AI driven tools allow researchers to explore injury patterns and prognostic factors through natural language queries, removing the need for advanced statistical skills. On the educational side, AI generates tailored quizzes and realistic clinical scenarios with automated feedback, reinforcing guideline-based reasoning at the learner's own pace.

Results:
The platform transforms routine clinical documentation into a living research resource, enabling real-time epidemiological insights. Its AI-assisted educational modules provide adaptive, scalable training that meaningfully complements traditional teaching.

Conclusion:
By weaving AI into a purpose-built dental trauma platform, every patient encounter contributes to epidemiological understanding while fueling continuous, evidence-informed education, a model with real potential for broader adoption across dental traumatology programs.

Keywords: Artificial Intelligence, Education, Epidemiology

0042

Awareness and Sense of Urgency in Dental Avulsion Management: Knowledge Gaps Among Dutch Teens and Students

Maxim Chan[1]
[1]Amsterdam UMC, Oral and Maxillofacial Surgery, Amsterdam, the Netherlands

Background: According to Dutch dental trauma guidelines (DTG), optimal outcomes for avulsed permanent teeth are achieved when replantation or professional treatment occurs within 30 to 60 minutes following trauma. However, studies suggest that in the Netherlands patients following avulsion of teeth often seek care well beyond this critical time window, reducing the chances of successful reimplantation. This delay may be partly due to limited public awareness of appropriate first-aid measures for dental avulsion.

Objective: This study assesses awareness and perceived urgency in managing dental avulsion among Dutch students, focusing on knowledge gaps and their variation across different educational levels. Participants included secondary school students and individuals in higher education with both medical and non-medical backgrounds.

Methods: A 16-item questionnaire, incorporating a case-based scenario, was designed to evaluate general awareness and urgency perception. The questionnaire was distributed in educational settings between December 2024 and February 2025 and completed by students.

Results: A total of 348 responses were included. Only 49% of participants correctly identified the recommended treatment timeframe of 30 minutes or less. Those with a dental background scored highest overall ($p<0.001$), while secondary school students scored lowest. Medical students showed significantly greater general knowledge of avulsion management (“awareness”) than secondary school students ($p < 0.05$); however, they did not differ considerably in recognizing the urgency of treatment or in taking correct immediate actions (“sense of urgency”). Notably, only 17% of participants answered all six key management questions correctly according to national guidelines, highlighting substantial knowledge gaps, even among higher-education groups.

Conclusion: The findings of this study indicate significant knowledge deficits regarding the emergency management of dental avulsion across all educational levels. These results highlight the urgent need for targeted educational strategies to enhance first-aid awareness, particularly among adolescents and (medical) students, with an emphasis on timely and appropriate response.

Keywords: dental trauma management, Awareness and Sense of Urgency, Educational background

0058

Co-designing patient-centred resources to improve care following traumatic dental injury

Van Bui[1]
[1]Dundee Dental Hospital, Restorative Dentistry, Dundee, United Kingdom
Julie Kilgariff[2]
[2]Dundee Dental Hospital, Endodontics, Dundee, United Kingdom
Wei Sea Mavis Ting[3]
[3]Dundee Dental Hospital, Restorative Dentistry, Dundee, United Kingdom

Background:
Traumatic dental injuries significantly impact oral health and quality of life. Following acute trauma, patients must process complex information regarding aftercare and possible complications, yet recall during stressful consultations is often poor. At Dundee Dental Hospital, the existing trauma leaflet was identified as clinician-focused and not sufficiently accessible to patients.
Objective:
To co-design an accessible, patient-centred information leaflet and a “Dental Trauma Passport” using patient, staff, and student feedback to improve understanding and continuity of care.
Methods:
This quality improvement project used Plan–Do–Study–Act (PDSA) methodology. In Cycle 1, structured mini-interviews with 5 patients, 5 staff and 5 students identified existing shortcomings. These findings informed the development of a revised leaflet, incorporating simplified language, illustrations, clearer aftercare guidance, and explanations of trauma management and complications. The passport was designed to track injury details and follow-up care, supporting communication between the dental hospital, the patient’s own dentist, and future dental professionals. In Cycle 2, feedback on the new materials was gathered via questionnaires and interviews, and readability was assessed using the Flesch Reading Ease score. In Cycle 3, both tools will be introduced into routine clinical use to evaluate practicality and usability.
Results:
A total of 76 responses were collected in Cycle 2: 36 staff, 20 patients and 20 students. The revised leaflet showed improved readability, with Flesch Reading Ease increasing from 36 to 73. Overall, 91% of respondents rated the leaflet as very useful, and 9% as useful. Feedback on the dental trauma passport was also very favourable, although a small number of staff (n=5) raised concerns regarding completion time.
Conclusion:
Co-design enabled the development of more accessible and patient-centred trauma information resources. Both tools have now been incorporated into the local trauma care pathway and discharge process to support communication and continuity of care.

Keywords: Quality Improvement, Patient-Centred Care, Patient information leaflet

0036

Dental hygienists' knowledge in dental traumatology: an educational intervention within the Public Dental Services of Western Norway

Andjelka Cvijic[1]
[1]Oral Health Centre of Expertise in Western Norway, Bergen, Norway
Knut Helge Midtbø Jensen[2]
[2]Oral Health Centre of Expertise in western Norway, Bergen, Norway
Georgios Tsilingaridis[3]
[3]Karolinska Institute, Department of Dental Medicine, Stockholm, Sweden
Anne Nordrehaug Aastrom[4]
[4]University of Bergen, Department of Clinical Dentistry, Bergen, Norway
Athanasia Bletsa[5]
[5]University of Bergen, Department of Clinical Dentistry, Bergen, Norway

Background: In Norway, within the Public Dental Service (PDS), dental hygienists play an important role in managing traumatic dental injuries (TDI). The evidence on the effectiveness of educational interventions to improve their knowledge and clinical competence remains limited.
Objective: The study aimed to evaluate the effect of an educational intervention in dental traumatology on the knowledge of dental hygienists working within the PDS of Vestland County in Western Norway.
Methods: All PDS dental clinics of Vestland County in Western Norway (N =52) were purposively assigned to three groups: control group CC-no intervention (N = 19), IC1 group-webinars in dental traumatology (N = 17), and IC2 group-webinars combined with a one-day interactive in-person course at the clinics (N = 16). A post-intervention questionnaire, based on 7 clinical cases and 12 questions, was sent to all PDS dental hygienists (n = 87). A generalized linear mixed model (GLMM) was used to analyse the proportion of correct answers across intervention groups (CC, IC1, and IC2), and outcomes for each TDI case, with clinic as a random effect.
Results: The response rate was 58.6%. The mean dental trauma knowledge score (DTKS) (± SD) was 8.38 (± 2.22) out of 13.25. The overall proportion of correct answers was 58.2%, 64.4%, and 60.2% for the CC, IC1, and IC2 groups, respectively. No significant differences in the proportion of correct answers were observed between the three groups (CC, IC1, and IC2). Totally, the lowest proportions of correct responses (<50%) in the TDI cases were for external inflammatory root resorption (45.1%), tooth ankylosis (35.3%), and the healing pattern of horizontal root fracture (23.5%).
Conclusion: Educational intervention showed no improvement in the intervention groups compared with the control group, while knowledge gaps in specific TDI cases highlight the need for targeted continuing education in dental traumatology.

Keywords: educational intervention, dental hygienists, traumatic dental injuries

0091

Emergency Preparedness for Dental Trauma Among Medical Students: A Cross-Sectional Study of Knowledge and Clinical Decision-Making

Tamara Pawlaczyk-Kamieńska[1], Bartosz Jastrzębski[1], Olesya Marushko [1], Olena Marushko[1], Weronika Kamieńska[1], Patrycja Kamieńska[1]
[1]Poznan University of Medical Sciences, Department of Dental Traumatology, Chair of Pediatric Dentistry, Poznań, Poland

Background:
Traumatic dental injuries (TDI), particularly tooth avulsion, require immediate and appropriate first aid, as early management is a key determinant of prognosis. In many cases, initial care is provided by non-dental healthcare professionals in emergency or pre-hospital settings. Medical students, as future physicians trained in first aid, are therefore likely to encounter such injuries.
Objective:
To assess medical students' knowledge and clinical decision-making in dental trauma, and to identify factors influencing their preparedness for emergency management.
Methods:
A cross-sectional study of 291 medical students (years 4–6) used a structured, author-designed, guideline-based questionnaire. Objective knowledge was assessed using the TDI-KNOW Index, an original composite measure comprising 21 items. Clinical decision-making was evaluated using scenario-based questions on crown fractures and tooth avulsion. Associations were analyzed using non-parametric tests and regression.
Results:
The mean TDI-KNOW score was 63.56%, indicating a predominantly moderate level of knowledge (82.76% medium; 10.00% high). Clinical decision-making accuracy was limited, particularly for tooth avulsion (9.6% correct responses), compared to crown fractures (40.9%). While awareness of preventive measures was relatively high, key aspects of emergency management—such as immediate replantation, appropriate storage media, and time-dependent intervention—were poorly understood.
No consistent correlation was found between self-assessed and objective knowledge. General knowledge of avulsion was the only significant predictor of correct decisions ($p = 0.001$), while formal training had a limited effect. Only 10.3% of students reported prior training (<5% within the formal curriculum), despite a high perceived need for education (3.87/5) and strong willingness to participate (4.00/5).
Conclusion:
Medical students demonstrate insufficient preparedness for the emergency management of dental trauma, particularly in time-critical conditions such as tooth avulsion. Gaps in clinically relevant knowledge may adversely affect early management and patient outcomes. These findings highlight the need for structured, guideline-based, and simulation-oriented training in dental traumatology within medical curricula.

Keywords: medical education, emergency management, dental trauma knowledge

0137

Evaluation of Knowledge Levels of Dental Students Regarding Dental Trauma Management

Özlem Nur Yilmaz[1], Didem Odabaşi[1] , Hüseyin Şimşek[1]
[1]Ordu Üniversitesi, Diş hekimliği fakültesi, Pedodonti Bölümü, Ordu, Turkey

Background
Dental trauma is a common clinical condition, particularly in childhood, and may lead to significant esthetic and functional problems. Proper and timely intervention following trauma directly affects treatment outcomes. Therefore, evaluating the knowledge levels of dental students regarding dental trauma management is of great importance.
Objective
The aim of this study is to assess the knowledge levels of dental students regarding dental trauma management and to identify potential deficiencies.
Methods
This study was conducted among 3rd-, 4th-, and 5th-year students at the Faculty of Dentistry of Ordu University during the 2025–2026 academic year. Data were collected through an online questionnaire administered via Google Forms, which was developed in accordance with the literature. The questionnaire consisted of 19 questions evaluating demographic characteristics as well as knowledge and attitudes related to dental trauma management. The data were analyzed using percentage distributions.
Results
A total of 242 students voluntarily participated in the study. Of the participants, 99 (40.9%) were third-year, 85 (35.1%) were fourth-year, and 58 (24.0%) were fifth-year students. It was observed that the students' knowledge levels regarding dental trauma varied according to different topic areas. When fundamental knowledge questions were evaluated, 76.9% of the participants correctly identified the most common type of trauma in permanent teeth, while 83.5% correctly identified it for primary teeth. When asked about the priority in the initial assessment following dental trauma, 54.5% provided correct answers. The correct response rates for the appropriate storage medium and ideal replantation time after permanent tooth avulsion were 71.9% and 62.8%, respectively. For the management of avulsion in primary teeth, 65.3% of the students answered correctly.
Conclusion
Although dental students generally demonstrate an adequate level of knowledge regarding dental trauma management, deficiencies exist, particularly in situations requiring emergency intervention. These findings indicate the need to strengthen educational programs and improve the curriculum.

Keywords: dental trauma, dental students, knowledge level

0142

Evaluation of the Knowledge Levels and Attitudes of Physicians Working in Hospital Emergency Departments Regarding Dental Trauma

Rüveyda Yılmaz[1]
[1]Ordu Üniversitesi, Diş hekimliği fakültesi, Pedodonti Bölümü, Ordu, Turkey
Didem Odabaşi[2]
[2]Ordu Üniversitesi, Diş hekimliği fakültesi, Pedodonti Bölümü, Ordu, Turkey
Nihal Beldüz Kara[3]
[3]Ordu Üniversitesi, Diş hekimliği fakültesi, Pedodonti Bölümü, Ordu, Turkey

Background

Dental trauma is a significant public health problem that commonly affects the hard and supporting tissues of the teeth, particularly in children and young adults. One of the most critical factors in the management of traumatic dental injuries is timely and appropriate intervention. Emergency departments are the primary point of admission for the majority of dental trauma cases. This makes the knowledge level of emergency physicians critically important.

Objective
The aim of this study was to evaluate the knowledge levels and attitudes of physicians working in emergency departments regarding the management of dental trauma.

Methods
In this study, a questionnaire was created electronically using the Google Forms platform and distributed online to physicians working in emergency departments. The survey consisted of 19 questions assessing participants' demographic characteristics, as well as their knowledge and attitudes toward dental trauma management.

Results
A total of 104 physicians participated in the study, including 64 general practitioners (61.5%), 12 residents (11.5%), and 28 emergency medicine specialists (26.9%). Of the participants, 69.2% reported encountering dental trauma cases 1–5 times per month. Regarding the question on whether avulsed primary teeth should be replanted, 44.2% correctly indicated that they should not be replanted, while the same proportion (44.2%) correctly answered the question on replantation of permanent teeth. For the appropriate storage medium of an avulsed tooth, the most common response was saline (63.5%), whereas only 15.4% selected milk, which is the ideal storage medium. Regardless of professional status, the knowledge level of emergency physicians regarding dental trauma management was found to be insufficient. Notable deficiencies were observed particularly in the management of avulsion, appropriate storage media, indications for replantation, and timing of intervention.

Conclusion
The knowledge level of emergency physicians regarding dental trauma management is generally low, regardless of their level of specialization. There is a need for more comprehensive studies and educational programs to support emergency physicians in managing traumatic dental injuries accurately and promptly.

Keywords: Dental trauma, Emergency physicians, Tooth avulsion

0101

First Contact, Critical Gap: Medical Nurses' Preparedness for Emergency Management of Traumatic Dental Injuries in a Tertiary Care Setting

Apurva Mishra[1]
[1]Ajman University, Department of Clinical Sciences, College of Dentistry, Ajman, United Arab Emirates
Dipanshu Kumar [2]
[2]All India Institute of Medical Sciences, Department of Dentistry, Gorakhpur, India
Shailesh Kumar [3]
[3]All India Institute of Medical Sciences, Department of Dentistry, , Gorakhpur, India
Srinivasa TS[4]
[4]All India Institute of Medical Sciences, Department of Dentistry, Gorakhpur, India

Background: Traumatic dental injuries (TDIs) are an important but often overlooked aspect of emergency care, where prompt initial management can strongly influence long-term outcomes. In tertiary care settings, medical nurses are often the first healthcare professionals to encounter such cases during the critical "golden hour," especially when immediate access to dental specialists is limited.

Objective: To evaluate the knowledge, attitudes, experience, and awareness of the emergency and preventive management of TDIs among medical nurses working in a tertiary care hospital.

Methods: A cross-sectional descriptive study was conducted among medical nursing staff at a tertiary healthcare centre in India using a pre-validated, structured questionnaire administered electronically. The instrument assessed four domains: knowledge (10 items), attitude (5 items), experience (4 items), specialized awareness (2 items), along with one additional question assessing willingness to learn about dental trauma and preferred learning methods. Descriptive statistics and inferential analyses were performed to evaluate patterns and associations.

Results: A total of 206 nurses participated in this study. The mean knowledge score was low (3.57±1.65 out of 10), and 72.8% of respondents demonstrated poor knowledge. Awareness of formal TDI management guidelines was limited (35.9%), although a higher proportion (72.3%) recognized the preventive role of mouthguards. Despite knowledge gaps, most participants (77.2%) exhibited a positive attitude toward TDI management and acknowledged the importance of timely intervention. Clinical exposure to TDI cases was limited, with most participants reporting low levels of experience in handling such cases. Notably, 82% expressed a willingness to undergo further training and preferred interactive learning modalities.

Conclusion: This study highlights a critical discrepancy between the knowledge and attitudes of medical nursing professionals. Although attitudes toward TDI management are encouraging, substantial deficiencies in knowledge and practical exposure persist in the field.

Keywords: Emergency Nursing, Dental Trauma Preparedness, Traumatic Dental Injuries

0039

How Children Sustain Traumatic Dental Injuries: A 13Year Review of Injury Mechanisms

Ryan Sympson[1]
[1]Ohio State University, Columbus, United States
[1]Nationwide Children's Hospital, Columbus, United States
Paul Casamassimo[2]
[2]Ohio State University, Columbus, United States
[2]Nationwide Children's Hospital, Columbus, United States
Erin Gross[3]
[3]Ohio State University, Columbus, United States
[3]Nationwide Children's Hospital, Columbus, United States
Daniel Claman[4]
[4]Ohio State University, Columbus, United States
[4]Nationwide Children's Hospital, Columbus, United States
Riya Saini[5]
[5]Nationwide Children's Hospital, Columbus, United States
Ehsan Azadani[6]
[6]Ohio State University, Columbus, United States
[6]Nationwide Children's Hospital, Columbus, United States

Purpose: Traumatic dentoalveolar injuries (TDI) affect approximately 4.5% of the population each year. This 13year retrospective study evaluated trends in TDI at a pediatric hospital and levelone trauma center in Columbus, Ohio.

Methods: Children ≤18 years who experienced TDI between January 2012 and December 2024 were identified through Epic electronic health records. Mechanisms of injury (MOI) were categorized into 15 groups, including 6 sportsrelated subcategories. Trends across injury mechanisms, dentition type, and demographic characteristics were assessed.

Results: A total of 7,147 TDI encounters were recorded, including 4,416 (62%) males and 2,731 (38%) females. The mean age at injury was 7.99 years (SD 4.46). Permanent dentition injuries (4,729, 66%) were more common than primary dentition injuries (2,418, 34%). In the permanent dentition, falls were the most frequent MOI (2,106, 45%), followed by being hit by an object (767, 16%) and sports injuries (652, 14%). In the primary dentition, falls (1,957, 81%) were also the leading MOI, followed by hit by object (206, 9%) and bicycle injuries (83, 3%). Among sports injuries in the permanent dentition, basketball was most common (233, 36%), followed by baseball/softball (146, 22%) and football (72, 11%). Annual TDI cases increased from 287 in 2012 to 793 in 2024.

Conclusions: TDI rates rose substantially from 2012 to 2024. Although emerging etiologies such as trampoline and scooterrelated injuries are becoming more common, falls remain the leading MOI. Males experienced more TDIs than females, and permanent dentition injuries were predominant. Basketball was the most frequent sportsrelated MOI. These evolving patterns underscore the need for updated and targeted prevention strategies.

Keywords: Dental Trauma, Etiology, Mechanism

0083

Impact of helmet use on the pattern and severity of maxillofacial injuries in two-wheeler accidents: Evidence from North India

Amandeep Kaur[1]
[1]PGIMER Satellite Centre, Department of Oral Health Sciences, Sangrur, India

Background: Maxillofacial injuries are common in two-wheeler accidents, particularly in developing countries. Helmet use is a key preventive measure; however, the protective effectiveness varies with helmet type and remains insufficiently explored.
Objective: To compare the pattern and severity of maxillofacial injuries between helmeted and non-helmeted two-wheeler accident patients and to assess the protective effectiveness of different helmet types.
Methods: A retrospective observational study was conducted on 173 patients presenting with maxillofacial trauma following two-wheeler accidents between January 2023 and January 2026 at a tertiary care centre in North India. Patients with complete clinical and radiographic records were included. Data on demographics, helmet usage, and injury characteristics were collected. Fractures were categorized based on anatomical location. Statistical analysis was performed using SPSS, with associations assessed using Chi-square and Fisher's exact tests ($p < 0.05$).
Results: Out of 173 patients, males were predominantly affected (93.6%, n=162) with a mean age of 32.04 ±13.22 year. 59.0% were non-helmeted, while 41.0% reported helmet use, including full-face (19.7%), half-coverage (13.9%), and open-face (7.5%) helmets. Non-helmeted individuals exhibited a significantly higher prevalence of severe injuries, including maxillary (89.5%), mandibular (96.6%) and zygomatic fractures (81.8%) ($p < 0.001$). Nasal (88.9%) and orbital fractures (100%) were predominantly observed in this group. Soft tissue injuries including lacerations and abrasions were significantly higher among non-helmet users (p=0.013). Head injuries were reported exclusively in non-helmet group whereas full-face helmet users demonstrated lowest incidence of fractures and injury severity.
Conclusion: Helmet use, particularly full face helmets significantly reduces the incidence and severity of maxillofacial injuries in two-wheeler accidents. These findings highlight the need for stricter enforcement of helmet laws and increased public awareness regarding appropriate helmet use.

Keywords: maxillofacial injuries, head protective devices, motorcycle accidents

0144

Improving Documentation of Traumatic Dental Injuries in a Paediatric Dental Service: A Quality Improvement Project

Zahraa Alhabib[1]
[1]Kuwait Institute for Medical Specializations (KIMS) , Kuwait Board in Paediatric Dentistry (KBPD), kuwait, Kuwait
Aysha Alsaif [2]
[2]Kuwait Institute for Medical Specialization (KIMS), Kuwait Board in Paediatric Dentistry (KBPD) , Kuwait, kuwait
Rawan Alkhuwaiteem [3]
[3]Kuwait Institute for Medical Specialization (KIMS), Kuwait Board in Paediatric Dentistry (KBPD) , Kuwait, Kuwait

Background: Accurate documentation of traumatic dental injuries (TDIs) is essential for diagnosis, treatment planning, follow-up and outcome evaluation. Although a structured dentoalveolar trauma assessment sheet was already in use, documentation gaps and inconsistent completion limited its clinical and audit value.
Objective: To evaluate current TDI documentation practice and improve completion of applicable documentation fields toward a standard of 100% completeness.
Methods: A quality improvement project was conducted within a paediatric dental service in Kuwait, including a Paediatric Dentistry Unit and a postgraduate paediatric dentistry training program. An initial retrospective service evaluation of 50 randomly selected trauma files was undertaken to identify documentation gaps across key trauma-specific domains. Following presentation of findings, the existing trauma assessment sheet was refined to improve clarity, including clearer options for present, absent and not-applicable findings, and staff feedback was provided to encourage consistent completion. A second audit cycle of 50 files was completed against a predefined standard of 100% completion of applicable fields. Domain completeness was calculated as documented items divided by applicable items, excluding not-applicable fields.
Results: Use of the structured trauma assessment sheet increased from 38% to 84%. Documentation completeness improved across key trauma-specific domains, including history of injury from 56.1% to 86.1%, clinical examination from 62.7% to 89.1%, dental trauma assessment from 47.7% to 83.5%, and radiographic assessment from 50% to 84.8%. Follow-up documentation improved from 62% to 94%, treatment planning from 74% to 94%, complications discussed from 42% to 82%, and photography documentation from 32% to 78%.
Conclusion: Refining an existing structured trauma assessment sheet, combined with staff feedback and audit against a 100% completion standard, substantially improved the completeness, clarity and auditability of TDI records. This practical intervention may support more consistent trauma assessment, safer follow-up and future outcome evaluation in paediatric dental services.

Keywords: Documentation , Quality improvement project

0001

Knowledge about mature permanent tooth avulsion and its management among dentists in Rabat, Morocco

LAILA AZZAHIM[1]
[1]Université Mohammed V de Rabat, Faculté de médecine dentaire de Rabat -Department of conservative dentistry and endodontics , Rabat, Morocco
SANAA CHALA[2]
[2]Université Mohammed V de Rabat, Faculté de médecine dentaire de Rabat - Department of conservative dentistry and endodontics , Rabat, Morocco
[2] Mohammed V Military Training Hospital , Rabat, Morocco
[2]Laboratory of Biostatistics, Clinical Research and Epidemiology, Rabat, Rabat, Morocco
FAIZA ABDALLAOUI[3]
[3]Université Mohammed V de Rabat, Faculté de médecine dentaire de Rabat -Department of conservative dentistry and endodontics , Rabat, Morocco
NISSRIN BASSIM[4]
[4]Université Mohammed V de Rabat, Faculté de Médecine dentaire de Rabat - Department of conservative dentistry and endodontics, Rabat, Morocco

Background
Avulsion is a trauma during which the tooth is completely moved out of its socket. Dental avulsion is an emergency whose adequate management requires the acquisition of correct knowledge. Several studies have been carried out in different countries and have reported very varied results, most of which have shown a low level of knowledge regarding this subject.
Objective
We carried out this study in order to assess the knowledge of dentists working in the city of Rabat, Morocco regarding their management of avulsed teeth.
Methods
This study was approved by the Ethics Committee for Biomedical Research in Morocco. A 14-item French-language questionnaire regarding dental avulsion and its management was administered to dentists working in private practice in Rabat using convenience sampling methodology.
The data obtained were entered into Statistical Package for the Social Sciences database (IBM, SPSS version 13.0, Chicago, USA) and analysed with a significance level established at $p < 0.05$. The knowledge level was assessed using a scoring system. Chi2 and Fisher's Exact tests were used to compare the groups. The analysis of variables was performed by simple linear regression in univariate analysis. We calculated the significance coefficient (β) with its 95% confidence interval.
Results
A total of 205 dentists, representing 37 % of all dentists working in the private sector in Rabat completed the questionnaires. Most of the participants correctly answered the knowledge-based questions, except those regarding the ideal extra-alveolar period, the time of endodontic treatment, the type and the duration of splinting. The overall median score was 5[4 ;6].
The level of knowledge of the dentists in our study was moderate.
Conclusion
Given the lack of other studies concerning Moroccan dentists, comparison with studies carried out in other countries is difficult, hence the need to carry out more Moroccan studies in order to improve knowledge.

Keywords: avulsion, mature permanent tooth, management

0029

Knowledge of Dental Trauma among Taiwanese Dentists and Auxiliary Members based on the International Association of Dental Traumatology guidelines: Preliminary Results

Po-Yuan Jeng[1]
[1]Chung Shan Medical University, College of Oral Medicine, Taichung, Taiwan
[1]Chung Shan Medical University Hospital, Department of Dentistry, Taichung, Taiwan
[1]New Taipei City Hospital, Department of Dentistry, New Taipei, Taiwan
Cheng-Mei Yang[2]
[2]Kaohsiung Veterans General Hospital, Department of Stomatology, Kaohsiung, Taiwan
Paul Abbott[3]
[3]University of Western Australia, UWA dental school, Perth, Australia
Wan-Chuen Liao[4]
[4]National Taiwan University, School of Dentistry, College of Medicine, Taipei, Taiwan
[4]National Taiwan University Hospital, Department of Dentistry, Taipei, Taiwan
Chia-Tze Kao[5]
[5]Chung Shan Medical University, College of Oral Medicine, Taichung, Taiwan
[5]Chung Shan Medical University Hospital, Orthodontic Department, Taichung, Taiwan

Background: Traumatic dental injuries (TDI) are among the most prevalent conditions worldwide. Accurate diagnosis and proper management have a significant impact on the prognosis of injured teeth. However, studies evaluating the knowledge levels regarding TDIs of Taiwanese dentists and dental auxiliary personnel (including dental nurses, assistants, and receptionists) remain limited.
Objective: To evaluate the knowledge levels and experience regarding traumatic dental injuries of Taiwanese dental staff, and to analyze potential influencing factors.
Methods: Two separate questionnaires were developed for dentists and dental auxiliary personnel, and were administered online via Google Forms. The survey is being conducted from March to September 2026. Invitations were distributed through dental professional groups on Facebook and Line application. Participants were also recruited during domestic dental congresses, and they were encouraged to share the survey link or QR code with their colleagues.
Results: As of March 17th, 197 dentists and 53 auxiliary members had completed the survey. On average, dentists answered 9.74 out of 14 questions correctly, with statistically significant differences observed across gender, age group, practice location, specialty and frequency of encountering trauma cases. Auxiliary personnel answered 8.42 out of 12 questions correctly, with gender being a statistically significant factor. Only approximately 34% of participants recognized that avulsed teeth could be replanted immediately at the site of injury, rather than awaiting arrival at the clinic. Dentists demonstrated limited familiarity with optimal storage media for avulsion, and appropriate splinting method and management for certain types of injuries. A proportion of auxiliary personnel were not aware that tooth avulsion is a time-sensitive emergency, and were also unfamiliar with instrument preparations and post-operative care instructions.
Conclusions: The knowledge level of Taiwanese dental staff regarding dental trauma is generally acceptable. However, several items showed frequent incorrect responses, emphasizing the need for continuous education and training courses on these topics.

Keywords: Dental Trauma, Avulsion, Dental education

0146

Lost to follow-up: The Hidden Gap in Dental Trauma Outcomes

Dr Divya Khanna[1]
[1]Dubai Health, Dubai, United Arab Emirates

Background:
Dental trauma is a dynamic condition in which complications such as pulp necrosis, root resorption, and ankylosis may develop months or years after the initial injury. Accordingly, the International Association of Dental Traumatology recommends structured follow-up for up to five years. However, adherence to these protocols in routine clinical practice remains inconsistent.
Objective:
To critically examine the impact of loss of follow-up on the validity of dental trauma outcomes and to emphasize the need for more reliable follow-up systems in clinical practice.
Methods:
A narrative critical analysis was conducted using established international guidelines and relevant literature, supplemented by practice-based clinical observations. Key barriers to follow-up adherence were identified and thematically analyzed.
Results:
Loss to follow-up is consistently observed as a pervasive challenge, particularly beyond the acute and early review phases. Patient disengagement after symptom resolution is widely reported, reflecting underestimation of delayed complications. Recognized barriers include prolonged follow-up schedules, limited patient awareness, and the absence of structured recall systems. This attrition compromises the detection of late sequelae and introduces systematic bias, whereby favorable outcomes are overrepresented, and complications remain underreported.
Conclusion:
Loss to follow-up is not merely a logistical issue but a critical limitation in dental trauma and outcome reporting. Strengthening follow-up pathways through patient-centered communication, structured recall systems, and digital integration is essential. Addressing this gap is fundamental to achieving accurate outcome evaluation and advancing the quality of care in dental traumatology. Hence, without reliable follow-up, the true outcomes of dental trauma remain fundamentally underestimated.

Keywords: Lost to follow up , Dental trauma outcomes, systematic bias

0040

Paediatric Oral and Maxillofacial Injuries Requiring Inpatient Care: A Population-Based Registry Study in Northern Finland (2016–2024)

Jenni Pasuri[1]
[1]University of Oulu, Research Unit of Population Health/Faculty of Medicine, Oulu, Finland
Tarja Tanner[2]
[2]University of Oulu, Research Unit of Population Health/Faculty of Medicine, Oulu, Finland
Riitta Lithovius[3]
[3]University of Oulu, Research Unit of Population Health/Faculty of Medicine, Oulu, Finland

Background
Oral and maxillofacial injuries are one of the major public dental health issues worldwide. Pediatric accidents requiring hospitalization constitute a significant number of emergency visits, and maxillofacial injuries are common occurrences. These cases are typically related to high-energy accidents.
Objective
Aim of this study was to investigate incidence of oral and maxillofacial injuries requiring hospital treatment among patients under 16-yo in Northern Finland during the years 2016-2024. In addition, the objective was to investigate the distribution of these injuries between genders and across different age groups.
Methods
Data for this retrospective register study was retrieved from the ESKO electronic patient record system (EPR) in 2025. The inclusion criteria were ICD-10 diagnosis codes S01-S03 (soft and hard tissue injuries) and patients aged 0-15 years. Injuries other than oral or maxillofacial area were excluded.
Data retrieved was inter alia age, gender, date of injury, length of hospitalization, etiology and ICD10-diagnose. The study population was categorized into five age groups: 0-3 yo, 4-6 yo, 7-9 yo, 10-12 yo, 13-15 yo. Material was processed by descriptive analyses in SPSS-program. Statistical significance was set as $p<0.05$.
Results
A total of 825 under 16-yo patients' oral and/or maxillofacial injuries required hospitalization during follow-up period. The overall annual incidence in the age group 0-15 years old in 2016-2024 was 103 per 100 000 population. Injuries were more common in male (61,9%, $p <0.001$). The highest prevalence was in groups 0-3 yo (37,9%) and 4-6 yo (20,5 %), $p <0.001$.
Conclusion
This is the first registry study in the Northern Finland region on children's oral and maxillofacial injuries requiring hospitalization. Injuries were more common with male patients and in the youngest age groups. Etiology for these needs further studies and it is the topic of our following research.

Keywords: paediatric dentistry, maxillofacial injuries, epidemiology

0063

Parent's knowledge of emergency management of traumatic dental injuries in Sweden

Georgios Tsilingaridis[1]
[1]Karolinska Institutet, Department of Dental Medicine, Division of Paediatric Dentistry, Huddinge, Sverige
Asma Malak[2]
[2]Karolinska Institutet, Department of Dental Medicine, Division of Paediatric Dentistry, Huddinge, Sweden
Reem Issa[3]
[3]Karolinska Institutet, Department of Dental Medicine, Division of Paediatric Dentistry, Huddinge, Sweden
Alina Wikström[4]
[4]Karolinska Institutet, Department of Dental Medicine, Division of Paediatric Dentistry, Huddinge, Sweden
Nitesh Tewari[5]
[5]Karolinska Institutet, Department of Dental Medicine, Division of Paediatric Dentistry, Huddinge, Sweden

Background: Traumatic dental injuries (TDIs) are highly prevalent among children and adolescents, and timely emergency management, particularly of avulsed permanent teeth is critical for favorable outcomes. Parents often serve as first responders in such situations, yet international evidence indicates substantial knowledge gaps with no previous studies from Sweden.
Objective: This study aimed to evaluate Swedish parents' knowledge regarding the emergency management of traumatic dental injuries, with a specific focus on avulsed permanent teeth, and to identify factors associated with adequate knowledge.
Methods: A cross-sectional, questionnaire based survey was conducted among parents attending a pediatric dental department at a tertiary care hospital. A structured questionnaire adapted from validated instruments assessed sociodemographic characteristics, prior exposure to information, and knowledge of emergency management of avulsed permanent teeth. Descriptive statistics, chi square tests, and logistic regression analyses were performed to identify factors associated with sufficient knowledge (≥50% correct responses).
Results: A total of 168 parents participated. Overall knowledge was limited: 54.2% demonstrated insufficient knowledge. Only 44.6% were aware that replantation of a permanent tooth is possible, 28.5% identified correct cleaning under running water, and 18.3% selected milk as an appropriate storage medium. Prior exposure to information was reported by 36.9% and was significantly associated with sufficient knowledge ($p = 0.006$). In multivariable analysis, university education remained independently associated with sufficient knowledge (adjusted OR = 2.06, 95% CI 1.07–3.98, $p = 0.031$).
Conclusion: This Swedish cohort of parents exhibited limited knowledge regarding the emergency management of avulsed permanent teeth, particularly concerning replantation, extra oral time, cleaning, and storage media. Higher educational levels and prior exposure to information were associated with better knowledge. These findings highlight the need for targeted educational strategies delivered through dental clinics and digital platforms to improve parental preparedness for dental trauma emergencies.

Keywords: Trauma, Knowledge, Parents

0089

Prevalence and patterns of multiple injuries affecting a single permanent tooth (combination injuries): a systematic review and meta-analysis

Nitesh Tewari[1]
[1]Karolinska Institutet, Division of Pediatric Dentistry, Department of Dental Medicine, Huddinge, Sweden
[1]All India Institute of Medical Sciences, Division of Pediatric Dentistry, Centre for Dental Education and Research, New Delhi, India
Alina Wikström[2]
[2]Eastman institutet, 4. Department of Endodontics, Public Dental Health Services, Stockholm, Sweden
Eva Lauridsen[3]
[3]Rigshospitalet, 5. Dental Trauma Guide Teamet Kæbekirurgisk, Copenhagen, Denmark
Vijay Mathur[4]
[4]All India Institute of Medical Sciences, Division of Pediatric Dentistry, Centre for Dental Education and Research, New Delhi, India
Partha Haldar[5]
[5]All India Institute of Medical Sciences, Centre of Community Medicine, New Delhi, India
Lars Andersson[6]
[6]Malmo University, 7. Department of Oral & Maxillofacial Surgery, Malmo, Sweden
Georgios Tsilingaridis[7]
[7]Karolinska Institutet, Division of Pediatric Dentistry, Department of Dental Medicine, Huddinge, Sweden

Background: Combination injuries or multiple traumatic dental injuries (TDI) affecting a single permanent tooth, are clinically important but remain under recognized. Although global prevalence of TDI is well documented, the epidemiology of combination injuries has not been clearly established. This systematic review aimed to assess the prevalence and patterns of combination injuries in traumatized permanent teeth.

Methods: A review protocol was registered in PROSPERO (CRD1245967). Comprehensive searches of PubMed, EMBASE, Web of Science, and Scopus were conducted without language or date restrictions on 4th December 2025. Observational studies done in clinical settings involving patients older than 6 years with TDI in permanent teeth and reporting combination injuries were included. Two reviewers independently screened, extracted data, and assessed risk of bias using the Joanna Briggs Institute checklist. Random effects meta analyses were performed to estimate pooled prevalence and proportions of specific injury combinations. Certainty of evidence was evaluated using the GRADE framework.

Results: Thirty studies from 20 countries were included. Among 34,382 traumatized permanent teeth, 7,161 presented with combination injuries. Reported prevalence ranged from 2.36% to 48.28%, with a pooled prevalence of 14% (95% CI: 11–19%; I^2 = 98.2%). Denmark demonstrated the highest pooled prevalence among countries represented by multiple studies. The most frequently reported combination was enamel-dentin fracture with subluxation (25%). Reporting terminology varied considerably, and many studies did not explicitly document combination injuries. While most studies had a low risk of bias, the overall certainty of evidence was very low.

Conclusions: The pooled prevalence of combination injuries was 14%, with the highest reported in Denmark. and the most commonly observed combination was enamel–dentin fracture with subluxation. Considerable variation in reporting terminology and the very low certainty of evidence highlight the urgent need for standardized nomenclature, calibrated diagnostic protocols, and well-designed studies to capture the complexity of these injuries.

Keywords: Traumatic dental injuries, Combination injuries, systematic review

0154

Prevalence of traumatic injuries in patients who attended the Dental Trauma Unit at the Department of Endodontics, FOUBA.

Lorena Cabirta[1]
[1]University of Buenos Aires, Department of Endodontics, School of Dentistry, Buenos Aires, Argentina
L. Pinasco[2]
[2]University of Buenos Aires, Department of Endodontics, School of Dentistry, Buenos Aires, Argentina
V. Panetta[3]
[3]University of Buenos Aires, Department of Endodontics, School of Dentistry, Buenos Aires, Argentina
D. Sala[4]
[4]University of Buenos Aires, Department of Endodontics, School of Dentistry, Buenos Aires, Argentina
E. Miklaszewski[5]
[5]University of Buenos Aires, Department of Endodontics, School of Dentistry, Buenos Aires, Argentina
T. Lee[6]
[6]University of Buenos Aires, Department of Endodontics, School of Dentistry, Buenos Aires, Argentina
P.A. Rodríguez[7]
[7]University of Buenos Aires, Department of Endodontics, School of Dentistry, Buenos Aires, Argentina

Background: Dentoalveolar trauma is a major public health concern requiring systematic epidemiological monitoring. Comprehensive long-term data on dental trauma remain limited in Argentina.

Objective: To analyze trauma prevalence, etiology, injury distribution, and emergency management in patients treated at the Dental Trauma Unit, Department of Endodontics, Faculty of Dentistry, University of Buenos Aires (FOUBA) between 2016 and 2023.

Materials and Methods: A retrospective study evaluated 465 patients (aged 6–81 years). Age, sex, etiology, initial emergency provider, injury classification (IADT criteria), and affected teeth were analyzed.

Results: Participants were 52% male (n=240) and 48% female (n=225).Initial care occurred at FOUBA for 58% (n=270) and at other centers for 42% n=195); primary emergency response was inadequate in 52% (n=241).Etiology was heterogeneous (Chi-square= 431.91; df=4; $p < 0.05$): street accidents (38%; 95% CI: 34–43%), domestic accidents (31%; 95% CI: 27–35%),sports (24%; 95% CI: 20–28%), car accidents (5%; 95% CI: 3–6%),and work accidents (2%; 95% CI: 1–3%).Etiology did not significantly vary by year (Chi-square = 38.90;df = 28; $p = 0.08$). Maxillary central incisors were most involved (tooth 11: 23.8%; tooth 21: 23.1%). Injury types were heterogeneous (Chi-square= 348.49; df = 11;$p < 0.05$), led by lateral luxation (25%), crown fracture without exposure (17%), avulsion (14%), and alveolar fracture (12%). Injury distribution showed a significant association with year (Chi-square = 135.00; df=105; $p<0.05$).

Conclusion: This study provides the first comprehensive reference dataset on dental trauma in Argentina. The high prevalence of severe injuries and a 52% inadequate initial response highlight an urgent need for national educational strategies.

Keywords: Dental trauma, Epidemiology, Emergency management

0090

Statistical models for assessing the risk of pulp necrosis in teeth after trauma.

Patrycja Proc[1]
[1]Medical University of Lodz, Department of Paediatric Dentistry , Lodz, Poland
Julia Piotrowska [2]
[2]Medical University of Lodz, Department of Biostatics and Translational Medicine / medical student, Lodz, Poland
Damian Mikulski[3]
[3]Medical University of Lodz, Department of Biostatics and Translational Medicine , Lodz, Poland
Monika Lukomska-Szymanska[4]
[4]Medical University of Lodz, Department of General Dentistry, Lodz, Poland

Introduction. In clinical practice, dentists undertaking the treatment of traumatic dental injuries are often faced with the unknown of long-term maintaining the vitality of the pulp. There are strict guidelines for the treatment of teeth after trauma, but even standard procedures may yield different treatment results in different cases. The aim of the work was to create statistical models that could determine the probability of pulp necrosis (PN) in a tooth after trauma.
Materials and methods. The results of treatment of 84 child patients aged 8-13, treated over a 3-year period because of dental trauma to incisors, were analyzed for factors that may influence dental pulp survival. State of 333 incisors were investigated with cold pulp testing, x-rays and LDF examination. The multivariate statistical analysis was used to assess the factors associated with PN, followed by backward stepwise selection to create the multivariable model of independent predictors of PN.

Results. The necrosis of pulp was confirmed in 38 incisors, it was found that the factors influencing pulp survival were: involvement of vehicle in accidents (OR = 2.61, 95% CI: 1.30–5.27), presence of facial soft-tissue injuries (OR = 2.67, 95% CI: 1.31–5.47), coexistence of lower-tooth trauma (OR = 4.22, 95% CI: 1.12–14.76), negative cold test at baseline (OR = 6.67, 95%CI: 3.24–13.73) or at 12 months (OR = 12.88, 95% CI: 5.72–29.01), periapical lesions on the first (OR = 3.04, 95%CI: 1.29–7.16) or second radiograph (OR = 16.81, 95%CI: 7.45–37.90), pain on percussion (OR = 10.42, 95%CI: 4.63–23.45) or reported pain (OR = 16.43, 95%CI: 4.55–59.27).
Conclusions: Based on the analysis, two alternative statistical models were created to assess the probability of dental pulp survival.

Keywords: pulp necrosis, dental trauma , statistical models

0051

Traumatic Dental Injuries in Eastern Bavaria: Characteristics, Injury Patterns, Diagnostic Findings, and Initial Management from the Regensburg Dental Trauma Registry

Sevgi Arabulan[1], Karolina Müller[2], Gunnar Huppertz[2], Martyna Smeda[1], Michael Koller[2]
[1]University Hospital Regensburg, Department of Conservative Dentistry and Periodontology, Regensburg, Germany
[2]University Hospital Regensburg, Center for Clinical Studies, Regensburg, Germany
Sophia R. Lindner[6]
[6]University Hospital Regensburg, Department of Cranio-Maxillofacial Surgery, Regensburg, Germany
Torsten E. Reichert[7]
[7]University Hospital Regensburg, Department of Cranio-Maxillofacial Surgery, Regensburg, Germany
Wolfgang Buchalla[8]
[8]University Hospital Regensburg, Department of Conservative Dentistry and Periodontology, Regensburg, Germany
Matthias Widbiller[9]
[9]University Hospital Regensburg, Department of Conservative Dentistry and Periodontology, Regensburg, Germany

Background
Traumatic dental injuries (TDIs) are highly prevalent worldwide, yet structured and standardized datasets, particularly in Germany, remain scarce.

Objective
To characterize the characteristics, injury patterns, diagnostic findings, and initial management of TDIs using data from the Regensburg Dental Trauma Registry (RDTR).

Methods
This single-center, retrospective study included 1,000 cases with TDIs presented within three days after trauma and treated at the Center for Dental Traumatology, University Hospital of Regensburg, between June 2016 and December 2020. Data were recorded in a standardized way using a REDCap-based electronic case report form. Descriptive analyses were performed at both the case and tooth level.

Results
The cohort comprised 1,000 cases (61.6% male, 38.4% female; median age 13 years [IQR 7-26]), affecting 1,904 permanent and 528 primary teeth. Most presented within 24 hours of injury (84.1%). Age distribution showed peaks at 2–4 and 7–9 years independent of sex. Falls were the leading cause of trauma (67.8%), with cycling (18.6%) as the most common activity at the time of injury.
Maxillary central incisors were the most frequently affected teeth in both dentitions (58.7% primary; 54.9% permanent). Luxation injuries predominated in primary teeth (92.8%) compared with permanent teeth (69.8%), whereas fractures were more common in permanent teeth (57% permanent vs. 14.2% primary). Avulsion injuries affected 202 teeth (139 permanent, 63 primary); among cases with avulsion to permanent teeth, 40.9% were stored dry. The most frequent initial treatments were splinting (36.5%), restoration or coverage of fractured surfaces (27.0%), and repositioning (11.3%).

Conclusions
The RDTR provides structured data on TDIs in Eastern Bavaria, revealing injury patterns and management practices. The data also highlight gaps in initial management of avulsed teeth before presentation to the trauma center. This registry may provide a basis for future multicenter and outcome-oriented research in dental traumatology.

Keywords: Traumatic dental injuries, Epidemiology, Clinical data registry

0121

When Seconds Matter: Perceived Barriers to Managing Tooth Avulsion Among Sports School Educators - A Qualitative Study

PUTERI NUR AMEERAFARAHIN BINTI MD AMIN[1]
[1]Department of Orthodontic, Paediatric Dentistry and Special Care Dentistry, Faculty of Dentistry, Universiti Malaya, Kuala Lumpur, Malaysia
Nabihah Binti Dziaruddin[2]
[2]Department of Orthodontic, Paediatric Dentistry and Special Care Dentistry, Faculty of Dentistry, Universiti Malaya, Kuala Lumpur, Malaysia
Shani Ann Mani[3]
[3]Department of Orthodontic, Paediatric Dentistry and Special Care Dentistry, Faculty of Dentistry, Universiti Malaya, Kuala Lumpur, Malaysia
Sabri Bin Musa[4]
[4]Department of Orthodontic, Paediatric Dentistry and Special Care Dentistry, Faculty of Dentistry, Universiti Malaya,, Kuala Lumpur, Malaysia

Background: Permanent tooth avulsion requires immediate and appropriate management to improve treatment outcomes and prognosis. In sports school settings, where dental injuries often occur during school or athletic activities, teachers and coaches are frequently the first responders. However, research on their preparedness and the perceived barriers in managing such incidents in Malaysia is limited. Objective: This study explored the perceived barriers associated with the knowledge, attitudes, and practices of sports school educators in managing permanent tooth avulsion in schoolchildren. Methods: A qualitative study using focus group discussions was conducted with 20 purposively sampled teachers and coaches from Bukit Jalil National Sports School, Malaysia. Participants were selected based on their roles as academic teachers or sports coaches and their teaching experience. Four focus group discussions were conducted, and data were analysed using inductive thematic analysis to identify perceived barriers related to knowledge, attitudes, and practices in the management of permanent tooth avulsion. Results: Three main themes emerged: (1) Knowledge Gaps and Misconceptions, highlighting the lack of practical emergency response knowledge, misconceptions regarding tooth avulsion replantation, and misinformation from unreliable sources; (2) Attitudinal Barriers to Tooth Avulsion Management, encompassing fear-driven avoidance, emotional and cognitive overload, and low self-efficacy; and (3) Systemic Barriers to Tooth Avulsion Management, including ambiguity in emergency roles and responsibilities, administrative procedures hindering timely response, and lack of formal training opportunities. Conclusion: This study highlighted the critical and interrelated barriers of knowledge deficits, attitudinal challenges, and systemic constraints perceived by sports school educators in managing tooth avulsion. Therefore, it is imperative that these significant impediments are addressed through a multifaceted strategy encompassing targeted dental trauma education and training, accessible educational resources and supportive institutional strategies to strengthen their emergency response and improve outcomes for affected schoolchildren.

Keywords: tooth avulsion, qualitative study, sports school educators

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ABSTRACTS
Topic 2

Diagnostic Imaging and Artificial Intelligence in Dental Traumatology



0097

CBCT-guided management of delayed external inflammatory root resorption

Dilyana Joffe-Sokolova[1]
[1]International University of Cathalonia, Dentistry, Sant Cugat del Vallès, Spain
[1]Tandartspraktijk Steenwijkerdiep , Steenwijk, The Netherlands

Introduction

External inflammatory root resorption is an infection-related complication of dental trauma. Abbott described two essential conditions: external root-surface damage with cementum loss and bacterial contamination of the root canal system.

Case report

A 46-year-old female patient presented with discomfort in the region of tooth 11 . She recalled endodontic treatment 25 years earlier and possible minor trauma around that period. Later, she experienced discoloration of tooth 11 and recurrent episodes of gingival discomfort and swelling . Clinical examination showed tenderness to palpation, normal probing depths, grade I mobility of teeth 11 and 21, and a sinus tract. Periapical radiographs showed root canal-treated tooth 21, incomplete obturation of tooth 11, a large periapical lesion, and interradicular radiolucency between 11 and 21. The resorptive defect was not clearly identifiable on two-dimensional imaging. CBCT was performed to assess residual root structure and canal communication. It demonstrated bifurcation of the apical part of the canal and an external resorptive defect at mid-root level, with direct communication to the canal space. Tooth 11 was diagnosed with external inflammatory resorption and retreated endodontically in two sessions. The previous filling consisted of paste, not gutta-percha. Apical size was ISO 70, indicating a pre-existing wide canal. Calcium hydroxide was used as an intracanal medicament. Final irrigation with EDTA and 5% sodium hypochlorite was followed by obturation with NeoPutty MTA and composite restoration.

Conclusion

This case emphasizes that endodontically treated teeth with suspected trauma require long-term follow-up. In established external inflammatory resorption, infection control is the key therapeutic objective. The mid-root resorptive defect, its canal communication, and the remaining canal morphology were not clearly identifiable on two-dimensional radiographs but were demonstrated by CBCT. These findings guided the decision for non-surgical retreatment with NeoPutty MTA to support obturation, reinforcement, and tooth preservation.

Keywords: CBCT-guided management, external inflammatory root resorption, obturation with MTA

0079

Does Prompt Structure Matter? Effects of Prompting Strategies on Artificial Intelligence Responses in Dental Avulsion Management

Şevval Çakıcı[1]
[1]Kutahya Health Sciences University, Faculty of Dentistry, Department of Pediatric Dentistry, Kutahya, Türkiye
Safa Kurnaz[2]
[2]Kutahya Health Sciences University, Faculty of Dentistry, Department of Endodontics, Kutahya, Türkiye

Background: Large language model (LLM)-based artificial intelligence (AI) systems are increasingly used to support clinical decision-making, including in dental traumatology. However, AI-generated outputs are highly sensitive to prompt design, and variations in prompt structure may lead to differences in the completeness and clinical usefulness of recommendations. This variability may be particularly critical in time-sensitive conditions such as dental avulsion.
Objective: This study aimed to compare different prompt structures in terms of the completeness and quality of AI-generated responses for dental avulsion management.
Methods: Ten standardized dental avulsion clinical vignettes were presented to ChatGPT-5.3 (OpenAI, San Francisco, CA, USA) using three prompt structures: open-ended, guideline-referenced, and task-specific structured queries. Initially, all responses were assessed for factual accuracy in accordance with International Association of Dental Traumatology (IADT) guidelines. Subsequently, responses were evaluated for quality and content completeness. Content completeness was assessed based on predefined avulsion management steps derived from IADT guidelines, including replantation decision, tooth management, splinting, antibiotic recommendation, tetanus prophylaxis, endodontic approach, postoperative patient and parent counseling, follow-up, and prognosis, and each component was scored accordingly. Statistical analyses were performed using the Friedman test with post hoc Wilcoxon signed-rank tests, and Spearman correlation analysis. Inter- and intra-rater reliability were assessed using intraclass correlation coefficients (ICC).
Results: Inter- and intra-rater reliability were high (ICC = 0.92 and 0.89, respectively). Task-specific structured queries yielded significantly higher completeness (16.9±0.7) and quality (4.6±0.5) scores compared with open-ended (13.3±1.2 and 3.4±0.5, respectively) and guideline-referenced (12.8±1.3 and 3.5±0.5, respectively) queries ($p<0.001$). No significant differences were observed between open-ended and guideline-referenced queries. Completeness and quality scores were strongly correlated ($\rho=0.804$, $p<0.001$).
Conclusion: Prompt structure significantly influences the completeness and quality of AI-generated responses in dental avulsion management. Task-specific structured queries yield more comprehensive and clinically relevant outputs, emphasizing the importance of prompt design in time-sensitive dental trauma care.

Keywords: Artificial intelligence, ChatGPT, Dental avulsion

0143

Radiographic Healing Patterns After Regenerative Endodontic Treatment in Traumatized Immature Permanent Incisors with Pulp Necrosis Using a Blood Clot Scaffold and Biodentine

Michał Sobczak[1]
[1]Specialized Dental Practice, Warsaw, Poland
Anna Pantelewicz[2]
[2]Medical University of Warsaw, Department of Dental and Maxillofacial Radiology , Warsaw, Poland
Joanna Kowalska[3]
[3]an54 bednarczyk i sobczak, Warsaw, Poland

Background:
Pulp necrosis in immature permanent incisors is a common consequence of dental trauma. Regenerative endodontic treatment (RET) supports periapical healing, but continued root maturation remains unpredictable, particularly in traumatized teeth.
Objective:
To evaluate radiographic healing patterns, root maturation, and early radiographic signs of repair after RET in traumatized immature permanent incisors with pulp necrosis.
Methods:
This retrospective case series included traumatized immature permanent incisors with pulp necrosis treated in a private dental clinic between 2017 and 2026. All teeth were treated using a standardized two-visit protocol: canal disinfection, calcium hydroxide medication, bleeding induction, collagen matrix placement, Biodentine coronal barrier, and resin composite restoration. Radiographs were analysed for periapical healing, apical closure, root maturation, intracanal mineralization, hard tissue bridge formation, canal obliteration, resorption, and arrested root development. Time to the first radiographic sign of healing or repair was recorded.
Results:
Twenty-five teeth in 19 patients were included. Mean age at injury was approximately 8 years, mean observation period was 45 months, and mean interval from endodontic treatment initiation to RET was 78 days. Primary RET success was achieved in 24/25 teeth (96%); one tooth required repeat RET after additional disinfection. Tooth survival was 92%; two teeth were lost due to trauma-related ankylosis and managed with autotransplantation. First radiographic signs of healing or repair appeared 1–3 months post-RET. Outcomes included periapical healing, apical closure, hard tissue deposition, intracanal mineralization, canal obliteration, and variable root maturation.
Conclusion:
RET using a blood clot scaffold and Biodentine resulted in predictable periapical healing, whereas root maturation and hard tissue formation remained variable. Early signs of repair included hard tissue bridge formation, intracanal mineralization, and apical narrowing. Assessment of these early radiographic signs may help clarify healing patterns and support interpretation of treatment outcomes in traumatized immature permanent incisors.

Keywords: Regeneration, Blood clot scaffold, Radiographic healing patterns

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ABSTRACTS
Topic 3

Acute Dental Trauma Management, Healing, Complications and Long-Term Outcomes



0130

A Tooth That Wouldn't Let Go

W Siti Norzuraihan W Mahmood[1]
[1]Faculty of Dentistry, Universiti Malaya, Kuala Lumpur, Malaysia

Introduction:
Traumatic dental injuries in the primary dentition can result in disturbances to the developing permanent successors, including delayed eruption. Retained necrotic primary teeth may act as both mechanical and inflammatory barriers, interfering with normal eruption pathways. Early recognition and timely intervention are essential to prevent further complications.

Case report:
A 9-year-old boy presented with delayed eruption of the permanent maxillary right central incisor, eight months after the eruption of the
contralateral tooth. History revealed trauma to the primary predecessor at age two, when the boy fell
forward, striking his upper front teeth against a staircase, leading to gingival bleeding but no immediate tooth displacement. Subsequently, tooth 51 became discoloured, indicative of a pulpal necrosis. Clinical examination revealed a retained necrotic tooth 51, firm and accompanied by a healed sinus tract. Radiographic evaluation confirmed tooth 11 at Cvek Stage 2 development, positioned apically with significant root resorption of tooth 51. Tooth 51 was extracted under local anaesthesia, facilitating spontaneous eruption of tooth 11. Concurrently, comprehensive management of multiple dental caries was undertaken, including placement of stainless steel crowns, vital pulp therapy, composite resin restorations, preventive resin restorations, and extractions. Subsequent follow-up demonstrated spontaneous and progressive eruption of the permanent incisor, with satisfactory alignment and aesthetics. Comprehensive caries management and preventive care were also provided. The patient's behaviour improved over time, facilitating successful treatment completion.

Conclusion:
Retained necrotic primary teeth following early childhood trauma can delay the eruption of permanent successors. Timely extraction of the retained tooth can effectively remove the obstruction, promote spontaneous eruption, and reduce the need for more invasive interventions. Regular monitoring is critical to ensure favourable outcomes.

Keywords: retained primary tooth, traumatic dental injury, delayed eruption

0140

Against All Odds: Survival of Repeated Avulsed Teeth

SITI KHADIJAH SHUHAIMY BASHA[1]
[1]TAWAU HOSPITAL, DEPARTMENT OF PEDIATRIC DENTISTRY, SABAH, MALAYSIA

Background:
Tooth avulsion is the complete displacement of a tooth from its socket and represents the most severe form of dental trauma. It commonly affects children and adolescents, with maxillary central incisors being the most frequently involved. Avulsion results in immediate disruption of the pulpal blood supply and damage to the periodontal ligament cells. Replantation is the treatment of choice as it preserves aesthetics and function. Although delayed replantation is associated with a poorer prognosis, favorable outcomes have been reported when managed according to the International Association of Dental Traumatology (IADT) guidelines. Bio-obturation using bioactive materials is a contemporary endodontic approach that promotes periradicular healing and stabilisation in traumatized teeth.

Case report:
This report describes two cases of avulsed permanent maxillary central incisors with delayed replantation and repeated trauma. The patients were two boys aged 11 and 12 years who sustained avulsion of tooth 21. In both cases, replantation was performed 16 hours post-trauma in accordance with the IADT 2020 guidelines. Passive splinting was applied and removed after three weeks. Both patients experienced a second avulsion episode within one month, after which long-term splinting was maintained for four months despite a guarded prognosis. Endodontic treatment was subsequently completed using a bioactive obturation technique. At more than 12 months of follow-up, both teeth were retained, functional, and asymptomatic, with radiographic evidence of ankylosis and no signs of infection or inflammatory resorption.

Conclusion:
Replantation should be considered in all possible cases of tooth avulsion in accordance with IADT guidelines. Although delayed replantation with repeated trauma is predictably associated with poor outcomes, the use of bioactive obturation materials may contribute to improved clinical stability and reduction of long-term complications in compromised avulsion cases.

Keywords: AVULSION, BIOACTIVE MATERIAL, BIO-OBTURATION

0047

Antimicrobial Photodynamic Therapy and Photobiomodulation in Delayed Replantation of Avulsed Teeth: A 7-Year Follow-Up

Flávia Monari Belmonte[1]
[1]University of São Paulo, Faculty of Dentistry, São Paulo, Brasil
Emilio Carlos Paschoal[2]
[2]University of São Paulo, Faculty of Dentistry, São Paulo, Brasil
Luciane Hiramatsu Azevedo[3]
[3]University of São Paulo, Faculty of Dentistry, São Paulo, Brasil
Celso Luiz Caldeira[4]
[4]University of São Paulo, Faculty of Dentistry, São Paulo, Brasil
Patricia Moreira de Freitas [5]
[5]University of São Paulo, Faculty of Dentistry, São Paulo, Brasil

Background:
Dental avulsion is among the most severe traumatic injuries to permanent teeth. Delayed replantation, particularly after prolonged dry storage, is associated with a high risk of ankylosis and external root resorption. Adjunctive therapies such as antimicrobial photodynamic therapy (aPDT) and photobiomodulation therapy (PBMT) may improve outcomes by reducing microbial load and modulating inflammation.
Objective:
To report a clinical case of delayed replantation of avulsed teeth associated with aPDT and PBMT, with a 7-year follow-up.
Case Description:
An adult male patient presented with avulsion of teeth 11 and 21, stored dry for approximately 18 hours. Prior to replantation, pulp tissue was removed and aPDT was applied using a low-level laser (660 nm, 100 mW, 9 J) with intracanal irradiation. After replantation, a passive flexible splint (teeth 13–23) was maintained for four weeks. PBMT was performed three times per week for two months using an infrared laser (808 nm, 100 mW, 3 J). Clinical and radiographic follow-ups were conducted periodically.
Results:
After 7 years, the teeth remained functional, with favorable clinical, radiographic, and tomographic findings. No severe inflammatory or infectious root resorption was observed.
Conclusion:
The combination of aPDT and PBMT as adjuncts to endodontic treatment may represent a promising approach in delayed tooth replantation, even under unfavorable conditions.

Keywords: Dental avulsion, Delayed replantation, Laser therapy.

TOPIC 3

0118

Biomechanical performance of different rigidity of steel wire/resin composite splinting for treating dental trauma with bone alveolar fracture.

Priscilla Soares[1]
[1]Federal University of Uberlandia, Uberlandia , Brazil
Daniela Quevedo[2]
[2]Federal University of Uberlandia, Uberlandia , Brazil
Caroline Orsi[3]
[3]Federal University of Uberlandia , Uberlandia, Brazil
Paulo Cesar Junqueira[4]
[4]Federal University of Uberlandia, Uberlandia , Brazil
Camilla Moura[5]
[5]Federal University of Uberlandia, Uberlandia , Brazil
Carlos José Soares[6]
[6]FEderal University of Uberlandia, Uberlandia , Brazil

Background: A rigid splint has been specified as the better approach to manage alveolar bone fractures. The degree of rigidity of the wire/resin composite splints can be challenging decision for clinicians.
Objective: This study aimed to evaluate the biomechanical behavior of different types of wires used for splinting the teeth associated with alveolar bone process fracture.
Methods: A model was created using a 3D models to simulate the anterior maxilla, with simulated alveolar fractures, based on cone-beam computed tomography. Four wire-composite splints (0.7, 0.8 and 0.9 mm in diameter and 0.6 mm intertwined) were compared with models without splints and with no fracture (n = 5). The alveolar process displacement was measured (3 times per model/per splint type) at the fractured and adjacent central incisor regions using a deflectometer under functional cycling and static loading (100 N). Data (μm) were analyzed using RM ANOVA, followed by Tukey's HSD test (α = 0.05).
Results: The results demonstrated that the splinting with resin composite associated with 0.7 mm and 0.8 mm steel wires exhibited biomechanical behavior similar to the 0.9 mm wire, promoting adequate stabilization with low fracture displacement. In contrast, the braided wires showed greater displacement, indicating a lower stabilization capacity.
Conclusion: It is concluded that smaller diameter wires can be considered viable alternatives to the 0.9 mm wire for rigid splinting, combining satisfactory mechanical performance with greater ease of clinical manipulation, and lower potential for the ankylose occurrence.
CAPES (001); CNPq; CNPq INCT – Saúde Oral e Odontologia (406840/2022-9); FAPEMIG (APQ-03041-23; RED-00204-23).

Keywords: rigid splint, 3D model

0073

Case report of Complicated Crown-Root and Crown Fractures in a pediatric patient – long-term follow-up.

Agnieszka Zielinko[1]
[1] Specjalistyczna Lecznica Stomatologiczna Uniwersytetu Medycznego w Białymstoku Sp. z o.o. , Zakład Stomatologii Dziecięcej, Uniwersytet Medyczny w Białymstoku , Białystok, Polska
Agata Markowska[2]
[2]Specjalistyczna Lecznica Stomatologiczna Uniwersytetu Medycznego w Białymstoku Sp. z o.o. , Zakład Stomatologii Dziecięcej, Uniwersytet Medyczny w Białymstoku Kierownik Zakładu, Białystok, Polska
Elżbieta Łuczaj-Cepowicz[3]
[3]Specjalistyczna Lecznica Stomatologiczna Uniwersytetu Medycznego w Białymstoku Sp. z o.o. , Zakład Stomatologii Dziecięcej, Uniwersytet Medyczny w , Białystok, Polska

Crown-root fractures are among the most severe dental injuries, involving enamel, dentin, and cementum, and resulting in the loss of tooth structure. Treatment methods for crown-root fractures vary and depend, among other factors, on the patient's age and the stage of root development. This report presents the management of a complicated crown-root fracture of tooth 21 and crown fractures of teeth 11 and 12 in a growing patient.
An 11-year-old boy presented with a traumatic injury. He struck his front teeth against a bicycle handlebar. Clinical examination revealed a chin wound, a crown-root fracture of tooth 21 with a fracture line extending approximately 2 mm below the gingival margin on the palatal side, as well as crown fractures of teeth 11 and 12. Tooth 21 responded positively to vitality testing and percussion, and the coronal fragment showed significant mobility. No pathological changes in the pulp or periapical tissues were found in teeth 12 and 11. Radiographic examination confirmed the diagnosis. After removal of the coronal fragment of tooth 21 under local anesthesia, pulp exposure was identified and a partial pulpotomy with Biodentine was performed. Temporary restorations of teeth 11, 12, and 21 were completed using glass ionomer cement. Follow-up examinations at monthly intervals showed no pathological findings. Six months later, definitive composite restorations were placed. Two years post-trauma, radiographs revealed root canal obliteration in tooth 11. CBCT confirmed this finding and additionally indicated possible cervical resorption of tooth 21. Due to planned orthodontic treatment, endodontic treatment of tooth 11 was performed. The patient also underwent closed curettage of tooth 21. At the three-year follow-up, CBCT imaging showed no progression of resorption.
Crown-root fractures remain a significant diagnostic and therapeutic challenge, requiring individualized treatment. Because complications may occur long after the initial injury, long-term follow-up is essential.

Keywords: complicated crown-root fracture

0078

Comparative Evaluation of Splint Types and Removal Techniques on Enamel Microhardness Following Dental Trauma

Ceren Sağlam[1]
[1]Ege University Faculty of Dentistry, Department of Pediatric Dentistry, İZMİR, TURKEY
Aslı Aşık[2]
[2]Tınaztepe University Faculty of Dentistry, Department of Pediatric Dentistry, İZMİR, TURKEY
Dilşah Çoğulu[3]
[3]Ege University Faculty of Dentistry, Department of Pediatric Dentistry, İZMİR, TURKEY
Yağmur Lena Sezici[4]
[4]Tınaztepe University Faculty of Dentistry, Department of Orthodontic Dentistry, İZMİR, TURKEY

Background: Flexible splinting protocols are widely advocated in the management of dental trauma to allow physiological mobility and promote optimal periodontal healing. Composite resin-based splints reinforced with either metallic wire or fiber materials are widely utilized in clinical practice. However, the debonding and splint removal procedures, particularly those involving rotary instrumentation, may compromise enamel surface integrity and reduce microhardness due to combined mechanical abrasion and thermal effects.
Objective: This study aimed to evaluate the effects of splint type (wire vs. fiber) and removal technique (tungsten carbide bur vs. orthodontic pliers) on enamel microhardness and ultrastructural surface characteristics.
Methods: This in vitro study was conducted on extracted human anterior teeth (n=56), which were randomly allocated into four groups (n=14) according to splint type and removal technique:
*Group 1:Bonding+0.4mm stainless steel wire splint+removal with tungsten carbide rotary bur
*Group 2:Bonding+0.4mm stainless steel wire splint+removal with orthodontic debonding pliers
*Group 3:Bonding+fiber splint+removal with tungsten carbide rotary bur
*Group 4:Bonding+fiber splint+removal with orthodontic debonding pliers
Enamel microhardness values were measured at baseline (T1) and post-removal (T2), and microhardness reduction (T1-T2) was calculated. Surface topography and morphological alterations were further evaluated using scanning electron microscopy.
Results: Enamel microhardness significantly decreased after splint removal in all groups ($p<0.05$). Mean microhardness loss values were 9.61±6.53, 8.09±5.26, 12.86±8.93 and 11.03±9.87 for Groups 1-4, respectively. However, no statistically significant pairwise difference was found between the groups ($p>0.05$). Two-way ANOVA revealed no significant interaction was observed between splint type and removal technique ($F=0.005$, $p=0.942$).
Conclusion: Splint removal procedures result in a significant decrease in enamel microhardness, irrespective of splint type or removal technique. Preservation of enamel integrity and minimization of iatrogenic damage during splint removal are of critical clinical importance, and less invasive or atraumatic debonding strategies should be considered in the management of dental trauma cases.

Keywords: Dental Trauma, Splint Types, Removal Techniques

0045

Complications of trauma to a permanent tooth with incomplete root development- case report

Izabela Ziękiewicz[1]
[1]Uniwersytecka Klinika Stomatologiczna, Poradnia Stomatologii Dziecięcej , Kraków , Polska

Background
Traumatic injuries to permanent teeth in paediatric patients constitute a significant concern in paediatric dentistry. Injuries involving teeth with incomplete root development present a particular clinical challenge, as even minor trauma may result in serious complications, including pulp necrosis, the development of inflammatory periapical lesions, and disturbances in further odontogenesis. Early diagnosis, appropriately selected therapeutic management, and long-term follow-up are essential for a favourable prognosis.
Case Report
An approximately 8-year-old patient presented following trauma to tooth 12, which was in the eruption phase and exhibited incomplete root development. Clinical examination revealed a complicated crown fracture involving enamel, dentine, and pulp, with a loss of approximately three-quarters of the clinical crown, pulp exposure, and concomitant slight subluxation of the tooth.
Initial management consisted of vital pulp therapy in the form of a partial pulpotomy, along with repositioning and adhesive reattachment of the fractured crown fragment.
During follow-up visits, radiographic examination demonstrated the development of an inflammatory periapical lesion, and pulp necrosis was diagnosed based on clinical findings. Consequently, multistage endodontic treatment was undertaken and completed with apexification using Biodentine. The crown was subsequently restored with a composite material.
A two-year follow-up confirmed complete healing of the periapical lesion and demonstrated the effectiveness of the implemented treatment.
Conclusion
Dental trauma in patients of developmental age may lead to long-term complications despite appropriate initial management. The present case highlights the importance of regular follow-up and the need for a flexible therapeutic approach, allowing for modification of the treatment plan in response to evolving clinical conditions. Comprehensive, staged management enables a favourable treatment outcome and preservation of the tooth in the oral cavity.

Keywords: Dental trauma, Incomplete root development, Apexification

0117

Conservative approach for treating complex crown-root fracture initially indicated for extraction and implant installation: An 8-year follow-up.

Bruna Ferreira Soares[1]
[1]Federal University of Uberlandia , Uberlandia , Brazil
Caroline Garcia Orsi[2]
[2]Federal University of Uberlandia, Uberlandia, Brazil
Carlos José Soares[3]
[3]Federal University of Uberlandia, Uberlandia , Brazil
Priscilla Soares[4]
[4]Federal University of Uberlandia, Uberlandia , Brazil
Camilla Moura[5]
[5]Federal University of Uberlandia , Uberlandia , Brazil

Introduction: A crown-root fracture is one of the most common traumas requiring precise diagnosis and prompt, correct treatment to achieve a good prognosis.
Case report: This case report presents an 18-year-old male patient, victim of a traffic accident. He went the Dentoalveolar Trauma Clinic (FOUFU) after being recommended for tooth extraction for implant placement. Clinical examination revealed extrusion of tooth 11, premature contact, and grade II mobility. The pulp sensitivity test was positive. Radiography exam showed a horizontal radiolucent line, confirming the diagnosis of a crown-root fracture at the mid-cervical third. The treatment suggested was the digital repositioning, the use of semi-rigid splint with resin composite and 0.6 mm steel wire and occlusal adjustment. The clinical and radiography aspects confirmed the correct tooth repositioning. The patient was monitored every 3 months during the first one year, when the degree of mobility decreased, then the splint was removed. The pulp sensitivity test was performed at all appointments, showing a positive response. Follow-up radiographs revealed the formation of radiopaque tissue, suggestive of repair tissue formation at the fracture line, which may have contributed to decreased tooth mobility. The patient continues for 6 months return to follow up. After 8 years, the clinical and radiography parameters demonstrate the success of the conservative therapeutic protocol.
Conclusion: It is possible to conclude that the conservative treatment associating splinting and careful follow-up is recommended for treating the crown-root fracture is with a satisfactory prognosis.

Keywords: Crown-root fracture , Follow-up, Splinting

0116

Delayed Replantation of an Avulsed Maxillary Incisor After 48-Hour Extra-Oral Dry Storage: Management Using a Bioceramic Sealer — A Case Report

Ouaret Sarra[1]
[1]Oran1 University, Faculty of Medicine, Department of Dental Medicine, Oran, Algeria
Mebarki Amina[2]
[2]Oran1 University, Faculty of Medicine, Department of Dental Medicine, Oran, Algeria
Metref Salim[3]
[3]Oran1 University, Faculty of Medicine, Department of Dental Medicine, Oran, Algeria

Introduction
Dental avulsion with prolonged extra-oral dry storage represents one of the most severe traumatic dental injuries, associated with a high risk of inflammatory root resorption and replacement resorption following replantation. When combined with a concomitant crown fracture of an adjacent tooth, clinical management becomes particularly complex. Bioceramic-based sealers have emerged as promising materials for root canal obturation prior to delayed replantation, owing to their biocompatibility and potential anti-resorptive properties.
Case Report
A 13-year-old boy presented on March 12, 2026, following dental trauma involving two maxillary incisors. Tooth 11 had been avulsed and stored dry for approximately 48 hours before consultation. Clinical and radiographic examination revealed an empty alveolar socket associated with soft tissue laceration. Tooth 21 presented a crown fracture in close proximity to the pulp without exposure. The entire procedure was comprehensively documented using high-quality clinical photographs and radiographic examinations at each stage of management. For tooth 11, extra-oral endodontic treatment was performed using BioRoot RCS bioceramic sealer (Septodont, France), selected for its biocompatibility and potential to limit post-replantation resorption. Following alveolar socket curettage, the tooth was replanted and stabilized with a flexible splint in accordance with the International Association of Dental Traumatology guidelines. Tooth 21 was managed with direct pulp capping using Mineral Trioxide Aggregate (MTA). The splint was removed after 17 days (March 29, 2026), and both teeth were definitively restored on April 9, 2026. Clinical and radiographic follow-up revealed satisfactory soft tissue healing with no early signs of inflammatory root resorption.
Conclusion
This case highlights the importance of a biologically driven approach in managing complex dental trauma. In accordance with IADT 2020 guidelines, a rigorous clinical and radiographic follow-up protocol (2 and 4 weeks, 3, 6, 12 months, and annually for 5 years) is essential to monitor for potential ankylosis-related resorption and validate the role of bioceramic materials in such challenging scenarios.

Keywords: Tooth avulsion , Delayed replantation, Bioceramic sealer

0135

Delayed Replantation to Decoronation: Managing Replacement Resorption and Aesthetic Rehabilitation in an Anxious Growing Child

Gowry Paramasivam[1]
[1]Department of Orthodontics Paediatric and Special Care Dentistry, Faculty of Dentistry, Universiti Malaya, Kuala Lumpur, Malaysia
Shani Ann Mani[2]
[2]Department of Orthodontics Paediatric and Special Care Dentistry, Faculty of Dentistry, Universiti Malaya, Kuala Lumpur, Malaysia
Nabihah Dziaruddin [3]
[3]Department of Orthodontics Paediatric and Special Care Dentistry, Faculty of Dentistry, Universiti Malaya, Kuala Lumpur, Malaysia

Introduction:
Delayed replantation of avulsed permanent teeth with prolonged extra-oral dry time often results in replacement resorption and ankylosis, particularly in children. While initial management focuses on controlling inflammatory resorption, long-term success depends on timely recognition of ankylosis and strategic intervention to preserve alveolar bone during growth. This report highlights the transition from biological management to definitive treatment in a high-risk paediatric trauma case.
Case Report:
An 11-year-old boy presented 16 hours after avulsion of teeth 11 and 21, stored dry. Delayed replantation and flexible splinting were performed. Due to severe dental anxiety, root canal treatment was initiated one week later, followed by sequential intracanal medicament therapy using corticosteroid–antibiotic paste (Ledermix®) and calcium hydroxide to control inflammatory resorption. At six months, a second traumatic episode resulted in accelerated root resorption in tooth 21. By 12 months, clinical and radiographic findings confirmed ankylosis and replacement resorption, with early signs of infraocclusion. Although decoronation was indicated, parents were not initially convinced. Instead, interim aesthetic management with a composite veneer was performed; however, the outcome was compromised by poor cooperation from the child. Eventually, parents consented for decoronation. At 20 months post-trauma, when the patient was 13 years old, decoronation of teeth 11 and 21 and placement of a fibre-reinforced composite (EverStick®) bridge utilising the patient's natural crowns were performed under general anaesthesia, providing immediate aesthetic rehabilitation.
Conclusion:
This case demonstrates the importance of dynamic treatment planning in paediatric dental trauma. While intracanal medicaments may delay resorption, progression to ankylosis necessitates a shift in treatment goals from tooth preservation to alveolar bone maintenance. Decoronation, combined with fibre-reinforced composite bridge rehabilitation, offers an effective strategy to preserve function, aesthetics, and future treatment options in growing patients. Early recognition and timely intervention are critical to optimise long-term outcomes.

Keywords: Dental avulsion , Replacement resorption, Decoronation

0119

Dental splints in dentoalveolar trauma: an overview of public healthcare services in Brazil

Caroline Garcia Orsi[1]
[1]Federal University of Uberlândia, Department of Periodontology and Implantology, Faculty of Dentistry, Uberlândia, Brazil
Roberta de Oliveira Alves[2]
[2]Federal University of Uberlândia, Department of Periodontology and Implantology, Faculty of Dentistry, Uberlândia, Brazil
Liran Levin[3]
[3]University of Saskatchewan, College of Dentistry, Saskatoon, Canada
Carlos José Soares[4]
[4]Federal University of Uberlândia , Department of Operative Dentistry and Dental Materials, Faculty of Dentistry, Uberlândia, Brazil
Priscilla Barbosa Ferreira Soares[5]
[5]Federal University of Uberlândia, Department of Periodontology and Implantology, Faculty of Dentistry, Uberlândia, Brazil

Background: The prognosis of traumatized teeth depends on multiple factors, including the appropriate selection and execution of splinting procedures. However, variability in clinical practice, particularly in public health settings, may compromise adherence to evidence-based recommendations. Objective: To evaluate the indications, quality, clinical characteristics, and adherence to current guidelines of dental splints used in the management of dentoalveolar trauma in a comprehensive public oral health service in Uberlândia, Brazil. Methods: This prospective observational study evaluated 51 dental splints involving 320 teeth between January 2024 and January 2025. Data regarding splint type (semi-rigid or rigid), splint characteristics, resin composite polishing, plaque accumulation, oral hygiene instructions, patient satisfaction, splint duration, and adherence to IADT guidelines were recorded. Data were analyzed descriptively. Results: Most splints were semi-rigid using nylon fishing line (58.8%), and 49% showed improper alignment. Visible plaque was observed in 73.4% of cases and gingival inflammation in 66.9%. Only 32.6% of patients received oral hygiene instructions. Diagnostic errors were identified in 19.6% of cases, and 31.4% did not follow recommended protocols regarding splint rigidity. Conclusion: Significant gaps were identified in the indication, application, and follow-up of dental splints within the evaluated public healthcare service. These findings highlight the need for improved professional training, protocol standardization and better clinical documentation to enhance trauma care outcomes.

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Keywords: Periodontal Splints, Tooth Injuries, Emergency Treatment

0059

Dental trauma case in primary dentition: alveolar bone fracture and lateral luxation trauma followed by two additional traumatic episodes.

Nicolina Kyriacou[1]
[1]European University of Cyprus, School of Dentistry, Nicosia, Cyprus
Eirini Koutagia[2]
[2]European University of Cyprus, School of Dentistry, Nicosia, Cyprus
Konstantina Taoufik[3]
[3]European University of Cyprus, School of Dentistry, Nicosia, Cyprus
Rodoula Pitrou[4]
[4]European University of Cyprus, School of Dentistry, Nicosia, Cyprurs

Introduction: Managing dental trauma in preschool-aged children is often complex, as treatment outcomes depend on multiple interacting factors. In addition to the close anatomical relationship between the apices of injured primary teeth and the developing permanent tooth germs, parental preferences and the child's level of cooperation play a critical role in treatment planning and execution.
Case Report: A 4.5 year old boy presented to the dental clinic three hours after sustaining a traumatic injury at home, which resulted in occlusal interference and discomfort. Clinical examination revealed an alveolar bone fracture involving teeth #51 and #52, as well as lateral luxation of tooth #51. The displaced bone segment and luxated tooth were repositioned and stabilized using a wire splint, and post trauma care instructions were provided. One week later, the child returned following a second traumatic episode, which had partially detached the splint and caused palatal displacement of the bone segment. The bone was repositioned again, and the splint was resecured for an additional four weeks. Upon splint removal, mobility of both the teeth and the bone was within normal limits, as confirmed in subsequent follow up. Five months later, a third traumatic incident occurred, with increased mobility observed in teeth #51, #61, and #62, though no occlusal interference or discomfort was noted. The mother declined radiographic evaluation, and post trauma instructions were provided. Over the following months, mobility increased, and radiographic examination showed physiological root resorption. At the latest followup, the upper central incisor had erupted without signs of traumarelated complications. Nonetheless, minor crown fractures were present, attributed to a recent injury.
Conclusion: The management of alveolar bone fractures in primary dentition relies heavily on child's cooperation.Nevertheless, favorable healing is achievable even in cases complicated by recurrent traumatic events.Clinicians should remain alert to the possibility of additional injuries throughout the course of treatment.

Keywords: Alveolar bone fracture, Lateral Luxation, Primary Dentition Trauma

0031

Do Surface Treatment for Late Replantation of Avulsed Permanent Teeth Prevent Ankylosis and Root Resorption? A Systematic Review of Animal Studies

Elif Kuru[1]
[1]Usak University School of Dentistry, Pediatric Dentistry Department, Usak, Turkey
Ahmed Elkhadem[2]
[2]Cairo University School of Dentistry, Pediatric Dentistry, Cairo, Turkey
Nitesh Tewari[3]
[3]Karolinska Institutet, Dental Medicine, Division of Pediatric Dentistry, Huddinge, Sweden
Ece Eden[4]
[4]Ege University School of Dentistry, Pediatric Dentistry, İzmir, Turkey

Background: Late replantation of avulsed teeth is often associated with poor prognoses due to root resorption and ankylosis. The present systematic review aimed to investigate the impact of various surface treatment methods and materials on the prevention of root resorption in animal studies.

Methods: The protocol was registered in the Open Science Framework. PubMed, EMBASE, Scopus, and Web of Science were searched on November 20, 2025. A search of the grey literature and a risk-of-bias assessment were performed. GRADE analysis was conducted to determine the certainty of the evidence.

Results: A total of 43 articles met the inclusion criteria. Several methods, such as topical antibiotics, lasers, growth factors, Emdogain, resorption inhibitors, and fluoride, have been studied. Three animal models had been used with rats being the most common. While bisphosphonates, topical antibiotics, diode laser, and growth factors showed promise in preventing root resorption and ankylosis, the ND-YAG laser, fluoride application, a Cathepsin K inhibitor, and Propolis were found to be ineffective. The risk of bias was moderate or high in the included studies. A notable limitation in these studies was the lack of randomization and blinding, which had an impact on their overall quality.

Conclusion: Surface treatments may have the potential to prevent root resorption and ankylosis following late replantation of permanent teeth. However, the best approach and material have yet to be discovered. Biphosphonates, topical antibiotics, diode laser, and external application of the growth factors showed better ability to prevent ankylosis and replacement resorption following late replantation of permanent teeth.

Keywords: avulsion, late replantation, root resorption

0100

Documentation quality of traumatic dental injuries in pediatric patients: a retrospective audit based on IADT guidelines.

Natalja Greķe[1], Ilona Viduskalne[1], Ieva Ivanova[1], Natalja Protasa[1]
[1]Rīga Stradiņš University, Institute of Stomatology, Department of Pediatric Dentistry, Riga, Latvia

Background:
Accurate documentation of traumatic dental injuries (TDIs) is essential for diagnosis, treatment, and long-term follow-up. However, adherence to recommended documentation standards in clinical practice remains unclear.

Objective:
To evaluate the completeness and quality of TDI documentation in pediatric patients.

Methods:
A retrospective audit of electronic dental records was conducted at the RSU Institute of Stomatology. All cases of traumatic dental injuries presenting in 2025 were screened. Records were included if they corresponded to the first presentation for a given injury and if the trauma had occurred within one month prior to presentation. Follow-up visits were excluded. Documentation variables were assessed using a standardized scoring system (0–3), and overall compliance (%) was calculated. Inter-rater reliability was assessed using Cohen's kappa based on the independent re-evaluation of 5% of records. Statistical analysis included the Kruskal–Wallis test with permutation.

Results:
A total of 619 records were included. The mean documentation compliance was 28.4%. Key clinical parameters were frequently missing, including amnesia (99.3%), percussion sound (98.3%), and intraoral photographs (96.4%). Documentation quality differed significantly between diagnosis groups ($p = 0.012$) and age groups ($p < 0.001$), with lower compliance observed in younger children. Inter-rater agreement was good ($\kappa = 0.93$).

Conclusion:
Documentation of TDIs is incomplete and inconsistent. Critical diagnostic parameters, particularly neurological findings, are frequently omitted. This represents a significant gap between clinical guidelines and real-world practice. The implementation of structured documentation protocols may improve clinical practice and patient safety.

Keywords: Traumatic dental injuries, Documentation quality, Pediatric dentistry

0150

Effect of splint rigidity on tooth displacement and stress distribution in horizontal root fractures: an experimental and finite element study

Carlos José Soares[1], Paulo César Junqueira[1], Caroline Orsi[1], Airin Rondón[1], Maribí Isomar Lozada[1], Nitesh Tewari[2], Georgios Tsilingaridis[3], Priscilla Soares[1]
[1]Federal University of Uberlandia , Uberlandia , Brazil
[2]All India Institute of Medical Sciences, New Delhi, India
[3]Karolinska Institutet, Stockholm, Sweden

Background: The splinting type can influence the stabilization of the horizontal root tooth fractures compromising the healing process.
Objective: This study aimed to evaluate the effect of splint rigidity and fracture location on tooth displacement and stress distribution in horizontal root fractures. Methods: A 3D printed maxillary model was generated by cone-beam CBCT. Horizontal root fractures at the cervical, middle, and apical root central incisor thirds were simulated and the adjacent central incisor served as a control. Splinting were created using wire/resin composite with different rigidities, flexible- 1.0 mm nylon line, semi-rigid- 0.6 mm steel wire, and rigid- 0.9 mm steel wire. No-splint fractured tooth was used as a negative control. The coronal tooth displacement (mm) was measured using a deflectometer (Instron) during the initial and after biting cyclic loading of the anterior teeth with 1 Hz between 25-50 N. Three-dimensional finite element models were created based on the same CBCT. A nonlinear biting force analysis was performed to evaluate the displacement and stress distributions. Displacement data were analyzed by two-way ANOVA followed by Tukey test ($\alpha = 0.05$).
Results: Stress distributions were analyzed qualitatively using modified von Mises stress (MPa). The tooth displacement of non-splinted teeth increased significantly from the apical to cervical root tooth fractured ($p < 0.01$). All splinting types significantly reduced coronal tooth displacement and the stress concentration at fracture line ($p < 0.01$). Stress concentration at fracture line was higher for cervical and non-splinted teeth. The use of 0.9 mm steel wire resulted in significantly lower than intact tooth. Flexible splinting using 1.0 mm nylon line and semi-rigid splinting using 0.6 steel wire resin composite provided sufficient stabilization across all fracture levels, effectively limiting displacement and maintaining stress/displacement closer to that of intact teeth.
Conclusion: FEA and experimental results showed high similarity validating both methods.

Keywords: Finite element analysis, Root fracture, Splint rigidity

0127

External Inflammatory Root Resorption Following Intrusive Trauma in an Immature Incisor: A Case Report

NUR ADLINA DIYANA BT MD ISMAIL[1]
[1]Universiti Malaya, Faculty of Dentistry, Kuala Lumpur, Malaysia

Introduction: External inflammatory root resorption (EIRR) is a pathological sequela of dental trauma that may lead to progressive loss of tooth structure if not diagnosed and managed promptly. EIRR is initiated when bacterial contamination of the root canal system coincides with damage to the protective cementum, allowing inflammatory mediators to activate clastic cells and resorb dental hard tissues. Early intervention through disinfection of the root canal system is critical to halt progression and improve prognosis.

Case Report: This case report describes the diagnosis and management considerations of EIRR in a 12-year-old patient presenting with a history of intrusive trauma to the maxillary central incisors three years prior to presentation. The affected teeth had initially re-erupted spontaneously and remained asymptomatic until the patient developed intermittent pain and swelling approximately 11 months before referral. Patient is a healthy, cooperative patient with good oral hygiene and no active caries. Radiographic assessment demonstrated an immature, non-vital maxillary right central incisor (tooth 11) with features consistent with external inflammatory root resorption and associated periapical radiolucency. Pulp sensibility tests were negative, supporting the diagnosis of pulpal necrosis complicated by EIRR. Management focused on eliminating intracanal infection to arrest the resorptive process. Initial treatment involved pulp extirpation followed by placement of calcium hydroxide intracanal medicament, with subsequent replacement at the follow-up visit. A multidisciplinary approach was adopted, incorporating both paediatric and orthodontic input. Treatment options discussed included apexification with preservation of the tooth alongside growth modification and future orthodontic alignment, or extraction with space management and prosthetic/orthodontic substitution.

Conclusion: This case highlights the importance of long-term monitoring following dental trauma, even in cases of apparent spontaneous recovery. It emphasises the role of timely diagnosis, appropriate endodontic intervention, and interdisciplinary planning in managing immature teeth affected by EIRR, with the aim of preserving tooth structure and function while accommodating future growth and occlusal development.

Keywords: External inflammatory root resorption, Intrusive dental trauma, Immature permanent tooth

0023

From Avulsion to Survival: A Multicentric Retrospective Study of Prognostic Determinants in Replanted Permanent Teeth in Children

Sumaiyya Saleem[1]
[1]Sathyabama institute of science and technology, Pediatric and Preventive Dentistry, Chennai, India
Dhanraj Kalaivanan[2]
[2]Sathyabama Institute of Science and Technology, Pediatric Dentistry, chennai, India
Deepesh Prajapati[3]
[3]Breathe Right Dental Clinic, Pediatric Dental Surgeon, Jaipur, India

Background:
Avulsion of permanent teeth is one of the most severe traumatic dental injuries in children, often compromising long-term outcomes. Although replantation is the treatment of choice, pediatric-specific evidence on survival patterns and prognostic determinants remains limited and heterogeneous.

Objective:
To evaluate prognostic factors and long-term clinical and radiographic outcomes of replanted avulsed permanent teeth in children and adolescents.

Methods:
A multicentric retrospective cohort study was conducted across pediatric dental departments and private practices. Records of children aged ≤14 years with replanted avulsed permanent teeth and a minimum follow-up of 12 months were included. Each tooth served as the unit of analysis. Data included demographic, injury-related (extra-alveolar time, storage medium), tooth-related (root development stage), and treatment-related variables (splinting, antibiotics, endodontic care). Primary outcome was tooth survival; secondary outcomes included pulpal status and periodontal healing, particularly root resorption. Survival analysis and multivariable regression identified independent prognostic factors.

Results:
Among ≥50 replanted teeth, most injuries involved maxillary incisors, frequently presenting with prolonged extra-alveolar time (>60 minutes) and suboptimal storage. Despite this, high tooth retention (88.9%) was observed. Favorable outcomes were more common with shorter extra-alveolar time, though not statistically significant in closed (p=0.361) or open apex teeth (p=0.247). Storage medium showed no significant association with outcomes (p>0.05). However, extra-alveolar duration significantly influenced outcomes in open apex teeth (p=0.007), but not in closed apex teeth (p=0.062). Root development stage was significantly associated with outcomes in open apex teeth (p≤0.002), with advanced stages demonstrating better healing.

Conclusion:
High survival and favorable healing were observed despite delayed replantation and suboptimal storage. Traditional prognostic factors showed limited and inconsistent influence, highlighting the regenerative potential of immature teeth and supporting replantation even in less-than-ideal conditions.

Keywords: Dental Avulsion, Tooth survival, Prognostic factors

0129

Healing Beyond Trauma: A Three-Year Follow-Up of Subluxation and Lateral Luxation in Immature Incisors

Nicholas Li Jie Thong[1]
[1]Universiti Malaya, Faculty of Dentistry, Kuala Lumpur, Malaysia

Introduction

Traumatic dental injuries in children present unique challenges, particularly in immature permanent teeth where pulpal healing potential must be balanced against the risk of necrosis. Luxation injuries require timely intervention and structured long-term follow-up to optimise outcomes.

Case Report

A 6-year-old boy presented with subluxation of tooth 11 and lateral luxation of tooth 21 following a fall. Tooth 21 was palatally displaced with occlusal interference and was repositioned under intravenous sedation in the emergency setting, followed by placement of a glass ionomer cement (GIC) wire splint. The splint was partially dislodged within two weeks and was subsequently replaced with a composite-wire splint under improved isolation. Both teeth exhibited open apices (Cvek stage 2) and were initially non-responsive to pulp sensibility testing, although responses to cold testing were positive.

The patient was managed conservatively with regular clinical and radiographic follow-up in accordance with trauma guidelines. Splinting was maintained for four weeks, followed by periodic pulp sensibility testing and radiographic assessment to monitor healing. Over a three-year period, both teeth demonstrated favourable outcomes, including continued root maturation to Cvek stage 4, resolution of periodontal ligament widening, and sustained positive pulp sensibility responses. No signs of pulp necrosis, inflammatory root resorption, or ankylosis were observed. Soft tissue healing was uneventful, with stable gingival architecture. Behavioural management strategies enabled improved cooperation, progressing from Frankl 2 to Frankl 4, facilitating compliance with long-term follow-up.

Conclusion

Immature luxated teeth can demonstrate favourable healing with conservative, guideline-based management and careful long-term monitoring.

Keywords: Dental trauma, Luxation injuries, Immature permanent teeth

0134

Immediate Management and Two-Year Outcome of Cvek Pulpotomy in a Traumatised Immature Permanent Incisor.

Su Reen Liew[1] , Shani Ann Mani[2]
[1]Universiti Malaya, Faculty of Dentistry, Kuala Lumpur, Malaysia

Introduction:
Management of complicated crown fractures in immature permanent incisors is time-sensitive because preservation of pulp vitality is essential for continued root maturation. This case highlights emergency care, early definitive vital pulp therapy, and long-term follow-up after traumatic injury.

Case report:
A healthy 9-year-3-month-old boy presented at the emergency department after an accidental fall at school with lower lip abrasion, an uncomplicated crown fracture of upper right central incisor (tooth 11), and a complicated crown fracture of upper left central incisor (tooth 21) with approximately 1 mm pulp exposure. At presentation, the child was crying, distressed, and uncooperative. Immediate treatment prioritised pain control, pulp protection, and soft tissue management. A glass-ionomer bandage was done on tooth 11 and direct pulp capping with calcium hydroxide after achieving haemostasis was done on tooth 21 since bioactive calcium-silicate cement was not available in the Emergency Department. Within 24 hours, Cvek pulpotomy using Biodentine as pulp medicament and composite restoration was done on tooth 21 as definitive management. Composite resin restoration on tooth 11 was done in a subsequent visit. Follow-up included pulp sensibility and periapical radiographs at regular intervals based on guidelines. Clinically, tooth 21 was asymptomatic and had normal response to pulp sensibility tests at all review visits up to 2 years post trauma. Radiographically, complete root development was evident at 1 year follow-up, with no evidence of pulpal or periapical pathology at 2-year review. Additional preventive management included a custom mouthguard and interceptive orthodontic planning to reduce the risk of recurrent trauma.

Conclusion:
This case depicts that even when ideal materials are unavailable at the time of trauma presentation, prompt definitive follow-up with the recommended treatment can still deliver stable outcomes in young permanent teeth.

Keywords: Complicated crown fracture, Cvek pulpotomy, Apexogenesis

0124

Inverted mesiodens in traumatized dento-alveolar area - various considerations

Agata Koprowicz[1]
[1]Polish Endodontic Association, Country representative, Medical University of Lodz, Kielce, PL
[1]Medical University of Lodz, Łódź, PL

Introduction
The vast majority of traumatic dental injuries occur in children and teenagers. In addition to health or dental problems this may seriously affect their psychological wellbeing. The most frequent type of trauma in permanent and immature dentition are luxations and crown fractures, with or without pulp exposure. Children with maloccusion are more prone for injuries. The clinical situation may become more complicated when supernumerary teeth are present in the traumatized dento-alveolar area. This case report aims to discuss about the difficulty and variant aspects of diagnosis and treatment of the traumatized teeth adjacent to the supernumerary tooth.
Case report
A 9-year-old girl with parents reported to the dental office after dental traumatic injury that took place during physical education lesson. The patient cried a lot and agreed to the examination with a great reluctance. She suffered from a complicated fracture of crowns of teeth 11 and 21. Only the fragment of tooth 21 was saved. Both maxillary incisors reacted to thermal stimulus and no mobility was revealed. Distoocclusion of mixed dentition with an advanced protrusion of maxillary incisors was detected. A parallel radiograph was taken uncovering an inverted supernumerary tooth in apical area of tooth 21. Thus, cone-beam computed tomography was performed to obtain better analysis. Partial pulpotomy was performed in both teeth under local anesthesia with Biodentine and the recovered fragment of crown of tooth 21 was reattached and the tooth 11 was restored with composite resin. Follow up visits was set up 2 days, 2, 4 and 10 weeks after dental traumatic injury.
Conclusion
An inverted supernumerary tooth located in the apical area of immature permanent maxillary incisor may influence diagnostic method and treatment option. The injury force distribution may differ from cases with no anatomical anomalies. The proximity of mesiodens to the root of permanent incisor in 9-year-old patient may impede analysis of the development status of the apex and hinder differentiation the status of periapical tissues and luxation.

Keywords: Apexification, Maxillary central incisor, Inverted supernumerary tooth

0148

Management of a Combined Avulsion and Uncomplicated Crown Fracture of Tooth 21 in an 8-Year-Old Patient using extraoral endodontic treatment – case report with 5 months follow-up

Ramiar Karim[1]
[1]University medicine of Greifswald, Department of Paediatric dentistry, 17489 Greifswald, Germany
Hiba Modawi[2]
[2]University medicine of Greifswald, Department of Paediatric dentistry, 17489 Greifswald, Germany
Christian Heinz Splieth[3]
[3]University medicine of Greifswald, Department of Paediatric dentistry, 17489 Greifswald, Germany
Julian Schmoeckel[4]
[4]University medicine of Greifswald, Department of Paediatric dentistry, 17489 Greifswald, Germany

Introduction
Avulsion is a severe dental injury requiring immediate, complex management for tooth survival. Prognosis depends heavily on extra-oral dry time (EODT) and the timing of root canal treatment to prevent inflammatory resorption.

Case Report
An 8-year-old female patient presented with a traumatic dental injury to the upper left central incisor (tooth 21) following an accidental fall onto her face while exiting the school bus on her way home. Clinical examination revealed a combined injury: a complete avulsion associated with an uncomplicated enamel-dentine fracture. The tooth had been kept dry for about 120 minutes prior to arrival and was placed immediately in office into tooth rescue solution (Miradent SOS Zahnbox, Germany). The patient exhibited a high caries risk with multiple active lesions and poor oral hygiene, increasing the risk of secondary infection. Due to the prolonged EODT and logistical challenges—the family lived far from the clinic, limiting the child's ability to tolerate frequent invasive visits—a streamlined approach was adopted. Immediate extraoral endodontic treatment including retrograde filling of the apex was performed using a bioactive calcium disilicate cement (Biodentine XP, Septodont, France) to minimize the risk of replacement resorption. The tooth was then immediately replanted and stabilised with a flexible splint for 3 weeks. Follow-up examinations were conducted at one week, 3 weeks followed by two and 5 months. Radiographic and clinical interpretations showed no signs of inflammatory or replacement resorption, and the tooth remained asymptomatic and functional.

Conclusion
This case highlights that the potential of bioactive materials like Biodentine XP for immediate extraoral endodontic treatment for a successful management of avulsed teeth with prolonged extra-oral time. This approach reduces invasive interventions and improves long-term prognosis, particularly for pediatric patients with high caries risk, reduced cooperation, or limited access to rural care.

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Keywords: Avulsion, Extraoral endodontic treatment, Bioactive materials

0128

Management of a Fractured Tooth via Autotransplantation: A 12-Year Longitudinal Follow-up

Yu-Chen Lee[1]
[1]Cathay General Hospital, Department of Oral Medicine, Taipei City, Taiwan

Introduction
Loss of tooth structure increases the risk of catastrophic fractures, such as vertical root fractures or split teeth, which often lead to an unfavorable prognosis and eventual tooth loss. While dental implants are a common restorative choice, tooth autotransplantation serves as a viable biological alternative for rehabilitating the edentulous site. This case report aims to describe the successful clinical management of a fractured tooth via autotransplantation with long-term stability.

Case Report
A 30-year-old female was referred for root canal retreatment of tooth 46 due to the presence of separated instruments and a sinus tract. Clinical examination revealed percussion tenderness without swelling, while periodontal probing depths were within normal limits. Radiographic examination showed radiopaque fragments in both mesial and distal roots and periapical radiolucency. The diagnosis was previously initiated therapy with chronic apical abscess. During treatment, the instruments were successfully removed, but a perforation occurred. Despite the repair, tooth fracture occurred prior to canal obturation, rendering the tooth non-restorable. Due to the patient's strong preference for a biological restoration over dental implants or conventional bridges, tooth autotransplantation was performed as a minimally invasive approach. Radiographic follow-up at one year revealed the formation of a continuous lamina dura. At the five-year follow-up, the transplanted tooth remained functional without signs of root resorption. Remarkably, clinical and radiographic outcomes remained stable and excellent throughout the 12-year follow-up period.

Conclusion
The success of tooth autotransplantation depends on a comprehensive sequence of careful case selection, precise surgical procedure, and appropriate endodontic and restorative treatment. When these criteria are met, autotransplantation can achieve a highly favorable and sustainable long-term outcome, serving as a reliable alternative to artificial prostheses.

Keywords: autotransplantation

0115

Management of an Avulsed Immature Maxillary Left Permanent Central Incisor: A Case Report

Ceyda Ipek Isseven[1]
[1]Marmara University, Faculty of Dentistry, Istanbul, Turkey
Figen Eren[2]
[2]Marmara University, Faculty of Dentistry, Istanbul, Turkey

Introduction: Tooth avulsion is one of the most severe traumatic dental injuries (TDI), in which the timing of the treatment directly affects the outcome. In cases of avulsion, replantation is a highly effective treatment, as it helps preserve alveolar bone and maintain future treatment options. This case presents the 2-year clinical course of an avulsed, immature permanent central incisor that was initially treated with replantation.

Case Report: A 6-year-old boy was admitted to our clinic with an avulsed maxillary left permanent central incisor with incomplete root development. The tooth had been stored in milk for 2 hours. After anamnesis was obtained, replantation was decided on as the optimal treatment. The patient and parents were informed about the treatment procedure, and informed parental consent was obtained. Following local anesthesia, the alveolar socket was inspected closely, and both the tooth and the socket were gently irrigated with sterile saline. The tooth was then replanted in its anatomical position and stabilized with a passive flexible splint bonded with composite resin. To avert further trauma during the healing period, occlusion was raised with Transbond Plus (3M Unitek, Monrovia, CA, USA). Systemic antibiotics were prescribed, and the patient was referred to a physician for assessment of tetanus prophylaxis. The splint was removed after two weeks. At the 6-month follow-up, pulp necrosis was observed, and endodontic treatment was performed with mineral trioxide aggregate (MTA) obturation. At approximately 19 months after replantation, the patient presented to our clinic with severe mobility, and the tooth was extracted. Following extraction, prosthetic rehabilitation was planned to restore esthetics and function.

Conclusion: Even when the long-term survival of a replanted tooth is uncertain, replantation remains a valid approach as it attempts to preserve function, esthetics, alveolar bone, and open the way for future treatment options. Although early intervention improves the effectiveness of replantation, long-term clinical and radiographic follow-up remains essential for monitoring the healing process and anticipating potential complications.

Keywords: Traumatic Dental Injuries, Tooth Avulsion, Replantation

0114

Management of Complicated Crown Fracture of Tooth 21 Using Biodentine: A Case Report

Kateryna Zhmurko [1]
[1]Holistic Medicine Dental Clinic/ Medical Club 88, Lviv , Ukraine

Introduction:
Complicated crown fractures of anterior teeth involve enamel, dentin, and pulp exposure and require prompt management to preserve pulp vitality and ensure optimal esthetic and functional outcomes. Bioactive materials such as Biodentine are widely used in vital pulp therapy due to their favorable biological properties.

Case Report:
A patient presented with trauma to the maxillary left central incisor (tooth 21). Clinical examination revealed a complicated crown fracture with pulp exposure. The tooth responded positively to vitality tests. Radiographic examination showed no signs of periapical pathology or root fracture.

A conservative treatment approach was selected. Under local anesthesia and rubber dam isolation, a partial pulpotomy was performed. Hemostasis was achieved, followed by placement of Biodentine as a pulp capping material. The tooth was restored using an adhesive composite restoration to re-establish morphology, function, and esthetics.

Results:
At follow-up, the tooth remained asymptomatic, with positive vitality tests and no radiographic signs of periapical pathology. The restoration demonstrated satisfactory functional and esthetic outcomes.

Conclusion:
Partial pulpotomy using Biodentine is an effective and reliable treatment for complicated crown fractures. Timely intervention and appropriate material selection are essential for maintaining pulp vitality and achieving favorable clinical outcomes.

Keywords: dental trauma, complicated crown fracture, Biodentine

0136

Management of Complicated Crown Fractures in Permanent Incisors: A Three-of Partial Pulpotomy

Yaren Yener[1]
[1]Istanbul University, Faculty of Dentistry, Department of Pedodontics, Istanbul, Turkiye
Bilgenaz Eyuboglu Armagan[2]
[2]Istanbul University, Faculty of Dentistry, Department of Pedodontics, Istanbul, Turkiye
Yonca Bircan Ercin[3]
[3]Istanbul University, Faculty of Dentistry, Department of Pedodontics, Istanbul, Turkiye
Arzu Pinar Erdem[4]
[4]Istanbul University, Faculty of Dentistry, Department of Pedodontics, Istanbul, Turkiye

Introduction: Orofacial trauma often results in complicated crown fractures, necessitating immediate intervention to preserve pulp vitality. In permanent teeth, the goal is maintaining pulp health to support either continued root development or long-term functional stability. Partial pulpotomy is a conservative treatment approach aimed at removing superficially inflamed pulp tissue while maintaining the vitality and function of the remaining healthy pulp.

Case Report: This report presents three pediatric trauma cases managed conservatively. All patients presented on the day of injury; clinical and radiographic examination confirmed pulp exposure in all cases.
• Case 1: An 8-year-old boy with a fractured immature mandibular incisor after a fall; tooth 41 had sustained a complicated crown fracture.
• Case 2: A 9-year-old girl presented with a complicated crown fracture of immature tooth 11 due to a fall.
• Case 3: A 14-year-old boy with a complicated crown fracture of a mature permanent maxillary central incisor due to a collision.
In all cases, partial pulpotomy was performed by removing 2-3 mm of superficial pulp tissue. Following hemorrhage control with diluted sodium hypochlorite (2.5%), non-stainig MTA was placed and teeth were restored with composite resin. Clinical and radiographic follow-ups at 8-16 months confirmed all treated teeth remained asymptomatic, maintained vitality, and showed either progressive root development or stable pulp health.

Conclusion: These cases highlight the importance of early diagnosis and conservative management in complicated crown fractures of permanent teeth. Partial pulpotomy serves as an effective treatment supporting physiological root maturation and eliminates the need for invasive endodontic procedures, regardless of the stage of root development.

Keywords: Pulpotomy, Crown Fracture, Permanent Teeth

0126

Management of Intrusion and Subsequent External Inflammatory Root Resorption in a Paediatric Patient

YOON CHEN JAMES LIAN[1]
[1]Universiti Malaya, Department of Orthodontics, Paediatric and Special Care Dentistry, Kuala Lumpur, Malaysia

Introduction: Dental intrusion, the apical displacement of a tooth into its socket, is a severe luxation injury in permanent dentition. This injury represents the total displacement of the tooth into the alveolar bone, resulting in crushing of the periodontal ligament and the neurovascular bundle. In paediatric patients, where alveolar bone is relatively pliable and roots are often immature, the management remains highly complex. Intrusion causes significant damage, increasing the risk of pulp necrosis and root resorption.

Case Report: A 9-year-old patient presented 17 hours after a fall in a playground. Clinical examination revealed a healthy, cooperative patient with fair oral hygiene. Patient suffered abrasion wounds to the lower lip and chin. Teeth 21 and 22 were both intruded by 8mm and 3mm respectively. Additionally, tooth 21 suffered an uncomplicated crown fracture involving the incisal edge. Radiographic assessment demonstrated immature maxillary left central and lateral incisors. Pulp sensibility tests were done and both teeth had a negative response for electric pulp test (EPT) but positive response within normal limits for cold test. As per guidelines, both teeth were allowed to erupt spontaneously while being reviewed for signs of disease progression. Tooth 22 was eventually repositioned spontaneously within 1 month of the injury. However, tooth 21 eventually developed signs of external inflammatory root resorption (EIRR) during the 1 month review. Initial treatment involved pulp extirpation followed by placement of Ledermix intracanal medicament. This was later replaced with calcium hydroxide during subsequent appointments to arrest the resorption and promote periapical healing.

Conclusion: Managing dental intrusion in immature teeth requires balancing conservative observation with timely intervention. While spontaneous eruption is preferred to minimize additional trauma, this case underscores the high risk of resorptive complications. Diligent clinical and radiographic monitoring is indispensable for early detection of EIRR. Prompt endodontic therapy remains essential for clinical success to preserve the dentition and manage the sequelae of severe luxation injuries in paediatric patients.

Keywords: intrusion, root resorption

0070

Management of persistent occlusal pain in traumatized maxillary anterior tooth following delayed treatment

Qiang Li[1]
[1]Peking University School of Stomatology, Department of Emergency, Beijing, China

Introduction
Delayed treatment of maxillary anterior tooth trauma with lateral luxation frequently leads to complications. Cone-beam computed tomography (CBCT) exhibits limited diagnostic resolution for apical microcracks, whereas apical microsurgery serves as an effective modality for both diagnosis and management of such lesions, offering valuable clinical insights.

Case Report
A 29-year-old female presented with a 5-month history of maxillary anterior tooth trauma, including lateral luxation of tooth #11 and an enamel-dentin fracture of tooth #21. She declined the initial treatment plan and subsequently developed crown discoloration, occlusal pain, and pulp hypersensitivity. Root canal therapy alleviated the pulp symptoms; however, persistent occlusal pain in tooth #11 remained. Occlusal adjustment was performed to relieve the persistent occlusal pain but proved ineffective. Further clinical examination revealed tenderness to biting and percussion of tooth #11. CBCT showed a widened periodontal ligament space and apical osseous fenestration of tooth #11, with normal findings for tooth #21. Apical microsurgery was performed on tooth #11 to identify apical microcracks. During the staining procedure, a microcrack was detected after a 3 mm apicoectomy. Following an additional 2 mm apicoectomy (resulting in a 5 mm total resection), no microcrack was observed. At the 3-month follow-up, occlusal pain in tooth #11 had resolved, and tooth function was fully restored.

Conclusion
Prompt reduction is essential for laterally luxated teeth, as delayed treatment carries a high risk of complications. CBCT demonstrates low diagnostic efficacy for apical microcracks, and apical microsurgery is an effective approach for the diagnosis and treatment of persistent occlusal pain following dental trauma.

Keywords: traumatized tooth with delayed treatment, persistent occlusal pain, microapical surgery

0006

Management of Soft Tissue Injuries in Dental Trauma: A Retrospective Observational Study of Dental Records

Lotte van der Hoek[1]
[1]University Medical Center Utrecht, Department of Oral and Maxillofacial Surgery, Utrecht, The Netherlands
Maxim Chan[2]
[2]Amsterdam University Medical Center, Department of Oral and Maxillofacial Surgery, , Amsterdam, The Netherlands
Renee Helmers[3]
[3]Amsterdam University Medical Center, Department of Oral and Maxillofacial Surgery, Amsterdam, The Netherlands
Ellen Van Cann[4]
[4]University Medical Center Utrecht, Department of Oral and Maxillofacial Surgery, , Utrecht, The Netherlands
Eelco Bergsma[5]
[5]University Medical Center Utrecht, Department of Oral and Maxillofacial Surgery, Utrecht, The Netherlands
Leander Dubois[6]
[6]Amsterdam University Medical Center, Department of Oral and Maxillofacial Surgery, Amsterdam, The Netherlands

Background: Traumatic dental injuries frequently co-occur with soft tissue injuries, particularly following high-energy trauma. While detailed management guidelines exist for traumatic dental injuries, guidance for soft tissue injuries remains scarce, potentially leading to inconsistent or insufficient care in general dental practice.

Objective: To examine the relationship between soft tissue injuries and traumatic dental injury types, describe the complexity and anatomical distribution of soft tissue injuries, and evaluate their management and referral patterns in Dutch dental emergency centers.

Methods: A retrospective, multicenter, observational study was conducted using 252 patient records from ten dental emergency centers (January–July 2024). All included patients presented with both traumatic dental injuries and soft tissue injuries. Data from clinical notes, photographs, radiographs, and dental treatment codes were analyzed. Injuries were categorized by type, size, depth, and complexity. Logistic regression and chi-square tests were used to assess associations.

Results: A total of 581 soft tissue injuries and 635 traumatic dental injuries were identified. Lacerations (37%) and excoriations (34%) were most common. Complex traumatic dental injuries were significantly associated with more severe soft tissue injuries (OR = 2.64, p = .045). A significant association was also found between inner lip lacerations and fractured teeth (p = .006). With respect to management, 72% of soft tissue injuries were not treated, and only 8% were referred. Notably, treatment and referral decisions did not consistently correspond with wound size or depth. Antibiotic use and tetanus prophylaxis were inconsistently applied and poorly documented.

Conclusion: Soft tissue injuries are common in dental trauma but are frequently undertreated or inconsistently managed. The severity of soft-tissue involvement tends to increase with the complexity of dental injuries, underscoring the need for structured clinical protocols, evidence-based wound care, and clear referral criteria in emergency dental practice.

Keywords: Soft tissue injuries, Wound management, Clinical decision making

0096

Multidisciplinary Management of a Subgingival Crown-Root Fracture in a Patient with Autism Spectrum Disorder: A Case Report

Zabairachna Polina[1]
[1]Dental clinic “Tilky Dity”, Kharkiv, Ukraine

Introduction
Crown-root fractures of permanent anterior teeth (Andreasen’s classification of dental trauma) are complex injuries involving enamel, dentin, cementum, and often the pulp, with subgingival or subcrestal extension that complicates restorative management. Treatment is particularly challenging in patients with autism spectrum disorder (ASD) due to limited cooperation and restrictions in diagnostic and therapeutic procedures.

Case report
A 15-year-old male patient with ASD presented with traumatic injury of tooth 11 (FDI: maxillary right central incisor). The mechanism of injury was unknown. Clinical examination revealed a complicated crown-root fracture extending below the gingival margin and approximately 6 mm apical to the alveolar bone crest with pulpal exposure. Cone-beam computed tomography was indicated but not performed due to severe behavioral limitations.
The tooth had been exposed to the oral environment for approximately one week prior to presentation. Upon exposure, the pulp tissue was vital, with severe and persistent bleeding that complicated hemostasis. Clinical findings suggested irreversible pulpitis.
Orthodontic extrusion was considered,however, it was not feasible due to the patient’s non-cooperative behavior and inability to tolerate prolonged orthodontic treatment.

Treatment was performed under inhalational general anesthesia using Sevoflurane. A multidisciplinary approach was applied. The coronal fragment was removed, orthograde endodontic treatment was completed, and alveolar bone recontouring was performed to achieve adequate biological conditions for restoration. Definitive rehabilitation was achieved using direct composite resin restoration.

Conclusion
Management of crown-root fractures in patients with autism spectrum disorder requires individualized treatment planning based on behavioral and clinical limitations. Treatment under general anesthesia may allow predictable short-term rehabilitation, however, long-term prognosis is dependent on the feasibility of regular follow-up, which may be limited in patients with special healthcare needs. Within these constraints, tooth preservation in severe subgingival or subcrestal fractures can be considered a viable option to maintain function and occlusal stability.

Keywords: Crown-root fracture, Autism spectrum disorder, General anesthesia

0041

Organisation of Dental Emergency Care In The Netherlands: Perspectives from General Acute Care

Maxim Chan[1]
[1]Amsterdam UMC, Oral and Maxillofacial Surgery, Amsterdam, the Netherlands

Background
Dental emergencies frequently present to GP Urgent Care Centre (UCC) and hospital emergency rooms (HERs), despite being primarily the responsibility of dentists. Limited integration between dental and medical acute care systems may lead to inefficiencies, delays, and suboptimal patient pathways.

Objective
To evaluate the organisation of dental emergency care in the Netherlands from the perspective of UCCs and HERs, with a focus on accessibility, collaboration, triage, and referral pathways.

Methods
A cross-sectional survey was conducted among all UCCs (n=103) and HERs (n=82) in the Netherlands between July 2023 and February 2024. The questionnaire addressed protocols, collaboration with dental services, referral processes, and patient pathways. Descriptive analyses were performed, and geographical accessibility of dental emergency centres (DECs) was assessed.

Results
The response rate was high, with 83% of UCCs and 82% of HERs in the Netherlands participating. Most UCCs (77%) and HERs (79%) reported no formal collaboration with dental emergency services. Patients often presented to UCCs and HERs due to poor findability and accessibility of dental services, as well as unfamiliarity with the system. Dental protocols were absent in 40% of UCCs and 74% of HERs, contributing to variation in triage and referral decisions. Referrals were predominantly conducted via cold transfers (72% UCCs; 76% HERs), potentially disrupting continuity of care. Additionally, geographical accessibility of DECs was uneven, with travel times exceeding 45 minutes in some regions.

Conclusion
Dental emergency care in the Netherlands is poorly integrated into the broader acute care system. Limited collaboration, inconsistent protocols, reliance on cold transfers, and uneven accessibility contribute to inefficiencies in patient pathways. Strengthening integration through centralised access points, shared triage standards, and structured referral pathways may improve coordination, accessibility, and quality of care.

Keywords: Organisation of Dental Emergency Care , General Acute Care , Collaboration

0026

Prognostic markers of post-traumatic external inflammatory root resorption in children: evaluation of pulpal blood flow and gingival crevicular fluid biomarkers

Małgorzata Jamka-Kasprzyk[1]
[1]Jagiellonian University Collegium Medicum, Developmental Age Dentistry Department, Krakow, Poland
Iwona Gregorczyk-Maga[2]
[2]Jagiellonian University Collegium Medicum, Developmental Age Dentistry Department , Krakow, Poland

Background
External inflammatory root resorption (EIRR) is a common sequela of traumatic dental injuries (TDI), particularly in children. Early diagnosis remains challenging due to the limited sensitivity of conventional radiographic methods. This study aimed to identify novel, non-invasive biomarkers for the early detection of post-traumatic EIRR by evaluating changes in pulpal blood flow and the composition of gingival crevicular fluid (GCF).

Materials and Methods
A cohort of 32 pediatric patients presenting within 48 hours of traumatic injury to permanent incisors was prospectively followed over a 6-month period. Clinical assessments were conducted at baseline and at three subsequent follow-up visits. At each time point, periapical radiographs were obtained to assess the presence of EIRR. Pulpal blood flow was measured using laser Doppler flowmetry (LDF), and GCF samples were collected from the affected teeth. The contralateral permanent first molar served as an internal control for both LDF measurements and GCF analysis. Interleukin-1 alpha (IL-1α) concentrations in GCF were quantified using enzyme-linked immunosorbent assay (ELISA).

Results
EIRR was diagnosed in 14 out of 32 teeth (43.8%) during the follow-up period. Teeth that developed EIRR demonstrated significantly reduced pulpal blood flow compared to control teeth at all examined time points, with a progressive decline observed over time. Furthermore, IL-1α concentrations in the GCF of EIRR-affected teeth were significantly elevated at the time of diagnosis compared to both control teeth and traumatized teeth that did not develop EIRR. At the final follow-up, IL-1α levels remained significantly higher in the EIRR group.

Conclusions
The development of EIRR following traumatic injury to permanent teeth with complete root formation is associated with a marked reduction in pulpal blood flow and a concomitant increase in IL-1α levels in GCF. These findings suggest that LDF measurements and GCF analysis of IL-1α may serve as valuable non-invasive biomarkers for the early detection and monitoring of EIRR.

Keywords: resorption, markers, children

0092

Pulpal–Periodontal Metaplasia Following Luxation and Avulsion Injuries in Immature Permanent Incisors: An Uncommon but Potentially Stable Healing Outcome

JAIME DIAZ[1]
[1]Universidad de La Frontera, Dental Faculty, Temuco, Chile
[1]Hospital Hernan Henriquez A., Paediatric Dentistry Unit, Temuco, Chile
ANDREA SEIFFERT[2]
[2]Universidad de La Frontera, Dental Faculty, Temuco, Chile
MACARENA VILLAR[3]
[3]Universidad de La Frontera, Dental Faculty, Temuco, Chile
CAMILA FIGUEROA[4]
[4]Universidad de La Frontera, Dental Faculty, Temuco, Chile

Introduction
Clinical and radiographic follow-up of immature permanent teeth following displacement injuries is essential for the early detection and appropriate management of healing complications. In some cases, long-term follow-up may reveal the formation of calcified tissue within the pulp space; however, the biological mechanisms underlying this phenomenon, as well as its clinical implications and long-term behavior, remain poorly understood and only sparsely reported in the literature.

Case report
Two young patients presented with avulsion and extrusive luxation of teeth 21 and 11, respectively, both exhibiting incomplete root development (Moorrees stages 4–5). In case (A), reimplantation was performed within 15 minutes of injury, whereas in case (B), repositioning was carried out within 45 minutes. Follow-up periods were 9 and 4 years, respectively. Throughout the observation period, both teeth remained asymptomatic, with normal responses to percussion testing and no clinical or radiographic signs of infection, ankylosis, or external root resorption.
In case (A), radiographic assessment at 6 months demonstrated partial arrest of root development and the persistence of a wide pulp canal. At 3 years, tooth exhibited infraposition with normal percussion test. Orthodontic extrusion was performed. At 9 years, CBCT imaging revealed a structure resembling osteoid tissue within the pulp chamber, consistent with pulp fibro-osseous metaplasia and suggestive of an internal periodontal ligament-like structure with organized features.
In case (B), radiographic examination showed severe arrest of root development and diffuse radiopaque tissue within the pulp space. The tooth was subsequently extracted for orthodontic reasons; micro-CT analysis revealed irregular mineralized tissue with features resembling trabecular bone and areas of structural organization.

Conclusion
This rare healing pattern may be associated with early intervention, open apex, pulp vitality, and damage to Hertwig's epithelial root sheath. Pulpal–periodontal metaplasia may represent a stable and functional outcome rather than treatment failure, supporting conservative management and long-term monitoring.

Keywords: Ingrowth of Mineralized Tissue, Pulp and periodontal healing, Immature teeth

0109

Regenerative Endodontic Treatment of Immature Permanent Teeth Following Trauma: An Effective Alternative Treatment Approach to Conventional Apexification

Hanna Sobczak-Zagalska[1]
[1]Medical University of Gdańsk, Division of Conservative Dentistry, Gdańsk, Polska
Marek Olejniczak[2]
[2]Medical University of Gdańsk, Division of Conservative Dentistry, Gdańsk, Polska
Adriana Goczewska[3]
[3]University Centre of Dentistry, Medical University of Gdańsk, Pediatric and Family Dentistry Clinic, Gdańsk, Polska
Aleksandra Molska[4]
[4]University Centre of Dentistry, Medical University of Gdańsk, Pediatric and Family Dentistry Clinic, Gdańsk, Polska

Introduction
Traumatic dental injuries in children frequently affect immature permanent teeth, often resulting in pulp necrosis, external inflammatory resorption and root development arrest. Conventional treatment methods, such as calcium hydroxide apexification or the use of apical barriers with bioceramic materials, do not allow for continued root formation so that long-term tooth prognosis may be compromised.
Regenerative endodontic treatment (RET) has been introduced as a biologically based, tissue-engineering alternative focused at repairing or restoring the damaged pulp-dentin complex to enable further root development.

Case Report
The presentation reports a clinical case series of RET performed in immature permanent teeth with post-traumatic pulp necrosis. Standard regenerative protocols were carried out, including minimal or no mechanical instrumentation, root canal disinfection with 2% sodium hypochlorite solution, the use of intracanal medicaments, induction of intracanal bleeding, and sealing with a biocompatible material with bioactive properties.
In all cases, resolution of clinical and radiographic signs of inflammation was achieved. Follow-up examinations demonstrated continued root development, including increased root length and thickening of dentinal walls. No adverse events were observed during the observation period.

Conclusion
RET appears to be an effective treatment approach for immature teeth with pulp necrosis following trauma, allowing both resolution of infection and continued root formation. These findings confirm that regenerative procedures represent a valuable alternative to traditional apexification techniques.

Keywords: Dental Trauma, Regenerative Endodontic Therapy, Avulsion

0003

Replacing an Avulsed Canine with a Third Molar Root Autotransplant: A Clinical Report

Olga Tishkina[1]
[1]PFUR, Disaster medicine, Moscow, Russia

Background: Traumatic avulsion of permanent teeth in adolescent patients presents a significant clinical challenge. Conventional implant therapy is contraindicated until skeletal growth is complete, and traditional options like removable dentures or resin-bonded bridges often lead to alveolar ridge resorption. While premolar autotransplantation is a recognized alternative, it carries risks to the donor tooth and requires future management of the donor site.

Objective: To present a novel technique for replacing an avulsed maxillary canine using an autogenous third molar root fragment to preserve bone volume and restore aesthetics in a growing patient.

Methods: A 14-year-old female presented with lateral luxation of incisors and avulsion of tooth #13 following a vehicular accident. A 3D-guided approach was employed: a surgical template was used to prepare the recipient socket based on CBCT planning. A mandibular third molar was selected as the donor.[1][2][3] The roots were separated using a surgical turbine under constant saline irrigation. After atraumatic extraction, a pulpotomy was performed on the root segment, followed by MTA (Mineral Trioxide Aggregate) pulp capping. The root autograft was then transplanted into the prepared site and stabilized.[1][4]

Results: At the 24-month follow-up, the patient showed excellent aesthetic and functional outcomes. Radiographic examination revealed root canal obliteration, indicating maintained pulp vitality and successful revascularization. Compared to traditional prosthetic solutions, this method provided faster rehabilitation and superior preservation of the alveolar bone volume.

Conclusion: Autotransplantation of a third molar root is a viable, low-risk alternative for canine replacement in adolescents. This technique is particularly suitable for patients with multi-rooted third molar anatomy, allowing for multiple „attempts” and providing a biological scaffold that maintains the alveolar ridge during growth.

Keywords: Avulsion, Autotransplantation, Third molar

0032

Severe Intrusion in the Mixed Dentition: Multidisciplinary Management of a Complicated UL1 Injury.

Dalal Alsallal[1]
[1]University of Manchester , University Dental Hospital of Manchester , Manchester , United Kingdom
Carly Dixon [2]
[2]University of Manchester , University Dental Hospital of Manchester , Manchester , United Kingdom
David Waring [3]
[3]University of Manchester , University Dental Hospital of Manchester , Manchester , United Kingdom

Background:
Intrusive luxation of permanent incisors in the mixed dentition are amongst the most severe dental injuries. Management is challenging due to complexity in diagnosis, concomitance injury, and need for multidisciplinary treatment planning. Treatment is further complicated when initial emergency treatment does not align with International Association of Dental Traumatology (IADT) guidelines.

Objective:
To present the multidisciplinary management of a severely intruded immature UL1 in an 8-year-old male and highlight clinical decision-making in accordance with IADT guidance.

Methods:
An 8-year-old boy sustained severe intrusion of UL1 whilst on a holiday resort. Partial surgical repositioning and composite splinting were carried out immediately post injury. On presentation to our unit two days later, clinical and radiographic examination confirmed severe intrusion of UL1 with open apex and an uncomplicated crown fracture. The splint was removed to allow spontaneous re eruption, with close clinical and radiographic monitoring. Due to a limited re eruption at 4 weeks, orthodontic extrusion was initiated using a fixed sectional appliance with 0.12NiTi. Pulp vitality was monitored throughout the follow up. At 15 weeks, signs of pulpal necrosis and radiographic pathology were detected, and root canal treatment was commenced. Obturation was completed using bioceramic TotalFill, followed by composite restoration and orthodontic palatal retention for 3 months.

Results:
Orthodontic extrusion achieved satisfactory repositioning of UL1 within the arch. Endodontic intervention-controlled external inflammatory resorption. At 12-month review, the UL1 remained functional with normal mobility and no clinical signs of ankylosis. Annual clinical and radiographic follow up is planned to monitor the developing dentition and due to ongoing risks of external replacement resorption and ankylosis.

Conclusion:
This case demonstrates the importance of staged, IADT guideline based management in intrusive injuries with immature apices. Early correction of initial treatment, timely orthodontic repositioning, and proactive endodontic therapy enabled preservation of aesthetics and function while maintaining future restorative options during growth.

Keywords: Intrusion , Complicated crown fracture , Orthodontic repositioning

0064

Socket-Shield–Based Partial Extraction Therapy for Alveolar Ridge Preservation Following Traumatic Root Fracture in a Growing Patient – A Case Report

Maciej Bodal[1]
[1]Medical University of Gdańsk, Division of Conservative Dentistry, Faculty of Medicine, Gdańsk, Poland
Hanna Sobczak-Zagalska[2]
[2]Medical University of Gdańsk, Division of Conservative Dentistry, Faculty of Medicine, Gdańsk, Poland

Introduction
Traumatic dental injuries in growing patients may lead to tooth loss, creating a complex clinical situation because implant placement must often be delayed until growth is completed. Following extraction, alveolar ridge resorption, particularly in the anterior maxilla, may compromise future implant therapy and esthetic outcomes. Partial extraction therapy (PET), including socket-shield–based approaches, aims to preserve the periodontal–bone complex and limit tissue resorption.

Case Report
A 13-year-old patient presented after a bicycle accident with crown fractures of the maxillary incisors. Initial treatment included direct composite restorations and endodontic therapy. Follow-up revealed a periapical lesion and an oblique root fracture confirmed by CBCT. Due to the unfavorable prognosis for conventional treatment, socket-shield–based PET was performed by retaining the buccal portion of the root to preserve the alveolar ridge. Because of the unfavorable fracture line, the apical portion of the prepared buccal root shield was left in place to avoid destabilization of the coronal shield segment. In view of the pre-existing inflammatory sinus tract and fracture involvement of the prepared shield, biomaterial placement was omitted to reduce the risk of infection-related complications. A temporary fiber-reinforced composite restoration was bonded to adjacent teeth as a minimally invasive interim solution. Healing progressed without complications. CBCT evaluation 4.5 months after the procedure showed a buccopalatal alveolar ridge width of 7.8 mm at the contralateral healthy site and 6.7 mm at the PET-treated site, corresponding to an approximately 14% reduction. Despite a slight discrepancy in gingival zenith level, the esthetic outcome remained satisfactory.

Conclusion
Socket-shield–based PET may be a valuable interim treatment option in growing patients with nonrestorable traumatically damaged teeth when implant placement must be delayed. These preliminary findings require long-term follow-up to confirm root shield stability, monitor alveolar ridge remodeling, and assess conditions for future implant therapy.

Keywords: dental trauma, root fracture, partial extraction therapy

0002

Successful conservative treatment of a fractured and luxated tooth after a bike accident in an adolescent patient: a three-year observation.

Julia Sieczak[1]
[1]Zakład i Katedra Protetyki Stomatologicznej Uniwersytetu Medycznego im. Piastów Śląskich we Wrocławiu, Wrocław, Polska
Anna Kokot[2]
[2]Medyczne Centrum Innowacji Wrocław Sp. z o.o., UCS - Uniwersyteckie Centrum Stomatologii, Wrocław, Polska
Beata Wilk-Sieczak[3]
[3]MSA-DENT sp. z o. o., Wrocław, Polska

Introduction:
In pediatric patients, sports and other outdoor activities are a frequent cause of dental trauma, among other injuries. It's crucial to start treatment as quickly as possible and carefully choose an approach that best benefits the patient's overall oral health.

Case report:
An athletic 13-year-old boy fell from a bike while riding in the mountains. Besides scratches on his upper and lower limbs and a suspected arm fracture, he hit his head on a protruding root, causing damage to both upper central incisors: tooth 11 - luxation and enamel and dentin fracture without pulp exposure, tooth 21 - subluxation; and to the surrounding soft tissues, including a tear in the upper lip. Due to a fear of a concussion, the patient was taken to the ER for further screening. He was able to get access to dental care the day after his accident. The staff of our dental office had educated both him and his parents on how to behave when dental trauma occurs. The tooth fragment was kept submerged in milk until the appointment.
The boy was used to dental procedures and cooperated well, which ensured the treatment proceeded without unnecessary complications. A conservative approach was chosen, deciding to bond fractured tooth fragments, perform reposition and splinting, set the hygiene routine, and use appropriate substances for the regeneration of soft tissue. After 3 years of periodic control, the pulp remains alive.

Conclusion:
When treating children, focusing on adaptation first can be a great help when performing complicated procedures, often essential when dealing with cases of dental trauma. Moreover, educating patients and their parents on what to do when faced with dental injuries can allow for more effective treatment. Usage of proper remedies promotes faster healing of the soft tissues.

Keywords: tooth injury, conservative treatment, sports trauma

0053

The conservative management of posttraumatic ankylosis after severe tooth intrusion

Peggy Herrmann[1]
[1]Hannover Medical School, Department of Conservative Dentistry, Periodontology and Preventive Dentistry, Hannover, Germany
Nadine Schlueter[2]
[2]Hannover Medical School, Department of Conservative Dentistry, Periodontology and Preventive Dentistry, Hannover, Germany
Anne-Katrin Luehrs[3]
[3]Hannover Medical School, Department of Conservative Dentistry, Periodontology and Preventive Dentistry, Hannover, Germany
Ralf Krug[4]
[4]University Hospital of Würzburg, Department of Conservative Dentistry and Periodontology and Center of Dental Traumatology, Würzburg, Germany

Introduction
Intrusions of permanent anterior teeth are rare but serious dental injuries. Traumatic damage of the root surface often leads to pathological root resorption and post-traumatic ankylosis. It may arrest alveolar ridge development in growing patients, resulting in infraocclusion and uncertain long-term prognosis. Treatment strategies for adolescent patients consider gender-specific pubertal growth patterns and individual growth peaks.

Case Report
An 11-year-old girl presented after a rollerblading accident with a severe intrusion (infraposition of up to 10 mm) of the left central incisor, and with an enamel-dentin fracture. Ruptured and compressed parts of the periodontal ligament were diagnosed, as well as a fractured alveolar process and multiple lacerations to the gingiva and the upper lip.

Treatment
Under local anesthesia, the intruded tooth was carefully repositioned, and the vestibular alveolar bone bidigitally as well. A titanium trauma splint (TTS) was applied and wound management was performed. Root canal treatment was initiated with a corticosteroid-antibiotic paste and temporary sealing. A systemic medication of doxycycline was given and proper oral hygiene instructions were provided. Root canal preparation and calcium hydroxide placement were performed. Eight weeks after trauma, irrigation and obturation of the root canal were completed. The asymptomatic patient was monitored regularly. At the 18-month follow-up tooth 21 showed clinical signs of ankylosis. A potentially expected infraocclusion of 1-1.5 mm was predicted using patient and parental height data according to the Westphal formula and the Accident App. The conservative treatment of incisal lengthening was performed using composite due to a low lip line. Follow-up examinations were conducted twice a year.

Conclusion
The 5-year follow-up showed a promising prognosis for tooth retention due to slow progression of replacement resorption, in this case, at the end of the pubertal growth spurt. Severe tooth dislocation and ongoing replacement resorption remain adverse prognostic factors in children.

Keywords: Intrusion, Posttraumatic ankylosis, Pubertal growth

0057

Traumatic Avulsion and Lateral Luxation in an Adolescent Patient: Clinical Approach and Early Outcomes

Agnieszka Malik[1]
[1]University Dental Clinic, Department of Pediatric Dentistry, Kraków, Poland
Małgorzata Jamka-Kasprzyk[2]
[2]Jagiellonian University Medical College, Department of Dentistry of Developmental Age, Kraków, Poland
Iwona Gregorczyk-Maga[3]
[3]Jagiellonian University Medical College, Department of Dentistry of Developmental Age, Kraków, Poland

Introduction
Avulsion of a permanent tooth in a growing patient represents one of the most severe dental injuries. Immediate intervention and appropriate acutephase management are crucial to reducing the risk of complications such as replacement resorption and ankylosis, which are particularly common in adolescents.

Aim
The aim of this report is to present the clinical management and early outcomes of a traumatic injury involving complete avulsion of tooth 11 and lateral luxation of tooth 21 in a 15 year old patient, with emphasis on the importance of prompt treatment during the growth period.

Case Description
The patient presented approximately 30 minutes after a sports related injury. Tooth 11 was transported in physiological saline. Clinical examination revealed complete avulsion of tooth 11, lateral luxation of tooth 21, and soft tissue trauma, including rupture of the upper labial frenum.

Clinical Management
Replantation of tooth 11 and surgical repositioning of tooth 21 were performed, followed by flexible splinting. A frenulum plasty of the upper lip was carried out. Subsequently, endodontic treatment of both teeth was completed using a bioceramic sealer.

Results / Follow up
At the six month follow up, no signs of pathological root resorption were observed. However, a metallic percussion sound in tooth 11 indicated early replacement resorption. The patient remains under continuous dental and orthodontic monitoring, considering ongoing craniofacial growth.

Conclusions
Dental trauma in growing patients requires immediate and well-coordinated management to minimize long-term complications. This case highlights the critical role of rapid first aid and appropriate acute phase treatment in determining the long-term prognosis.

Keywords: Complete Avulsion, Lateral Luxation, Permanent Tooth

0069

Treatment Outcomes and Prognostic Factors in Permanent Incisors with Uncomplicated and Complicated Crown Fractures

Arif BOLACA[1]
[1]Pamukkale University, Faculty of Dentistry, Department of Pediatric Dentistry, Denizli, Turkey
Fatma Irmak CILDIR[2]
[2]Pamukkale University, Faculty of Dentistry, Department of Pediatric Dentistry, Denizli, Turkey
Yıldırım ERDOGAN[3]
[3]Pamukkale University, Faculty of Dentistry, Department of Pediatric Dentistry, Denizli, Turkey

Background: Traumatic dental injuries are common in children and adolescents, and crown fractures represent the most frequent type of injury affecting permanent incisors. Although previous studies have mainly focused on luxation injuries, evidence regarding pulpal prognosis and associated prognostic factors in crown-fractured teeth remains limited.

Objective: To evaluate treatment outcomes and identify prognostic factors associated with pulpal prognosis in permanent incisors with uncomplicated (UCFs) and complicated (CCFs) crown fractures.

Methods: Dental trauma records of patients aged 6-15 years with UCFs and CCFs were retrospectively reviewed. Recorded variables included demographic data, fracture type, root development stage, concomitant luxation injury, time to treatment, pulp therapy, restorative treatment, and pulpal outcomes. Group comparisons were analyzed using Independent t-test, Mann-Whitney U test, and Chi-square test. Kaplan-Meier and Log-rank tests were used for survival analysis ($p < 0.05$).

Results: A total of 151 patients (221 teeth), aged 6-15 years (mean age: 9.83 ± 1.92) were included. UCFs accounted for 85.5% of cases and CCFs for 14.5%. Overall pulp survival rate was 82.8%, and pulp necrosis occurred in 17.2% of teeth. Fracture type was significantly associated with pulpal outcome ($p = 0.0001$), with CCFs showing a higher frequency of pulp necrosis. No significant association was found between demographic data, root development stage, time to treatment, pulp therapy, or restorative treatment. Concomitant luxation injuries were observed in 26.2% of teeth and were significantly associated with an increased risk of pulp necrosis ($p = 0.001$). Kaplan-Meier survival analysis showed a gradual decrease in pulp survival over time, particularly during the first years following trauma.

Conclusion: Treatment outcomes were generally favorable; however, fracture type and concomitant luxation injury appear to be important factors influencing pulpal prognosis. This finding highlights the importance of careful monitoring of crown-fractured permanent incisors, particularly during the early follow-up period.

Keywords: Crown fractures, Permanent incisors, Pulpal prognosis

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ABSTRACTS
Topic 4

Endodontic Management of Traumatic Dental Injuries



0087

Antimicrobial Activity and Biocompatibility of AntibioticLoaded chitosan nanoparticles as a Potential Scaffold in Regenerative Endodontic Treatment

Abdulrahman Al-Majed[1]
[1]College of Dentistry, King Saud University, Riyadh, Saudi Arabia
Maha ALGHOFAILY[2]
[2]King Saud University, Restorative Dental SCience , Riyadh, Saudi Arabia
Basmah Almaarik[3]
[3]King Saud University, Riyadh, Saudi Arabia
Eram Eram Eltahir[4]
[4]King Saud University, Riyadh, Saudi Arabia
Fadilah Sfouq Aleanizy[5]
[5]King Saud University, Riyadh, Saudi Arabia
Fulwah Yahya Alqahtani[6]
[6]King Saud University, Department of Pharmaceutics,, Riyadh, Saudi Arabia

Backgrounds:
Triple antibiotic paste (TAP) is widely used in endodontics due to its broad antimicrobial spectrum; however, high concentrations are associated with adverse effects such as tooth discoloration and cytotoxicity. To overcome these limitations, modified TAP (mTAP), in which minocycline is replaced with clindamycin, has been introduced to improve safety. In addition, nanoparticle-based delivery systems offer advantages including controlled drug release, enhanced stability, and targeted delivery, which may improve intracanal disinfection outcomes.
Objective:
This study aimed to develop and evaluate chitosan nanoparticle-loaded mTAP (mTAP-CNPs) as a novel drug delivery system for endodontic applications.
Methods:
Nanoparticles were characterized using a Zetasizer to determine particle size (PS), polydispersity index (PDI), and zeta potential (ZP). Morphology was assessed using transmission electron microscopy (TEM), while Fourier transform infrared spectroscopy (FTIR) and differential scanning calorimetry (DSC) confirmed drug encapsulation and compatibility. Encapsulation efficiency (EE%) was quantified using high-performance liquid chromatography (HPLC). Antibiofilm activities against Fusobacterium nucleatum were evaluated using crystal violet biofilm assay and confocal laser scanning microscopy (CLSM). Cell viability was assessed using the AlamarBlue assay.
Results:
The nanoparticles exhibited sizes of 155.33 nm (empty CNPs) and 207.33 nm (mTAP-CNPs) with uniform distribution (PDI ≈ 0.3). High encapsulation efficiencies were achieved for ciprofloxacin (92%), metronidazole (92.3%), and clindamycin (94.5%). Biofilm biomass was significantly reduced in mTAP-CNPs groups ($p < 0.001$), with sustained low levels at Days 7 and 14 compared to controls. Additionally, mTAP-CNPs demonstrated improved cell viability relative to conventional mTAP.
Conclusion:
mTAP-loaded chitosan nanoparticles showed favorable physicochemical properties, effective antibiofilm activity, and enhanced biocompatibility, suggesting their potential as an advanced intracanal medicament for improved root canal disinfection.

Keywords: Intracanal medicament, Chitosan nanoparticles, Regenerative Endodontic

0066

Balancing Disinfection and Regenerative Potential: Effects of Irrigation and Intracanal Medicaments on TGF-β1 Release in Immature Teeth

Zeynep Yağmur Özdemir Tekin[1]
[1]Kutahya Health Sciences University, Department of Endodontics Faculty of Dentistry, Kütahya, Turkiye
Arzu Kaya Mumcu[2]
[2]Kutahya Health Sciences University, Faculty of Dentistry Department of Endodontics, Kütahya, Turkiye
Derya Berikten[3]
[3]Kütahya Health Sciences University, Department of Molecular Biology and Genetics Faculty of Engineering , Kütahya, Turkiye
Fatih Kar[4]
[4]Kütahya Health Sciences University, Department of Basic Sciences Faculty of Engineering and Natural Sciences, Kütahya, Turkiye

Background: In immature permanent teeth, pulp necrosis resulting from trauma or bacterial infection may affect root development. Regenerative endodontic procedures aim to support root maturation; however, achieving effective disinfection while preserving dentin-derived growth factors remains challenging. Irrigation protocols and intracanal medicaments may influence both bacterial elimination and the release of bioactive molecules such as transforming growth factor beta-1 (TGF-β1).
Objective: To evaluate the effects of different irrigation protocols (sodium hypochlorite (NaOCl), ethylenediaminetetraacetic acid (EDTA), etidronic acid (HEDP), glycolic acid (GA)) and intracanal medicaments (calcium hydroxide (Ca(OH)2), triple antibiotic paste (TAP), N-acetylcysteine (NAC)) on bacterial reduction and TGF-β1 release.
Methods: One hundred extracted human teeth were prepared as simulated open apex models and infected with Enterococcus faecalis. The specimens were randomly assigned to irrigation (NaOCl+EDTA, NaOCl+HEDP, NaOCl+GA, control) and intracanal medicament groups (Ca(OH)2, TAP, NAC, control). Bacterial load was quantified as log10 CFU. TGF-β1 levels were measured using ELISA. Canal volumes were determined using cone-beam computed tomography, and TGF-β1 values were evaluated in relation to canal volume. Data were analyzed using one-way and two-way ANOVA ($p<0.05$).
Results: All irrigation protocols significantly reduced bacterial load compared to control ($p<0.001$), with no significant differences among EDTA, HEDP, and GA. TAP demonstrated the greatest antibacterial effect among medicaments ($p<0.05$). Irrigants significantly increased TGF-β1 release in both sterile and infected samples ($p<0.05$), whereas intracanal medicaments reduced TGF-β1 release in sterile samples and did not significantly affect TGF-β1 release in infected samples. Two-way ANOVA showed significant effects of infection status and treatment ($p<0.001$), with no significant interaction between the two factors. A significant negative correlation was observed between bacterial load and TGF-β1 release after irrigation ($r=-0.574$, $p=0.003$).
Conclusion: Irrigation enhances both disinfection and growth factor release, whereas intracanal medicaments may compromise the biological environment. Optimizing this balance is essential for maintaining regenerative potential in immature teeth.

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Keywords: regenerative endodontics, immature teeth, TGF-β1

0016

Cervical Root Resorption: From Silent Destruction to Conservative Preservation

Georges El Achkar[1]
[1]Saint-Joseph University, Endodontics, Beirut, Lebanon

Background: Cervical root resorption is a recognized but often under-diagnosed sequela of dental trauma, characterized by progressive loss of cervical dental hard tissues. Disruption of the precementum following trauma facilitates clastic cells adhesion and subsequent resorptive activity, which may remain clinically silent until advanced stages.

Objective: To highlight the importance of early diagnosis and present contemporary conservative management strategies for trauma-related CRR.

Methods: Diagnosis relies on cone-beam computed tomography (CBCT), enabling accurate three-dimensional evaluation of lesion extent and accessibility. Treatment planning is guided by lesion characteristics and restorability.

Results: Conservative approaches, including selective debridement and restoration with bioactive materials, can arrest resorption and preserve tooth structure. Early detection and intervention significantly improve prognosis.

Conclusion: Cervical root resorption should be considered in the long-term follow-up of traumatized teeth. Early CBCT-based diagnosis and conservative intervention significantly improve prognosis, supporting a tooth-preserving approach and reducing the need for extraction.

Keywords: Cervical Root Resorption (CRR), Cone-Beam Computed Tomography (CBCT), Conservative Treatment

0102

Clinical Dilemma in the Management of Intrusive Luxation in Pediatric Patients with Difficult Behavior

Hind Tallab[1]
[1]KFAFH, dental, jeddah, Saudi Arabia

Introduction
Traumatic dental injuries are common in children and adolescents, with intrusive luxation representing one of the most severe and complex types due to its impact on the periodontal ligament, pulp, and surrounding alveolar bone.

Case Presentation
A healthy 9 -year-old patient presented to the pediatric dental clinic at King Fahad Armed Forces Hospital (KFAFH) after accidentally striking a wall while playing with a blanket covering his face. Further clinical examination showed that both central incisors 11, and 21 were severely intruded >5 mm and locked within the alveolar bone with lateral luxation and complicated crown fracture with profuse bleeding and pinpoint pulp exposure no soft tissue injury, no bone fracture. Percussion testing produced a characteristic metallic sound, suggestive of ankylotic positioning.

Investigation:
Radiographic assessment included an orthopantomogram (OPG) and (CBCT), was requested. A periapical radiograph was also obtained at different angle to assess root development and periodontal status.

Treatment Plan and Management:
A multidisciplinary treatment approach was adopted, involving pediatric dentistry, endodontics, and oral and maxillofacial surgery teams.
Following consultation with the endodontist, early endodontic intervention within one week of trauma was recommended to reduce the risk of pulpal necrosis and inflammatory root resorption.
Due to the patient's behavior, treatment under general anesthesia was planned. The patient was medically evaluated and prepared accordingly.
Under general anesthesia:
Endodontic treatment was completed for teeth 11 and 21
Surgical repositioning was performed using the forceps and wire splint size 0.016 flexible splint placed

Discussion
Intrusive luxation in permanent teeth with complete root formation typically requires active intervention, especially in cases of severe intrusion (>5 mm). Immediate or early repositioning is often recommended to restore function and minimize complications.
Early endodontic treatment is crucial in such cases, as the risk of pulpal necrosis is extremely high. Delayed treatment may lead to inflammatory root resorption, which significantly affects prognosis.

Conclusion
Severe intrusive luxation requires prompt diagnosis and a well-coordinated multidisciplinary approach. Early intervention, appropriate imaging, and timely endodontic treatment are key factors in improving prognosis.

Keywords: difficult child behavior, complex decision making, time sensitive injury

0038

Delayed Pulpal and Periapical Complications Following Dental Trauma in an Adolescent: A 6-Year Follow-Up Case Report

Katarzyna Białoszewska[1]
[1]University Clinical Center of the Medical University of Warsaw, Department of Aesthetic Dentistry, Warszawa, PL

Introduction
Dental trauma to permanent teeth may lead to delayed pulpal and periapical complications, particularly when follow-up is inconsistent or absent. This case report describes the long-term consequences of delayed presentation after trauma to the maxillary anterior teeth in an adolescent patient.

Case report
A 13-year-old girl was submitted in 2021, one year after trauma that had initially been managed elsewhere as an enamel-dentin fracture of tooth 11. No post-traumatic records were available, and no recall visits had been performed. Clinical examination showed that tooth 11 was non-responsive to sensibility testing and had grade I mobility, whereas teeth 12 and 21 were initially responsive. Radiographic and CBCT examination revealed a periapical lesion and suspected internal resorption in tooth 11, reduced canal lumen in teeth 12 and 21, osteolytic changes adjacent to tooth 12, and widening of the periodontal ligament space around tooth 21. Endodontic treatment of tooth 11 consisted of a two-week calcium hydroxide dressing followed by complete canal obturation with Biodentine. Within three months, teeth 12 and 21 developed pain, loss of sensibility, and tenderness to percussion, and endodontic treatment was initiated because of pulp necrosis. The patient subsequently attended regular follow-up visits. At the 2026 follow-up, she was asymptomatic, and radiographic healing of the periapical lesions was observed.

Conclusion
This case demonstrates that apparently limited anterior dental trauma may progress to multi-tooth pulpal and periapical complications when systematic follow-up is lacking. Long-term monitoring should be regarded as an integral part of trauma management, and timely endodontic intervention may result in favorable outcomes even in delayed presentations.

Keywords: dental trauma, complications, fracture

0030

Delayed Reimplantation in a Class III Malocclusion: A Multidisciplinary Approach to Complex Trauma

Amenah AlSheikhosien[1]
[1]University of Manchester, Dental Hospital, Manchester, United Kingdom
Carly Dixon[2]
[2]University of Manchester , Dental Hospital , Manchester, United Kingdom

Introduction:
Avulsion is one of the most severe dental injuries in the developing dentition. Immediate reimplantation is recommended as periodontal ligament (PDL) cells viability depends on the storage medium and extra oral dry time (EODT). However, ideal management is not always possible, increasing the risk of ankylosis and subsequent infraocclusion complicating long term treatment planning.

Case Report:
A 13-year-old female was urgently referred following a pedestrian road-traffic incident. She sustained severe dental trauma accompanied by minor soft tissue abrasions to the knee and face. The UR2 and UL1 were avulsed and UR1 sustained combination injury lateral luxation and crown fracture,UR2 suspected concussion, and LL1 uncomplicated crown fracture. The patient also presented with background Class III malocclusion, reverse overjet and maxillary crowding. Location of the UL1 and UR2 was delayed with EODT 5 & 15 hours respectively, with storage in milk. Reimplantation was completed 24 hours post trauma by a general dentist with socket debridement and splinting. On review the following day the initial splinting was revised with a passive flexible splint for 2 weeks.
Endodontic treatment was initiated at two weeks for UR2 and UL1, with subsequent endodontic treatment of UR1 and UL2 due to pulp necrosis along with composite restorations to restore aesthetics and function. Follow up in line with IADT guidelines showed ankylotic characteristics in UR2 and UL1. Following treatment, the patient attended the Transition Clinic a Consultant led paediatric, restorative, and orthodontic teams to assess the long-term sequel of dental trauma, and ensure patients have a coordinated trauma management into adulthood.

Conclusion:
This case highlights the importance of reimplantation where feasible, while recognising the poor prognosis associated with delayed replantation. Despite the high risk of ankylosis and infraocclusion, treatment outcomes have provided a functional and aesthetic outcomes and preserved future treatment options in a Class III growing patient.

0088

Effect of liquid platelet-rich fibrin (PRF) on periodontal ligament cell viability in avulsed teeth after 3–4 hours of dry time

Everdan Carneiro[1]
[1]PONTIFICIA UNIVERSIDADE CATÓLICA DO PARANÁ, PUCPR, Curitiba, Brazil
Tatiana Carvalho Kowaltschuk[2]
[2]PONTIFICIA UNIVERSIDADE CATÓLICA DO PARANÁ, PUCPR, Curitiba, Brazil
Mariana Martins Juglair[3]
[3]PONTIFICIA UNIVERSIDADE CATÓLICA DO PARANÁ, PUCPR, Curitiba, Brazil
Daniel Grigolo[4]
[4]PONTIFICIA UNIVERSIDADE CATÓLICA DO PARANÁ, PUCPR, Curitiba, Brazil
Fabiane Barchiki[5]
[5]PONTIFICIA UNIVERSIDADE CATÓLICA DO PARANÁ, PUCPR, Curitiba, Brazil
Lorena Bortolini Navarro[6]
[6]PONTIFICIA UNIVERSIDADE CATÓLICA DO PARANÁ, PUCPR, Curitiba, BraZIL
Ulisses Xavier da Silva Neto[7]
[7]PONTIFICIA UNIVERSIDADE CATÓLICA DO PARANÁ, PUCPR, Curitiba, Brazil
Vânia Portela Dietzel Westphalen[8]
[8]PONTIFICIA UNIVERSIDADE CATÓLICA DO PARANÁ, PUCPR, Curitiba, Brazil

Background: The success of tooth replantation is directly related to the viability of periodontal ligament (PDL) cells, which is highly dependent on extra-alveolar dry time. Although immediate replantation is recommended, delayed scenarios are common, requiring effective strategies to preserve or restore cell viability. Conventional media such as milk can maintain PDL cell viability, but their effectiveness is limited after prolonged dry periods. Platelet-rich fibrin (PRF), an autologous biomaterial rich in growth factors and fibrin matrix, has emerged as a promising approach for enhancing cell survival and tissue regeneration; however, its effectiveness after extended extra-alveolar dry times remains unclear.

Objective: To evaluate the effect of liquid PRF on maintaining and restoring PDL cell viability in teeth subjected to 3 and 4 hours of dry extra-alveolar time.

Materials and Methods: Sixty-six extracted human teeth were randomly assigned to four groups: dry (3 and 4 hours) and PRF (3 and 4 hours). After the extra-alveolar period, teeth in the PRF groups were immersed in liquid PRF for 45 minutes. PDL cells were isolated by enzymatic digestion (collagenase type II and dispase), counted, and assessed for viability using Trypan blue staining in a Neubauer chamber.

Results: Liquid PRF significantly increased both the concentration and viability of PDL cells compared to dry controls. Significant differences were observed after 4 hours for both variables ($p < 0.005$), and for viability after 3 hours, indicating greater effectiveness at longer extra-alveolar times.

Conclusion: Liquid PRF improves PDL cell viability after extended dry times and may represent a promising strategy for delayed tooth replantation.

Keywords: Platelet-Rich Fibrin, Periodontal Ligament Cells, Tooth Replantation

0145

Endodontic microbiota of necrotic traumatized permanent teeth: A CrossSectional Study

Juliana Bastos[1]
[1]Federal University of Minas Gerais, School of Dentistry/Dental Trauma Guide, Belo Horizonte, Brazil

Background: Despite valuable early reports, evidence on the microbiology of traumainduced pulp necrosis in permanent teeth remains limited compared with conventional endodontic infections in nontraumatized teeth. Applications of molecular methods to traumatic injuries are only now emerging, underscoring a persistent knowledge gap. The present study aimed to characterize the intracanal microbiota of traumatized permanent teeth with pulp necrosis using 16S rRNA gene nextgeneration sequencing, evaluating different trauma types as potential determinants of microbial composition.
Methods: This cross-sectional study included 62 necrotic permanent teeth from 56 patients (aged 6–39 years), distributed across four groups based on TDI subtype: avulsed teeth with intact crowns (G1, n=18), avulsed teeth with enamel-dentin fractures (G2, n=11), non-avulsed necrotic teeth with intact crowns (G3, n=9), and non-avulsed necrotic teeth with enamel-dentin fractures (G4, n=24). Root canal samples were collected before treatment under aseptic conditions. The V3-V4 regions of the 16S rRNA gene were sequenced on the Illumina MiSeq platform and analyzed using QIIME2 against the SILVA database. Alpha diversity, PCoA, PERMANOVA, and PERMDISP analyses were performed.

Results: A total of 6,933,077 reads yielded 850 bacterial taxa (mean 97.8 ± 39.7 per sample). Firmicutes (33.86%), Bacteroidota (22.17%), and Fusobacteriota (21.42%) predominated at phylum level. The dominant genera were Fusobacterium (21.28%), Campylobacter (6.85%), Parvimonas (6.48%), Treponema (4.54%), and Porphyromonas (4.28%). No significant differences in alpha diversity were detected across groups. PERMANOVA revealed a significant effect of TDI subtype on community composition (R^2=0.071, p=0.007), with PERMDISP confirming centroid shift rather than dispersion inequality as the driver (p=0.966).

Conclusions: TDI subtype significantly influenced root canal microbiome structure, with Campylobacter emerging as a potentially trauma-specific taxon with clinical relevance for regenerative endodontic protocols. The high microbial diversity and detection of uncultured taxa underscore the necessity of NGS-based approaches for comprehensive characterization of post-traumatic endodontic infections.

Keywords: root canal microbiome, 16S rRNA sequencing, pulp necrosis

0052

FROM ACUTE TRAUMA to LATE COMPLICATIONS: MULTIDISCIPLINARY MANAGEMENT of TRAUMATIC DENTAL INJURIES - Two Case Reports

Betul USLU[1]
[1]Kutahya Health Science University, Department of Endodontics / Faculty of Dentistry, Kutahya, Turkiye
Arzu KAYA MUMCU[2]
[2]Kutahya Health Science University, Department of Endodontics / Faculty of Dentistry, Kutahya, Turkiye

Introduction
Traumatic dental injuries may result in complex clinical conditions, particularly when associated with pulpal involvement, root resorption, or systemic diseases. Management of such cases requires timely intervention and a multidisciplinary approach to achieve favorable outcomes.

Case Report
Case 1: An 18-year-old female presented after a bicycle accident with extrusive luxation of tooth #11, complicated crown fractures of teeth #12 and #21, and soft tissue injuries. Emergency management included repositioning of tooth #11 and stabilization using a 0.4 mm nickel–titanium (Ni-Ti) wire splint. Partial pulpotomy with Biodentine was performed on tooth #21 to preserve pulp vitality. One week later, root canal treatment was initiated for teeth #11 and #12, and calcium hydroxide was placed as an intracanal medicament. The splint was removed after two weeks, and endodontic treatments were completed. At the 1-year follow-up, all teeth were asymptomatic and functional.
Case 2: A 27-year-old male with hemophilia A presented three years after trauma with pain and increased mobility in teeth #31, #41, and #42. Radiographic evaluation revealed external root resorption in teeth #31 and #41, which were non-vital, while tooth #42 remained vital. Following hematology consultation, intravenous Adynovate 2000 IU/5ML was administered prior to treatment. A trauma splint was applied, and root canal treatment was initiated for teeth #31 and #41, and calcium hydroxide was placed as an intracanal medicament. After two weeks, the treatments were completed and the splint was removed. At the 1-year follow-up, periapical healing was observed, and all teeth were asymptomatic and functional.

Conclusion
Successful management of traumatic dental injuries depends on early diagnosis, appropriate treatment planning, and consideration of systemic conditions. Both acute and delayed cases can achieve favorable outcomes with a multidisciplinary approach. In addition, regular follow-up is essential for early detection and management of potential complications, thereby ensuring long-term clinical success.

Keywords: Traumatic dental injuries, Extrusive luxation, External root resorption

0005

From traumatic pulp necrosis to root maturation: Revitalization procedure in a young patient following lateral luxation

Dr. Shirin El-Sayed[1]
[1]Dental Trauma Hub Heidelberg, Department of Conservative Dentistry, Clinic for Oral, Dental and Maxillofacial Diseases, University Hospital Heidelberg, Dental School, Heidelberg University, Heidelberg, Germany
Dr. Florian Leciejewski[2]
[2]Dental Trauma Hub Heidelberg, Department of Conservative Dentistry, Clinic for Oral, Dental and Maxillofacial Diseases, University Hospital Heidelberg, Dental School, Heidelberg University, Heidelberg, Germany

Introduction
Pulp necrosis is a common complication of dental traumatic injuries and may interrupt root development in immature teeth, thereby compromising their long-term prognosis. Regenerative endodontic procedures have emerged as a biological alternative to traditional apexification for the management of necrotic immature teeth. This case report presents the successful revitalization of a maxillary incisor affected by lateral luxation and subsequent pulp necrosis.
Case report
An 8-year-old female patient presented following dental trauma with lateral luxation of tooth 11 and incomplete root development. The tooth was repositioned and stabilized with a flexible splint for three weeks. A root canal treatment was not initiated due to the wide open apex and the potential for spontaneous revascularization.
Three weeks later radiographic follow-up revealed early signs of inflammatory root resorption, indicating pulp necrosis.
Therefore, revitalisation procedure was initiated: after access preparation and removal of the necrotic tissue, chemical disinfection was performed using sodium hypochlorite with sonic activation, followed by placement of an intracanal calcium hydroxide dressing. At the second visit, the canal was irrigated with EDTA and apical bleeding was induced. A collagen plug was placed over the blood clot scaffold and sealed with calcium silicate cement (Biodentine™ XP, Septodont) and an adhesive composite resin restoration.
At 12 months the treated tooth exhibited root development comparable to the contralateral incisor, with progressive root maturation, increased root length and dentinal wall thickness and apical closure. The tooth remained asymptomatic with normal percussion and periodontal probing.
Conclusion
Regenerative endodontic treatment approaches are still rare, but can be considered to promote root development and apical closure in immature teeth affected by traumatic pulp necrosis.

Keywords: Revitalization , immature root, lateral luxation

0072

Management of Complex Anterior Crown Fractures with Delayed Pulpal and Periapical Complications: Two Case Reports

BİLGE AKDANA[1]
[1]Faculty of Dentistry, Kutahya Health Sciences University, Department of Endodontics, Kutahya, Turkey
Safa KURNAZ[2]
[2]Faculty of Dentistry, Kutahya Health Sciences University, Department of Endodontics, , Kutahya, Turkey
Furkan KURUÇAY[3]
[3]Faculty of Dentistry, Kutahya Health Sciences University, Department of Periodontology, Kutahya, Turkey

Introduction: Anterior crown fractures are among the most prevalent traumatic dental injuries and present functional and esthetic challenges. Their management requires careful assessment of fracture extent, pulpal status, and periodontal involvement.
Case report:
In the first case, a 48-year-old female patient presented with dental trauma involving multiple anterior teeth. Clinical and radiographic examination revealed an enamel fracture in tooth #11, a crown fracture in tooth #12 with previous root canal treatment (RCT) and periapical pathology, a crown fracture extending subgingivally in tooth #21, and complicated crown fractures in teeth #22 and #23 with existing prosthetic restorations.
Tooth #11 was restored with composite resin. Root canal retreatment of tooth #12 and RCT of teeth #22 and #23 were performed using nickel-titanium instruments, with calcium hydroxide as intracanal medication. Obturation was completed with gutta-percha and a bioceramic sealer, followed by composite restoration. Periodontal surgical intervention was performed for tooth #21 to manage the subgingival extension of the fracture, and the tooth was subsequently restored with composite resin. At six-month follow-up, pulp necrosis developed in tooth #21 and RCT was performed.
In a second case, a 35-year-old male patient presented two days after dental trauma. Clinical and radiographic examination revealed an enamel fracture in tooth #11 and a complicated crown fracture in tooth #21. Tooth #11 was restored with composite resin. RCT was performed for tooth #21 using nickel-titanium instruments, with calcium hydroxide as intracanal medication. Obturation was completed with gutta-percha and a bioceramic sealer, followed by composite restoration. At one-year follow-up, a periapical lesion was detected in tooth #11, and RCT was performed.
At one-year follow-up in both cases, all treated teeth were asymptomatic, with no clinical signs or symptoms and normal function.
Conclusion: Successful management of anterior crown fractures depends on appropriate treatment selection and careful follow-up for favorable outcomes.

Keywords: Dental trauma, Root canal treatment, Tooth fracture

0141

Managing External Root Resorption in Traumatized Permanent Teeth Using PRO-PRF–Based Regenerative Endodontic Therapy: A Four-Case Series

Anahi de Paula Melo[1]
[1]UFU, Faculdade de Odontologia, Uberlândia, Brasil
Nellys Guillermina Lanz de Contreras[2]
[2]Universidade Federal de Uberlândia, Faculdade de Odontologia, Uberlândia, Brasil
Bruna Ferreira Soares[3]
[3]Universidade Federal de Uberlândia, Faculdade de Odontologia, Uberlândia, Brasil
Priscilla Barbosa Ferreira Soares[4]
[4]Universidade Federal de Uberlândia, Faculdade de Odontologia, Uberlândia, Brasil
Carlos José Soares[5]
[5]Universidade Federal de Uberlândia, Faculdade de Odontologia, Uberlândia, Brasil
Camilla Christian Gomes Moura[6]
[6]Universidade Federal de Uberlândia, Faculdade de Odontologia, Uberlândia, Brasil

External root resorption (ERR) is a common complication of severe dentoalveolar trauma. Recent evidence suggests that platelet-rich fibrin (PRF) may help stabilize resorptive processes due to its regenerative potential. Progressive PRF (PRO-PRF), a modified protocol enhancing fibrin architecture and cellular distribution, has been explored in other fields; however, its use in regenerative endodontic therapy (RET) for teeth with established ERR remains unknown. This case series describes a PRO-PRF–based RET protocol in four traumatized permanent maxillary central incisors (mean age: 9.5 years), including avulsion (n = 2), lateral luxation (n = 1), and intrusion (n = 1). Baseline assessment included clinical examination, pulp sensibility tests, periapical radiographs, and cone-beam computed tomography (CBCT). All teeth became nonresponsive and developed ERR within 1–7 months post-trauma. Initial management involved chemomechanical preparation with 2.5% NaOCl and intracanal calcium hydroxide paste, following AAE guidelines. At the second visit, intracanal dressing was removed, final irrigation performed with EDTA, and liquid PRO-PRF delivered into the canal, where it polymerized within 10–15 min. PRO-PRF was prepared using a progressive centrifugation protocol (700/1300/2400 rpm, 5-min intervals). A resorbable gelatin-based sponge was placed over the matrix, followed by coronal sealing with Biodentine® and composite resin. Follow-up included clinical examinations, pulp sensibility tests, periapical radiographs, and cone-beam computed tomography (CBCT), with a minimum follow-up period of 12 months. All cases showed arrest of ERR without progression. Clinically, the teeth did not regain responsiveness to pulp sensibility tests but remained asymptomatic and functional, with no signs of infection. PRO-PRF–based RET may represent a promising strategy for managing severe ERR in traumatized permanent teeth. Further studies are needed to assess its predictability and long-term outcomes.
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Keywords: pulp, regenerative endodontics, root resorption

0153

PCO following initial trauma management: Cases, decisions and follow-up

Alejandra Salinas[1]
[1]Pontificia Universidad católica de chile , Endodontics /Medicine , Santiago, Chile
[1]sociedad de endodoncia de chile , Sociedad de endodoncia de chile , Santiago, Chile

Background:
PCO is a complication associated with dentoalveolar trauma that occurs within the first year following the injury. According to various studies, it occurs in 22–27.8% of cases, particularly in association with traumatised teeth with incomplete root development, luxations and root fractures. This condition has also been observed as a consequence of vital pulp therapy performed during emergency treatment. On occasion, its occurrence can confuse the clinician regarding its interpretation and the appropriate course of action to follow

Objective:
The objective of this presentation is to illustrate, through clinical cases of dentoalveolar trauma with various emergency diagnoses and treatments, the consequent occurrence of PCO and its clinical management based on current evidence.

Method
From the pool of patients treated at the Dental Trauma Clinic of Clínica San Carlos de Apoquindo, Chile, a series of clinical cases were selected which, after a minimum of one year of follow-up, presented with a diagnosis of PCO . The initial diagnoses of dentoalveolar trauma and emergency treatments were diverse .
This presentation shows a selection of those who developed PCO following a minimum of one year of follow-up.

Results:
The cases presented show PCO as a condition associated with pulp repair, whether following the trauma itself or the treatment performed.

Conclusion:
PCO is a biological response of repair and revascularisation which, in rare cases, presents complications associated with pulp necrosis

Keywords: PCO, Endodontics , Dental trauma

0076

Poor Initial Prognosis, Successful Long-term Outcome: 12-year Follow-up of Avulsed Maxillary Central Incisor in a Pediatric Patient

Eugenio Carlos Grano de Oro Cordero[1]
[1]Universidad Complutense de Madrid, Facultad de Odontología, Madrid, Spain
Sofía Grano de Oro Saavedra[2]
[2]Universidad Complutense de Madrid, Facultad de Odontología, Madrid, Spain
Gloria Saavedra Marbán[3]
[3]Universidad Complutense de Madrid, Facultad de Odontología, Madrid, Spain

Introduction
The prognosis of an avulsed tooth fundamentally depends on extraoral time, storage medium until replantation, and subsequent pulp management.

Case report
A 9-year-old patient presented with abscess and mobility of the left maxillary central incisor avulsed over three months prior. Extraoral dry time was 45 minutes, followed by replantation and splinting for over two months. Radiographic examination showed signs of inflammatory root resorption. Despite very poor prognosis, apexification with MTA plug was attempted to retain the tooth as long as possible. The response was excellent, with the tooth maintained for over 12 years with healthy periapical tissues.

Conclusion
Despite incorrect initial treatment, adequate root canal treatment can substantially improve the prognosis of avulsed teeth, especially in growing patients.

Keywords: Avulsion, Apexification, MTA

0007

Root Resorption and Tooth Loss Following Endodontic Management of Traumatic Dental Injuries in Permanent Teeth: A Systematic Review and Meta-analysis

Aman Kumar[1]
[1]All India Institute of Medical Sciences, Jammu, Department of Pediatric and Preventive Dentistry, Vijaypur, Jammu, India

Clinical outcomes of Biomaterials in External Root Resorption and Tooth Survival After Dental Trauma: A Systematic Review and Meta-Analysis

Background: External root resorption is a major complication following dental trauma. Although various biomaterials are used in the management of traumatized teeth, reported post-traumatic resorption and survival outcomes remain heterogeneous.
Objective: To systematically synthesize and quantitatively estimate the pooled prevalence of external root resorption and tooth survival outcomes in teeth managed with biomaterials following dental trauma.
Methods: This systematic review and meta-analysis followed PRISMA guidelines and was registered in PROSPERO. Electronic databases were searched without date or language restrictions for human clinical studies involving biomaterial-based management of traumatic dental injuries. Risk of bias was assessed using ROB 2 (randomized trials) and the JBI critical appraisal tools (non-randomized studies). Random-effects meta-analyses estimated pooled prevalence of external replacement root resorption (ERRR), external inflammatory root resorption (EIRR), and tooth loss (TL). Sensitivity and subgroup analyses explored sources of heterogeneity.
Results: Eleven studies (1 randomized controlled trial and 10 observational cohorts) were included. Most studies were judged at moderate-to-high risk of bias. ERRR occurred in 30% of cases (95% CI: 24–35% in sensitivity analyses), increasing to 43% among avulsion injuries. EIRR demonstrated a pooled prevalence of 17%, decreasing to 5% (95% CI: 4–7%) in sensitivity analyses. Tooth loss was relatively infrequent, stabilizing at 6% (95% CI: 3–10%) after sensitivity adjustment. Direct comparative evidence was limited, and no biomaterial demonstrated consistent superiority across reported outcomes.
Conclusion: Reported rates of post-traumatic external root resorption and tooth survival vary across biomaterials; however, the available evidence is predominantly observational and at moderate-to-high risk of bias, limiting definitive inferences. Higher resorption rates were observed in severe trauma such as avulsion. Well-designed, multicenter randomized trials with standardized outcome definitions are required to generate more robust comparative evidence.

Keywords: Root Resorption, Biomaterials, Dental Trauma

0147

Same Injury, Different Outcomes: The Impact of Timely Management on Complicated Crown Fractures

Hadeel Alshemmari[1]
[1]Kuwait Board in Paediatric Dentistry , Kuwait Institute for Medical Specializations, Ministry of Health, Kuwait
Hussa Albahar[2]
[2]Kuwait Board in Paediatric Dentistry , Kuwait Institute for Medical Specializations, Ministry of Health , Kuwait
Sherifa Almukhaizeeim[3]
[3]Kuwait Board in Paediatric Dentistry , Kuwait Institute for Medical Specializations, Ministry of Health, Kuwait

Introduction: Complicated crown fractures are a common form of traumatic dental injury in children. These injuries require prompt diagnosis and immediate management to preserve pulp vitality and prevent long-term complications. Vital pulp therapy, particularly pulpotomy, is currently recommended as a conservative and effective treatment approach when the pulp remains vital.
Case Report: Two healthy 9-year-old male patients presented with complicated crown fractures of permanent incisors. Case 1 presented one year following the traumatic dental injury. Clinical and radiographic examination revealed a complicated crown fracture of tooth 32 associated with necrotic pulp and symptomatic apical periodontitis. Management involved laser-assisted gingivectomy to expose the remaining crown structure, followed by non-surgical root canal treatment and composite build-up using a strip crown. At follow-up visits, clinically the tooth remained asymptomatic with satisfactory function and esthetics. Radiographic evaluation demonstrated adequate root canal obturation and resolution of periapical pathology. Case 2 presented one hour following the traumatic dental injury. Clinical and radiographic examination revealed a complicated crown fracture of tooth 21. Immediate management involved coronal pulpotomy using a calcium silicate material, followed by composite restoration. At follow-up visits clinically the tooth remained vital and assymptomatic Radiographic evaluation demonstrated normal periodontal ligament space and healthy periapical tissues.
Conclusion: These cases highlight how timing changes outcomes. In the delayed case, pulp necrosis required root canal treatment, while the early case allowed pulpotomy, preserving pulp vitality. These examples show that timely intervention is key in determining whether a tooth can be treated conservatively or requires more invasive care.

Keywords: Complicated crown fracture, Vital pulp therapy , Endodontic treatment

0081

Short-, Medium-, and Long-term Management of Complications After Bilateral Maxillary Central Incisor Avulsion in a 6-Year-Old Patient: A Case Report

Sofía Grano de Oro Saavedra[1]
[1]Universidad Complutense de Madrid, Facultad de Odontolgía, Madrid, Spain
Eugenio Carlos Grano de Oro Cordero[2]
[2]ad Complutense de Madrid, Facultad de Odontología, Madrid, Spain
David Rubio Flores[3]
[3]ad Complutense de Madrid, Facultad de Odontología, Madrid, Spain
Gloria Saavedra Marbán[4]
[4]ad Complutense de Madrid, Facultad de Odontología, Madrid, Spain

Introduction
The prognosis of avulsed teeth depends primarily on the extraoral time elapsed and the storage medium used until replantation, as well as on subsequent pulp management.

Case report
A 6-year-old patient presented after avulsion of both permanent maxillary central incisors 5 days earlier. The teeth had been stored in saline for two hours before being replanted and splinted. Because both teeth were very immature, regenerative endodontic procedures were performed. One month later, signs of inflammatory resorption were observed in both teeth, so apexification treatments were carried out. In several follow-up visits, the patient was asymptomatic and the periapical tissues showed a healthy appearance. At 4 years, ankylosis of tooth 1.1 and infraocclusion were noted, so autotransplantation was performed.

Conclusion
Maintaining avulsed teeth can be challenging, especially in growing patients. There are currently numerous therapeutic options that allow us to manage complications that may arise in order to avoid the loss of permanent teeth.

Keywords: Avulsion, Regenerative procedures, Autotransplantation

0133

Strategic Tooth Preservation After Failed Regenerative Endodontic Treatment for Traumatised Immature Permanent Incisors in a Growing Patient

ANIS MARLINA IBNE WALID[1]
[1]UNIVERSITI MALAYA, FACULTY OF DENTISTRY, KUALA LUMPUR, MALAYSIA
LILY AZURA SHOIAB[2]
[2]UNIVERSITI MALAYA, FACULTY OF DENTITSTRY, KUALA LUMPUR, MALAYSIA

Introduction: Management of traumatised immature permanent incisors is clinically challenging, particularly when regenerative endodontic treatment and apexification attempts fail. In growing patients, treatment decisions are further complicated by the need to preserve function, aesthetics, and alveolar development while delaying definitive replacement options until growth is complete. This case illustrates a biologically driven tooth-preservation strategy following failed regenerative and apexification outcomes in traumatised immature maxillary incisors.
Case report: A 15-year-old boy presented with a fractured restoration in the maxillary anterior region, seven years after trauma to teeth 11 and 21 at 8 years of age. The initial injuries included a complicated crown fracture with intrusion of tooth 11 and an uncomplicated crown fracture with subluxation of tooth 21. Initial management included Cvek pulpotomy, followed by regenerative endodontic procedures and apexification attempts.
Despite these interventions, both teeth developed asymptomatic apical periodontitis with radiographic evidence of disturbed root development and calcific barrier formation, complicating canal negotiation. As the patient was still growing, extraction and definitive prosthetic replacement were considered unfavourable; therefore, a strategic tooth-preservation approach was adopted. In view of failed regenerative outcomes, a decision was made to retain the teeth through conventional endodontic retreatment. Tooth 11 was retreated using bioceramic sealer and thermoplasticised gutta-percha following the removal of previous obturation material. Whilst Tooth 21 required ultrasonic negotiation of a calcific barrier prior to completion of root canal treatment.
Aesthetic rehabilitation of tooth 11 was achieved using a silicone index-guided composite build-up based on a diagnostic wax-up. At the one-year review, both teeth remained asymptomatic, functional, and aesthetically satisfactory
Conclusion: This case demonstrates that failure of regenerative endodontic treatment in traumatised immature permanent incisors does not necessarily mandate extraction. In a growing patient, conventional endodontic retreatment combined with conservative aesthetic rehabilitation can provide a predictable interim strategy to maintain function and aesthetics, support alveolar development, and preserve future multidisciplinary treatment options.

Keywords: Immature permanent teeth, Endodontic retreatment, Aesthetic rehabilitation

0035

Surgical treatment of advanced external inflammatory resorption

Yu-heng Lin[1]
[1]Chang-gung Memorial Hospital, Endodontics, Tauyuan, Taiwan
Huei-Yu Lin [2]
[2]Tungs' Taichung MetroHarbor Hospital, Endodontics, Taichung, Taiwan

Introduction
Failure to provide timely treatment for traumatized teeth may adversely affect long-term prognosis.

Case Report
A female patient tumbled and sustained severe anterior dental trauma in 2014, including avulsion of teeth 21, 22, intrusion of teeth 11, 12 and 13. Initial management consisted of repositioning, semirigid splinting, and soft tissue repair. The patient lost follow-up for eight years and returned in 2022 with recurrent swelling and a sinus tract in the maxillary anterior region. Clinical and radiographic examinations revealed inadequate root canal fillings in teeth 21 and 22, and pulp necrosis in tooth 13. CBCT further confirmed replacement resorption of tooth 21 and a large through-and-through cystic lesion associated with tooth 22. Nonsurgical root canal treatment was then completed for tooth 13. Retreatment of tooth 22 was attempted under dental operating microscope, but persistent exudation from root perforation precluded successful nonsurgical management. Periapical surgery was performed without root canal obturation, and a long oval resorptive defect involving approximately half of the root length was identified on buccal side. After cyst enucleation and root-end preparation, the defect was repaired using MTA and collagen was placed into osseous defect. Final restoration with composite resin was done after surgical wound stabilized. At the two-year follow-up, patient remains asymptomatic and postoperative periapical radiographs demonstrated incomplete healing of the previous cystic lesion. CBCT revealed a reduction in thickness of the palatal alveolar plate in the region of the prior palatal cortical perforation. For esthetic rehabilitation, zirconia crowns were placed on teeth 21 and 22.

Conclusion
This case highlights that delayed treatment of traumatized teeth adversely affects prognosis, while combined surgical management can achieve favorable healing even in advanced lesions. The use of collagen alone, without a barrier membrane, may not provide sufficient space maintenance for complete bone regeneration in through-and-through defects.

Keywords: delayed treatment, External inflammatory resorption, Through and though defect

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ABSTRACTS
Topic 5

Aesthetic, Restorative and Prosthetic Rehabilitation after Dental Trauma



0106

Aesthetic and Functional Rehabilitation After Traumatic Tooth Loss in Adolescents Using Ceramic Cantilever Fixed Dental Prostheses: A Three-Case Series.

Jan Sobczak[1]
[1]Universita degli Studi di Siena, Dentistry and Dental Prosthodontics, Siena, Italy
Michał Sobczak[2]
[2]Specialized Dental Practice, Warsaw, Poland

All-ceramic cantilever resin-bonded fixed dental prostheses (RBFDPs), especially zirconia-ceramic single-retainer designs used to replace missing incisors, have demonstrated favourable long-term outcomes, with reported 10-year survival rates exceeding 90%. This treatment option is particularly relevant in adolescents after traumatic tooth loss, when implant placement is often postponed until growth completion and autotransplantation is not the preferred method of treatment.
This case series presents the rehabilitation of teeth lost due to trauma complications in three different scenarios. In all patients, a digital design workflow was used for fabrication of the final restoration using a no-preparation technique.

A 14-year-old patient presented with a comminuted crown-root fracture of tooth 11. All fractured fragments were extracted, and the crown was used as a temporary pontic fixed with a glass fibre splint to create an ovate pontic site.
The final zirconia ceramic RBFDP was cemented with two ipsilateral retainers on teeth 12, 13.
Follow-up: 1 year.

A 13-year-old patient presented 3 years post trauma with invasive cervical resorption and 6 mm infraocclusion of tooth 11 of unknown origin. Considering the patient's age, decoronation and orthodontic treatment were performed; after orthodontic completion tooth 11 was restored with a zirconia-ceramic RBFDP with a single retainer on tooth 21.
Follow-up: 1 year.

An 11-year-old patient presented with avulsion and crown fractures of teeth 11 and 21. After replantation, both teeth were extracted 3 years later due to progressive replacement and inflammatory resorption with bone loss. Guided bone regeneration using the Umbrella technique was performed. The final restoration consisted of two zirconia-ceramic RBFDPs with ovate pontics, supported by ipsilateral retainers on teeth 12, 13 and 22, 23.
Follow-up: 2 years.

During ongoing follow-up, the ceramic cantilever RBFDPs remain clinically successful, providing stable aesthetic and functional rehabilitation, gingival support, improved self-confidence and smile satisfaction in growing patients.
Although single-retainer cantilever RBFDPs are most commonly reported, selected adolescent trauma cases may benefit from extended cantilever designs with two ipsilateral retainers, particularly when additional bonding surface, increased support or improved load distribution is desirable.

Keywords: Prosthetic Rehabilitation, Cantilever Bridge, Tooth loss management

0110

Aesthetic Rehabilitation of Post-Traumatic Enamel Hypomineralization in a Permanent Incisor Using Resin Infiltration: A 3-Year Follow-Up

Daryna Tolkachova[1]
[1]Only Kids , Kharkiv , Ukraine

Introduction
Trauma to primary teeth may result in developmental defects of the permanent successors, including enamel hypomineralization, which can significantly affect aesthetics and psychosocial well-being in children. Management of such defects remains challenging when aiming for minimally invasive yet stable long-term outcomes.
Case Report
A 7-year-old child presented with a chief complaint of an unaesthetic white opacity on the labial surface of a permanent mandibular incisor (tooth 41), causing significant aesthetic concern. Medical history suggested dental trauma to the primary predecessors around the age of 3 years; no treatment had been provided, and the exact nature of the injury remained unclear.
Clinical examination revealed a well-demarcated, milky-white opacity located in the middle third of the vestibular surface. The absence of defects in the first permanent molars and the localized involvement of a single incisor, combined with the history of trauma to the primary predecessor, supported the diagnosis of post-traumatic enamel hypomineralization rather than molar-incisor hypomineralization (MIH).
A minimally invasive treatment approach was selected. Initial surface preparation was performed using microabrasion (Opalustre) to improve enamel permeability. This was followed by resin infiltration (Icon, DMG), applying three etching cycles to enhance resin penetration. Complete masking of the lesion and satisfactory aesthetic integration were achieved.
Conclusion
At 3-year follow-up, the treated tooth demonstrated excellent color stability, absence of surface roughness, and no recurrence of the opacity. This case highlights that accurate etiological diagnosis combined with resin infiltration and appropriate surface pre-treatment can provide a predictable and durable minimally invasive solution for aesthetic rehabilitation of post-traumatic enamel hypomineralization in permanent teeth.

Keywords: Post-traumatic enamel defect, Resin infiltration, Aesthetic rehabilitation

0151

Biological oriented preparation technique for functional and aesthetic rehabilitation after dental trauma: a clinical case

Nicolas Obtel[1]
[1]Paris Cité University, INSERM U1333 Santé Orale, Dental school, Montrouge, France
[1]AP-HP - Charles Foix hospital, Department of dentistry and oral surgery, Ivry-sur-Seine, France
Corentin Illand[2]
[2]AP-HP - Charles Foix hospital, Department of dentistry and oral surgery, Ivry-sur-Seine, France
Lise Valtaud[3]
[3]Paris Cité University, INSERM U1333 Santé Orale, Dental school, Montrouge, France
[3]AP-HP - Charles Foix hospital, Department of dentistry and oral surgery, Ivry-sur-Seine, France
Grégoire Chevalier[4]
[4]AP-HP - Charles Foix hospital, Department of dentistry and oral surgery, Ivry-sur-Seine, France
Franck Decup[5]
[5]Paris Cité University, INSERM U1333 Santé Orale, Dental school, Montrouge, France
[5]AP-HP - Charles Foix hospital, Department of dentistry and oral surgery, Ivry sur Seine, France
François Ferré[6]
[6]Paris Cité University, INSERM U1333 Santé Orale, Dental school, Montrouge, France
[6]AP-HP - Charles Foix hospital, Department of dentistry and oral surgery, Ivry sur Seine, France

Introduction:
A 25-year-old man sustained dental trauma. The four maxillary incisors were fractured subgingivally on the buccal side. In this case report, we describe the functional and aesthetic rehabilitation of the maxillary anterior region in this patient using a BOPT technique combined with osteoplasty. We will present the case from the management of the dental emergency through to 2 years post-operatively.

Case Report:
In this case report, the patient is 25 years old. A smile design was proposed based on the patient's pre-trauma smile, as shown in the photos provided by the patient. Although the fractures of the incisors were subgingival, it was possible to preserve the teeth even though the ferrule effect was not present. First, we proceeded with the elimination of the sources of infection (periodontal and endodontic treatments of the incisors). Since the palatal surfaces of the maxillary incisors were intact, we opted for a BOPT technique (Biological oriented preparation technique, Loi et al, 2013) combined with crown lengthening via osteoplasty under a gingival flap for all four incisors. This allowed us to preserve a maximum crown-to-root ratio while achieving a ferrule effect, all while maintaining the supra-crestal attachment and preserving bone and dental tissue. The temporary crowns were fabricated in accordance with the smile design created and have been relined at 2mm of the bone crest. Tissue conditioning enabled us to shape the gingiva, achieving a gingival line that respected the periodontium and met aesthetic gingival criteria. The temporary crowns were left in place for 6 months to allow for gingival maturation (gingival thickening with gingival pegging and creeping). After taking impressions and consulting with the prosthodontist (the CAD/CAM steps are documented), four zirconia crowns were subsequently cemented. A 2-year follow-up was documented with photographs.

Conclusion:
In this case report, we demonstrate that BOPT is the technique of choice for achieving a ferrule effect in cases of subgingival fractures, thereby restoring function and aesthetics in the maxillary anterior region while meeting both aesthetic and functional criteria.

Keywords: Biological oriented preparation technique (BOPT), Smile design, Crown Lengthening

0074

Conservative Management of Traumatic Subgingival Crown-Root Fracture in Mixed Dentition via Light Orthodontic Forced Eruption : A Case Report

Min Young Park[1]
[1]Yonsei university, College of dentistry, Department of pediatric dentistry / Resident, Seoul, Korea
Dong Hwan Shin[2]
[2]Yonsei university, College of dentistry, Department of pediatric dentistry / Resident, Seoul, Korea
Hyung Jun Choi[3]
[3] Yonsei university, College of dentistry, Department of pediatric dentistry / Professor , Seoul, Korea
Ko Eun Lee[4]
[4]Yonsei university, College of dentistry, Department of pediatric dentistry / Professor , Seoul, Korea

Introduction
Subgingival crown-root fractures in anterior teeth present a clinical challenge in pediatric patients. Ongoing root development, thin dentinal walls, and the mixed dentition stage restrict the use of conventional restorative and prosthetic options. This case report describes the conservative management of a traumatized, newly erupted open-apex permanent incisor using light orthodontic forces delivered through a customized mini-tube appliance system.

Case Report
A 7-year-old boy visited the clinic with trauma to the maxillary anterior region caused by a fall. Clinical and radiographic examination revealed a complicated crown fracture with a subgingival fracture line on the maxillary central incisor. Apexiogenesis was performed using mineral trioxide aggregate, followed by temporary resin restoration
Two weeks later, no significant symptoms were observed, and a Nance holding arch with an artificial tooth was delivered for space maintenance and esthetics. However, after 5 months, the appliance fractured, and poor oral hygiene beneath the appliance led to gingival inflammation. Six months after the trauma, orthodontic extrusion was initiated using mini-tube appliances bonded to multiple maxillary teeth and a 0.012-inch titanium alloy wire delivering light continuous force. A passive stainless steel wire was applied for stabilization.
Two months later, sufficient extrusion was achieved to allow definitive crown restoration with post placement, which was subsequently completed. During crown placement, periotomy was performed, and a lingual fixed retainer including the restored crown was bonded to prevent relapse of the extrusion.

Conclusion
Orthodontic extrusion using a mini-tube appliance provided a predictable and minimally invasive treatment. This technique achieved satisfactory esthetic and functional rehabilitation while reducing dependence on patient compliance and supporting better oral hygiene. This approach appears to be a practical and reliable option for managing similar traumatic injuries in growing patients.

Keywords: Subgingivally fracture, Forced eruption, Mini tube appliance

0113

Conservative Treatment of a Complicated Crown Fracture with an Associated Vertical Root Fracture: A Case Report

Berre UZUN PEKİNTÜRK[1]
[1]Istanbul Health and Technology University, Department of Pediatric Dentistry, Faculty of Dentistry, Istanbul, Turkey
Nilüfer ÜSTÜN[2]
[2]Istanbul Health and Technology University, Department of Pediatric Dentistry, Faculty of Dentistry, Istanbul, Turkey
Pırıl BOZKAN URAS[3]
[3]Istanbul Health and Technology University, Department of Pediatric Dentistry, Faculty of Dentistry, Istanbul, Turkey
Zafer Cavit ÇEHRELİ[4]
[4]İstanbul Health and Technology University, Department of Pediatric Dentistry, Faculty of Dentistry, İstanbul, Turkey

Introduction: Traumatic dental injuries (TDIs) are common in children, most often involving the maxillary permanent incisors due to their anterior position. Crown fractures are the most frequent type, and associated root fractures may complicate diagnosis, treatment planning, and prognosis. Current guidelines stress precise radiographic evaluation, including cone-beam computed tomography (CBCT) when necessary, and recommend conservative strategies that preserve pulp vitality and esthetics in pediatric patients.
Case Report: A 10-year-old girl presented four days after a fall with fractures of the maxillary left central and lateral incisors (teeth 11 and 12). The fragments had been kept dry but were immediately placed in saline upon arrival to allow rehydration. Clinical examination showed an enamel–dentin fracture with a vertical root fracture in tooth 11, and an uncomplicated enamel–dentin fracture in tooth 12. CBCT confirmed that the vertical fracture in tooth 11 was confined to the coronal third.
At the initial visit, the fragment of tooth 12 was reattached using the fractured fragment. The coronal fractured root segment of tooth 11 was carefully removed without additional trauma, resulting in a functional pulp exposure. A pulpotomy was performed, and the tooth was temporarily restored with glass ionomer cement. Soft tissue healing was monitored over two weeks. At follow-up, periodontal healing was satisfactory, and definitive restoration was completed with a strip crown. Further follow-ups were scheduled to monitor pulpal and periodontal status.
Conclusion: This case highlights the value of thorough imaging in TDIs with suspected root fractures. It also demonstrates that, even with delayed presentation, a staged conservative approach combining fragment reattachment, vital pulp therapy, and definitive restoration can yield favorable functional and esthetic outcomes in young patients.

Keywords: Fragment Reattachment, Vertical Root Fracture, Vital Pulp Therapy

0043

Enamel Adhesion of Newly Developed Composite Splinting Materials: Is Universal Adhesive Pretreatment Necessary?

Hong-Keun HYUN[1]
[1]Seoul National University School of Dentistry, Pediatric Dentistry, Seoul, Republic of Korea

Background: Stable enamel bonding is a key requirement for composite materials used in dental splinting. Reducing procedural steps may improve clinical efficiency, provided that adequate bond strength is maintained.

Objective: To investigate the enamel bonding performance of newly developed composite resin splinting materials and to assess whether the additional use of a universal adhesive is required after phosphoric acid etching.

Methods: Four experimental composite splinting materials—G-Fix™, Light Fix™, Ortho Connect™, and Ortho Connect™ Flow—were applied to phosphoric acid-etched enamel either with or without universal adhesive pretreatment. Conventional composite resins were used for comparison. Following thermocycling, shear bond strength was evaluated and failure modes were classified. Contact angle measurements were performed to assess wettability, and the resin–enamel interface was characterized by atomic force microscopy.

Results: Universal adhesive pretreatment did not enhance shear bond strength for any material. Moreover, significantly lower bond strength values were observed in the Light Fix™ and Ortho Connect™ Flow groups when adhesive was used. All experimental materials achieved clinically acceptable bond strength when placed directly on etched enamel. Interfacial findings suggested that adhesion depended primarily on functional monomer-based chemical interaction rather than increased micromechanical interlocking.

Conclusion: The tested splinting composites showed reliable adhesion to phosphoric acid-etched enamel without the need for universal adhesive pretreatment. For certain materials, adhesive application may even be detrimental. These results support a simplified enamel bonding protocol for splinting procedures.

Keywords: splinting, composite resin, shear bond strength

0084

Fragment Reattachment in Crown Fractures: A Retrospective Survival Analysis

Jasna Ferko[1]
[1]University Medical Centre Ljubljana, Department of Paediatric and Preventive Dentistry, Ljubljana, Slovenia
Rok Kosem[2]
[2]University Medical Centre Ljubljana, Department of Paediatric and Preventive Dentistry, Ljubljana, Slovenia

Background: Fragment reattachment is considered the treatment of choice for crown fractures due to its numerous advantages. Despite decades of research into fragment reattachment techniques, there is still no consensus regarding the most appropriate method.

Objective: The aim of this study was to evaluate the survival of reattached fragments in relation to the initial diagnosis and the fragment reattachment technique used.

Methods: A retrospective review of medical records identified 135 patients treated with fragment reattachment following crown fracture at the Department of Paediatric and Preventive Dentistry, University Medical Centre Ljubljana, Slovenia, between 2000 and mid-2023. Survival probability of the reattached fragments was estimated using the Kaplan–Meier method, and the association between independent variables and fragment survival was assessed using the log-rank test.

Results: Of the 163 teeth treated with fragment reattachment, 73 (44.8%) had uncomplicated fractures and 90 (55.2%) had complicated fractures. Concomitant luxation injury was present in 97 (59.5%) teeth. A simple reattachment technique was used in 84 (51.5%) cases, while in 79 (48.5%) cases a chamfer was placed at the fracture line following fragment reattachment. The mean observation period was 11.6 years. Kaplan–Meier analysis showed that fragment survival differed significantly between techniques ($p < 0.001$), with 1-, 2-, and 5-year survival rates of 65.5%, 48.5%, and 32.2% for simple reattachment and 97.5%, 89.4%, and 76.9% for the chamfer technique, respectively. No statistically significant differences in fragment survival were observed between uncomplicated and complicated fractures ($p = 0.349$) or according to the presence of luxation injury ($p = 0.987$).

Conclusion: Fragment reattachment can provide a long-term restorative solution for crown fractures, with improved survival associated with the use of a chamfer technique.

Keywords: Crown fracture, Fragment reattachment, Survival analysis

0012

Long-term Outcomes of Restorations for Crown Fractures in Permanent Anterior Teeth of Children: A Retrospective Study

Guangyun Lai[1]
[1]Shanghai Ninth People's Hospital, Shanghai Jiao Tong University School of Medicine, Department of Pediatric Dentistry, Shanghai, China
Kai Sheng[2]
[2]Shanghai Ninth People's Hospital, Shanghai Jiao Tong University School of Medicine, Department of Pediatric Dentistry, Shanghai, China
Shimin Zhao[3]
[3]Shanghai Ninth People's Hospital, Shanghai Jiao Tong University School of Medicine, Department of Pediatric Dentistry, Shanghai, China
Jun Wang[4]
[4]Shanghai Ninth People's Hospital, Shanghai Jiao Tong University School of Medicine, Department of Pediatric Dentistry, Shanghai, China

Background: Direct composite restoration and fragment reattachment are widely used to manage crown fractures. Nevertheless, evidence concerning the long-term retention of these methods and the primary causes of restoration failure remains limited.
Objective: This study evaluated the long-term outcomes of restorations for crown fractures in permanent anterior teeth and investigated factors associated with restoration failure, with a minimum follow-up period of two years.
Methods: Pediatric patients with crown fractures in permanent anterior teeth, treated between 2020 and 2024 and followed for a minimum of 24 months, were included. All teeth underwent either fragment reattachment or direct composite restoration. Restoration survival rates were evaluated using life-table analysis. Cox regression analysis was used to assess factors influencing restorative survival, while the chi-square test was used to evaluate variables associated with the interval between initial restoration and re-fracture.
Results: The study included 173 teeth from 132 children (mean age 8.8 ± 1.7 years) with a mean follow-up of 38 months (range 24–65 months). Twenty-three teeth experienced re-fracture after initial restoration. Recurrent trauma accounted for most re-fractures (69.5%), followed by biting on hard foods (13%). Cumulative survival rates at two, three, and four years were 90%, 85%, and 72% for direct composite restoration, and 90%, 84%, and 70% for fragment reattachment, respectively. Cox regression analysis identified no significant factors associated with restoration survival. Regarding composite restorations, the matrix transfer technique did not affect the treatment outcome. However, the interval between initial restoration and re-fracture was significantly shorter for fragment reattachment than for direct composite restorations ($p=0.015$). Boys were more likely to experience earlier re-fracture than girls ($p=0.039$).
Conclusion: Both direct composite restoration and fragment reattachment demonstrate favourable retention, which may be further improved by preventing recurrent injury, particularly among boys. Teeth restored with fragment reattachment exhibited earlier failures following treatment.

Keywords: crown fracture, retention, pediatric patients

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ABSTRACTS
Topic 6

Pediatric and Developmental Aspects of Dental Trauma



0008

Appropriate use of CBCT in management of complex dental injuries in a 12-year-old patient

Louise Barry[1]
[1]Dublin Dental University Hospital, Trinity College Dublin, Department of Paediatric Dentistry, Dublin, Ireland
Anne C O'Connell[2]
[2]Dublin Dental University Hospital, Trinity College Dublin, Department of Paediatric Dentistry, Dublin, Ireland

Introduction:
Early and accurate diagnosis is essential to optimise long-term outcomes and preserve alveolar bone in growing patients.
Case Report:
A healthy 12-year-old girl presented 24 hours following a fall indoors. Intraoral examination revealed abrasion of the mucosa, enamel infraction and concussion of tooth 12, extrusion with a mid-root fracture of tooth 11, and a complicated crown-root fracture of tooth 21 with loss of the entire crown.
Periapical radiographs confirmed mature apices and a mid-root fracture (11) and a cervical fracture (21). At the emergency visit, tooth 11 was repositioned and splinted. Tooth 21 underwent a Cvek pulpotomy using Biodentine and flowable composite.
Treatment:
Two weeks later, a multidisciplinary team formulated a definitive management plan aimed at preserving the permanent dentition. Tooth 12 remained asymptomatic. Tooth 11 developed pulpal necrosis and endodontic treatment was initiated with pulp extirpation and placement of CaOH to the fracture line. Tooth 21 had lost its composite seal and access was complicated by gingival overgrowth. Isolation of tooth 21 was not possible due to its position. and orthodontic repositioning using fixed appliances was planned.
At three weeks post-injury, tooth 21 became symptomatic and pulp extirpation was attempted despite limited access. A post-operative radiograph revealed a previously undetected root fracture. Cone beam computed tomography (CBCT) was subsequently undertaken for both central incisors, highlighting extensive root fractures in both teeth with associated bony defects.
Follow-up:
Both teeth had an unfavourable prognosis. Root submergence combined with prosthesis was recommended to preserve alveolar bone and maintain aesthetics and function during growth.
At the eight-week review, tooth 21 was extracted and replaced with an interim appliance. Further treatment is planned.
Conclusion:
CBCT imaging significantly altering the treatment plan justifying its use in appropriate cases to reduce unnecessary interventions.

Keywords: Paediatric , Root fracture, Cone Beam Computed Tomography

0024

Distant complications in the hard tissues of the maxillary incisors of an 8 – year–old girl after an injury in early childhood.

Katarzyna Cichoń[1]
[1]Instytut Pomnik Centrum Zdrowia Dziecka, Zakład Stomatologii, Warszawa, Polska
Katarzyna Rudolf - Urasińska[2]
[2]Rudolf Stomatologia - Medycyna Estetyczna, , Konstancin Jeziorna, Polska
Ewa Krasusuka - Sławińska[3]
[3]Instytut Pomnik Centrum Zdrowia Dziecka, Zakład Stomatologii, Warszawa, Polska

Introduction
The effects of craniofacial injuries in early childhood can occur immediately or be observed at a time distant from their occurrence. Injuries to the area of the alveolar process of the maxilla or the alveolar part of the mandible can be the cause of damage to primary teeth or permanent tooth germs. The effects of damage to the germs of permanent teeth are very often observed only at the moment of their eruption.

Case report
Currently an 8-year-old girl, after a craniofacial injury at the age of 7 months. The injury was caused by the child falling together with the car seat from a height of about 1.2 meters onto her face with a pacifier in her mouth. Fall without loss of consciousness and without vomiting. On the day of examination in the hospital emergency department, swelling of the upper lip, a slightly injured base of the nose, nasal septum without hematoma, and preserved nasal patency were observed. Intraorally, the upper lip frenulum is cut, swelling of the sublingual area without indications for surgical intervention. Neurologically, no alarming symptoms. Normal development of the alveolar process of the maxilla was observed, all deciduous teeth erupted on time. After the physiological loss of the upper medial deciduous incisors, eruption of the central permanent incisors with enamel hypoplasia and altered structure of tooth 12 was observed. A CBCT was performed, in which an abnormal structure of the crowns of the permanent lateral incisors and delayed development of the roots of the central incisors was observed.

Conclusion
The effects of craniofacial injuries in early childhood on the hard tissues of the teeth may go unnoticed during the primary dentition period and may only appear at the time of permanent teeth replacement.

Keywords: childhood trauma, eruption of deformed teeth

0108

Follow-Up–Oriented Management of Periodontal Tissue Injuries in Children: A Three-Case Report

Bilgenaz Eyuboglu Armagan[1]
[1]Istanbul University, Institute of Graduate Studies in Health Sciences, Department of Pedodontics, Istanbul, Turkiye
Arzu Pınar Erdem[2]
[2]Istanbul University, Faculty of Dentistry, Department of Pedodontics, Istanbul, Turkiye

Introduction: Orofacial trauma in children may lead to medical, esthetic, functional, and psychological consequences. Management of periodontal tissue injuries should be guided by injury type, root development, and the potential impact on the developing permanent tooth. In selected cases, conservative management with structured follow-up may support favorable healing while avoiding unnecessary intervention.
Case report: This report presents three pediatric trauma cases managed conservatively in accordance with IADT follow-up principles. All patients presented on the day of injury. Case 1 involved an 11-year-old boy with extrusive luxation of tooth 11 with mobility and percussion sensitivity. The tooth was repositioned under local anesthesia and stabilized with a passive flexible 0.4 mm stainless steel wire splint for 2 weeks. Clinical and radiographic follow-up showed symptom resolution, preserved vitality, and no pathologic findings at 1 year. Case 2 involved an 8-year-old boy with severe intrusive luxation of immature permanent incisor. After soft tissue care and home-care instructions, spontaneous re-eruption was awaited. Follow-up confirmed continued eruption, maintained vitality, and favorable clinical and radiographic healing over 12 months. Case 3 involved a 5-year-old girl with avulsion of primary tooth 51 and severe intrusive luxation of primary tooth 52. Following a conservative protocol of observation and home-care instructions, spontaneous re-eruption of tooth 52 and the eruption of permanent tooth 11 were observed at the 6-month follow-up. Following the timely exfoliation of tooth 52 and the subsequent eruption of permanent tooth 12, both permanent incisors remained clinically and radiographically asymptomatic at the 12-month follow-up.
Conclusion: These cases highlight that periodontal tissue injuries in pediatric patients should not be managed with a uniform approach. While extrusive luxation may require prompt repositioning and short-term flexible splinting, selected intrusive injuries in immature permanent and primary teeth may be managed successfully by observation and close follow-up. Careful case selection and adherence to trauma follow-up principles are essential for favorable outcomes.

Keywords: Luxation Injuries, Pediatric Dental Trauma, Conservative Treatment

0010

Long-term Outcomes Following Primary Tooth Intrusion: A Case Report

Katarzyna Brzeń[1]
[1]Jagiellonian University Medical College, Department of Developmental Age Dentistry, Institute of Dentistry, Kraków, Poland
Iwona Gregorczyk - Maga[2]
[2]Jagiellonian University Medical College, Department of Developmental Age Dentistry, Institute of Dentistry, Kraków, Poland

Introduction:
Trauma to primary teeth, particularly intrusions and alveolar fractures, may cause significant developmental disturbances in permanent dentition, including enamel hypoplasia, eruption disorders, and odontoma formation. To present the long-term management of a patient who experienced severe primary tooth trauma at age 2, highlighting developmental consequences in permanent teeth and challenges in treatment compliance.
Clinical and radiographic records over 9 years were retrospectively analyzed. Assessments included developmental changes in permanent teeth, conservative, endodontic, surgical, and orthodontic interventions, and the influence of behavioral factors on treatment outcomes.

Case report:
Intrusion of teeth 52, 51, 62, 61 and alveolar fracture caused damage to tooth buds 11, 21, and 22. Observed complications included enamel hypoplasia of central incisors, impaction and deformation of tooth 22, and an odontoma requiring surgical removal of four microteeth. Orthodontic treatment addressed an open bite and negative overbite. Endodontic therapy of tooth 21, necessitated by pulp necrosis, was completed via apexification with Biodentine. Despite 75 treatment visits, outcomes remained partially unsatisfactory due to poor patient compliance and oral hygiene.

Conclusion:
Early trauma to primary teeth can result in complex, long-term developmental disturbances of permanent dentition, necessitating interdisciplinary management. Successful outcomes depend on trauma severity as well as patient and caregiver cooperation. Early diagnosis, regular monitoring, and parental education are critical in managing pediatric dental trauma.

Keywords: intrusion, enamel hypoplasia, odontoma

0048

Managing Ankylosed Incisor by Orthodontic Space Closure and Anterior Tooth Substitution in Growing Patient

Wonjoo Seo[1]
[1]Pusan National University Dental Hospital, Department of Pediatric Dentistry, Yangsan-si, Korea
Taesung Jeong[2]
[2]Pusan National University Dental Hospital, Department of Pediatric Dentistry, Yangsan-si, Korea
Jonghyun Shin[3]
[3]Pusan National University Dental Hospital, Department of Pediatric Dentistry, Yangsan-si, Korea
Eungyung Lee[4]
[4]Pusan National University Dental Hospital, Department of Pediatric Dentistry, Yangsan-si, Korea
Soyoung Park[5]
[5]Pusan National University Dental Hospital, Department of Pediatric Dentistry, Yangsan-si, Korea

Background
Traumatic injuries to permanent incisors in growing patients frequently precipitate ankylosis, replacement resorption, and disruption of dentoalveolar development. Without meticulous growth consideration, these sequelae manifest as infraocclusion, alveolar defects, and persistent aesthetic and functional deficits. When multiple incisors are compromised alongside pronounced maxillary protrusion and lip incompetence, comprehensive treatment planning must harmonize craniofacial growth, structural integrity, and orofacial function.

Case Description
A 7-year-old male presented following the avulsion and replantation of the maxillary right central incisor (#11) and intrusion of the left central incisor (#21), sustained due to an out-car TA. Both teeth exhibited replacement resorption and ankylosis, presenting a poor prognosis and high risk of interfering with maxillary development. The patient had a skeletal Class II malocclusion with severe incisor protrusion, lip incompetence, and mouth-breathing tendencies. Eschewing conventional premolar extractions, both ankylosed central incisors were extracted to eliminate growth barriers. Orthodontic space closure utilized mesial translation of the lateral incisors, followed by sequential substitution of the canines and first premolars to reconstruct the anterior dentition. Substituted teeth were recontoured with composite resin to optimize morphology and incisal guidance. Achieving lip competence facilitated concurrent myofunctional therapy and nasal breathing re-establishment. After 18 months of treatment, a stable Class I molar relationship with optimal overjet and overbite was achieved. This accompanied restored lip competence, functional improvement, high aesthetic satisfaction, and alveolar bone preservation without interim prosthetic rehabilitation. This approach enables functional rehabilitation, avoids prosthetic replacement during growth, and may be considered for insurance coverage in trauma-related cases.

Summary
This case illustrates that targeted extraction of ankylosed incisors, combined with orthodontic space closure and sequential tooth substitution, is an effective, growth-adaptive strategy. It underscores the critical importance of comprehensive, multidisciplinary approaches in managing severe pediatric dental trauma.

Keywords: Tooth avulsion, Orthodontic space closure, Anterior tooth substitution

0132

Multidisciplinary Management of an Infected Gutta Percha Obturated Ankylosed Tooth: Removal, Regeneration, and Rehabilitation in a Growing Patient

Nurmimie Abdullah[1]
[1]Hospital Sultan Idris Shah Serdang, Department of Paediatric Dentistry, Selangor, Malaysia

Introduction
Ankylosis is a recognized complication of dental trauma characterized by fusion of the cementum or dentin of a tooth root to the alveolar bone. When an infection develops in a previously gutta-percha obturated ankylosed tooth, management becomes more complex, requiring coordinated surgical, regenerative, and restorative strategies, especially in growing patients.

Case Report
A 12-year-old patient sustained two avulsed teeth following a fall. The upper right maxillary central incisor was reimplanted, while the adjacent upper left central incisor was not found. Pulp extirpation was performed on the reimplanted tooth, which was later obturated with gutta-percha. He presented two years later with a sinus over the labial gingiva of an ankylosed maxillary incisor that had previously been root-treated. Clinical and radiographic assessment revealed replacement resorption with periapical infection. Additionally, a significant severe vertical labial bone defect was also detected radiographically. Removal of gutta-percha was attempted with intention for decoronation. Nonetheless, it was to no avail even after referral to a restorative specialist. Hence, surgical removal of an infected-ankylosed tooth was performed with meticulous bone preservation using a 3D replica as a stent. Guided Bone regeneration (GBR) was executed with collaboration of Periodontists to reconstruct the alveolar defect from the surgical procedure and adjacent resorbed ridge to preserve the ridge contour for future definitive prosthetic rehabilitation. An Essix retainer with a pontic was issued as a space maintainer until oral hygiene is satisfactory, allowing the interim fiber-reinforced composite restoration to maintain aesthetic, functional, and space during growth. Upon review visit, the finished result was pleasing, and the patient and parent were satisfied.

Conclusion
Management of ankylosed teeth in growing patients requires careful, multidisciplinary planning. Surgical removal combined with regenerative techniques and interim rehabilitation can preserve alveolar bone and optimize long-term aesthetic outcomes. The present case highlights the importance of holistic, multidisciplinary care and ridge preservation to conserve bony integrity, especially in children.

Keywords: Regeneration, Rehabilitation, Ankylosed obturated tooth

0049

Spontaneous Healing of Root Fractures in Immature Permanent Teeth with Preserved Pulp Vitality: A Case Report

Juyun Kim[1]
[1]Pusan National University Dental Hospital, Department of Pediatric Dentistry, Yangsan-si, Korea
Taesung Jeong[2]
[2]Pusan National University Dental Hospital, Department of Pediatric Dentistry, Yangsan-si, Korea
Jonghyun Shin[3]
[3]Pusan National University Dental Hospital, Department of Pediatric Dentistry, Yangsan-si, Korea
Eungyung Lee[4]
[4]Pusan National University Dental Hospital, Department of Pediatric Dentistry, Yangsan-si, Korea
Soyoung Park[5]
[5]Pusan National University Dental Hospital, Department of Pediatric Dentistry, Yangsan-si, Korea

Introduction
Premature endodontic intervention following dental trauma is often driven by clinician anxiety or hasty judgment. However, the 2020 International Association of Dental Traumatology (IADT) guidelines emphasize that root fractures in immature permanent teeth should not prompt preemptive endodontic treatment based solely on nonresponsive pulp vitality tests. Unnecessary interventions are generally discouraged in the absence of definitive clinical or radiographic signs of pulp necrosis. Accordingly, this report presents two cases demonstrating spontaneous root fracture healing in immature teeth following conservative management.

Case report
Case 1: A 7-year and 5-month-old patient presented with a cervical third root fracture of the maxillary right central incisor caused by trauma. Given the favorable occlusion, a conservative approach involving oral hygiene instructions and regular monitoring was adopted without active intervention. At the 17-month follow-up, radiographic findings demonstrated spontaneous healing at the fracture site accompanied by ongoing root development.
Case 2: A 7-year-7-month-old patient presented with an apical-third root fracture of the maxillary right central incisor and a cervical-third root fracture of the maxillary left central incisor. To alleviate secondary occlusal trauma exacerbated by a deep overbite, initial stabilization was achieved by opening the posterior bite. Four months after the trauma, ongoing root development was observed. At six months, a myofunctional appliance was implemented to correct the overbite. Over a 33-month follow-up period, tooth mobility resolved, and both teeth consistently exhibited normal responses to electric pulp testing. Radiographs demonstrated fading fracture lines, indicative of hard tissue repair and normal root maturation.

Conclusion
Inappropriate early endodontic treatment may impede root development in immature teeth. Given their considerable regenerative capacity, maintaining pulp vitality and facilitating root maturation continue to be the primary therapeutic objectives. In the absence of definitive infection, meticulous monitoring of the pulpal status may be considered a valid and sufficient clinical approach in place of immediate endodontic intervention.

Keywords: Spontaneous healing, Immature permanent teeth, Root fracture

0020

Treatment of Trauma-Induced Ankylosed Upper Incisor with an Open Apex: 11-Years Follow-up

Aysel Toprak Akbulut[1]
[1]Marmara University, Department of Paediatric Dentistry, Istanbul, Türkiye
Yılmaz Umut Aslan[2]
[2]Marmara University, Department of Prosthodontics, Istanbul, Türkiye
Ali Menteş[3]
[3]Marmara University, Department of Paediatric Dentistry, Istanbul, Türkiye

Introduction: Ankylosis is a traumatic dental injury characterized by the replacement of the periodontal ligament leading to root fusion with alveolar bone. It may lead to severe complications such as pulp necrosis, infection, apical periodontitis, external replacement resorption, inflammatory root resorption, and eventual tooth loss. In growing individuals, ankylosed teeth result in infra-occlusion, adjacent tooth migration, and alveolar ridge deficiency. This case report presents the 11-year clinical and radiographic follow-up of an ankylosed permanent incisors managed multidisciplinary through various interventional protocols.
Case Report: An 8-year-old systemically healthy female was referred to Marmara University, Department of Pediatric Dentistry in 2015 with a history of dental trauma. Clinical and radiographic examinations revealed intrusion of tooth #11 and lateral luxation of tooth #12. Due to failed spontaneous re-eruption of #11 and inadequate space, maxillary expansion was performed at 6th month, followed by an orthodontic eruption protocol. During follow-up, pulp necrosis was diagnosed in tooth #12. Since the apex remained open, an apical plug was created using White Mineral Trioxide Aggregate (MTA Angelus), followed by root canal treatment (RCT). When orthodontic traction failed, surgical repositioning was performed at 2nd Year. Two weeks after surgery, inflammatory root resorption was detected, and RCT was performed with white MTA. Orthodontic treatment was completed at 8th year. Since open-bite still remained, lithium disilicate (e.max, Ivoclar) laminate veneers were applied to the four maxillary incisors to optimize esthetics at 9th year. At the 11-year follow-up, tooth #11 remains functional and esthetically acceptable despite ongoing replacement resorption.
Conclusion: Surgical repositioning is an effective protocol when spontaneous re-eruption and orthodontic traction are unsuccessful in ankylosis cases. MTA remains a reliable, biocompatible material for managing trauma-induced external resorption. These interventions successfully maintained the tooth in the arch until growth completion, thereby preventing potential complications in the alveolar bone and adjacent teeth.

Keywords: dental trauma, ankylosis, intrusion

0138

Treatment of Unilateral Condylar Fracture in a Pediatric Patient: A Case Report

Ece Öksüz Şahin[1]
[1]Istanbul University, Faculty of Dentistry, Department of Pedodontics, Istanbul, Türkiye
Yeliz Güven[2]
[2]Istanbul University, Faculty of Dentistry, Department of Pedodontics, Istanbul, Türkiye

Introduction: Management of mandibular condylar fractures in pediatric patients presents unique challenges due to ongoing craniofacial growth and developing dentition. The aim of this case report is to evaluate the clinical and radiographic outcomes of a pediatric patient with a unilateral condylar fracture treated conservatively.

Case Report: A 6.5-year-old girl presented to the Istanbul University Faculty of Dentistry, Department of Pediatric Dentistry, following facial trauma due to a fall down the stairs. Clinical examination revealed pain upon palpation of the left condyle, limited mouth opening, and leftward mandibular deviation during opening. Panoramic radiography and Cone Beam Computed Tomography confirmed the diagnosis of a left condylar neck fracture. Closed reduction was chosen as the treatment modality to facilitate the initial fibrous fusion of the fracture segments and to allow for remodeling guided by normal functional stimuli. At the initial visit, antibiotics and anti-inflammatory analgesics were prescribed, and a soft diet was recommended. For the functional repositioning and reduce joint loading, a mandibular occlusal splint with a 3 mm acrylic height on the fractured side was applied. At the 1-year follow-up, clinical examination showed improvement in mouth opening and a marked reduction in mandibular deviation, with establishment of a stable and satisfactory occlusion. Radiographic examination demonstrated acceptable remodeling of the fractured condyle.

Conclusion: Conservative management using a removable occlusal splint can provide favorable functional and radiographic outcomes in pediatric condylar fractures. Early functional guidance combined with regular follow-up is essential for achieving stable occlusion and minimizing the risk of growth-related complications.

Keywords: Pediatric condyle fracture, Conservative treatment, Occlusal splint

0062

Unfavourable Outcomes Following Loss of Central Incisors: Two Case Reports

Rebecca Courtney[1]
[1]Department of Paediatric Dentistry, Dublin Dental University Hospital, and School of Dental Science Trinity College Dublin, Dublin, Ireland
Anne C. O'Connell[2]
[2]Department of Paediatric Dentistry, Dublin Dental University Hospital, and School of Dental Science Trinity College Dublin, Dublin, Ireland

Introduction:
Complications arise when initial dental management of trauma are compromised by patient compliance and timing. This presentation highlights options using the permanent lateral incisors to substitute for lost central incisors in 2 cases where ideal management was impeded by patient factors.

Case Reports:
Case 1: A 10.5-year-old female had open reduction and internal fixation of an anterior maxillary alveolar fracture with an enamel–dentine fracture of 11. Initially the tooth was restored and monitored. The patient was referred two years post-trauma with grey discoloration of 11, a buccal sinus, negative pulp sensibility tests and radiographic evidence of external inflammatory root resorption. Pulp extirpation and calcium hydroxide placement were performed under general anaesthesia, but suspected perforation resulted in poor prognosis of 11. Extraction of 11 with lateral incisor substitution has been completed and orthodontic space closure planned.

Case 2: A 9-year-old male attended an orthodontic assessment with a history of avulsion and loss of 21 two years previously. A space maintainer had been provided previously but was lost within one week and not replaced. The patient had a Class II Division I incisor relationship with midline deviation and space loss and became increasingly self-conscious about the missing 21. The compromised treatment plan is orthodontic space reopening using interim camouflage of 22 as a substitute central incisor.

Conclusion:
These cases illustrate how delayed complications and timing of intervention following dental trauma can lead to unfavourable outcomes. Early intervention, close monitoring and appliance compliance are critical in preserving long-term treatment possibilities.

Keywords: Dental Trauma complications, Tooth loss, Lateral Incisor Substitution

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ABSTRACTS
Topic 7

Oral and Maxillofacial Surgery, Transplantation and Implants in Dental Trauma Management



0103

Dentigerous cyst leads to autrotransplantation

Dagmar Marandi[1]
[1]Meliva, Kaarli Dental Clinic, Tallin, Estonia

Introduction
Besides facial soft tissue injuries and facial bone fractures, dental trauma is one of the most common injuries in the craniomaxillofacial region.
Dental trauma is more common in childhood, especially during active play and sports. Children are more prone to dental injuries because they fall frequently when learning to walk, they play actively and are fearless in sports.
Trauma to teeth can range from small enamel cracks to complete tooth loss.
Trauma to primary teeth frequently impacts the localization, development, and eruption of permanent teeth also it can damage or displace the permanent germ, leading to malformation, eruption delays.

Case report
In 2018. a 2 years old boy fell on the face and had the enamel fracture of primary upper right tooth. During mixed dentition dd 12,11 stayed impacted. In 2024 the boy had his first CBCT and teeth dd 12,11 were impacted in totally wrong position surrounded by the well-demarcated hypodense lesion. The lesion contains the crowns of dd 13,12,11 and had displaced the follicles of dd 11,12 to apical direction restricting the eruption. D 11 had distally rotated crown of 45 degrees and d 12 was situated parallel to alveolar ridge in rotation of 90 degrees. The pericoronal lesion resembles radiologically dentigerous cyst. In 2024 and 2025 2 autotransplantations were done. In year 2026 boy is 10 years old and having his first and second incisive in dentition, waiting canine eruption in right position.

Conclusion
In this case the eruption of teeth was rather obstructed due to a cyst (which pushed the follicles upwards), which in turn presumably arose from a previous childhood trauma, so a connection with the trauma is certainly assumed
The displacement of permanent d 12 and rotated d 11 was solved with autotransplantation and orthodontical treatment. D 13 is in erupting phase.

Keywords: Trauma in childhood, Dentigerous cyst, Autotransplantation

0071

Digital-Assisted Autotransplantation of a Traumatized Maxillary Anterior Tooth: A 30-Month Follow-Up

Shao Xiao[1]
[1]Peking University School of Stomatology, Hospital, Beijing, China

Maxillary anterior tooth trauma is highly prevalent, and for non-restorable teeth, implant therapy has frequently been considered the sole treatment choice. This case presents an alternative approach using autotransplantation to restore a missing tooth in the aesthetic region, which resulted in favorable and stable long-term outcomes.

A 29-year-old female with a complicated crown-root fracture of tooth #11 underwent autotransplantation of tooth #28 (third molar) to the #11 site using a fully digital workflow. Intraoral scanning and CBCT data were merged to design a layered surgical guide and a 3D-printed replica of the donor tooth. One week later, the guide was used to prepare the recipient socket, followed by atraumatic extraction and transplantation of tooth #28. The tooth was splinted with resin and wire. Root canal treatment was performed at one week, and a CAD/CAM crown at eight weeks. At the 30-month follow-up, clinical examination showed physiological mobility, no tenderness, and a satisfactory emergence profile. Radiography and CBCT confirmed new bone formation, a visible periodontal ligament space, and no root resorption or ankylosis.

Digital guideassisted autotransplantation enables rapid restoration of a missing tooth in the aesthetic zone following trauma. During a 27month observation period, stable periodontal ligament healing and alveolar bone regeneration were achieved, with satisfactory aesthetic outcomes. This technique holds promise for expanding the clinical application of tooth autotransplantation.

Keywords: Autotransplantation, Digital guide, Maxillary anterior tooth trauma

0054

Digitally Assisted Autotransplantation of an Immature Molar to Replace a Damaged Premolar. Case Report

Halina Szkutnik-Gunia[1]
[1]PaoloDent, Dentistry, Wiśniowa, Poland
Małgorzata Jamka-Kasprzyk[2]
[2]Developmental Dentistry Age Department, Jagielonian University Cracow, Cracow, Polska

Introduction:
Autotransplantation of teeth is biologically feasible in young patients with progressive craniofacial growth who have access to implants. Modern digital tools—such as CBCT, intraoral scanning, and 3D printing—ensure precision and predictability.

Case Report:
Tooth no. 24 was not restored in a 19-year-old patient due to caries extending into the pulp and alveolar bone. Autotransplantation of tooth no. 28, due to incomplete root development and ectopic location, was considered.
A preoperative CBCT and intraoral scanning were performed, and the tooth was lengthened using a patient-specific template. Four replicas of the donor device were 3D printed, including two enlarged by 10% to optimize atraumatic socket preparation and shorten the off-treatment period, which is crucial for periodontal ligament survival.

In December 2024, tooth 24 was atraumatically extracted, and the donor tooth was immediately repaired. It was positioned in infraposition to avoid premature occlusion and stabilized with sutures. Standard perioperative antibiotic therapy was administered.

Results:
Twelve-month survival was achieved thanks to the preservation of the pulpal implants, continued root development, and the absence of resorption and ankylosis. Data transmission was functional and aesthetic without protection.

Conclusions:
Autotransplantation of immature implants, supported by digital power and 3D-printed replicas, offers a promising and minimally invasive alternative to conventional prostheses or implants in young soldiers. Extracorporeal treatment is crucial. In this situation, combining a biological implant with a dental implant can optimize outcomes and provide the possibility of reconstruction in emergency situations.

Keywords: tooth autotransplantation,, 3D-printed surgical guide, digital planning, periodontal ligament presser

0104

Optimizing Management of Impacted Incisor with Immature Root: Autotransplantation for Rapid Aesthetic Rehabilitation in a Child

Yan Mei Ng[1]
[1]Department of Paediatric Dentistry , Hospital Kulim, Kedah, Malaysia
Mohamad Haziq Muhammad Zawawi [2]
[2]Department of Paediatric Dentistry, Hospital Seberang Jaya, Penang, Malaysia
Nik Nur Farahiyah @ Hidayah Nik Zainal Abidin[3]
[3]Department of Paediatric Dentistry, Hospital Kulim, Kedah, Malaysia
Jian'an Saw[4]
[4]Department of Paediatric Dentistry, Hospital Kulim, Kedah, Malaysia

Introduction:
Autotransplantation of teeth with open apex has demonstrated more favorable outcomes compared to closed apex teeth, due to the potential for revascularization and continued root development. This biological advantage often eliminates the need for root canal therapy and also contributes to a lower risk of ankylosis.

Case Report:
An 8-year-old girl presented to our hospital with the chief complaint of missing upper front tooth with history of dental trauma when she was 3 years old. Radiographic examination revealed a horizontally impacted maxillary right central incisor (tooth #11) with an open apex (Stage IV based on Cvek's classification on root development). Clinical assessment showed adequate space to accommodate the clinical width of the impacted incisor. After multidisciplinary clinic discussion with the orthodontists, the patient's parents opted for autotransplantation to achieve an immediate aesthetic outcome. The autotransplantation procedure was performed under general anesthesia using an atraumatic technique to preserve periodontal ligament vitality. Concentrated growth factor was used as a storage medium and root surface adjunct during the surgical procedure. The transplanted incisor was splinted to the adjacent teeth for a period of 4 weeks. At the one-year follow-up, tooth #11 demonstrated satisfactory alignment, healthy periodontal tissues, and continued root development. The patient remains under our periodic review, with high parental satisfaction reported.

Conclusion:
Autotransplantation of a horizontally impacted immature incisor is a viable and effective treatment option in growing patients. It enables early aesthetic rehabilitation while preserving the biological benefits of an open apex, ultimately improving patient's quality of life. Careful case selection and meticulous surgical technique are key to achieve successful outcomes.

Keywords: autotransplantation , impacted incisor, concentrated growth factor

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ABSTRACTS
Topic 8

Treatment Planning and Orthodontic Management



0149

Clinical evaluation of post-traumatic maxillary permanent incisors treated with orthodontic forced eruption: a case series

Małgorzata Bilińska- Stajno[1]
[1]Private practice, Warsaw, Poland
Michał Sobczak[2]
[2]Specialized Private Practice, Warsaw, Poland

Background
Traumatic crown-root fractures and other severe post-traumatic defects of maxillary permanent incisors may extend subgingivally or subcrustally, making predictable restoration difficult without pre-restorative procedures. Orthodontic forced eruption is a conservative tooth-preserving approach that may expose sound dental hard tissue, improve the ferrule effect, and facilitate restoration while managing gingival architecture in the aesthetic zone.
Objective
The aim was to evaluate clinical outcomes of post-traumatic maxillary permanent incisors treated with orthodontic forced eruption prior to restoration.
Methods
Seven patients treated in a private interdisciplinary clinic were retrospectively evaluated. Age ranged from 8 years 4 months to 42 years 8 months, with a mean age of 18 years 5 months. Inclusion criteria were post-traumatic subgingival or subcrestal defects requiring orthodontic extrusion to enable restoration. All teeth underwent endodontic treatment, orthodontic forced eruption with fixed appliances, retention, and subsequent restorative and/or periodontal management. Outcomes included tooth survival, completion of extrusion, feasibility of restoration, need for additional aesthetic or periodontal procedures, and clinical/radiographic complications.
Results
Six cases involved tooth 11 and one involved tooth 21. The primary indication for extrusion was post-traumatic crown-root/root fracture in six cases; one case followed intrusion-related complications. Four patients completed orthodontic extrusion, while three were still under active treatment. Mean extrusion rate was 3mm. In completed cases, the mean duration of treatment with fixed appliances was 9.25 months. Retention was provided with an Essix retainer and composite button in four cases (6 months). All completed cases required aesthetic correction, including composite reshaping, palatal surface modification, and gingivectomy. In younger patients, post-retention changes related to continued eruption and dentoalveolar development of adjacent teeth were observed, occasionally leading to incisal edge discrepancies and further aesthetic adjustment.
Conclusion
Within the limitations of this small case series, orthodontic forced eruption appeared to be a feasible tooth-preserving approach for severely traumatized maxillary permanent incisors with subgingival or subcrestal defects. Final aesthetic rehabilitation frequently required additional restorative and periodontal procedures. Younger patients may require continued monitoring because dentoalveolar growth and eruption of adjacent teeth can affect long-term incisal and gingival symmetry.

Keywords: Crown- root fracture, Orthodonic forced eruption, Dental trauma

0017

Early Orthodontic Intervention in a Replanted Avulsed Incisor Before Complete Ankylosis

SUNG CHUL CHOI[1]
[1]Kyung Hee University, School of Dentistry, Department of pediatric dentistry, Seoul, Korea

Introduction: Protrusive maxillary incisors are at increased risk of trauma and may cause esthetic and psychosocial problems in growing children. After avulsion and replantation, suspected ankylosis makes orthodontic movement uncertain. However, delaying treatment in a child with protrusive incisors may further increase the risk of re-injury and worsening esthetic or social burden. This report describes early orthodontic intervention before complete ankylosis in a replanted avulsed incisor.

Case Report: An 8-year-old boy presented after avulsion of the maxillary right central incisor and luxation of the maxillary left central incisor. The avulsed tooth was placed in milk within 5 minutes and replanted approximately 2 hours later. During follow-up, extensive root resorption of #11 was identified and managed with calcium hydroxide dressing followed by MTA filling, with subsequent healing of the apical lesion. The patient also had protrusive anterior dentition, anterior open bite, and a vertical growth pattern. Because #11 showed a metallic percussion sound suggestive of ankylosis, but remained at high risk of further trauma and esthetic burden, early orthodontic treatment with clear aligners was initiated before complete ankylosis was established. Immediately before treatment, another trauma resulted in signs of root fracture. Orthodontic treatment was nevertheless continued with slow, controlled tooth movement and close monitoring. After 10 months, the traumatized incisor was successfully moved, anterior protrusion and alignment were improved, and the root fracture showed favorable healing. Follow-up revealed infraocclusion associated with ankylosis, but the tooth remained functional and esthetically acceptable.

Conclusion: In selected growing patients, early orthodontic intervention before complete ankylosis may allow movement of a replanted avulsed tooth and help reduce re-trauma risk, Before complete ankylosis is established, carefully controlled early intervention may still allow tooth movement and may help reduce re-trauma risk, esthetic compromise, and psychosocial burden, provided that appropriate endodontic consideration and close interdisciplinary follow-up are maintained.

Keywords: Avulsion, Ankylosis, Early orthodontic intervention

0098

Managing Traumatic Dental Injury During Active Orthodontic Treatment: The Importance of an Interdisciplinary Approach: A Case Report

Faris Alshammari[1]
[1]University of Leeds, Leeds Dental Institute, Leeds, United Kingdom
Katherine O'Donnell[2]
[2]University of Leeds, Leeds Dental Institute, Leeds, United Kingdom
Cian Lowney[3]
[3]Leeds Dental Institute, Leeds, United Kingdom

Introduction:
Dental traumatic injuries are assessed clinically based on features outlined by the International Association of Dental Traumatology (IADT) guidelines. Patients undergoing orthodontic treatment who sustain dental trauma need multidisciplinary management to ensure a good outcome is achieved.

Case report:
An 18-year-old male patient undergoing Orthodontic treatment to align ectopic maxillary canines with fixed appliances presented following trauma to the maxillary central incisors. UR1 had mild extrusion (1mm) and UL1 palatal luxation (1mm). The affected teeth were repositioned under local anaesthesia and splinted for two weeks using the existing orthodontic appliance. Orthodontic forces were discontinued, and traumatic occlusion was relieved. After 2 weeks, the splint was removed. Clinical and radiographic examination at 2 and 4 weeks indicated no complications of dental trauma. At 8 weeks post-trauma, the UL1 showed signs of infection-related resorption and extirpation was completed, followed by completion of root canal treatment. This injury will lengthen the duration of Orthodontic treatment as active forces to UR1 and UL1 will be delayed for up to 12 months. His orthodontic treatment plan has been modified to continue with progress on the non-traumatised teeth, including his ectopic maxillary canines.

Conclusion:
Orthodontic appliances can make diagnosis of a traumatic dental injury complicated but can greatly assist with the immediate management strategy as demonstrated in this case. Careful liaison between the Paediatric Dental team and Orthodontic team can allow continuation of care to optimise the patient's treatment journey.

Keywords: Dental trauma, Fixed orthodontic appliance, Interdisciplinary management

0065

Orthodontic Management of a Severely Intruded Permanent Incisor: A 12- year long - term follow up

Deepesh Prajapati[1]
[1]Breathe Right Dental Clinic, Pediatric and Preventive Dentist, Jaipur, India

Introduction:
Traumatic intrusion of permanent teeth is one of the most severe dental injuries, often resulting in damage to the periodontal ligament and pulp, with potential long-term complications such as ankylosis and root resorption. Management strategies depend on the severity of intrusion and root development. While surgical repositioning is commonly recommended for severely intruded teeth, conservative approaches like orthodontic extrusion may offer favorable outcomes with better periodontal healing. However, long-term evidence supporting such approaches remains limited.

Case Report:
A 12-year-old female presented with a severely intruded, palatally displaced maxillary crown of permanent lateral incisor following trauma. An interdisciplinary treatment approach combining orthodontic extrusion and endodontic therapy was planned, deviating from conventional surgical management. Orthodontic extrusion was initiated using brackets, ligature wires, and auxiliary attachments, achieving gradual repositioning over five months. Endodontic therapy was initiated six months post-trauma. The patient was followed up clinically and radiographically over a 12-year period. At long-term evaluation, the tooth remained asymptomatic, functional, and aesthetically acceptable. Radiographic findings revealed pulp canal obliteration in the apical third and mild external root resorption, with no evidence of ankylosis or periapical pathology.

Conclusion:
Orthodontic extrusion can serve as a viable and biologically favorable alternative to surgical repositioning in selected cases of severe intrusion. This case emphasizes the importance of individualized, interdisciplinary management and highlights the value of long-term follow-up in achieving stable functional and aesthetic outcomes.

Keywords: Orthodontic Extrusion, Intrusive luxation, 12 year follow up

0131

When Orthodontics Meets Trauma: Management of Lateral Luxation of Mandibular Incisors During Active Orthodontic Treatment

Marcin Derwich[1]
[1]Lodz Medical University, Department of Pediatric Dentistry, Lodz, Poland
Elzbieta Pawlowska[2]
[2]Lodz Medical University, Department of Pediatric Dentistry, Lodz, Poland

Introduction
Orthodontic treatment in patients with dental trauma requires careful interdisciplinary planning, particularly when trauma occurs during active orthodontic treatment. Management becomes even more challenging in cases involving alveolar injury and tooth displacement beyond the alveolar process. This report presents the orthodontic and surgical management of lateral luxation of all mandibular incisors during comprehensive orthodontic therapy.

Case Report
A 13-year-11-month-old patient presented for orthodontic treatment with crowding and space deficiency for tooth 13. Diagnosis included skeletal open bite (FMA 36.5°), bimaxillary protrusion, dentoalveolar discrepancy, previous extraction of tooth 25, tongue thrusting, increased masticatory muscle activity, and awake bruxism. Treatment involved fixed appliances and planned extractions (14, 35, 44), combined with myofunctional therapy, physiotherapy, and psychological support.

Twelve months into treatment, the patient sustained trauma resulting in lateral luxation of four mandibular incisors. Initial suspicion of mandibular fracture was excluded. The teeth were repositioned; however, CBCT imaging revealed improper positioning of the lower right lateral incisor, with the root displaced beyond the alveolar process and associated vestibular plate fracture. Due to the unfavorable root position, orthodontic correction alone was not feasible. Manual repositioning under local anesthesia was performed, and correct positioning was confirmed with limited-field CBCT.

No active orthodontic forces were applied in the mandibular arch for six months. Orthodontic treatment was successfully completed after 30 months, and at 2-year retention follow-up, stable occlusal results and maintained pulp vitality of all mandibular incisors were observed.

Conclusion
This case highlights the importance of accurate diagnosis and interdisciplinary management of lateral luxation injuries occurring during orthodontic treatment. In cases of severe displacement beyond the alveolar process, early CBCT assessment should be considered to guide timely and appropriate intervention. Manual repositioning of the tooth may be required when orthodontic mechanics are insufficient. Favourable long-term outcomes can be achieved with an individualized, evidence-based approach.

Keywords: lateral luxation, orthodontic treatment, cone-beam computed tomography

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ABSTRACTS
Topic 9

Prevention, Sports Dentistry and Public Health Strategies



0050

Development and Biological Evaluation of a Novel Storage Medium to Improve Periodontal Ligament Fibroblast Survival in Avulsed Teeth

Amrita Chawla[1]
[1]All India Institute of Medical Sciences, Professor, Conservative Dentistry and Endodontics , New Delhi, India
Vishal Kumar[2]
[2]All India Institue of Medical Sciences , Senior Research fellow, Conservative Dentistry And Endodontics , New Delhi, India
Madhu Nath [3]
[3]All India Institute of Medical Sciences, Scientist III, Ocular Pharmacology & Pharmacy Division, New Delhi, India
Thirumurthy Velpandian[4]
[4]All India Institute of Medical Sciences, Professor, Ocular Pharmacology & Pharmacy Division, New Delhi, India
Sidhartha Sharma[5]
[5]All India Institute of Medical Sciences, Associate Professor, Conservative Dentistry and Endodontics, New Delhi, India
Vijay Kumar[6]
[6]All India Institute of Medical Sciences, Professor, Conservative Dentistry and Endodontics, New Delhi, India
Ajay Logani[7]
[7]All India Institute of Medical Sciences, Professor, Conservative Dentistry and Endodontics, New Delhi, India

Background
The prognosis of replanted avulsed teeth is primarily determined by the survival of periodontal ligament fibroblasts (PDFCs) present on the root surface. The viability of these cells is influenced by the storage medium used during the extra-oral period. Commonly recommended media such as Hank's Balanced Salt Solution (HBSS), milk, saline, and coconut water demonstrate variable ability to preserve cellular integrity. Corneal preservation media exhibit cytoprotective properties for corneal cells; however, no currently available medium is specifically optimized for the biological requirements of PDFCs.

Objective
To develop and evaluate a novel storage medium capable of improving the survival and functional stability of PDFCs using a primary cell culture model.

Methods
Extracted single-rooted premolars obtained for orthodontic purposes were used. Teeth were stored in HBSS, indigenous corneal preservation medium (Extstorsol), low-fat milk, coconut water, and normal saline for 1 h, 24 h, 48 h, and 96 h. PDFCs were isolated from the apical two-thirds of the root surface using collagenase digestion. Cell viability was assessed using the Trypan Blue exclusion assay. Osmolarity, pH, viscosity, and sterility were evaluated to identify properties that support cell survival. Further validation using the MTT assay is ongoing with a sample size of n = 4 per group.

Results
Initial findings revealed that Extstorsol demonstrated superior maintenance of cell viability at extended time points, followed by HBSS. Milk and coconut water were found to be more suitable for short-term storage. The establishment of primary PDFC cultures is ongoing and provides an important biological platform for the optimization of the experimental storage media.

Conclusion
Development of a biologically optimized storage medium supported by primary periodontal ligament fibroblast culture may improve cell survival and enhance the prognosis of delayed tooth replantation.

Keywords: Storage Medium , Avulsion , Periodontal Ligament Fibroblast Survival

0068

Effect of Air Vents on the Molding Characteristics and Fit of Mouthguards Fabricated on 3D-Printed Resin Models

Gen Tanabe[1]
[1]Meikai University, Department of Sports Dentistry, Sakado, Japan
[1]Institute of Science Tokyo, Department of Masticatory Function and Health Science, Tokyo, Japan
Katarzyna Mańka-Malara[2]
[2]Medical University of Warsaw, Orthodontics, Warsaw, Poland
Chihiro Takahashi[3]
[3]Private dental laboratory, Niiza, Japan
Abhishekhi Shrestha[4]
[4]University of Oulu, Research Unit of Population Health, Oulu, Finland
Kaito Togawa[5]
[5]Meikai University, Department of Sports Dentistry, Sakado, Japan
[5]Institute of Science Tokyo, Department of Masticatory Function and Health Science, Tokyo, Japan
Hiroshi Churei[6]
[6]Institute of Science Tokyo, Department of Masticatory Function and Health Science, Tokyo, Japan
Tomoya Sano[7]
[7]Meikai University, Department of Oral Health & Preventive Dentistry, Sakado, Japan
Ken Haku-Mizuhara[8]
[8]Private practice, Takaoka, Japan
Toshiaki Ueno[9]
[9]Meikai University, Department of Sports Dentistry, Sakado, Japan

Background:
With the advancement of digital dentistry, three-dimensional (3D)-printed resin models are increasingly used in dental laboratory procedures, including mouthguard (MG) fabrication. Since resin models have little air permeability, thermoforming a MG sheet on such models may reduce adaptation and molding accuracy. Aim of this preliminary study was to compare the molding characteristics and fit of mouthguards thermoformed on 3D-printed resin models, both with and without air vents.

Methods:
A plaster replica of jaw model was prepared and trimmed appropriately. The plaster model was scanned using a 3D scanner, and resin models were designed using CAD software and fabricated by 3D printing. Three model types with identical morphology were used: a plaster model, a resin model, and an air-vented resin model. EVA mouthguard sheets (3 mm) were thermoformed using a modified vacuum-forming machine. After cooling, the appliances were trimmed and polished. Fit was evaluated using an X-ray CT 3D measuring system. Scanning was done in 3 experimental settings: MG-fitted models, models and MGs and internal porosity and gap area at selected cross-sections between the models and MGs were analyzed.

Results:
The internal porosity of the plaster and resin models was 1.6% and 0.0%, respectively. The gap area between the model and MG was 283.8 mm² for the plaster model, 375.8 mm² for the air-vented resin model, and 572.6 mm² for the resin model without vents.

Conclusion:
In this preliminary evaluation, compared with plaster models, 3D-printed resin models tended to show poorer molding accuracy and fit during MG fabrication. However, the additional of air vents appeared to improve these properties. Air vents may enhance the clinical applicability of 3D-printed resin models for MG fabrication

Keywords: Mouthguard, 3D-Printed Resin Models, Air Vents

0004

Prevalence of Dental Trauma and Mouthguard Use in Motocross Athletes: A Pilot Study

Yessenia Valverde Ingersoll[1]
[1]Academy of Sports Dentistry , Chula Vista, United States
[1]Private Office, Chula Vista, CA, United States

Background:
Motocross is an extreme sport with a high risk of orofacial injuries. Dental trauma can result in significant functional and esthetic consequences, but data on injury prevalence and preventive behaviors such as mouthguard use in motocross athletes are limited.

Objective:
To assess the prevalence and types of dental trauma in motocross riders and evaluate patterns and barriers to mouthguard use over the preceding 12 months.

Methods:
A crosssectional pilot survey was administered to 15 motocross athletes at a local motocross center. Participants completed a questionnaire documenting demographics, dental trauma experiences (e.g., lip injuries, chipped teeth), frequency of mouthguard use, and perceived barriers to protective equipment adoption. Descriptive statistics summarized injury prevalence and mouthguard use patterns.

Results:
Of the 15 participants, only 1 regularly wore a mouthguard during motocross activities. The majority reported at least one orofacial injury in the past year, with lip lacerations and tongue bites being most common. Chipped or fractured teeth were also reported by multiple riders. Barriers to mouthguard use included concerns about esthetics, perceived inconvenience, and lack of access to fitted mouth guards.

Conclusion:
Preliminary findings suggest dental trauma is common among motocross athletes, yet mouthguard utilization remains exceptionally low. Barriers related to comfort, appearance, and access may contribute to underuse. These data highlight the need for enhanced educational outreach and accessible, sportspecific protective devices to reduce traumatic dental injury risk in highimpact sports. Larger studies are recommended to validate these observations and inform targeted prevention strategies.

Keywords: motocross, dental injury, mouthguard

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Workshops



1. Regeneration & Vital Pulp Treatment

Workshop leader: Dr. Michał Sobczak

Vital Pulp Therapy and Regenerative Endodontics– Hands-on Workshop

This hands-on workshop will focus on contemporary biologically based management of traumatized permanent teeth, from vital pulp preservation to regenerative endodontic treatment of immature necrotic teeth.

The first part will address traumatic pulp exposure, with particular emphasis on partial and coronal pulpotomy, case selection, aseptic pulp amputation, irrigation and haemostasis, hydraulic calcium silicate cements and immediate coronal sealing. VPT will be presented as controlled biological wound management.

The second part will focus on immature permanent teeth that have developed pulp necrosis. Participants will discuss decision-making between apical barrier techniques and regenerative endodontic treatment, considering root development, apical diameter, dentinal wall thickness, infection and long-term structural prognosis. Key steps of regenerative treatment, including disinfection, preservation of the apical biological niche, scaffold creation and will be demonstrated.

During the hands-on session, each participant will work on an individual open-apex model and perform a regenerative procedure using two scaffold approaches: an induced blood clot and platelet-rich fibrin (PRF). This will allow participants to compare the practical differences between the two techniques, including scaffold creation, control of the coronal level, placement of the hydraulic calcium silicate barrier.

The workshop will combine current evidence and guidelines with practical exercises, highlighting the clinical factors that determine predictable healing and long-term tooth survival.



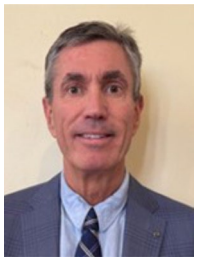
Dr Michał Sobczak, is a full-time specialist in Paediatric Dentistry. He graduated from the Dental Faculty of the Medical University of Warsaw, where he completed specialist training in Paediatric Dentistry and defended his PhD thesis in dental traumatology.
He is the co-founder and Medical Director of a multidisciplinary dental centre, where he leads a specialised team providing advanced care for patients with complex needs. His clinical expertise includes the management of dental trauma, dental caries, disorders of enamel and dentine mineralisation, as well as developmental and genetic anomalies affecting the dentition.
Dr Sobczak is a co-founder and, since 2013, a Board Member of the Polish Academy of Paediatric Dentistry (PASD).
In 2016, he was awarded the title of Fellow of the International Association of Dental Traumatology (FIADT), recognising his advanced competencies in dental traumatology.
In 2023–2024, he served as Board Member and Treasurer of the European Academy of Paediatric Dentistry (EAPD).
From 2021 to 2024, he served as a Member of the Board of Directors of the International Association of Dental Traumatology (IADT).
In 2025, he was elected President-Elect of the IADT.
Alongside his clinical practice, he is actively involved in postgraduate education and is a recognised national and international lecturer in dental traumatology and paediatric dentistry.
He is also a member of numerous national and international scientific societies.

2. Custom-Fabricated Mouthguard Workshop

Workshop leader: Dr. Hans Stasiuk

JUST WEAR IT! – Protect Those Winning Smiles
Custom-Fabricated Mouthguard Workshop
Hans Stasiuk
Historian and Past President of the Academy for Sports Dentistry

Would you like to see fewer dental emergencies in your office and in the field of play? Every patient and athlete should keep their winning smile for a lifetime, so it's important to protect their teeth from damage during athletic activities. The Academy for Sports Dentistry promotes various ways to prevent orofacial injuries in sports and how to treat them. A history of mouthguards, along with the advantages and disadvantages of the different types, will be discussed.
Participants in this workshop will learn which type of mouthguard is best for athletes of different ages and those who play different sports. This interactive workshop will cover the process of pressure-laminated custom mouthguards and give participants the opportunity to fabricate their own mouthguard (including trimming and polishing the EVA material).



After obtaining his Doctor of Dental Medicine Degree from the University of Manitoba in 1995, Dr. Stasiuk began working in Portage la Prairie, Manitoba. He has a special interest in Sports Dentistry, which started during dental school. Since joining the Academy for Sports Dentistry in 1996, Dr. Stasiuk has held numerous roles within ASD, including President on two occasions, Secretary, Editor, and Symposium Chair. Additionally, he is involved with multiple ASD committees and serves as the ASD Liaison for AOSM, CATA, and JCSMS. He was awarded an ASD Fellowship in 2006, and in 2025, he received the ASD Distinguished Member Award. He has jointly published papers with members of the European Association for Sports Dentistry and the International Association of Dental Trauma. He has been the Team Dentist for the Portage Terriers Hockey Club for over twenty-five years. Dr. Stasiuk has taught Sports Dentistry and a Custom Mouthguard Workshop at the University of Manitoba for over 25 years. He is in his fourth year as a part-time clinical instructor in the Pediatric Dentistry undergraduate clinic at the University of Manitoba.

3. Splinting Materials and Techniques

Workshop leader: Dr. Sidhartha Sharma

Effective splinting is a critical component in the management of traumatic dental injuries, directly influencing healing outcomes, patient comfort, and long-term prognosis. This workshop provides a comprehensive, evidence-based overview of contemporary splinting materials and techniques used in the stabilization of dental traumatic injuries.

Participants will learn the biological principles guiding splint selection, understand the indications and duration of splinting for various injury types, and gain familiarity with splinting materials such as orthodontic wires, fishing lines, titanium trauma splints etc. The session will also highlight common clinical challenges, troubleshooting strategies, and step-by-step demonstrations of splint fabrication and placement. By the end of the workshop, attendees will be equipped with practical skills and updated knowledge to confidently implement predictable, minimally invasive, and guideline-based splinting protocols in routine trauma care.



Dr. Sidhartha Sharma, MDS, FIADT, FDSRCPS (Glasgow), is a full time Associate Professor in Endodontics at the prestigious All India Institute of Medical Sciences, New Delhi, India. A Fellow of the International Association of Dental Traumatology and a Diplomate of the Indian Board of Endodontics, he is actively involved in clinical practice, postgraduate training, and research. With 56 indexed publications and three book chapters (H-index 14), his key interests include dental traumatology, vital pulp therapy, guided endodontics, and endodontic microsurgery. He has received several international awards, including the ESE Paul Dummer Research Poster Award 2025 , Poster Scientific Research Award at WCDT 2024, and the Best Delegate Presentation Award at ARCDT 2022.

4. Autotransplantation – surgical protocol for developing teeth

Workshop leader: Prof. Paweł Plakwicz, DDS, PhD

Autotransplantation of teeth with immature roots is an established treatment option for replacing missing teeth in growing individuals, with reported success rates exceeding 90%. Favorable orthodontic indications, atraumatic surgical handling, and an optimal match between the donor tooth and the recipient site are essential prerequisites for a successful outcome. Premolars with developing roots are considered optimal donor teeth; however, other teeth may also be autotransplanted in selected clinical scenarios.

The key elements of the workshop on the autotransplantation of developing teeth will include:

- the biology of the optimal stages of root development in relation to alveolar bone morphology at the recipient site;
- surgical planning based on the morphology of the donor tooth and recipient site, including the use of CBCT;
- a detailed description of the surgical technique for the autotransplantation of premolars in different clinical indications;
- postoperative follow-up, with particular emphasis on clinical and radiographic signs of treatment success and failure, as well as a review of relevant research findings;
- autotransplantation of other types of teeth, including developing incisors, canines and molars.



Prof. Plakwicz graduated from the Dental Faculty, Medical University of Warsaw. He was an assistant lecturer at the Department of Oral Surgery at the same university. He completed postgraduate training in autotransplantation of teeth at the University of Oslo, Norway in 2000. In 1996, he established a private practice in Warsaw, focused on the oral and periodontal surgery. In 2001, he qualified as a specialist in Oral Surgery and in 2009 defended his PhD. In 2015 he gained his PhD with habilitation. In 2017 he received his MFDS ad eundem from the Royal College of Surgeons of England. In 2023 he became a full professor. Until 2024 he has worked at the Department of Periodontology, Medical University of Warsaw. His main research interests are in the treatment of growing patients with missing teeth, eruption disturbances, teeth autotransplantation and treatment of mucogingival deformities. During the last decade, he authored and co-authored over 70 scientific articles and chapters in the books. He has performed and followed-up more than 700 autotransplanted teeth. Prof. Plakwicz lectures and conducts courses nationally and internationally in Europe, Africa and in the United States (where he was appointed Adjunct Professor at the UNC in Chapel Hill, NC in 2019).

5. Mastering the Open Apex. Endodontic Management of Necrotic Traumatized Immature Teeth

Workshop leader: Dr. Nestor Tzimpoulas

Traumatic dental injuries affecting immature permanent teeth represent one of the most biologically and technically demanding scenarios in endodontic practice, particularly when pulpal necrosis develops. Accurate diagnosis of pulp status, appropriate timing of intervention, and modification of treatment protocols are essential to achieve predictable outcomes in teeth with open apices, thin dentinal walls, and compromised periodontal tissues.

This 2.5-hour hands-on workshop focuses on **when and why pulp necrosis should be expected following traumatic dental injuries**, how to monitor these teeth clinically and radiographically, and **when to intervene endodontically**. Special emphasis will be placed on **adjusting treatment strategies in necrotic immature teeth**, integrating current evidence and trauma-based decision making.

Participants will be guided step-by-step through critical clinical stages, including:
- Access cavity design in maxillary anterior teeth following trauma, with emphasis on preservation of remaining tooth structure
- Adaptation of canal disinfection protocols in immature necrotic teeth to balance antimicrobial efficacy and tooth preservation
- Contemporary obturation strategies for teeth with open apices
-

The workshop will explore and compare different apexification and obturation techniques, including:
- Apical plug techniques using mineral trioxide aggregate (MTA) with or without barrier
- Apexification with premixed, ready-to-use bioceramic materials
- Hybrid techniques combining bioceramic sealers with gutta-percha

All techniques will be thoroughly discussed with regard to indications, material selection, common challenges, and clinical outcomes. During the practical session, participants will have the opportunity to perform these procedures on specially designed 3-D printed models of immature teeth, allowing hands-on experience with various bioceramic materials and techniques.

Key learning points
- **Understand the biological and structural challenges** of necrotic traumatized immature teeth and their implications for treatment planning and prognosis.
- **Adapt access cavity design and disinfection protocols** to safely manage immature teeth while preserving fragile dentinal walls.
- **Select and apply appropriate obturation strategies** for immature teeth, including apical barrier techniques with MTA and premixed bioceramic materials.
- **Identify common clinical challenges and improve predictability** when obturating immature canals using bioceramic sealers and gutta-percha



Dr. Nestor Tzimpoulas received his DDS degree in 2009 from the University of Athens, School of Dentistry, in Greece. He completed his three-year postgraduate specialization in Endodontics in 2016 at ACTA, University of Amsterdam,The Netherlands. Since 2016, he has been practicing exclusively in Endodontics, initially in The Hague and subsequently in Athens, where he owns a private practice specialized in Endodontics and Dental Traumatology, ROOTS.
In 2021, Dr. Tzimpoulas was awarded the Fellowship of the International Association of Dental Traumatology (IADT) after successfully completing the official written examination process.
He has authored and co-authored several peer-reviewed international publications and is the author of the chapter on post-traumatic root resorptions in the book "Traumatic Dental Injuries – Current Emergency Interventions and Treatment Approaches." He has lectured nationally and internationally in conferences, scientific societies, and Universities, and provides hands-on clinical courses worldwide focusing on contemporary dental trauma management, the use of bioceramic materials in vital pulp therapy, the endodontic management of immature teeth, and root resorptions. He is also the Greek ambassador of dentaltraumaguide.org and has translated the latest IADT Dental Trauma Guidelines, the Dental Trauma Guide, and the ToothSOS app into the Greek language.
Dr. Tzimpoulas is an accredited Specialist Member of the European Society of Endodontology (ESE) and a Specialist Member of the American Association of Endodontists (AAE). He serves on the Board of Directors of both the Hellenic Association of Endodontology and Sports Dentistry Hellas, and is a member of the International Association of Dental Traumatology (IADT) and serves and the Dutch Association of Endodontics (NVvE). Additionally, within the IADT he serves on the Education Committee, Social Media Committee and Membershio Committee.

6. Interactive Workshop: Dental Traumatology – Emergency Management and Hands-On Treatment

Workshop leaders: Dr. Christian Diegritz & Dr. Marcel Reymus

This interactive workshop focuses on the immediate management of traumatic dental injuries. Participants will engage in a realistic simulation: Using a custom AI application, they will receive a call from a concerned mother whose 16-year-old son has suffered a dental avulsion and multiple other traumatic dental injuries. The participant's task is to provide the mother with clear, correct instructions for emergency first aid.
Following the simulation, each participant will practice hands-on treatment on a realistic 3D-printed model of the patient's case. Practical exercises include the replantation of the avulsed tooth, repositioning of a luxated tooth, direct pulp capping, and the application of a titanium trauma splint.
The workshop is designed to enhance clinical decision-making and technical skills in the acute management of dental trauma.



2007: Graduated from the Dental School of the Ludwig Maximilians University of Munich (LMU)
Since 2008: Assistant Professor at the Department of Conservative Dentistry and Periodontology (LMU)
Since 2012: Certified Member of the ESE
Since 2014: Head of the Endodontic Section of the Department of Conservative Dentistry and Periodontology (LMU)
Since 2014: Specialist in Endodontics and Dental Traumatology (DGET)
Member of the DGZMK, DGZ, DGET, ESE, IADT and AAE



2013: Graduated from the Dental School of the Ludwig Maximilians University of Munich (LMU) Since 2013: Assistant Professor at the Department of Conservative Dentistry and Periodontology (LMU) Since 2018: Certified Member of the ESE Since 2018: Specialist in Endodontics and Dental Traumatology (DGET) Since 2024: Head of the Dental Trauma Section of the Department of Conservative Dentistry and Periodontology (LMU) Member of the DGZMK, DGZ, DGET, ESE and IADT

7. Intentional Replantation in the Aesthetic Zone

Workshop leader: Dr. Mile Churlinov

Intentional replantation (IR) is a surgical procedure designed to address apical or marginal infections following an accidental tooth extraction. The procedure involves extraction and reimplantation of the tooth after thorough debridement of the infection site and subsequent splinting to stabilize the tooth. Initially considered a treatment of last resort by Grossman, IR represents a critical option between saving natural dentition and opting for a dental implant. Recent systematic reviews indicate survival rates for IR ranging from 80% to 95%, depending on clinical variables.
Optimal candidates for intentional replantation include teeth for which surgical endodontics is contraindicated due to technical challenges, such as those located in the lower molar region, near vital structures (e.g., mental foramen or maxillary sinus), or with inaccessible external cervical resorption. Additionally, IR may be indicated for teeth with complex endodontic lesions, suspected vertical root fractures following repeated endodontic treatments, or anatomical peculiarities combined with periodontal involvement, such as gingivo-palatal grooves.
In the context of this presentation, we will explore a broader spectrum of indications for IR, including fractured teeth, cases where vertical root fracture is suspected, and extensive endodontic lesions. From the author's clinical experience, preoperative splinting significantly enhances postoperative splinting procedures, while intrasulcular incisions promote a more favorable healing environment for the supracrestal attachment.

Overall, intentional replantation is a cost-effective procedure associated with minimal postoperative pain and a low incidence of complications, provided the procedure is performed with careful preoperative planning and atraumatic tooth extraction techniques.



Education & Qualifications
- *2004: Dental Technician, Bitola, Macedonia*
- *2010: DDS, Faculty of Dental Medicine, Medical University of Plovdiv, Bulgaria*
- *2023: Master in Endodontics, Universitat Internacional de Catalunya (Highest Academic Achievement)*
- *2024-present: Part-time Teacher, Postgraduate Program in Endodontics and Autotransplantation, Universitat Internacional de Catalunya- Barcelona, Spain*
- *2024-present: Part-time Teacher on-line, London Dental Institute, UK*

Professional Experience
- *2013–2020: Specialist in Endodontics and dental traumatology, with a focus on using surgical microscopes*
- *2024–Present: Lecturer, Postgraduate Program in Endodontics at Universitat Internacional de Catalunya*
- *Contributor: Tooth Autotransplantation in the digital era, Francesc Abella & Ramon Meda*

Professional Memberships
- *International Association of Dental Traumatology (IADT)*
- *Dental Trauma Guide (Denmark)*
- *Opinion Leader for Coltene (Switzerland) in Bulgaria*
- *Awards & Achievements*
- *2018: First Place, Best Article and Case Report Competition, IADT World Congress, San Diego (Horizontal Root Fracture in Permanent Dentition)*
- *2023: First Place, Best Article and Case Report Competition, IADT World Congress, Japan (Guided Block Tooth Autotransplantation Case Report)*
- *2015: First Place, Smile of the Year (Complex Aesthetic Restoration), with Dr. Boyana Byanova*
- *2017: First Place, Smile of the Year (Implant Case), with Dr. Sofien Riahi*
- *2022: First Place, Smile of the Year (Microsurgical Endodontics), Second Place (Endodontic Retreatment)*
- *2023: Second Place, Smile of the Year (Microsurgical Endodontics)*

International Presentations & Lectures

- *2016–2023: Speaker and Lecturer at prominent international congresses and symposia, including:*
  - *World Endodontic Meeting (Cape Town, 2016)*
  - *EDSIC (Cairo 2016)*
  - *Roots Summit (Dubai, 2016)*
  - *Endo Evolution (Moscow 2017)*
  - *ESE Biennial Congress (Budapest, 2022)*
  - *Dental World Congress (Budapest, 2023)*
  - *Welcome to the Future of Autotransplantation (Sofia, 2024)*
  - *Master in Endodontics (Siena 2024)*
  - *World Dental Federation FDI (webinar)*

Key Topics

- *Pulpotomy in Permanent Dentition*
- *Endo-restorative Symbiosis*
- *Root Canal Preparation and Obturation*
- *Microsurgical endodontics*
- *External Cervical Resorption Management*
- *Intentional replantation*
- *Dental trauma and tooth autotransplantation*

Publications & Clinical Contributions

- *Contributed clinical cases to the "Tooth autotransplantation in the digital era" textbook.*
- *International Association of dental traumatology newsletter*
- *Hungarian Endodontic journal*
- *Jury at the scientific poster competition during the "World Dental Congress" Tokyo 2024*

8. The Child Behind the Trauma: Integrating Clinical and Psychosocial Strategies in Managing Tooth Injuries

Workshop leader: Prof. Anne O'Connell

A traumatic dental injury causes great distress to both child, parents and dentists. The IADT 2020 guidelines promotes a child centered approach for emergency and long term care of these injuries. It is important for every dentist to be aware of techniques that can be adapted to manage these stressful situations as well as an efficient approach to influence communication in the long term management for such injuries.

This will be an interactive session where strategies for the dental team will be applied to various situations. Communication is key to success but a planned approach is also required to diagnose and treat the injury while controlling the associated anxiety. Various approaches to managing behaviour will be analysed. Practical tips for clinical examination and treatments will be demonstrated that can be used by the dental team and modified according to culture, finance and individual concerns. An active exchange of ideas and approaches is anticipated to share techniques that influence and modify behaviour, thoughts and emotions while prioritising a 'Child First' approach.



Anne is currently a Professor /Consultant in Paediatric Dentistry and head of the PG programme in Trinity College Dublin and Childrens Heath Ireland at Tallaght. She obtained her Dental Degree from Trinity College Dublin and her specialty training in Paediatric Dentistry in Eastman Dental Centre, New York. She has numerous Fellowships and is Board Certification in Paediatric Dentistry. She is also a trained cariologist with a strong publication record in both basic science and clinical dentistry, including trauma, caries, and advanced aesthetic restorative care for children. Anne is the Past President of the International Association of Dental Traumatology and continues to be active in numerous national and international dental and scientific committees/organisations, including IADT, IADR, IAPD, ISDC, EAPD and AAPD. She remains an active clinician and educator with a passion to explore and share appropriate management of the child patient and their parents in various situations.

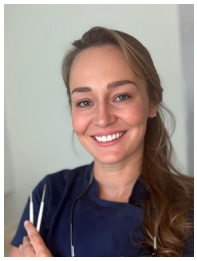
9. Invisible Repairs – Mastering Direct Composite Restorations in Traumatized Anterior Teeth

Workshop leader: Dr. Nela Sarteur

Direct restorations in traumatized anterior teeth represent one of the most challenging aspects of aesthetic dentistry. It's not just about rebuilding a shape—it's about restoring an optical balance so that the restoration becomes truly invisible.
The goal of "Invisible Repairs" is to integrate composite harmoniously, respecting the tooth's natural color, translucency, and morphology.
This hands-on workshop will focus on practical solutions to the most common challenges in anterior direct restorations, addressing key points of clinical management:

- **Masking the Fracture Line** – understanding why lines appear and strategies to break them
- **Mimicking Nature: Color & Optical Properties** – mastering tooth optics and improving shade selection without errors
- **Stratification Techniques for a Deep, Natural Effect** – achieving depth and realism while keeping the approach simple
- **Shape & Surface Anatomy** – managing macro and micro anatomy, line angles, and texture to enhance invisibility
- **Polishing for a Natural Effect** – step-by-step protocols for long-lasting, natural gloss
- **Managing Discoloured or Non-Vital Teeth** – understanding causes, using composite masking effectively, and knowing the limits of direct restoration
- **Avoiding and Solving Common Mistakes** – practical tips and troubleshooting for predictable outcomes

Participants will gain hands-on experience, practical tips, and reproducible strategies to achieve natural, invisible results in everyday practice.



Dr. Nela Sarteur, DMD, PhD is a dentist based in Italy, specializing in restorative and aesthetic dentistry, with a focus on direct composite restorations and contemporary layering techniques. After graduating in Dentistry in 2016 from the Masaryk University of Brno – Czech republic, she moved to Italy, where she joined the University "G. d'Annunzio" as a doctor and the tutor in the Department of Restorative Dentistry.
She completed her PhD in Biomolecular and Pharmaceutical Sciences in 2020. Her research focused on the mechanical properties and biocompatibility of additive restorative materials free of Bis-GMA and HEMA. She is a co-author of peer-reviewed publications in international journals, focusing on restorative materials and their clinical performance.Since 2022, she has been actively involved in hands-on dental education, delivering courses on anterior and posterior composite restorations in collaboration with dental institutions and universities across Europe.
Dr. Sarteur is also engaged in the international dental community through long-term participation in the Jules Allemand Trophy, where she progressed from participant to tutor and member of the organizing team.
Her clinical and teaching work is centered on achieving predictable, minimally invasive, and aesthetic outcomes in everyday dental practice. She places particular emphasis on the harmony between natural aesthetics and the functional dynamics of the oro-masticatory system.

10. 3D Imaging in Dental Trauma: Practical CBCT Interpretation and Clinical Decision-Making

Workshop leaders: Dr. Michał Szałwiński & Dr. Anna Pantelewicz

This workshop focuses on the interpretation of CBCT imaging in dental and maxillofacial trauma and its application in clinical decision-making. The program is based on the analysis of clinical cases and is organized into three thematic sections.

1. The first section covers the principles of CBCT assessment and the use of diagnostic software. Participants will be guided through a structured method of reviewing volumetric data with multiplanar reconstruction. Anatomical structures of the maxilla, mandible, and temporomandibular joint are reviewed in the context of trauma imaging, with reference to their relevance in interpretation of post-traumatic changes.
2. The second part addresses dental trauma, including crown and root fractures, luxation injuries, and associated changes in supporting structures. The discussion will include the diagnostic value of CBCT in different types of injuries, as well as the identification of complications such as external and internal resorption, ankylosis, and changes in alveolar bone morphology.
3. The final module is dedicated to fractures of the maxilla and mandible. Participants will analyze different fracture patterns, assess fracture extension and displacement, and evaluate the relationship to adjacent anatomical structures, including the mandibular canal and maxillary sinus. Common sources of diagnostic error, including artefacts and subtle fracture lines, will be discussed.

The workshop is conducted in a hands-on format, with participants working directly on CBCT clinical cases using dedicated software. The aim is to develop a structured and reproducible approach to image interpretation in dental and maxillofacial trauma.



***Dr. Michał Szałwiński**, MD, PhD, is a specialist in oral and maxillofacial surgery affiliated with the Medical University of Warsaw. He works at the Department of Cranio-Maxillofacial Surgery, Oral Surgery and Implantology, MUW, and is also an assistant professor at the Department of Dental and Maxillofacial Radiology, MUW. In 2009, he was awarded a PhD in medical sciences with distinction.His clinical and academic activity focuses on dental implantology, oral and maxillofacial surgery, and education in anatomy, implantology, and temporomandibular joint function. He is a member of the Polish Society of Dental and Maxillofacial Radiology, the Polish Society of Cranio-Maxillofacial Surgery, Oral Surgery and Implantology, OSIS-IMPLANT, the European Orthodontic Society, and the European Association for Cranio-Maxillofacial Surgery.*

***Dr. Anna Pantelewicz**, MD, PhD, is a dental practitioner and Assistant Professor at the Department of Dental and Maxillofacial Radiology at the Medical University of Warsaw. From 2014 to 2022, she was affiliated with the Department of Pediatric Dentistry at the same institution. In 2021, she was awarded a PhD in medical sciences with distinction. Her clinical and academic work focuses on pediatric dentistry, dental traumatology, and dental radiology. She serves as Secretary of the Polish Academy of Pediatric Dentistry and is a member of the Polish Society of Dental and Maxillofacial Radiology, the European Society of Radiology, and the European Academy of DentoMaxilloFacial Radiology.*

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1. Internal Septodont's document provided from Biodentine Expert Board - 11th September 2023.
2. Koubi et al. Clinical evaluation of the performance and safety of a new dentine substitute, Biodentine™, in the restoration of posterior teeth - a prospective study. Clin Oral Investig. 2013.

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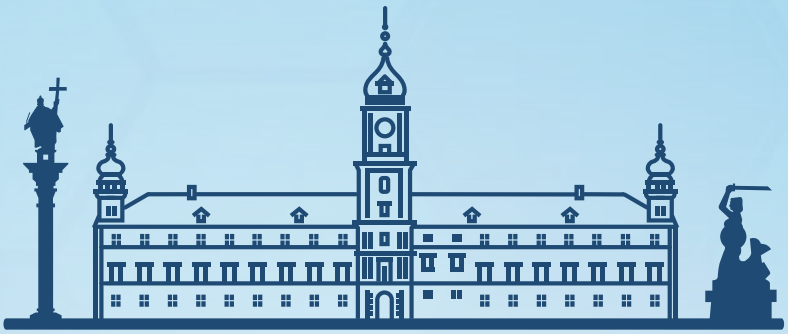
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