Executive Organizations

APEC 2025 PANENDO

FUTURE OF ENDODONTICS: WHAT LIES AHEAD

Supporting Organizations

3-5 December 2025

Panendoconference

apec2025panendo.com

Intercontinental Citystars Hotel - Cairo Egypt

Welcome Message

The Asian Pacific Endodontic Confederation (APEC) consists of 25 countries and holds its conference every two years in one of the member countries. This year, the APEC made its decision that Egypt will organize its 23rd conference. The Egyptian Association of Endodontists (EAE) has its meeting PanEndo: Future of Endodontics: what Lies ahead, which was born a giant and is considered the biggest Endodontic Conference in Africa. Delegates from all over the world will join us this December in what is promised to be the biggest endodontic event in Asia, the Middle East, and Africa. This is true as this conference is the joining of two giant conferences in one, the APEC2025cairo and the PanEndo: Future of Endodontics: what Lies ahead

APEC2025 PanEndo Conference
Celebrating 40 years since the establishment of APEC and 25 years since the establishment of the EAE.

This conference is inviting world-class international speakers, presidents of International Associations, and integrating p-, during, and post-congress intensive workshops. We are expecting 2500 local attendees and at least 600 non-Egyptian attendees.

The conference will focus on new aspects and current updates in the field of endodontics. The scientific sessions of the conference will be dominated by scientific data from worthy speakers. We wish that endodontists from the Middle East area and globally share in this unique event to gain cutting-edge knowledge in different aspects of endodontics. The conference will be held in the charming city of Cairo, the largest city in the Middle East and Africa. It combines the mystic ancient history with the cosmopolitan style in a unique way hardly to find elsewhere. We are awaiting you all to experience this magnificent journey of science, history, culture, and fun.

EAE President
Ahmed A Hashem
Prof. Ahmed A Hashem

APEC President
Samuel Dorn
Prof. Samuel Dorn

Venue

Intercontinental Cairo Citystars :

Voted Cairo's Best Business Hotel InterContinental Cairo Citystars offers luxury in the buzzing hub of Citystars Heliopolis, next to Stars Centre Mall. Whether you are in Cairo for business or leisure, the hotel puts everything at your fingertips, from steak to sushi, from spa treatments to squash and from advanced conference facilities to cocktails at the poolside bar.

Board of Egyptian Association of Endodontists:

President

Prof. Ahmed A Hashem

Vice President

Prof. Alaa H Diab

General Secretary

Prof. Hosam E Tawfik

Treasurer

Prof. Shehab E Saber

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Prof. Mohamed M Nagy

Executive Committee of APEC:

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Prof. Samuel Dorn

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Prof. Mohsen Ramazani

Honorary Auditor
Prof. Ibrahim Abu Tahun

Honorary Auditor
Prof. Gin Chen

3rd DECEMBER WEDNESDAY 2025

DAY 1 HALL A El Saraya 1

09:00 - 10:00 **OPENING CEREMONY**

Chairpersons: **Samuel Dorn / Maged Negm**

10:00 - 11:30 Vital Pulp Treatment: Scientific Developments, Clinical Opportunities and Obstacles
Hal Duncan (Ireland)

11:30 - 12:00 Coffee Break

Chairpersons: **Frank Setzer / Ehab Hassanien**

12:00 - 13:00 Science-Based Pulpal Diagnosis and Evolution in Terminology for Pulpitis
Ikhlas El karim (UK)

13:00 - 14:00 Evaluation of Irrigation Technologies in Root Canal Systems: A Comprehensive Analysis Utilizing Scanning Electron Microscopy (SEM), Histological Analysis, and Bacteriological Analysis
David Jaramillo (USA)

14:00 - 15:30 Lunch Break

Chairpersons: **Martin Levin / Heba El Far**

15:30 - 17:00 Improve Your Results and Predictability on Root Canal Disinfection
Bettina Basrani (Canada)

17:00 - 18:30 Successful Management of Endodontic Pain
Kenneth Hargreaves (USA)

3rd DECEMBER WEDNESDAY 2025

DAY 1 — HALL B — El Saraya 4

Chairpersons: **Fahad Umer / Randa Elboghdady**

10:00 - 11:30 SWEEPS: a Paradigm Shift Innovative Endodontics Using Shock Wave Enhanced Emission Photo-Acoustic Streaming
Giovanni Olivi (Italy)

11:30 - 12:00 Coffee Break

Chairpersons: **Deepti Shrestha / Rania ElBackly**

12:00 - 13:00 Use of Limited Field Cone Beam Computed Tomography (CBCT) in Endodontics
Martin Levin (USA)

13:00 - 14:00 Broken File Management
Waleed Kurdi (Egypt) (Cerkamed)

14:00 - 15:30 Lunch Break

Chairpersons: **Helen McHugh / Shehabeldin Saber**

15:30 - 17:00 Endodontic Microsurgery - Present and Future Directions
Frank Setzer (USA)

3rd DECEMBER WEDNESDAY 2025

DAY 1 — HALL C — El Saraya 2

Chairpersons: **Dalia Fayad / Suzan Abdelwanis**

10:00 - 10:45 Beyond RCT: The Expanding Role of Vital Pulp Therapy in Mature Teeth
Helen McHugh (Australia)

10:45 - 11:30 Clinical Applications of Bioceramic Materials in Modern Endodontics
Koyo Takimoto (Japan)

11:30 - 12:00 Coffee Break

Chairpersons: **Giovanni Olivi / Sybel Mousa**

12:00 - 12:45 When Pulp Regeneration Fails: Next Steps and Retreatment Strategies
Minju Song (South Korea)

12:45 - 13:30 Cannabis and the Endodontic Patient
Natasha Flake (USA)

14:00 - 15:30 Lunch Break

3rd DECEMBER WEDNESDAY 2025

DAY 1 | HALL C | El Saraya 2

Chairpersons: **Hayam Youssef / Wael Hussien**

15:30 - 16:15 Cemental Tears: What is New?
Angeline Lee (Hong Kong)

16:15 - 17:00 Regenerative Endodontics: Mahidol Studies
Jeeraphat Jantarat (Thailand)

17:00 - 17:45 Endodontic Revascularization in Daily Practice: Still Successful?
Talaat Abo Hatab (Syria)

Chairpersons: **Angeline Lee / Hayam Youssef**

17:45 - 18:30 Clinical Landscape of Synthetic Datasets in Endodontics
Fahad Umer (Pakistan)

18:30 - 19:15 Bonding to Root Dentin
Deepti Shrestha (Nepal)

3rd DECEMBER WEDNESDAY 2025

DAY 1 HALL D El Saraya 3

Chairpersons: **Jeeraphat Jantarat / Taher Islam**

10:00 - 10:30 Radiographs that Speak: Seeing the Unseen
Abdelrahman Elkholy

10:30 - 11:00 Endodontic Microsurgery. Turning Endodontic Failures into Success
Antonios Glynis

11:00 - 11:30 Root Caries: Uncovering the Hidden Challenges
Amira Galal - Manar Galal

11:30 - 12:00 Coffee Break

Chairpersons: **Talaat Abo Hatab / Mohsen Nour Eldin**

12:00 - 12:30 Pulp Preservation "The new Norm According to the Preoperative Form"
Mohamed Medhat Kataia

12:30 - 13:00 The Bioceramic Journey: From Science to Clinical Application
Shereen Elattar

13:00 - 13:30 Modern Management of Endodontic Mishaps
Ibrahim Elnaggar

13:30 - 14:00 Cryotherapy: A Cold Approach to Freeze the Endodontic Pain
Ahmed Ezz El-Regal Khamees

14:00 - 15:30 Lunch Break

3rd DECEMBER WEDNESDAY 2025

DAY 1 HALL D El Saraya 3

Chairpersons: **Nehal Thabet / Hemat ElShiekh**

15:30 - 16:00 "Diagnosis and Treatment Planning: Solving the Mysterious Puzzle" A Case-Based Journey through Endodontic Challenges
Mohamed Elashiry

16:00 - 16:30 Selective Endodontic Retreatment: A Conservative Approach to Post Treatment Apical Periodontitis
Hebatullah Adel Hussein

16:30 - 17:00 Lesion Size and Treatment Outcomes. Unravelling the Hidden Influence
Mai Osama - Ahmed Husseiny

17:00 - 17:30 Hidden Links. Apical Periodontitis and Systemic Health
Amira Hassan - Hager Mamdouh

Chairpersons: **Khalid Al-Fouzan / Nihal Nabil**

17:30 - 18:00 Decision Making in Modern Endodontics
Maya Feghali

18:00 - 18:30 Machine Minds: Exploring AI Applications in Endodontics
Hisham Mahmoud Abada

18:30 - 19:00 Finding the Right Mind Map for Retreatment Cases
Hesham Mohamed Salah

19:00 - 19:30 The Effect of Files with Different Kinematics on the Amount of Bacteria Extruded Apically During the Shaping of Root Canals Containing Mixed Biofilm
Esen Ercan

3rd DECEMBER WEDNESDAY 2025

DAY 1 HALL E Shahrazad

Chairpersons: **Prof. Ghada Elhilaly - Reem Lotfy - David Jaramillo**

09:00 - 09:20 Novel Strategies for Multidrug-Resistant Enterococcus Faecalis Biofilm Eradication: Bacteriophage (vB_EfaS_ZC1), Propolis, and their Combined Effects in an ex vivo Endodontic Model
Dalia Abd-Allah Mohamed Moheb

09:20 - 09:40 Influence of Diclofenac Potassium versus Prednisolone on Postendodontic Pain and Pulpal Interleukin-8 Expression in Symptomatic Irreversible Pulpitis Cases: A Randomized Placebo-controlled Trial
Ahmed Adel Abdullah Ali Soliman

09:40 - 10:00 Evaluation of Dentinal Microcracks Induced by Different Single File Systems Using Micro-Computed Tomography
Ahmed Salim Mohamed Khalil

10:00 - 10:20 Outcomes of REP using a Novel BCP Scaffold (A histological study and RCT)
Ameera Lotfy Mahfouze - Menna Allah Ali Abdeldaiem

10:20 - 10:40 Regenerative Endodontics in Necrotic Mature Teeth: Where Do We Still Fall Short? Cancelled
Khadija SIKKOU

10:40 - 11:00 Effect of Different Methods of Heating Sodium Hypochlorite Irrigating Solution on the External Root Surface Temperature
Amr Mohamed Mahmoud Elhenawy

11:00 - 11:20 Autologous Transplantation of Dental Pulp Tissue: A Radiographic Evaluation
Dina Nashaat Hussein

3rd DECEMBER WEDNESDAY 2025

DAY 1 HALL E Shahrazad

11:20 - 11:40 Antibacterial Effect of Catalytic Iron Oxide Nanoparticles, Sodium Hypochlorite, Hydrogen Peroxide and QMix as a Final Rinse on Enterococcus Faecalis Colonizing the Dentinal Tubules of Single Rooted Teeth
Eman Ali Abd El-Ghany Khalifa

11:40 - 12:00 Effect of Addition of Omega 3 Fatty Acids to Nano-Hydroxyapatite on Healing of Intra-Bony Defects (In Vivo Study)
Amira Gareer Ramadan

12:00 - 12:20 Microbiological Evaluation of Single versus Multiple Visit Regener ation using MALDI-TOF Mass Spectrometry (A Randomized Controlled Clinical Trial)
Pervine Hassan Sharaf

Chairpersons: **Nehal Thabet - Abeer Hashem - Nisreen Taha**

12:20 - 12:40 Success Rate of Single Versus Two-Visit Regenerative Treatment Protocol in Non-Vital Mature Anterior Teeth (A Preliminary Randomised Clinical Trial)
Lamiaa Mohamed Ragaei Lasheen

12:40 - 13:00 Awareness and Misconceptions About Vital Pulp Therapy in Mature Permanent Teeth: A Questionnaire-Based Survey among Egyptian Dental Practitioners
Maha Tarek Aboulkheir

13:00 - 13:20 Precision Endodontics with AI: Enhancing Canal Detection and Treatment Planning Through 3D CBCT Segmentation
Marwa Baraka

13:20 - 13:40 Evaluation of Minimally Invasive Regenerative Endodontics Clinically, Radiographically and Finite Element Analysis: A Randomized Controlled Clinical Study
Michael Emil Labib Ibrahim Girgis

3rd DECEMBER WEDNESDAY 2025

DAY 1 HALL E Shahrazad

13:40 - 14:00 Effect of Apical Patency and Local Corticosteroid on Pain and Neuropeptides Release in Patients with Symptomatic Irreversible Pulpitis: A Randomized Clinical Trial
Mustafa Mahmoud Mohamed Sultan

14:00 - 14:20 Assessment of Cleaning Ability of Two Instrumentation Motions Using Reciprocation or Rotation Motions in Conjunction with Either Continuous or Sequential Chelation: An in Vitro Study
Nourhan Naser

Chairpersons: **Dalia Fayad - Abeer El Gindi - Ikhlas El Karim**

14:20 - 14:40 Metallurgical Influence of Separated Endodontic Instruments on the Retrieval Capability of Katana-Sword-like Ultrasonic Tip under Different Lubricants: In Vitro Study
Omnia Abdel-Hakim Mohamed

14:40 - 15:00 Is “Pain Relief Effect of Calcium Hydroxide” a Fact or Just a Claim?: A Randomized Clinical Trial.
Sarah Alaa El-Din El-Abyad

15:00 - 15:20 The Effect of Two Different Contemporary Chelating Agents on Vital Pulp Therapy in Mature Permanent Teeth with Irreversible Pulpitis using Bio Ceramic Material: Randomized Clinical Trial
Yasmin Tawfik Mohamed Sobh

15:20 - 15:40 The Activation Paradox: Unlocking the Hidden Strength of Bioceramic Sealers
Marwa M. Aboushadi

16:30 - 19:30 (Prep Less, Engage Well) Conservative Broken File Retrieval Kurdi’s Protocol LIVE Show
Waleed Kurdi

4th DECEMBER THURSDAY 2025

DAY 2 | HALL A | El Saraya 1

Chairpersons: **Henry Kim / Jailan Elshafey**

09:00 - 10:00 Regenerative Endodontics: Current Status and Future Directions
Tatiana Botero (USA)

10:00 - 11:30 Smarter, Not Harder: Tech Tools Transforming Endodontics and Making the Tough Cases Easy
Mohamed Fayad (USA)

11:30 - 12:00 Coffee Break

Chairpersons: **Mohamed Fayad / Amr Abdallah**

12:00 - 13:00 Bioceramic Application: Intentional Replantation and Pulp Revascularization
Hyeon-Cheol Henry Kim (South Korea)

13:00 - 14:00 APICECTOMY: The Road to an Uncomplicated Dento-alveolar Operation
Maged Negm (Egypt)

14:00 - 15:30 Lunch Break

Chairpersons: **Natasha Flake / Omar Fahim**

16:00 -16:30 Endodontic Retreatment: Full Story
Abdulrahman Mohammed Alfadag (Yemen)

16:30 - 17:30 Strategic Surgical Planning for Managing Separated Instruments in Endodontics
Ji Wook Jeong (USA)

17:30 - 18:30 The Past, Present, and Future of Endodontics
Antonio Berto (USA)

4th DECEMBER THURSDAY 2025

DAY 2 HALL B El Saraya 4

Chairpersons: **Ayca Yilmaz / Karim Galal**

09:00 - 10:00 Root Canal Retreatment: How to do? When to do?
Mehmet Baybora Kayahan (Turkey)

10:00 - 11:30 Crown, Crown-Root and Root Fractures, Endodontic and Restorative Aspects
Marga Ree (Netherlands)

11:30 - 12:00 Coffee Break

Chairpersons: **Hussain Al-Huwaizi / Ahmed Nabil**

12:00 - 13:00 Vital Pulp Therapy for Managing Pulp Inflammation in Permanent Teeth: Where are We Standing Now?
Nessrin Taha (Jordan)

13:00 - 14:00 Deep Learning Unleashed: Transforming Endodontics Through Innovative AI Workflows
Shehabeldin Saber (Egypt)

14:00 - 15:30 Lunch Break

Chairpersons: **Maram Ebeid / Abeer El Gendy**

15:30 - 16:30 How Evidence Shapes Modern Endodontic Microsurgery
Moataz Alkhawas, Abdelrahman Ali Hamouda (Egypt)

4th DECEMBER THURSDAY 2025

DAY 2 HALL C El Saraya 2

Chairpersons: **Walid Nehme / Shaimaa Gawdat**

09:00 - 09:45 Targeting the Apex- A Guided Solution
Sandra Chen Ming Shu (Singapore)

09:45 - 10:30 Advancement in endodontic microsurgery instruments
Khalid S. Al-Fouzan (Saudi Arabia)

10:30 - 11:15 Broken Instrument: Clinical Decision Making and Management Protocols
Ahmed Ghobashy (Egypt)

11:30 - 12:00 Coffee Break

Chairpersons: **Engy Kataia / Marwa Sharaan**

12:00 - 12:45 Blind Spots In Endodontics: A clinical Guide to Missed Anatomy
Marc Habib (Lebanon)

12:45 - 13:30 Navigating Endodontics with CBCT: enhancing Diagnostic and Therapeutic Precision
Nayef Mazen Nayef Younis (Jordan)

14:00 - 15:30 Lunch Break

4th DECEMBER THURSDAY 2025

DAY 2 HALL C El Saraya 2

Chairpersons: **Marga Ree / Abeer Marzouk**

15:30 - 16:15 Current Concepts and Strategies in NiTi Systems
Ayca Yilmaz (Turkey)

16:15 - 17:00 Precision in Endodontics: Clinical Integration of 3D Imaging, Navi gation, and AI-Driven CBCT Segmentation
Ying-Hui Su (Taiwan)

17:00 - 17:45 Clinical Management of Root Resorptions
Hussain Al-Huwaizi (Iraq)

Chairpersons: **Ji Wook / Wafaa Omar**

17:45 - 18:30 Revitalizing Pulp Tissue Simplifying Necrobiotic Issue
Mujibar Rahman Howlader (Bangladesh)

18:30 - 19:15 Essentials in Management of Separated Endodontic Instruments
N. Velmurugan (India)

19:15 - 20:00 Differential Diagnosis of Pretreatment Pain Conditions in Endodontics
Hadi Assadian (Iran)

4th DECEMBER THURSDAY 2025

DAY 2 | HALL D | El Saraya 3

Chairpersons: Nayef Younes / Lamiaa Nabil

09:00 - 09:30 To Restore or Not: A Critical Decision Before Starting Your RCT
Medhat Samir

09:30 - 10:00 Unlocking Success: Mastering the Art of Access Cavity Preparation in Endodontics
Albaraa Samir Alkady

10:00 - 10:30 Recent Innovation and Concepts in Endodontic Microsurgery
Mohammed Abou El-Seoud

10:30 - 11:00 Navigating the unseen: Microrobtics in Endodontics!
Marwa Sharaan - Mai Hamdy

11:00 - 11:30 The Endo GPS: Tips for Navigating Your Way Through Different Root Canal Morphologies
Omar Khaled Montaser

11:30 - 12:00 Coffee Break

Chairpersons: Ying Hui Su / Aly Farag

12:00 - 12:30 Retreatment: The Challenging Process
Mohamed Abd El-Rahman Elsherif

12:30 - 13:00 Surgical Repositioning of Unerupted Anterior Teeth
Abdelhamied Saad

13:00 - 13:30 The Miracle of Autologous Growth Factors Enriched Bone Graft Matrix (Sticky Bone) In Regenerative Endodontic Micro-Surgery.
Nirvana Khalaf Mansour

13:30 - 14:00 Silent Roots, Loud Pain; Exploring Post Operative Endodontic Pain
Mohamed Kamal Abo Amo

4th DECEMBER THURSDAY 2025

DAY 2 HALL D El Saraya 3

14:00 - 15:30 Lunch Break

Chairpersons: **N. Velmurugen / Abeer Darag**

15:30 - 16:00 Hacking Complex Endodontic Scenarios
Mostafa Anwar

16:00 - 16:30 Cell-Free Regeneration: Unlocking the Therapeutic Potential of Secretomes and Exosomes in Endodontics
Mohamed Nageh Tawfik Haridy

16:30 - 17:00 Pulp-Dentin Regeneration: the dream is about to become truth
Ehab Abdel-Hamid Ahmed

17:00 - 17:30 The Ghost of Endodontic File separation
Mohammed Hamdy El-Tellawy

Chairpersons: **Sara Hossam / Taher Islam**

17:30 - 18:00 Teeth Auto-Transplantation; Truth or Myth?
Mosaad Mohamed Soliem

18:00 - 18:30 Artificial Intelligence the New Era in Endodontics
Mohamed Sohail Sayed Jacoub

18:30 - 19:00 Clinical Management of Furcation Perforation using Internal Matrix
Muhammad Salah-Uddin Anwar

19:00 - 19:30 Determination of the Amount of Bacteria Extruded Apically During the Shaping of Root Canals Containing Different Biofilms
Şeyma Nur Pektaş

4th DECEMBER THURSDAY 2025

DAY 2 HALL E Shahrazad

Chairpersons: **Mostafa El Kholy - Mohamed Mokhtar**

09:00 - 09:30 Endodontic Retreatment Gone Wrong: Strategies for Recovery and Success
Ahmed Ibrahim Salim Mohammed

09:30 - 10:00 Beyond the Basics: Tackling Complex Premolar Anatomy with Confidence
Amr Eldeeb

10:00 - 10:30 How to Avoid Post-Operative Hypersensitivity? (A Pre-Endo Recipe)
Ashraf Aref Elmalky

10:30 - 11:00 Root Canal Treatment and Biological Dentistry: Confronting the 'Elephant in the Room'
Fatima Betul

11:00 - 11:30 When Endo-Perio Lesions Collide: Save the Tooth or Extract?
Rehab Ali Farag, Ghada Gehad

11:30 - 12:00 A Cross Sectional Study using a 3D-Printed Model for Training Purpose in Apical Barrier Placement Technique.
Umesh Kumar

Chairpersons: **Moataz El Khawas - Abeer Marzouk**

12:30 - 13:00 Regenerative Endodontic Procedures for the Treatment of Necrotic Mature Teeth with Apical Periodontitis
Amatallah Hussein Al-Rawhani

4th DECEMBER THURSDAY 2025

DAY 2 | HALL E | Shahrazad

13:00 - 13:30 From Dull to Dazzling: Exploring Promising Approach to Enhance the Color of Discolored Teeth
Nada Omar / Haidy Salem

13:30 - 14:00 Challenges in Pulpal Treatment of Young Permanent Teeth
Ahmed Ali Youssef

14:00 - 14:30 Endodontic Irrigation Controversies: Tailoring Protocols for Optimal Outcomes
Asmaa Abd El-Hady & Hebatullah Ahmad Safwat

Chairpersons: **Engy Kataia - Nawar Naguib**

14:30 - 15:00 The Power of Non-Surgical Treatment of Large Periapical Lesions
Ali Ayad Gargom

15:00 - 15:30 "Navigating the Curve", Curved Canals Challenges and Solutions.
Abdel Moneim Ahmed Elkalashy - Mohammed Naguib Zyada

15:30 - 16:00 Causes, Diagnosis and Different Treatment Modalities for Dental Pulp Calcification
Ahmed Yaser Abu Bakr

16:00 - 16:30 Modern Strategies for the Management of Severely Curved Root Canals
Peter Nabil Naguib Abdullah

16:30 - 17:00 Single Cone Obturation vs Cold Lateral Compaction Tech. with Bioceramic and Resin Sealers
Mohamed AllaeldinAli Shemes

17:30 - 20:30 Lasers in Endodontics: A New Era in Non-Surgical and Surgical Treatment
Giovanni Olivi - Mohamed Fayad LIVE Show

5th DECEMBER FRIDAY 2025

DAY 3 | HALL A | El Saraya 1

Chairpersons: **Amr Abdallah / Naguib Abo Elenin**

09:00 - 10:30 Root Resorption: A Journey from Diagnosis to Treatment & Outcomes
Omar Abusteit (USA)

10:30 - 12:00 Staging Classification of Pulpitis : A Clinical Approach in Vital Pulp Therapy
Gopi Krishna (India)

12:00 - 13:00 Prayer & Coffee Break

Chairpersons: **Gopi Krishna / Yehia ElBoghdady**

13:00 - 14:00 **One-visit Pulp Revascularization**
Hyeon-Cheol Henry Kim (South Korea)

14:00 - 15:30 Lunch Break

Chairpersons: **Omar Abusteit / Karim Elbatouty**

15:30 - 17:00 The Seal that Whispers Healing: Bioceramics in the Hands of a Clinician
Suman Gautam (Nepal)

17:00 - 18:00 Popular Doesn't Mean Proven: A Review of Endodontic Trends
The British University in Egypt
Nawar Naguib - Mostafa ElKholy

5th DECEMBER FRIDAY 2025

DAY 3 | HALL B | El Saraya 4

Chairpersons: **Suman Guatam / Maram Obied**

09:00 - 10:00 The Cognitive Dissonance in Endodontic Treatment: Exploring the Impact of Immunology and Immune Modulators in Apical Periodontitis
Elizabetta Cotti (Italy)

10:00 - 11:00 Endodontic Dilemmas in the Era of Minimally Invasive Dentistry
Misr International University
Ahmed Ghobashy - Amr Bayoumi - Mohamed Nabeel

Contrasting Techniques in Endodontic Retreatment: Debating the Divide
Misr International University
Mohamed Fakhr - Ahmed Khalaf

11:00 - 12:00 Bone Regeneration and Bone Preservation in Endodontic and Endodontic Surgery
Jean-Yves Cochet (France)

12:00 - 13:00 Prayer & Coffee Break

Chairpersons: **Abeer Hashem / Medhat Taha**

13:00 - 14:00 **Learn Safe, Fast, Predictable Broken File Retrieval in Less than 60 Minutes**
Mohamed Salah Abdelsalam (Egypt)

14:00 - 15:30 Lunch Break

Chairpersons: **Yousra Nashaat / Manar Fouda**

15:30 - 16:30 Pulp Preservation and Regeneration
Tugba Turk (Turkey)

5th DECEMBER FRIDAY 2025

DAY 3 HALL C El Saraya 2

Chairpersons: **Marc Habib / Mohamed Rabie**

09:00 - 09:45 The Antimicrobial Puzzle: Solving Odontogenic Infections with Precision and Stewardship
Suez Canal University
Dalia Fayyad - Marwa Sharaan - Nelly Abdelsalam

09:45 - 10:30 Controversies in Endodontics: Current Debates and Clinical Dilemmas
Cairo University
Geraldine Ahmed - Shaimaa Gawdat - Fatma Abu Naeem

Chairpersons: **Amany Badr / Ahmed Labib**

10:30-11:15 Adult Pulpotomy: The State of Things
Azhar University
Ashraf Refaai - Moataz ElSadat

12:00 - 13:00 Prayer & Coffee Break

Chairpersons: **Jean-Yves Cochet / Ashraf Zazooa**

13:00 - 14:00 From Tooth Devitalization to Revitalization: Chasing the Dream of Dentin Pulp Regeneration
Alexandria University
Rania El Backly

Shaping the Future of Endodontics: Research Milestones
Alexandria University
Hisham Elnawam - Ahmed Mubarak - Shaymaa Shaaban

5th DECEMBER FRIDAY 2025

DAY 3 HALL C El Saraya 2

14:00 - 15:30 Lunch Break

Chairpersons: **Mujibar Rahman / Tarek Mostafa**

15:30 - 16:30 Preserve to Perform: Advancing Outcomes Through Minimally Invasive Endodontics
Ain-Shams University **Sara Hossam - Tariq Yehia**

From Fracture to Function: Innovations in Endodontic Trauma Therapy
Ain-Shams University **Sara Hossam - Wael El-Shater**

16:30 - 17:30 Endodontics, To What Limit?
Mansoura University **Mohamed Mahmoud**

17:30 - 18:00 Advances in Endodontic Irrigation: Bridging Science and Clinical Practice
Future University **Adel Abdelwahed - Mahmoud Badr**

5th DECEMBER FRIDAY 2025

DAY 3 | HALL D | El Saraya 3

Chairpersons: **Heba Elasfoury / Mohamed Mahmoud**

09:00 - 09:30 Beyond the Apex : A Surgical Approach to Endodontic Failures
Elias Hassan

09:30 - 10:00 Artificial Intelligence: A Game Changer in Endodontics
Maram Khallaf

10:00 - 10:30 Navigating Complexity in Endodontics: A Clinical Showcase of Challenging Cases and Their Management
Tarek Seniour

10:30 - 11:00 A Holistic Approach to Managing Chronic Apical Periodontitis: The Endodontist's Perspective
Živilė Grabliauskienė

11:00 - 11:30 Shaping the Future: 3D Printing in Endodontics
Hala Fayek - Sara El-Mallah

11:30 - 12:00 Endodontic Retreatment: Cleaning Your Way to the Apex
Wahiba Lagmou

12:00 - 13:00 Prayer & Coffee Break

Chairpersons: **Shady Hussien / Alaa Elbaz**

13:00 - 13:30 Artificial Intelligence; Paving New Road Map For Endodontic
Yousra Nashaat - Ahmed Negm

13:30 - 14:00 Root Canal Location: Pain Points and Main Challenge
Asmaa Ahmed Desouky

5th DECEMBER FRIDAY 2025

DAY 3 | HALL D | El Saraya 3

14:00 - 15:30 Lunch Break

Chairpersons: **Hend Abu Elnasr / Nelly Abdelsalam**

15:30 - 16:00 Bending Without Breaking: Modern Strategies for Curved Canal Management
Mostafa Omar Fahim - Kareem Mahmoud Taha

16:00 - 16:30 From Injury to Healing: Regenerative Endodontic Treatment in Challenging Cases
Nermine Hassan - Reham Hassan

16:30 - 17:00 Irrigating with Confidence: Maximize the Disinfection and Control the Accident
Dalia Abd-Allah Mohamed

17:00 - 17:30 Revolutionizing Vital Pulp Therapy: Innovations Shaping the Future of Tooth Preservation
Kareem Mahmoud Abdelhameed Hasan

17:30 - 18:00 Radiographic Healing of Periapical Lesions after Root Canal Treatment with Bioceramic Sealers: A Case Series
Kawther Belhaj Salah

18:00 - 18:30 Bioceramics, Aclinical Guide of Perfection
Mohamed Ahmed Mahmoud Hamed

18:30 - 19:00 Open Apex Between Regeneration and Apexification
Sara Ahmad Abou Ateya

5th DECEMBER FRIDAY 2025

DAY 3 HALL E Shahrazad

Chairpersons: **Yousra Nashaat / Mohanad Hakim**

09:00 - 09:30 Continuous Chelation Concept; A Recent Approach on Root Canal Disinfection
Eman Nabil El-Ezaby

09:30 - 10:00 One File Doesn't Fit All: Customizing Instrumentation in Endodontic Retreatment Cases
Mariam Ahmed - Yasser Ibrahim Mokhtar

10:00 - 10:30 Managing Complex Anatomy in Endodontics, Strategies for Predictable Outcomes
Mohamed Ashraf Rezk Elawady

10:30 - 11:00 Access Denied? Unlocking the Secrets of Calcified Canals
Nader Wadie Ramsis Haroun - Khaled Khalifa

11:00 - 11:30 4D Innovations in Endodontics: Smart Materials Shaping the Future of Regeneration
Soha Alaa Emam - Dalia Abdelfattah Tantawy

11:30 - 12:00 Pre-Endo Build Up,Why?
Salam Abu Arqub

12:00 - 13:00 Prayer & Coffee Break

13:00 - 13:30 Success and Failures of Single Visit Endodontic Treatment: "Efficiency Meets Efficacy"
Mennatullah Elsayed Abdelghany

13:30 - 14:00 Mapping the Adoption Curve of Emerging Endodontic Innovations among Moroccan Practitioners
Nisrine El Arrouf

15:30 - 18:30 Healing from Within: Bioceramics and the Future of Root Repair
Hesham Salah - Ali El-Tahan LIVE Show

APEC 2025
PANENDO

Hall A

Speakers & Abstracts

Hal Duncan

Professor in Endodontics, Dublin Dental University Hospital, Trinity College Dublin, Ireland. Director of Research in the Dublin Dental University Hospital, a Member of the Executive Board of the ESE, the President of the ESE, & the Editor-in-Chief of the International Endodontic Journal

"Vital Pulp Treatment: Scientific Developments, Clinical Opportunities and Obstacles"

Concerns over the cost and destructive nature of dental treatment have led the profession to examine novel methodologies that develop regenerative treatments and promote minimally invasive, biologically based dental restorative solutions. Although an exciting opportunity, vital pulp treatment has traditionally been damned by unpredictable results. Regenerative endodontics hopes to increase predictability, while delivering cost-effective, simple and conservative solutions for our patients. However, what is possible and what is a pipe dream? It is essential if new directions are to be considered in endodontic practice that we are able to critically assess where we are at present and whereas a specialty we need to be in the future. The aim of this lecture is to highlight current opportunities and concerns in vital pulp treatment from a scientific and practical viewpoint, while discussing potential solutions and the importance of evolving endodontic practice.

Ikhlas El Karim

Clinical Professor and Consultant in Restorative Dentistry/Chair of Endodontology and Translational Research at the School of Medicine Dentistry and Biomedical Sciences Queens University Belfast. Vice President of the Pulp Biology and Regeneration Group and Associate Editor for Clinical Research for the International Endodontic Journal. ember of the European Society of Endodontology Steering Group for development of quality guidelines in endodontics and a co-lead for the treatment of pulpitis working group.

"Science-Based Pulpal Diagnosis and Evolution in Terminology for Pulpitis"

Advances in pulp biology research have significantly improved our understanding of pulpitis pathophysiology and provided a strong foundation for the recent surge in vital pulp therapy. However, these scientific developments are yet to be translated into clinically meaningful classifications or diagnostic tests for pulp disease. The success of vital pulp therapy relies heavily on accurate case selection which, remains a challenge due to the limitations of current diagnostic methods. The aim of this presentation is to provide a new science-based approach to pulpal diagnosis, while reflecting on current practice and its limitations. We will explore how insights from pulpal pathophysiology can be translated into a systematic approach to diagnose pulpal disease and enhance diagnostics practices. The attendees will be able to develop a pragmatic approach to the use of pulpal diagnostic terminology and understand progress made to date on developing molecular markers and innovative technologies for pulpal diagnosis

David Jaramillo

A tenured Professor at the Department of Endodontics at the School of Dentistry, the University of Texas Health Science Center at Houston. Member of the International Federation of Endodontic Associations as acting chair of the Jean-Marie Laurichesse research grant award.

"Evaluation of Irrigation Technologies in Root Canal Systems: A Comprehensive Analysis Utilizing Scanning Electron Microscopy (SEM), Histological Analysis, and Bacteriological Analysis"

Effective root canal disinfection is paramount for successful endodontic treatment. This presentation will provide a comprehensive analysis of various irrigation technologies and their efficacy in achieving this goal. We will delve into a comparative evaluation of conventional syringe irrigation, passive ultrasonic irrigation (PUI), and advanced techniques such as laser-activated irrigation (LAI) and multi-sonication irrigation Technology. The presentation will focus on the findings from studies employing a multi-faceted approach, utilizing scanning electron microscopy (SEM), histological analysis, and bacteriological assays. SEM imaging will illustrate the removal of smear layer and debris from the root canal walls, highlighting the penetration of irrigants into dentinal tubules and anatomical complexities. Histological analysis will demonstrate the extent of tissue dissolution. Finally, bacteriological assessments, including colony-forming unit (CFU) counts and biofilm disruption studies, will quantify the antimicrobial efficacy of each irrigation technique against common endodontic pathogens. This presentation will critically evaluate the strengths and limitations of each irrigation technology, considering factors such as irrigant volume, flow rate, activation method, and canal anatomy. Special attention will be given to the challenges of disinfecting the apical third of the root canal system, isthmuses, and lateral canals. The clinical implications of these findings will be discussed, providing evidence-based recommendations for optimizing irrigation protocols in endodontic practice.

Bettina Basrani

Associate Professor and Director, MSc Program in Endodontics at the Faculty of Dentistry, University of Toronto, Ontario, Canada.

"Improve Your Results and Predictability on Root Canal Disinfection"

Root canal disinfection plays an important role in the success of endodontic treatment. Technological advances during the last decade have brought new agitation devices for disinfection of the root canal system. This lecture will present an overview of the disinfection methods currently available, their debridement efficacy and possible complications of their use.

Kenneth Hargreaves

DDS from Georgetown University, PhD in physiology from the Uniformed Services University, and certificate in Endodontics from the University of Minnesota. Professor in the Department of Endodontics at University of Texas in San Antonio, Diplomate of the American Board of Endodontists. Ken has received two IADR Distinguished Scientist Awards, the AAE President's Award and the ADA Gold Medal for Research. Ken has published more than 250 articles, two textbooks, including Pathways of the Pulp, and serves as editor of the Journal of Endodontics.

"Successful Management of Endodontic Pain"

This evidence-based lecture is designed to provide effective and practical strategies for managing acute dental pain emergencies. It will start with an overview of the opioid mis-use syndrome, its origins and strategies to mitigate its spread. The latest information on NSAIDS, acetaminophen-containing analgesics and local anesthetics will be provided with the objective of having immediate application to your next patient emergency. Want to know how to anesthetize that hot tooth? How to predictably manage severe acute pain after surgical or endodontic treatments? How to combine common medications to improve analgesia? This course will answer these practical tips and more using a lecture style that emphasizes interactions with the audience in answering common pain problems with useful solutions.

Tatiana Botero

Clinical Professor, Cariology, Restorative Sciences and Endodontics Department, School of Dentistry, University of Michigan. A Diplomate of the American Board of Endodontists. Chair of the Regenerative Endodontic Committee from the American Association of Endodontics (2024 – 2025).

"Regenerative Endodontics: Current Status and Future Directions"

The regenerative endodontic protocol is a unique option for immature necrotic teeth and brings the opportunity to the endodontist to enable the mesenchymal stem cells healing potential. Although there are some clinical situations that still need stronger evidence when selecting the cases, the current research supports the key factors that influence the outcome. Nevertheless, when the pulp is still vital, the evidence emphasizes the importance of its preservation. This presentation will focus on discussing the variables and protocols to apply in your practice, and the future directions to overcome current challenges in regenerative endodontics.

Mohamed Fayad

Director of Endodontic research, and a Clinical Associate Professor in the Endodontic department at College of Dentistry at the University of Illinois, Chicago (UIC). Diplomate of the American Board of Endodontists.

"Smarter, not Harder: Tech Tools Transforming Endodontics and Making the Tough Cases Easier."

As clinicians, we often rely on traditional methods that have served us well over the years. But in doing so, we may unintentionally overlook the powerful role that emerging technologies can play in transforming both our clinical practice and patient outcomes. Technologies like artificial intelligence, dental lasers, and real-time dynamic navigation are no longer futuristic concepts—they're practical tools that are changing the way we diagnose, plan, and treat. Not only do they enhance accuracy and efficiency, but they also simplify what were once considered complex or high-risk cases. Whether it's navigating challenging anatomical structures, improving soft tissue management, or making real-time decisions during procedures, these innovations provide a level of support that was previously unavailable. The integration of CBCT with advanced imaging software like e-VOLDXS—powered by AI—has revolutionized diagnostic capabilities. Dental lasers also play a critical role in modern endodontics. They are used in both non-surgical applications, such as the SWEEPS technique for root canal disinfection, and surgical procedures, including laser-assisted incisions, soft tissue management in invasive cervical resorption (ICR), and photobiomodulation (PBM) therapy to accelerate post-operative healing. Dynamic navigation further elevates the precision of endodontic procedures. It provides real-time, monitor-based guidance during both non-surgical and surgical interventions, allowing for unparalleled accuracy in accessing complex root canal systems or performing apical surgeries. This lecture will delve in how integrating these technologies into my practice has not only improved patient care but also made the clinical decision-making more confident and precise—even in the most difficult scenarios. It's time we shift from simply acknowledging these advancements to fully embracing them.

Hyeon-Cheol Henry Kim

Professor, Pusan National University School of Dentistry & President, Pusan National University Dental Hospital. IFEA Secretary, International Federation of Endodontic Association. President-elect, Korean Academy of Endodontics. Vice President, Korean Academy of Microscope Dentistry. Full member, National Academy of Medicine of Korea. Distinguished Adjunct Prof., Saveetha Dental College and Hospital, Dept. of Endodontics. Emeritus Prof., The Univ. of Jordan, School of Dentistry, Dept. of Restorative Dentistry.

"Bioceramic Application: Intentional Replantation and Pulp Revascularization "

In clinical endodontics, bioceramic materials, including Mineral Trioxide Aggregates (MTA) have been used for many indications in complicated cases and have shown clinically successful outcomes. Recently, various bioceramic cements made from calcium-silicate-based materials have been introduced. Those materials are branded in pre-mixed putty type or injectable material without the necessity of mixing or manipulation procedures. This lecture will present various clinical endodontic bioceramics applications, including MTA and pre-mixed calcium-silicate-cements. Specifically, some cases of intentional replantation and pulp revascularization using pre-mixed bioceramic will be presented, along with clinical videos. Clinical techniques and tips will be suggested.

- Basic understanding of endodontic bioceramic
- Bioceramic root canal sealer and its advantages
- Pre-mixed calcium-silicate-based cements and clinical applications
- Indications and clinical cases of Intentional replantation and techniques
- Clinical technique of pulp revascularization procedure (single-visit procedure)

Maged Negm

Professor of Endodontics, Faculty of Dentistry, Cairo University.

"APICOECTOMY: The Road to an Uncomplicated Dento-alveolar Operation"

Endodontic apical surgery has gained a widespread acceptance. The term API-COECTOMY is misleading because it places undue emphasis on a relatively small part of the surgical procedure! An understanding of the different techniques of APICOECTOMY is considerably important; as well as the operative procedure that should be developed with experience. Several questions that represent serious challenges will be addressed. Why some of the surgical techniques may end up with a depressingly high number of failures, and how can we avoid that? This lecture will shed light on the common problems facing the clinician, and as such, the clinician should be able to deal with them! Dealing with complications such as the proximity of roots-apices to the mandibular canal, mental foramen, and other vital structures will be discussed; and whether sinus perforation is an iatrogenic accident or an unavoidable occurrence?

AbdulRahman Mohammed AlFadag

Assistant Professor of Endodontic and President of Yemeni Endodontic Society.

“Endodontic Retreatment: Full Story”

Endodontic retreatment is a critical aspect of dental care, focusing on the management of failed root canal treatments. This presentation aims to provide a comprehensive overview of the factors contributing to endodontic failure, the retreatment process, and emerging techniques that enhance success rates. We will begin by examining the common causes of endodontic failure, including inadequate cleaning and shaping, missed canals, seepage, and anatomical complexities. Understanding these factors is crucial for developing effective retreatment strategies. Next, we will explore the step-by-step procedures involved in endodontic retreatment, from diagnosis to instrumentation. Emphasis will be placed on the importance of thorough assessment using radiographs and cone-beam computed tomography (CBCT).

Ji Wook Jeong

Faculty member at department of Endodontics, UTHSC Houston. Course director for Endodontic Surgery and the research director for the endodontic residents. Active member of the Scientific Advisory Board of the Journal of Endodontics, the Continuing Education Committee of the American Association of Endodontists, and the Research Committee of the Asian Pacific Endodontic Confederation.

"Strategic Surgical Planning for Managing Separated Instruments in Endodontics"

Managing separated instruments presents a significant clinical challenge, particularly when fragments are located in anatomically complex or inaccessible regions of the root canal system. While nonsurgical approaches remain the first-line option, attempting to remove deeply lodged files can lead to excessive dentin removal, compromising the structural integrity of the tooth and potentially reducing long-term prognosis. This lecture will focus on a strategic framework for managing such cases through endodontic surgery. When nonsurgical removal is not feasible or poses a high risk, surgical intervention—when carefully planned—can provide a predictable and conservative alternative. Five surgical strategies will be presented and discussed with clinical cases, illustrating the rationale, indications, technical execution, and expected outcomes for each: 1. Root-end resection with file removal; 2. File removal during retrograde preparation; 3. Leaving the fragment in place and sealing during surgery;4. Simultaneous orthograde and retrograde approach; 5. Intentional extraction and replantation. Each approach will be analysed in terms of risk assessment, decision-making, surgical planning, and postoperative considerations. This lecture aims to help clinicians optimize outcomes by matching the appropriate surgical strategy to the clinical scenario—maximizing tooth retention, minimizing complications, and restoring function with confidence.

DAY 2 HALL A El Saraya 1

Antonio Berto

National & International Lecturer. Fellow in the Department of Endodontics Texas A&M Health Science Center – Baylor College of Dentistry 2006. Fellow of the International College of Dentists 2019-2023.

"The Past, Present, and Future of Endodontics"

Endodontics has undergone significant transformation over the last century, transitioning from rudimentary pulp removal techniques to sophisticated biological and regenerative therapies. The discipline has continually evolved in response to advances in technology, materials science, and a deeper understanding of pulpal and periapical biology. This presentation aims to explore the historical development, current best practices, and future directions of endodontic treatment. By reflecting on the past, critically evaluating current methodologies, and looking ahead to emerging innovations, clinicians can better appreciate the dynamic nature of the specialty and prepare for the integration of cutting-edge strategies into daily practice.

DAY 3 HALL A El Saraya 1

Omar Abusteit

Associate Professor in the Division of Endodontics at the University of Minnesota School of Dentistry, Minnesota. Member of the continuing education committee of the American Association of Endodontists and distance learning representative of the AAE. Diplomate of the American Board of Endodontists.

"Root Resorption: A Journey from Diagnosis to Treatment & Outcomes"

In modern dentistry, more natural teeth are retained in service for an increased number of years in which they are subjected to a wide array of stimuli. Therefore, the presentation of various dental resorptive defects is not a rarity in dental offices anymore. This clinically oriented presentation will discuss various aspects of root resorption from pathophysiology to diagnosis and treatment planning. The aim is to guide the clinician through various clinical interventions supported by the best available evidence, apply recent technologies, and enhance clinical practice to provide favourable patient-centred outcomes.

Gopi Krishna

Adjunct Professor at SRIHER University (India). Associate Editor of the European Endodontic Journal. President-elect of the International Federation of Endodontic Associations (IFEA) and Secretary General of the Indian Endodontic Society & Indian Board of Endodontics.

"Staging Classification of Pulpitis: A Clinical Approach in Vital Pulp Therapy"

The current terminologies of pulpitis do not aid the clinician in choosing the right form of vital pulp therapy. This presentation proposes a clinically relevant, intra-operative grading classification of pulpitis that aids in both diagnosis and treatment of pulpitis. The other objective is to recommend the use of this grading classification to aid clinical education and training of students by linking therapeutic treatment recommendations to pulpal diagnosis.

Hyeon-Cheol Henry Kim

Professor, Pusan National University School of Dentistry & President, Pusan National University Dental Hospital. IFEA Secretary, International Federation of Endodontic Association. President-elect, Korean Academy of Endodontics. Vice President, Korean Academy of Microscope Dentistry. Distinguished Adjunct Prof., Saveetha Dental College and Hospital, Dept. of Endodontics. Emeritus Prof., University of Jordan, School of Dentistry, Dept. of Restorative Dentistry.

"One-Visit Pulp Revascularization"

Revascularization procedures for immature necrotic teeth have traditionally employed intracanal disinfection with antibiotic pastes. The most recognized protocol uses a triple antibiotic paste (TAP), composed of metronidazole, ciprofloxacin, and minocycline. However, because tetracycline derivatives such as minocycline can cause significant tooth discoloration, a double antibiotic paste (DAP) containing metronidazole and ciprofloxacin has often been recommended as an alternative. Despite its clinical efficacy, concerns remain about the use of fluoroquinolone antibiotics like ciprofloxacin in young patients. These agents have been associated with potential adverse effects on developing muscles, tendons, and skeletal growth, raising the question of whether their use is truly indispensable in regenerative endodontic procedures. In addition, there are practical issues in prescribing, compounding, and applying antibiotic pastes in clinical conditions. For these reasons, calcium hydroxide has been proposed as a substitute intracanal medicament. Nevertheless, it is important to recognize the potential limitations of calcium hydroxide. Complete removal of the material from the canal is often difficult, even with ultrasonic irrigation. Residual calcium hydroxide may interfere with the adhesion and survival of newly formed tissues on the canal walls. Ultimately, the fundamental aspect of disinfection in revascularization lies in the thorough removal of necrotic tissue and microbial sources using sodium hypochlorite (NaOCl) irrigation. This lecture will present clinical cases and discuss the feasibility of a one-visit revascularization protocol that omits the use of intracanal antibiotics or calcium hydroxide dressings, emphasizing a simplified, biologically based approach that can be completed in a single appointment.

Suman Gautam

Professor and Head of the Department of Conservative Dentistry and Endodontics at Nepal Medical College under Kathmandu University. Clinical Director at Root Canal Centre.

"The Seal that Whispers Healing: Bioceramics in the Hands of a Clinician"

The lecture examines the clinical relevance and scientific foundation of bioceramic materials in endodontics, focusing on their role in fostering periapical healing and improving treatment outcomes. Bioceramics, particularly calcium silicate-based cements, have shown excellent biocompatibility, bioactivity, and sealing ability, as supported by in vitro and in vivo studies. Their capacity to form hydroxyapatite upon contact with tissue fluids creates a biologic seal and encourages regenerative healing. With a clinician's perspective, it connects material science to clinical application, showcasing practical insights from daily practice, exploring the clinical versatility of bioceramics in procedures such as perforation repair, apexification, obturation, and root-end surgeries. Through real-world clinical cases and evidence-based discussion, the session emphasizes the paradigm shift from inert sealing to biologically active healing, highlighting how, in the hands of a thoughtful clinician, bioceramics become more than a material; they become a medium of healing.

Nawar Naguib

Associate Professor of Endodontics at the British University. Member of the editorial board of the European Endodontic Journal.

"Popular Doesn't Mean Proven: A Review of Endodontic Trends"

In an age where clinical trends spread rapidly through social media and influencer-driven platforms, the line between evidence-based practice and anecdotal enthusiasm in Endodontics can become blurred. Techniques and products are often promoted with strong claims but limited substantiation. This presentation aims to critically appraise the most popular contemporary trends in Endodontics, evaluating the quality and weight of supporting evidence behind each. By distinguishing scientifically sound practices from well-marketed myths, clinicians can make more informed decisions that prioritize biological principles and long-term outcomes over popularity. The lecture addresses trending practices including, but not limited not, access cavity designs, minimal root canal instrumentation, separated files retrieval, the potency of certain irrigants, the impact of anatomical variations, some activation methods, and bioceramic sealers.

Mostafa ElKholy

Senior Lecturer and Discipline Lead in Endodontics at the University of Western Australia. Active member of national and international endodontic societies.

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APEC 2025
PANENDO

B Hall

Speakers & Abstracts

Giovanni Olivi

Adjunct Professor at School of Dentistry and the Scientific Coordinator of the post-graduated" Laser Dentistry" Master at Catholic University of Sacred Hearth of Rome. Active Member (Endodontist) of Italian Society of Endodontics (SIE) and Italian Academy of Endodontics (AIE), member of Academy of Laser Dentistry (ALD), Funder Member and 2021-2023, and ad interim President of the International Academy of Innovative Dentistry (IAID).

"SWEEPS: a Paradigm Shift Innovative Endodontics Using Shock Wave Enhanced Emission Photo-Acoustic Streaming"

There has been a volcanic eruption of technologies in Endodontics over the past 20 years. The development of NiTi shaping files, the debut of biocompatible materials, the advent of CBCT for improved diagnostics. These minimally invasive technologies promote the maximum preservation of tooth structure, but according to an old aphorism enunciated by Herbert Schilder, for the success of endodontic therapy, "what is removed" is more important than "what is introduced" into the canal system. In this view, laser activated irrigation, and more specifically SWEEPS technology represents a breakthrough method for 3D cleaning and disinfection of the root canal system. Photoacoustic technology is used to activate the commonly used irrigants in endodontics (NaOCl and EDTA) and does not replace any conventional instrumentation. The SSP technology (single super short pulse, also called PIPS) first and the SWEEPS one (dual ultra short pulses) today are validated by a wide body of published and non-published experiments and data. High-speed videos at 100.000 frames are shown to explain the innovative dual pulse laser emission in endodontic environment. Scanning Electron Microscopy and CT imaging were used to evaluate the tissue dissolution, the debridement, smear layer, and endodontic filling material removal from the endodontic space. Bacteriological studies as well as Confocal analysis were performed to assess the decontaminating effect of these techniques. The lecture will present an overview of the scientific concepts behind the clinical application, and a series of clinical cases will be discussed.

Martin Levin

Adjunct Professor of Endodontics and Chair of the Dean's Council School of Dental Medicine, University of Pennsylvania, Philadelphia, PA. Member of the AAE's Special Committee to Develop an Outcomes Consensus Conference. Diplomate of the American Board of Endodontics.

"Use of Limited Field Cone Beam Computed Tomography (CBCT) in Endodontics"

Endodontic disease adversely affects the quality of life and can produce significant morbidity in afflicted patients. Endodontic therapy depends on diagnostic radiographs and image-guided treatment. Periapical and panoramic radiography have been augmented by the introduction of limited field of view (FOV) high-resolution CBCT, allowing three-dimensional assessment of odontogenic and non-odontogenic lesions, root canal morphology, revision treatment, root and alveolar fractures, resorptive lesions and neurovascular anatomy prior to surgery. This lecture will highlight volumetric analysis in outcomes, mapping of important anatomic structures, metal artifact reduction (MAR) algorithms, cinematic rendering, artificial intelligence, and periapical lesion visualization.

Waleed Kurdi

International speaker, Clinician, Lecturer and Course Director of the Endo-Dam Team.

"Broken File Management"

Radicular separation of endodontic instruments is the worst nightmare facing every dentist in modern dentistry. Instrument separation inside the canal worsens the root canal procedures and makes cleaning and shaping the canal more difficult. Hindering the procedures will affect the outcome and the prognosis of the case. Separation mode is a complicated phenomenon affected by many factors which I will clarify in my lecture and how to prevent that. Managing a separated instrument will range from orthograde to surgical option. Orthograde conservative conventional options including removal or bypassing the fragment will be the specific part of our lecture. A decision should be taken either to bypass or to retrieve according to many affecting factors which I will clarify. The main goal is not only removing the separated fragment but also the tooth integrity should be maintained so bypass is a good option in many situations and if retrieved it should be in a conservative way. When, why and how to retrieve broken file fragments through different protocols and trials. The available treatment options that clinician can perform in broken file cases. All non-surgical retreatment protocols and related instruments and techniques Clinicians should be familiar with all options in facing broken file cases even before referral if needed, with a specific predictable and successful protocol for broken file retrieval

DAY 1 HALL B El Saraya 4

Frank Setzer

Associate Professor of Endodontics at the University of Pennsylvania, serving as Predoctoral Director in Endodontics. Dental Faculty Member of OKU, Diplomate of the American Association of Endodontists AAE. Associate Editor for the Journal of Endodontics and the European Endodontic Journal.

"Endodontic Microsurgery - Present and Future Directions"

Endodontic microsurgery is the evolution of traditional apicoectomy and makes use of high magnification, ultrasonic preparation, and root-end filling with biocompatible filling materials. Modern endodontic surgery adopted the dental operating microscope, cone-beam computed tomography (CBCT) for preoperative diagnosis and treatment planning, and piezoelectric approaches for osteotomy and root manipulation. This lecture discusses the current state of root-end surgery and the most recent additions to the clinical protocol and technical improvements, including an outlook on future directions.

Mehemet Baybora Kayahan

Professor, Director of the Department of Endodontics at Istanbul Health and Technology University. Certified member of the European Society of Endodontology. Chair of the Education Committee of the International Federation of Endodontic Associations (IFEA). Representative of the Turkish Endodontic Society. Chair of the Education Committee in the Asian Pacific Endodontic Confederation.

"Root Canal Retreatment: How to do? When to do?"

The aim of endodontic treatment is to prevent or cure apical periodontitis. Root canal treatment is a predictable procedure with a high survival rate. However, procedural problems such as broken instruments, ledge formation, transportation of the canal, root perforation, and extrusion of the irrigants can affect the prognosis. On the other hand, patients demand the retention of their teeth more than ever before, and this results in an increasing necessity for the retreatment. Retreatment is easier with the help of Ni-Tis, irrigation systems, biomaterials, and ultrasonic instruments. Even hopeless teeth can be saved. There is no doubt that both root canal treatment and retreatment of teeth are feasible and economical ways to preserve function. In this lecture, indications and clinical approaches of root canal retreatment will be discussed.

Marga Ree

Member of a multidisciplinary dental practice in Amsterdam.

"Crown, Crown-Root and 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. This presentation will focus on current treatment approaches for crown, crown-root and root fractures in immature and mature teeth, with emphasis on the role of minimally invasive endodontic and restorative dentistry. The incidence of root fractures from trauma is not high, which may explain why dentists can be unsure about the best treatment approach and tend to overtreat. Teeth with root fractures often survive many years without treatment, although healing patterns may appear to be complicated, including resorption and mineralization processes. In this presentation, Marga Ree will show a variety of long-term follow-ups of root-fractured teeth, including the decision process when and how to interfere. Crown-root fractures due to trauma 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 extrusion or surgical extrusion. Surgical extrusion is a recognized treatment option, in which the tooth is surgically shifted within the socket to a more favorable position, so that the remaining tooth structure is more coronally placed. However, the 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 traumatized teeth that would otherwise be deemed unrestorable.

Nessrin Taha

Vice-Dean faculty of Dentistry - Jordan University of Science and Technology. Professor in endodontics and coordinator of the graduate endodontic program at same university. Member of the scientific committee of the Jordanian Board of Endodontics, and a member of the research committee of the Asia Pacific Endodontic Confederation (APEC). Member of the Royal College of Ireland, a fellow of the Royal Australian College of Dental Surgeons in general dentistry and a fellow in the special field of Endodontics.

"Vital Pulp Therapy for Managing Pulp Inflammation in Permanent Teeth: Where are We Standing Now?"

Dental caries continues to be a global problem in both children and adults, with root canal treatment being considered as the conventional management approach for teeth with inflamed pulps. While the reported outcomes of root canal treatment are favourable, the treatment procedure can be challenging, time-consuming, costly. And require tooth structure removal that, when combined with the loss of tooth structure to caries, may compromise the longevity of the tooth. The current improved understanding of the histopathology and the healing potential of the inflamed pulp, and the use of MTA and hydraulic calcium silicate-based materials, have led to a renewed interest in vital pulp therapy procedures as a minimally invasive treatment approach. With growing evidence from clinical trials reporting favourable outcomes of vital pulp therapy, it is increasingly practiced as an alternative treatment to root canal treatment in teeth with inflamed pulps. This presentation will review the pros and cons of vital pulp therapy including (indirect pulp cap, direct pulp cap and pulpotomy) for teeth with deep carious lesions, in terms of treatment planning and selection criteria, clinical procedures, cost effectiveness, clinical outcomes and patients' satisfaction.

Shehabeldin Saber

Professor at the Endodontic department at the British University in Egypt. Director of the Endodontics PhD and Master programs. Dental Science Research Group Lead and the AI Focus Group Lead at the Health Research Centre of Excellence at the British University in Egypt. Professor at the Endodontic department at Ain Shams University.

"Deep Learning Unleashed: Transforming Endodontics Through Innovative AI Workflows"

In recent years, the integration of artificial intelligence (AI) and deep learning (DL) into clinical practice has begun to revolutionize various fields, including Endodontics. This presentation aims to bridge the knowledge gap between expert endodontists and the emerging technologies that can enhance clinical outcomes for tasks such as diagnosis, treatment planning, and outcome prediction. This lecture is tailored for all endodontic researchers interested to build their own DL models. We will highlight different DL approaches, with special emphasis on computer vision tasks. Attendees will gain insights into the comprehensive step by step workflow for DL model development including data sourcing, pre-processing, augmentation, selection of algorithms, hyperparameter tuning, training, performance metrics, refinement and external validation.

DAY 2 HALL B El Saraya 4

Moataz Alkhawas

Professor and Head of Endodontic Department, Al-Azhar University. Certified Trainer at Egyptian Ministry of Health. Certified Endodontic Consultant at SCFHS.

"How Evidence Shapes Modern Endodontic Microsurgery"

Modern endodontic microsurgery is no longer guided by intuition alone; it's driven by evidence. From refined surgical protocols to improved materials and techniques, robust clinical research is transforming how specialists approach diagnosis, treatment planning, and microsurgical execution. This lecture unpacks the latest high-impact studies, highlights key evidence-based shifts in technique, and explores how integrating data into daily practice raises success rates and patient outcomes. By bridging research and reality, we reveal how evidence is not just shaping, but elevating the future of endodontic microsurgery.

Abdelrahman Ali Hamouda

Professor and Head of Endodontic Department, Al-Azhar University. Certified Trainer at Egyptian Ministry of Health. Certified Endodontic Consultant at SCFHS.

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Elizabetta Cotti

Full Professor of Conservative Dentistry and Endodontics, and the Chairman of the Department of Conservative Dentistry and Endodontics at the School of Dentistry, University of Cagliari- Italy. Dean of the Dental School and the Director of the Post Graduate programme (Master) in Clinical Endodontics at the University of Cagliari, lecturer in the Department of Endodontics at Loma Linda University, USA. President of IFEA (International federation of Endodontic Associations).

"The Cognitive Dissonance in Endodontic Treatment: Exploring the Impact of Immunology and Immune Modulators in Apical Periodontitis"

Apical periodontitis is a very prevalent disease and, under normal and controlled clinical conditions, in the presence of preoperative AP, the favorable outcome for primary and secondary root canal treatment is in the range of 75% to 80%. If controlling microbial infection is the key factor for healing of AP, integrity of the non-specific immune system and age of the patient have an influence on its resolution, it has also emerged that the onset of apical periodontitis and its presentation (smaller or larger lesions, presence of sinus tracts) all reduce the percentage of positive outcome of endodontic treatment. These conditions seem to be influenced by a genetic predisposition. Further epidemiologic data have shown a higher prevalence of AP in patients with autoimmune diseases. A certain amount of literature has also shown that some medications with immune modulating or anti-inflammatory effects seem to influence the development and response to treatment of AP. Understanding the interactions between the host's predisposition to inflammatory diseases and the effects of immune modulation on AP may aid in designing new treatment strategies for AP.

Ahmed Ghobashy

Head of endodontics department, head of continuing education and the coordinator of Master endodontics program at Misr International University (MIU).

"Endodontic dilemmas in the era of minimally invasive dentistry"

A favorable outcome with minimally invasive treatment may be achieved while preserving the tooth's natural structure with careful case selection. Minimally invasive approaches have two different sides that need comprehensive management and a guide to follow. Recently new approaches, materials and techniques have risen regarding the management inflamed pulpal tissue and hard tissue in order successfully manage different endodontic scenarios in a conservative manner. These approaches have supporters and opponents, eventually these opinions will have a great impact on the outcomes and long-term survival of teeth in function paving the way for the future of endodontics.

Amr Bayoumi

Professor of Endodontics, Faculty of Oral and Dental Medicine, Misr International University (MIU).

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Mohamed Nabeel

Associate Professor of Endodontics, Faculty of Oral and Dental Medicine, Misr International University (MIU).

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Mohamed Fakhr

Associate Professor of Endodontics, Faculty of Oral and Dental Medicine, Misr International University (MIU).

"Contrasting Techniques in Endodontic Retreatment: Debating the Divide"

Endodontic retreatment is a critical procedure aimed at addressing persistent or recurrent periapical pathology after initial root canal therapy. Various techniques have been developed to improve treatment outcomes, with differences in instrumentation, irrigation protocols, and obturation methods playing a significant role. This presentation will contrast traditional hand instrumentation with contemporary rotary and reciprocating systems, highlighting their efficacy in removing previous root canal fillings and disinfecting the root canal systeme-specially with or without the use of solvents. Separated instruments can further complicate the retreatment procedure especially when trying to adopt the removal or the bypass techniques of such instruments.

Factors such as procedural complexity, time efficiency, and risk of iatrogenic errors are considered in evaluating the effectiveness of each retreatment technique. Understanding these contrasting approaches allows clinicians to make informed decisions tailored to individual cases, ultimately improving the prognosis of endodontic retreatment.

Ahmed Khalaf

Professor of Endodontics, Faculty of Oral and Dental Medicine, Misr International University (MIU).

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Jean-Yves Cochet

Teaching in the post graduate program of Endodontics of Florida Southern University. Visiting Professor of Nova Southeastern University College of Dental Medicine. Director of Endo Department of ICDP (Institute de Chirurgie Dentaire de Paris). Postgraduate Program Lecturer at University Paris. Fellow of the International college of dentists.

"Bone Regeneration and Bone Preservation in Endodontics and Endodontic Surgery"

Endodontic lesions may result in significant bone destruction. Orthograde endodontic treatment, when done properly, will result in the regeneration of large bony defects. However, there are times one most resort to endodontic surgery when healing does not take place. A new approach for the treatment of large endodontic lesions will be discussed. Today with the advent of CT and CBCT scans, we are supplied with much more information than the traditional two-dimensional radiographs. The complementary surgical technique develops several therapeutic possibilities and increases significantly the percentage of positive outcomes. New resorbable membranes, bone grafting materials, piezo-surgery (regarding the repositioning the bone) can broaden our extent of treatment to regenerate original structures, particularly in endo-perio lesions. For long term non-restorable teeth why not imagine the endodontic treatment as a way to optimize bone preservation or regeneration in preparation for a future implant. This treatment modality is documented by 25 years of CT scans and, more recently, the Cone Beam CT scan. It will be seen as a new approach for bone regeneration and preservation.

Mohamed Salah Abdelsalam

Consultant Endodontist, Restorative dentist and international speaker. Founder and course director in Dental Point Academy. KOL for multiple companies' research. Active member in EAE.

"Learn Safe, Fast, Predictable Broken File Retrieval in Less than 60 Minutes"

A fractured instrument is one of the most common and frustrating mishaps encountered during routine endodontic treatment. When a fragment obstructs proper cleaning and shaping, attempts to bypass it can be difficult or even impossible. In these situations, safe and predictable retrieval becomes essential to reaching the apex and achieving optimal disinfection. Although multiple advanced techniques for broken instrument retrieval are available, not all clinicians have access to high-end devices in every case. This lecture focuses on bridging that gap. You will learn simple, practical, and highly effective techniques—from basic to advanced—that can be applied in most clinical scenarios. We will explore how to retrieve broken files safely, quickly, and with maximum predictability using:

1.Ultrasonic tips
2.Endodontic micro-forceps
3.Endodontic micro-loops
4.XP-Endo Shaper & XP-Endo Finisher

The consistently promising results are the reason behind my motto: "In Retrieve We Believe... so that NO BROKEN FILE is LEFT BEHIND.".

Tugba Turk

Professor in the Department of Endodontology at the Faculty of Dentistry, Ege University in Izmir, Turkey. Member of the Clinical Practice Committee of the European Endodontic Society. Member of the European Society of Endodontology, the Turkish Endodontic Society, and The Society of Stem Cell and Cellular Treatments. Member of the Clinical Practice Committee of the European Endodontic Society.

"Pulp Preservation and Regeneration" than 60 Minutes"

Pulp preservation treatments are biologically driven regenerative procedures that aim to treat teeth with compromised dental pulp to maintain pulp tissue in a healthy state. In the modern age of dentistry, the preservation of pulp vitality or revitalizing pulp tissue using biologically based approaches is of great importance, and regenerative therapies are at the core of management in the conservation of healthy pulpal tissue. In a vital tooth with advanced inflamed pulp tissue, regeneration occurs by stem cells originating from the remaining healthy portion of the pulp. On the other hand, in a necrotic tooth, stem cells are recruited from neighboring tissues for the regeneration process. For enhanced clinical efficacy, an exhaustive comprehension of the intricate nature of stem cells is paramount. In addition to stem cells, the integration of biomineralization techniques, sophisticated biocompatible disinfection methodologies, and the strategic utilization of biomaterials and biocompatible restorative materials constitute pivotal factors contributing to clinical success. Dental science today benefits from the latest technologies and uses all the evidence-based knowledge to define novel clinical principles and practices aiming to mimic nature itself like never before. Parallel to the advancements in the field of tissue engineering and regenerative endodontics the strategies in pulp regeneration are improved. This lecture aims to explore clinical considerations within the framework of recent guidelines, with a specific focus on advanced pulp preservation techniques and revitalization for both mature and immature teeth. The insights provided will be grounded in personal case reports with long-term follow-up, offering valuable perspectives for contemporary dental practices.

APEC 2025
PANENDO

C Hall

Speakers & Abstracts

DAY 1 HALL C El Saraya 2

Helen McHugh

Endodontist in the coastal town of Newcastle in NSW. Current member of the Australian Society of Endodontics and the Australian and New Zealand Academy of Endodontists

"Beyond RCT: The Expanding Role of Vital Pulp Therapy in Mature Teeth"

Vital pulp therapy (VPT) in permanent teeth with pulpitis is emerging as a viable, evidence-supported alternative to root canal therapy in select cases. Current literature supports partial and complete pulpotomies as a definitive treatment option for mature, permanent teeth with symptoms of irreversible pulpitis. This lecture will explore the biological rationale for VPT, questioning traditional views on the necessity of conventional endodontic treatment for managing such cases. We will also explore the diagnostic considerations and indicators necessary for performing successful VPT, and provide guidance on clinical protocols, technique sensitivity, and case selection to equip clinicians with the knowledge to confidently integrate VPT into daily practice.

Koyo Takimoto

Part-time faculty at Tokyo Medical and Dental University Dental School.

"Clinical Applications of Bioceramic Materials in Modern Endodontics"

Bioceramic materials is definitely essential in modern endodontics. The first bioceramic material is Mineral Trioxide Aggregate (MTA), which was introduced in 1993. Recently, not only liquid-powder mix type, but also sealer and putty-type of bioceramic materials have also become widely available, expanding their clinical use. However, given the wide variety of bioceramic materials provided by numerous manufacturers worldwide, it is often challenging for clinicians to choose their options due to differences in properties, biocompatibility, handling ease, and cost. The aim of my lecture is to discuss the clinical selection of bioceramic materials in different clinical situations, based on actual clinical cases. Ongoing clinical evaluation and evidence-based guidelines will be crucial in further refining the selection process for bioceramic materials.

Minju Song

Clinical assistant professor at Gangnam Severance Dental Hospital, Yonsei University. Visiting Assistant Project Scientist, Section of Restorative Dentistry, Division of Constitutive & Regenerative Sciences, UCLA School of Dentistry. Assistant Professor in Department of Conservative Dentistry, Dankook University, Cheonan, Korea. Associate Professor in Department of Conservative Dentistry, National Health Insurance Service Ilsan Hospital, Goyang, Korea

"When Pulp Regeneration Fails: Next Steps and Retreatment Strategies"

Pulp regeneration is one of the treatment options to consider for immature permanent teeth with pulp necrosis. When the first clinical case report was published in 2004, there were many questions about its outcome. However, many basic and clinical studies have since been conducted from perspectives such as 'stem cells,' 'tissue engineering,' and 'regenerative treatment,' and it has now established itself as one of the treatment methods for immature permanent teeth with necrotic pulp. Compared to apexification, it has the advantage of not only healing the lesion but also promoting root growth and the recovery of pulp vitality. The success rate of pulp regeneration is similarly high to MTA apexification. However, cases of failure have also been reported, and some literature reviews have been conducted on this topic. Most of the reported cases of failure were due to 'persistent infection,' and many were judged as failures at a point more than a year after treatment. Since it failed once, there are more considerations required for the retreatment of pulp regeneration. In this lecture, we will look into the reasons why pulp regeneration fails, what retreatment methods are available, and what should be taken into account to avoid a second failure, through actual case series.

Natasha Flake

Associate Professor of Endodontics at the University of Pennsylvania, serving as Predoctoral Director in Endodontics. dental faculty member of OKU, a member of the American Association of Endodontists AAE. Associate Editor for the Journal of Endodontics and the European Endodontic Journal.

"Cannabis and the Endodontic Patient"

Cannabis use is common in some regions for medical or recreational purposes. With an increase in cannabis use in the general population, dental patients may be more candid in discussing cannabis use with dental providers. However, barriers still exist to cannabis research, and little is known regarding the impact of cannabis on endodontic patients and endodontic treatment. Clinical data and guidelines are needed for both practitioners and patients. This presentation will provide an overview of the known effects of cannabis on the oral cavity and dental treatment. Data from research investigating the effects of cannabis use on local anaesthetic efficacy, dental anxiety, and endodontic treatment will be presented.

Angeline Lee

Fellow of the College of Dental Surgeons of Hong Kong, the Hong Kong Academy of Medicine, and the Royal College of Surgeons of Edinburgh. She is also a fellow of the Royal Australasian College of Dental Surgeons in their general and specialist streams and a registered Specialist in Endodontics with the Dental Council of Hong Kong and the Dental Board of Australia. Committee member of the Complaint Committee of the Private Healthcare Facilities Ordinance and the President of the Hong Kong Endodontic Society.

"Cemental Tears: What is New?"

Cemental tear is an increasingly recognized condition within the dental profession and demands our full attention. It is frequently misdiagnosed and poorly managed, causing significant frustration for both dentists and patients. This presentation will address the epidemiology, clinical features, radiographic and histologic characteristics, and diagnosis and management protocols of cemental tears. Furthermore, we will explore the factors influencing clinical outcomes, backed by the latest clinical research.

Jeeraphat Jantarat

Associate Professor in Department of Operative Dentistry and Endodontics, Faculty of Dentistry, Mahidol University, Thailand. IFEA Board of Directors member: Regent Asia (2022–2026), as well as APEC councillor and research committee.

"Regenerative Endodontics: Mahidol Studies"

In the last decades, Regenerative endodontic procedures (REPs), have been considered as effective treatment for nonvital immature permanent. The REPs involved non-instrumentation, irrigations and triple antibiotics or calcium hydroxide have been used as intra-canal medication. The patient natural scaffold was created, the Bioceramics was used as a capping material, and the tooth will be restored. The treatments are aiming for continued root formation and healing of apical lesion. The goals of REPs include primary goal to resolve symptoms and apical healing, secondary goal to promote further root development, and tertiary goal to gain a positive response to vitality testing.

To achieve clinical success of REPs, many guidelines and clinical recommendation have been developed. This presentation will focus on which factors will make the treatment works or lead to failure base on the result of Mahidol Study phase 1 and 2. The results of Mahidol Study 2 conducted from 120 REPs cases with recall rate 85.1% and follow up 12 months-148 months (average 41 months).The success outcome of Regenerative Endodontic Procedures was extremely high with more than 95%. For the result of root development, there were 8.3% increase in root length, 23.2% increase in root width, 21.7% increase in RRA, and 53% increase in apical diameter. The root length will continue to develop up to 48 months while the root width can increase up to 60 months. For the apical closure will occurs in 48 months.

Talaat Abo Hatab

Vice Dean for Scientific Affairs at Faculty of Dentistry, Syrian Private University, Syria. Assistant Professor and Head of Endodontic and Operative Dentistry Department at Faculty of Dentistry, Syrian Private University, Syria. Vice Head of Endodontic and Operative Dentistry Department at the Syrian National Dental Specialty Centre for postgraduate students. Board Director Member of The Syrian Endodontics and Operative Dentistry Society.

"Endodontic Revascularization in Daily Practice: Still Successful?"

Regenerative endodontics represents a paradigm shift with the primary goal of preservation of physiological pulp functions.

Advancements in biological understanding, techniques and materials have made regenerative endodontic procedures (vital pulp therapies and revascularization) alternatives to teeth requiring non-surgical endodontic treatment. In this lecture, the application of regenerative endodontic approaches will be discussed by different clinical cases, presenting the advantages and disadvantages of these procedures and their possible complications.

Fahad Umer

Assistant professor in Operative Dentistry and Endodontics program - Department of Dentistry at the Aga Khan University Hospital. academic editor for BDJ portfolio and PLOS ONE and serve on the scientific committee of Journal of Endodontics and International Endodontic Journal. Active member of ITU/WHO Focus Group AI on Health, Topic Group Dental Diagnostics and Digital Dentistry.

"Clinical Landscape of Synthetic Datasets in Endodontics"

Artificial Intelligence (AI) is increasingly being integrated into endodontic practice, significantly enhancing diagnostic precision, streamlining treatment planning, and supporting clinical decision-making. However, the development of robust AI models is often hampered by challenges inherent in real-world clinical datasets including the limited availability of annotated imaging data, over-representation of common pathologies and data privacy constraints. Synthetic datasets have emerged as a potential solution to these constraints. By leveraging advanced generative techniques such as Generative Adversarial Networks (GANs), Variational Autoencoders (VAEs), and diffusion models, synthetic data can replicate the structural and visual characteristics of electronic health records (EHRs) as well as clinical or radiographic images without exposing identifiable patient information. These artificial datasets can address class imbalance, enhance model robustness, and reduce reliance on time-intensive manual annotation. Additionally, with increasing emphasis on data governance frameworks such as the General Data Protection Regulation (GDPR) and the Health Insurance Portability and Accountability Act (HIPAA), they can offer a pragmatic and ethically compliant alternative to traditional datasets. Therefore, this paper will explore the clinical landscape of synthetic datasets in endodontics with a number of used cases as examples, identify the most used models and explore the limitations as well as areas of future research.

Deepti Shrestha

Hospital director – dental hospital, Kathmandu Medical college for 2 years, and an Associate Professor and head of department in Department of Conservative Dentistry and Endodontics, Kathmandu Medical College and Teaching Hospital for few years.

"Bonding to Root Dentin"

Adequate bonding of root filing materials to the root dentin to provide a fluid-impervious seal is important for success of endodontic treatment. However, bonding to root dentin is a challenge due to various factors like structure of root dentin, moisture, smear-layer, type of irrigants used, root filling materials, etc. This presentation will include the challenges of root dentin adhesion, strategies and progress in bonding to root dentin.

Sandra Chen Ming Shu

Endodontic Registrar at the National Dental Centre of Singapore.

"Targeting the Apex- A Guided Solution"

Guided surgical endodontics is a computer-assisted technique that aims to enhance the management of complex surgical cases. By leveraging digital technology, this method improves precision and minimizes complications during surgical procedures. This presentation will explore various methods documented in the literature, including both static and dynamic navigation techniques. It will also outline a protocol for creating static guides for osteotomy and root end resection using equipment typically found in clinics that perform guided implant surgery. Currently, there are no established guidelines regarding when or how to use guided surgical techniques. Therefore, it is up to the clinician to assess the potential benefits of this computer-guided approach for each case. The aim of this presentation is to expand the toolkit available to endodontists, enabling them to effectively address complex surgical challenges.

Khaled AlFouzan

Joint Appointment Professor in Endodontics and serves as the Associate Dean of Academic Affairs at the College of Dentistry, King Saud Bin Abdulaziz University for Health Sciences. Founder of the Saudi Endodontic Society.

"Advancement in endodontic microsurgery instruments"

Endodontic surgery was considered as the last option with instruments that were unsuitable, surgical sites with inadequate vision and increased incidence of post-operative complication. Traditional instruments used in endodontic surgery led to excessive osteotomies and steep bevelling of root surfaces, unnecessary damage to cortical bone and unfavourable crown/root ratios of existing teeth were the results. The advanced techniques developed to overcome the barriers seen in traditional endodontic surgery have allowed the clinicians to achieve higher success rates. With the use of state-of-the-art instruments, new and improved materials, and a surgical operating microscope, the gap has narrowed between biological concepts and the ability to achieve consistently successful clinical results. Endodontic microsurgery represents a minimally invasive treatment option with predictable outcome with the use of micro-instruments. The root apices can now be more easily located, smaller osteotomies are made, and shallower apicoectomies are done. These apices can then be properly filled with root-end filling materials that are both biocompatible and have osteogenic potential. Keeping this in mind, AlFouzan have developed state of the art endodontic microsurgical instrument kit that contains selected and appropriately designed instruments for microsurgical endodontic procedure which have attempted to have greater ergonomic flexibility and more efficient placement of root end filling materials.

Ahmed Ghobashy

Head of endodontics department, head of continuing education and the coordinator of Master endodontics program at Misr International University (MIU). Board member of the Egyptian Endodontic Society and member of the American Association of endodontics and the British Endodontic Society,

"Broken Instrument: Clinical Decision Making and Management Protocols"

Fracture of instruments during the procedure causes a great deal of anxiety for both the clinician and the patient, and maximum effort should be undertaken for treating the tooth in a nonsurgical way. The common approach for dealing with a broken instrument is its removal. The widening of the canal to the level of the broken fragment and its removal by ultrasonic tips and/or some type of grasping equipment is accepted worldwide. Newly introduced techniques, instruments, and kits guaranteed the successful management of most cases with broken instruments. Removal of healthy dentin and especially peri-cervical dentin decreases root strength and can predispose the root to vertical root fracture. So, it is prudent that decision making and managing protocols for dealing with separated instrument should provide clinical approach that can guarantee safe management of separated instruments without sacrificing the longevity of the tooth in the patient mouth in function.

Nayef Mazen Nayef Younes

Examiner and board member: Jordan Endodontic board committee. Owner and CEO of Dr Nayef Younes Endodontic clinic in Amman- Jordan

"Navigating Endodontics with CBCT: enhancing Diagnostic and Therapeutic Precision"

The integration of Cone-Beam Computed Tomography (CBCT) in endodontics has revolutionized diagnostic and therapeutic approaches, leading to enhanced precision and improved patient outcomes. This lecture aims to explore the profound impact of CBCT technology on contemporary endodontic practice. It will discuss the fundamental principles of CBCT imaging and its superiority over traditional radiographic methods, particularly in identifying complex root canal anatomies, detecting periapical lesions, and planning surgical interventions. Through a series of detailed case studies, attendees will gain insights into the practical applications of CBCT, from initial diagnosis to treatment planning. By examining clinical scenarios and outcomes, this lecture will highlight how CBCT enhances diagnostic accuracy, facilitates minimally invasive procedures, and contributes to overall treatment success. Join me to delve into the transformative potential of CBCT in endodontics and discover how this cutting-edge technology is shaping the future of endodontic care.

Ayca Yilmaz

Associate Professor in the Department of Endodontics at the Faculty of Dentistry, Istanbul University. board member of Istanbul Chamber of Dentist and treasurer of the Turkish Endodontic Society.

"Current Concepts and Strategies in NiTi Systems"

Endodontic treatment encompasses the cleaning and shaping, disinfecting, and filling of the root canal system. The initial stage of shaping is particularly critical as it significantly influences the success of the subsequent stages. The efficacy and success of NiTi systems in shaping have been extensively documented in the literature. These systems have revolutionized endodontic practice, providing greater flexibility, efficiency, and predictability in root canal preparation. This lecture aims to provide a comprehensive overview of the evolution of NiTi systems from their inception to the present day. It will cover the technical advancements and general characteristics of these systems, highlighting how they have improved over time. The lecture will delve into the various types of NiTi instruments available, their design features, and their clinical applications. Furthermore, the session will offer practical tips for the clinical use of NiTi systems, drawing on evidence-based and up-to-date information. Topics such as the correct usage protocols, maintenance of instruments, prevention of instrument fracture, and techniques to maximize the efficiency and safety of NiTi systems will be discussed. By the end of the lecture, participants will have a thorough understanding of NiTi systems and be equipped with the knowledge to utilize these tools effectively in their endodontic practice.

Ying-Hui Su

Chief Resident, Department of Endodontics and Operative Dentistry, Kaohsiung Medical University Memorial Hospital. Visiting staff, Department of Endodontics and Operative Dentistry, Kaohsiung Medical University Memorial Hospital. Visiting staff, Dental department, Kaohsiung Municipal CiJin Hospital.

"Precision in Endodontics: Clinical Integration of 3D Imaging, Navigation, and AI-Driven CBCT Segmentation"

This presentation highlights the evolving role of 3D imaging technologies in endodontics, focusing on the integration of static and dynamic navigation systems with microscopes and ultrasonic devices. Emphasis will be placed on how guided endodontics and dynamic navigation systems enhance the precision of both surgical and non-surgical treatments, particularly in managing complex cases such as calcified canals and apical surgeries involving thick cortical bone or anatomical constraints. Clinical workflows will be illustrated using real-world cases that demonstrate the synergy between CBCT data, intraoral scanning, 3D-printed guides, and piezo-assisted surgery. The role of 3D printing will also be discussed in applications like autogenous tooth transplantation, offering a route to reduced surgical time and increased reproducibility. These techniques represent a paradigm shift toward more minimally invasive and data-driven endodontic procedures. Complementing this clinical perspective, the presentation will also introduce a 3D U-Net–based deep learning algorithm designed for automatic segmentation of oral tissues in dental CBCT scans. Using a dataset of manually labelled CBCT volumes, the model achieved promising accuracy in differentiating structures such as teeth, alveolar bone, and root canals. Particular attention will be paid to the segmentation of root canals—a notable challenge due to resolution limits and morphological complexity—and how advances in AI can enhance treatment planning and navigation accuracy.

Hussein Al-Huwaizi

Professor in the department of conservative dentistry, college of dentistry, University of Baghdad. Member in the International, European, Asian Pacific, Arab and Iraqi Endodontic society. Coordinator of the Iraqi Endodontic Society.

"Clinical Management of Root Resorptions"

Pathological conditions associated with necrotic teeth need definite diagnosis and treatment. Root resorption is formed due to many causes mostly importantly is trauma. It causes variable tooth loss that has to be primarily stopped and then treatment of the tooth defect treated. Due to the difficult visibility and access treatment needs special approach and tools.
In this lecture clinical cases of external and internal resorption will be displayed, and new ways of treatment will be presented.

Mujibar Rahman Howladr

Pro-Vice Chancellor (R&D) & Professor and Course Supervisor Department of Conservative Dentistry and Endodontics Dean Dental Faculty Bangladesh Medical University, Dhaka. Chairman, Asian Pacific Endodontic Confederation (APEC 2025 Dhaka). President, Bangladesh Dental Health Research Foundation President, Bangladesh Endodontic Society.

"Revitalizing Pulp Tissue Simplifying Necrobiotic Issue"

Regeneration or Repair? A common conflicts in recent treatment approach where regeneration surplus the repair by its virtue of naturally occurring capability. Regenerative endodontic therapy (RET) each a biologically based treatment approach designed to replace damaged structure of pulp dentin complex to restore the pulp vasculature, proprioceptive and immunological functions. Dental pulp narcosis has become one of the most common problems being the sequelae of caries trauma and inaccurate endodontic treatment. Necrosis of pulp not only affects the long-term tooth survival and preservation but also can a serve as a source of bacterial infection to periapical tissues and facial spaces, in addition there is a strong correlation between oral infections and systemic diseases like stroke, cardiovascular diseases, diabetes mellitus and so on. Till now, Root Canal therapy (RCT), is the most acceptable treatment protocol for pulp necrosis bases on removal of necrotic tissue and replaces by artificial obturating materials, however this conventional therapy does not restore the pulp proprioceptive, immunological function and vascularity. There for, RET has attracted more attention with the development of tissue engineering. The ultimate goal of REPs is the regeneration of the tooth pulp based on 3 pillars; the source of stem cells (genesis); the supply of growth factors (Induction) & the presence of a scaffold (Conduction). Regenerative Endodontic Treatment is based on the concept of tissue engineering which requires the eradication of pathogens, the preservation of stem cells with the presence of scaffold and signalling molecules.

N. Velmurugan

Principal of Meenakshi Ammal Dental College & also maintains a private practice at Chennai. Fellow of Indian society of Dental research

"Essentials in Management of Separated Endodontic Instruments"

Mechanical enlargement of instruments is largely done using Nickel Titanium instruments. One of the biggest issues, with Nickel Titanium files is their frequent separation inside the root canal, which impedes complete cleaning & shaping of the. Retrieval of separated instruments is more predictable with newer ultrasonic tips and looping devices that are currently available. In this presentation, various retrieval methods, factors affecting the retrieval and methods to prevent instrument separation, will be disused using a series of clinical cases.

Hadi Assadian

Assistant Professor and Vice-Head of International Affairs, Department of Endodontics. School of Dentistry, Tehran University of Medical Sciences (TUMS), Tehran, Iran. Member of the Iranian Association of Endodontists (IAE), Division of International Affairs. Editor-in-Chief of the Journal of Iranian Dental Association.

"Differential Diagnosis of Pretreatment Pain Conditions in Endodontics"

Pretreatment pain remains one of the most diagnostically challenging presentations in contemporary endodontic practice. Before any intervention is undertaken, clinicians must navigate a complex landscape of overlapping symptoms, variable pain pathways, and multifactorial etiologies. This online lecture, delivered as part of the APEC2025 PanEndo Conference, offers a comprehensive framework for the differential diagnosis of pretreatment pain conditions, grounded in clinical evidence and enriched by interdisciplinary insight. The session will explore the full spectrum of pain presentations encountered prior to endodontic therapy, including pulpal, periapical, periodontal, and non-odontogenic sources. Emphasis will be placed on distinguishing neuropathic pain, referred pain, and pain of musculoskeletal or psychosocial origin—each of which may mimic odontogenic pathology and lead to diagnostic error if not carefully assessed. Participants will be guided through a structured diagnostic algorithm incorporating detailed history-taking, targeted clinical tests, advanced imaging modalities (including CBCT), and validated pain assessment tools. Case-based discussions will illustrate how diagnostic precision not only prevents unnecessary or ineffective treatment but also enhances patient outcomes and fosters trust. By the conclusion of this lecture, attendees will be equipped to identify key clinical indicators that differentiate pain sources, recognize atypical and red-flag presentations, apply a systematic and evidence-based approach to the diagnosis of pretreatment pain conditions, and communicate diagnostic findings effectively within interdisciplinary teams. This presentation ultimately aims to elevate diagnostic acumen and reinforce the principle that clarity before treatment is essential to the success of endodontic care.

Dalia Fayyad

Professor of Endodontics and Dean of the Faculty of Dentistry, Suez Canal University, Egypt, and member of the committee concerned with the management of New Ismailia National University, Egypt. External referee for the Scientific Committee for promotion of professors and associate professors (Conservative Dentistry and Endodontics). Member of the Egyptian association of Endodontics.

"The Antimicrobial Puzzle: Solving Odontogenic Infections with Precision and Stewardship"

Effective management of endodontic infections requires a thorough understanding of antimicrobial therapies, their clinical applications, and emerging challenges. This presentation explores the comparative efficacy of local versus systemic antimicrobial agents, including their indications, mechanisms, spectrum of activity, and limitations. Special emphasis is placed on alternative and herbal therapies, routes of administration, and optimal timing for application in root canal treatment and regenerative endodontic procedures. A critical discussion on anti-microbial challenges in clinical endodontics addresses microbial invasion pathways, biofilm elimination difficulties, and antibiotic resistance. Contemporary disinfection strategies—such as enhanced irrigants, intracanal medicaments, and novel advanced techniques— will be evaluated for their clinical applicability and limitations. Furthermore, the fundamentals of antibiotic prescription in dentistry will be reviewed, emphasizing accurate diagnosis, differentiation between inflammation and infection, and evidence-based selection of narrow vs. broad-spectrum antibiotics. Additionally, key considerations include dosage, duration, route of administration, and recent prophylactic guidelines will be covered in the presentation.

Marwa Sharaan

Professor in the Department of Endodontics, College of Dentistry at Suez Canal University, Ismailia, Egypt. Vice Dean of Education & Students' Affairs. Member of the Egyptian Association of Endodontists.

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Nelly Abdelsalam

Associate Professor and Consultant in Endodontics, College of Dentistry, Gulf Medical University, United Arab Emirates. Faculty of Dentistry, Suez Canal University.

"The Antimicrobial Puzzle: Solving Odontogenic Infections with Precision and Stewardship"

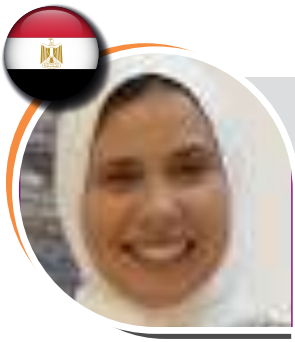
Effective management of endodontic infections requires a thorough understanding of antimicrobial therapies, their clinical applications, and emerging challenges. This presentation explores the comparative efficacy of local versus systemic antimicrobial agents, including their indications, mechanisms, spectrum of activity, and limitations. Special emphasis is placed on alternative and herbal therapies, routes of administration, and optimal timing for application in root canal treatment and regenerative endodontic procedures. A critical discussion on anti-microbial challenges in clinical endodontics addresses microbial invasion pathways, biofilm elimination difficulties, and antibiotic resistance. Contemporary disinfection strategies—such as enhanced irrigants, intracanal medicaments, and novel advanced techniques— will be evaluated for their clinical applicability and limitations. Furthermore, the fundamentals of antibiotic prescription in dentistry will be reviewed, emphasizing accurate diagnosis, differentiation between inflammation and infection, and evidence-based selection of narrow vs. broad-spectrum antibiotics. Additionally, key considerations include dosage, duration, route of administration, and recent prophylactic guidelines will be covered in the presentation.

Geraldine Ahmed

Professor of endodontics and tissue engineering member. Vice dean for education and students' affairs, Dean of the faculty of dentistry, Cairo university.

"Controversies in Endodontics: Current Debates and Clinical Dilemmas"

Endodontic science and practice are always surrounded by considerable debate and remarkable controversies such as factors affecting intra and post operative pain, single versus multiple visit endodontic treatment, current trends and recent materials applied for vital pulp therapy, recent trends in endodontic instruments and what to use, modern advancements in regenerative endodontics... etc. Moreover, to build upon existing scientific success, it is essential to address the current challenges and issues faced. Evidence based research is essential to resolve these debates ensuring standardized optimum care in endodontics.



Shaimaa Gawdat

Professor of Endodontics, faculty of dentistry, Cairo university. Head of endodontic division, New Giza university.

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Fatma Abu Naeem

Associate professor of endodontics, faculty of dentistry, cairo university.

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DAY 3 HALL C El Saraya 2

Ashraf Refai

Professor of Endodontics and former head of the Endodontic department at the faculty of dental medicine, Al-Azhar University in Cairo. He has also been a visiting professor at MIU (Misr International University) and FUE (Future University in Egypt). Dr. Refai has been an exclusive Micro Dentist since 2007.

"Adult Pulpotomy: The State of Things"

Adult pulpotomies have become a regular procedure in many clinics. Evidence is mounting that advocates its use as a definitive long-term treatment. This lecture outlines where we stand with regards to the evidence and the future directions of this newly introduced procedure.

DAY 3 HALL C El Saraya 2

Moataz Elsadat

Lecturer of Endodontics- Al-Azhar University. He has been practicing Micro Endodontics for more than 17 years, with extensive experience in both clinical and academic fields.

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Rania El Backly

Professor of Endodontics and Senior Researcher at The Tissue Engineering Laboratories Faculty of Dentistry, Alexandria University, Egypt. Fellow of The Laboratorio di Medicina Rigenerativa, DIMES, Universita' degli studi di Genova, Italy. Visiting researcher at the biotherapies laboratories, department of internal and specialized medicine, Università Degli Studi Di Genova, Genoa, Italy.

"From Tooth Devitalization to Revitalization: Chasing the Dream of Dentin Pulp Regeneration"

For more than two decades, endodontists have been practicing regenerative techniques in the clinic with successful outcomes. However, as evidence continuously erupts from clinical trials and systematic reviews, it has become apparent that regeneration of a functional dentin-pulp complex is much more challenging than it was initially expected. Although regenerative approaches for the management of the inflamed or the necrotic pulp have found their way into everyday clinical practice, sufficient long-term evidence is still lacking. Survival rates are high; however, success has been measured based on several outcomes which have not always been predictable. Root development or restoration of pulp sensibility following revitalization procedures are not consistent outcomes. Furthermore, complications such as discoloration and intracanal calcification may complicate or necessitate future interventions. Therefore, it is necessary to obtain a deeper understanding of the interplay between infection, inflammation, and regeneration to better target the stem cell niche to orchestrate the cascade of events leading up to the restoration of a functional dentin-pulp complex capable of nociception and immune function. This presentation will provide an overview of the current available evidence on the outcomes of regenerative endodontic procedures and highlight potential strategies to enhance them addressing potential failures and unsatisfactory outcomes. Additionally, it will shed light on the promise of this treatment modality for the management of necrotic mature permanent teeth in addition to immature teeth and reveal future approaches for the advancement of the field of regenerative endodontics.

Ahmed Mubarak

Assistant Professor of Endodontics- Conservative Dentistry Department- Alexandria University. Visiting professor Beirut Arab University, Beirut Lebanon.

“Shaping the Future of Endodontics: Research Milestones”

Background and learning points: Endodontics is undergoing a significant transformation driven by advancements in technology and innovative treatment approaches. This presentation highlights recent research conducted at Alexandria University, focusing on novel techniques and materials that aim to enhance the predictability and success of endodontic procedures. Key areas of research include the development of new intracanal medications with improved antimicrobial efficacy, advancements in regenerative endodontics, and the introduction of biocompatible materials that promote healing and long-term tooth preservation. Additionally, modern instrumentation and enhanced irrigation techniques are reshaping conventional treatment paradigms, leading to more efficient and minimally invasive procedures.

Hisham ElNawam

Lecturer of Endodontics at the Conservative-Dentistry Department, Faculty of Dentistry, Alexandria University.

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Shaymaa Shaaban

Assistant Lecturer and Researcher in Endodontics at Alexandria University.

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Sara Hossam

Associate Professor and the undergraduates course director at the Endodontic dept. at Ain shams university. Basic Life support instructor at the American Heart Association.

"Preserve to Perform: Advancing Outcomes Through Minimally Invasive Endodontics"

Minimally Invasive Endodontics (MIE) is reshaping the approach to root canal therapy by prioritizing dentin preservation while maintaining effective canal disinfection. With the support of modern technologies such as CBCT, ultrasonics, and bioceramic materials, clinicians can perform more precise and biologically respectful treatments. This presentation will explore how MIE optimizes both mechanical performance and biological healing, ultimately contributing to better restorative integration and tooth longevity.

Tariq Yehia

Associate Professor at the Endodontic Department, Faculty of Dentistry, Ain Shams University. Reviewer at BMC Oral Health Journal, Restorative Dentistry and Endodontics Journal (RDE), F1000Research Journal, Ain Shams Dental Journal. Reviewer at BMC Oral Health Journal, Restorative Dentistry and Endodontics Journal (RDE), F1000Research Journal, Ain Shams Dental Journal. Director of visiting residents' program at Endodontic department, Faculty of Dentistry, Ain Shams University. President of strategic planning sector at Quality Control Unit, Faculty of Dentistry, Ain Shams University. Member of Assessment and Evaluation Committee, Faculty of Dentistry, Ain-Shams University.

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"From Fracture to Function: Innovations in Endodontic Trauma Therapy"

Traumatic dental injuries pose significant clinical challenges due to their complex nature and potential long-term consequences. Recent years have witnessed a paradigm shift in the approach to trauma management in endodontics. Innovations such as regenerative endodontic procedures, biomaterials for pulp preservation, digital diagnostics, and updated IADT guidelines are reshaping clinical practice. This presentation reviews these developments, discusses their clinical relevance, and provides guidance on integrating them into daily endodontic care.

Wael El-Shater

Associate Professor and the undergraduates course director at the Endodontic dept. at Ain shams university.

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DAY 3 HALL C El Saraya 2

Mohamed Mahmoud

Director of Delta University Continuing Education Centre Delta plus, DUI. Head of Continuing Education Unit, Faculty of Dentistry, Mansoura University Mansoura university. Associate professor of Endodontics. Head Of Endodontic Department, Faculty of Dentistry, Mansoura University.

“Endodontics, To What Limit?”

Over the last years, there were revelations in technology, materials, and techniques regarding either root canal treatment or retreatment. These revelations make what was impossible yesterday to be possible today, expanding treatment options, and better prognosis.
But still there is a limit!

Adel AbdelWahed

Associate Professor of Endodontics, Future University.

“Advances in Endodontic Irrigation: Bridging Science and Clinical Practice”

This lecture explores the latest advancements in endodontic irrigation, emphasizing the critical interface between scientific research and clinical application. Effective irrigation is vital for the successful management of root canal systems, where the removal of debris and disinfecting the canal space significantly influences treatment outcomes. We will discuss innovative irrigation techniques and materials, including the use of novel irrigants and delivery systems that enhance cleaning efficiency.

Attendees will be encouraged to engage in discussions on overcoming barriers to adopting new technologies and practices in their clinical settings.

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APEC 2025
PANENDO

Hall D

Speakers & Abstracts

Abdelrahman ELKholy

Assistant lecturer of Endodontics- Suez Canal University

“Radiographs that Speak: Seeing the Unseen”

Endodontic radiography is an indispensable tool that guides clinicians from diagnosis to final obturation. This session explores how to skilfully use intraoral radiographic techniques and advanced imaging modalities, including CBCT, to assess root canal anatomy, detect periapical pathologies, and identify complications such as missed canals or root fractures. Emphasis will be placed on mastering radiographic angulation, recognizing anatomical variations, and minimizing diagnostic errors. The presentation encourages a deeper understanding of image interpretation and its clinical relevance, promoting precision and confidence in daily endodontic practice.

Antonio Glynis

Crete Endodontics Referral Practice.

“Endodontic Microsurgery. Turning Endodontic Failures into Success”

Endodontic microsurgery has become an important procedure in modern endodontic practice, particularly in cases where conventional root canal therapy has failed. This presentation reviews the latest microsurgical techniques, advancements in technology, and evidence-based practices that maximize treatment success. Emphasis is placed on meticulous surgical protocols, retro-preparation methods, biocompatible retro-filling materials, and magnification. Clinical cases and videos demonstrating successful management of challenging scenarios through microsurgery will be showcased, reinforcing its significance as an indispensable component of comprehensive endodontic care.

Amira Galal

Associate Professor of endodontics, National Research Centre, Misr International University, Egypt.

“Root Caries: Uncovering the Hidden Challenges”

Root caries has emerged as a significant clinical concern, particularly in aging populations and patients with periodontal attachment loss. Despite its growing prevalence, root caries remains underdiagnosed and undertreated due to its subtle clinical presentation and the limitations of conventional diagnostic tools. This lecture will delve into the often-overlooked challenges in identifying, preventing, and managing root caries in modern dental practice. This session aims to equip clinicians with the knowledge and tools to recognize root caries as a complex and growing challenge—and to address it with confidence using comprehensive, patient-centred strategies.

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Mohamed Medhat Kataia

College Of Dentistry and Health Sciences, University of Fujairah.

"Pulp Preservation "The new Norm According to the Preoperative Form"

This presentation aims to explore the evolving domain of the vital pulp therapy and the newly adopted concept that there are no discrete boundaries rendering the pulp unworthy of treatment. Recently approaches to vital pulp therapy are taking a turn into the combination of laser biomodulation to increase the success rate of the treatment yet the treatment predictors are still the same as described by the AAE which is the pulp's state under the microscope and its degree of attachment, and not to forget the ability to obtain haemostasis. Yet the use of artificial intelligence which is becoming integral in all our practices in predicting the possibility of the pulp involvement before the procedure, then performing the therapy and degree of success may be a game changer. This lecture is to shed a light upon the outcomes, different approaches and the predictors of pulp preservation therapies as a new norm of treatment

Shereen Elattar

Endodontic Specialist Private Practice, Amman – Jordan

"The Bioceramic Journey: From Science to Clinical Application"

Bioceramic materials have redefined the landscape of modern endodontics, offering a unique combination of bioactivity, sealing ability, and biocompatibility. This lecture traces the evolution of bioceramics from their scientific foundations to their transformative role in daily clinical practice. We will explore their chemical composition, physical properties, and biological behavior, shedding light on how these characteristics influence outcomes in obturation, perforation repair, and regenerative procedures. The session will also address the transition from in vitro data to in vivo success, highlighting key clinical protocols, decision-making pathways, and case-based applications. By bridging the gap between science and technique, this lecture aims to equip clinicians with the knowledge and confidence to fully integrate Bioceramic materials into predictable and efficient endodontic workflows. Key Learning Points:

-Understand the chemical and physical properties that make bioceramics unique in endodontics

-Review the biological rationale behind the use of bioceramic sealers and repair materials

-Identify the indications for bioceramic application in obturation, perforation repair,
and regenerative endodontics

-Learn practical clinical protocols for using premixed bioceramic materials effectively

-Explore case-based examples highlighting outcomes and decision-making strategies

-Bridge the gap between laboratory research and real-world clinical implementation

Ibrahim El Naggar

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“Modern Management of Endodontic Mishaps”

Endodontic mishaps can occur even in the most skilled hands, and their management is often the difference between treatment success and failure. This lecture explores advanced strategies for recognizing, preventing, and managing common and complex endodontic errors, including perforations, instrument separation, canal transportation, and missed anatomy. Through clinical case examples and evidence-based protocols, attendees will gain practical methods to handle complications with confidence and preserve long-term outcomes.

Ahmed Ezz El-Regal Khamees

Assistant Lecturer in the Endodontic Department of MSA University. Certified trainer for practicing DOMs. Program director of Post graduate Endodontic residency in MSA University in Egypt.

"Cryotherapy: A Cold Approach to Freeze the Endodontic Pain"

Endodontic post- operative pain is a common concern following root canal treatment, and it can significantly impact the patient's quality of life. Recently, cryotherapy has emerged as a potential effect on reducing post-operative pain in various medical fields, including dentistry. It involves the use of cold temperatures to induce therapeutic effects.

Mohamed Elashiry

Department of Endodontics, Dental College of Georgia, Augusta University.

"Diagnosis and Treatment Planning: Solving the Mysterious Puzzle. A Case-Based Journey through Endodontic Challenges"

Accurate diagnosis and strategic treatment planning are the cornerstones of successful endodontic therapy. A thorough evaluation — combining detailed patient history, clinical testing, and advanced imaging modalities such as cone-beam computed tomography (CBCT) — is essential for detecting pulpal and periapical pathosis, particularly in cases with complex presentations. Treatment planning must be individualized, accounting for factors such as tooth restorability, periodontal status, and patient-specific considerations. Clinical decision-making is increasingly supported by evidence-based protocols and interdisciplinary collaboration to maximize outcomes and long-term tooth retention. In this presentation, I will discuss the current standards and advances in endodontic diagnosis and treatment planning, illustrated through a series of diagnostically challenging cases that highlight both common pitfalls and strategies for success.

Hebatullah Adel Hussein

Endodontic Department, Faculty of Dentistry, Ain Shams University.

"Selective Endodontic Retreatment: A Conservative Approach to Post Treatment Apical Periodontitis"

Endodontic retreatment has traditionally been approached as a full re-treatment of all previously treated canals. However, growing evidence supports the viability and effectiveness of selective endodontic retreatment, where only the affected portion of the root canal system is re-treated. It involves selectively re-treating only the root(s) exhibiting periapical lesions, while leaving other roots with no visible pathology untouched. This approach aims to minimize unnecessary removal of tooth structure and reduce the risk of iatrogenic damage, compared to a full root canal retreatment. This lecture will explore the clinical rationale, indications, and techniques for selective retreatment, emphasizing how to integrate this conservative approach into daily practice. Through clinical cases, imaging, and outcome assessments, attendees will learn how to identify candidates and limitations for selective retreatment, use contemporary diagnostics tools, including CBCT, for assessing canal-specific pathology, guiding case selection, and apply evidence-based techniques and strategies for planning and performing selective retreatment while minimizing risks and preserving existing restorations.

Mai Osama

Lecturer of Endodontics- Ain Shams University.

"Lesion Size and Treatment Outcomes. Unravelling the Hidden Influence"

Periapical lesions are one of the most prevalent chronic inflammatory lesions observed in the jaws, they usually result from pulp infection of mechanical, thermal, chemical, or microbial etiology. It was shown in literature that preoperative periapical lesion size is one of the major prognostic factors influencing treatment outcomes. Numerous studies were found evaluating the effect of periapical lesion size on the outcome of either conventional endodontic treatment, retreatment or endosurgery. However, a major conflict was revealed regarding this topic. The aim of this lecture is to uncover some of causative factors of this controversy in an attempt to reach a perceptive conclusion.

Ahmed Husseiny

Assistant Lecturer of Endodontics- Ain Shams University.

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Amira Hassan

Lecturer of Endodontics- Ain Shams University.

“Hidden Links. Apical Periodontitis and Systemic Health”

Apical periodontitis has long been described as a local coordinated interaction of immune-inflammatory cells and microflora within the periapical area. However, from a broader perspective a bidirectional relationship has been suggested between endodontic infection and systemic health. Apical periodontitis may contribute to a systemic condition or aggravate a pre-existing disease. On the other hand, a systemic disease can influence the progression and severity of apical periodontitis. These findings emphasize the importance of interdisciplinary collaboration between dental and medical professionals to optimize clinical outcomes.

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Maya Feghali

Private Practice Limited to Endodontics in Paris-France

"Decision Making in Modern Endodontics"

Modern endodontic approach improves the ability to treat and retain teeth, resulting in a predictably favourable long-term outcome and allowing retention of the natural dentition. The goal of endodontic treatment is to eliminate bacteria, to disinfect and fill three dimensionally the root canal system. In his daily practice the endodontist faces several clinical situations, treatment, retreatment, surgical intervention, or extraction?

The aim of decision-making in endodontics is to analyse each case and balance the risks to determine whether or not a tooth is worthiest to be kept or extracted. Endodontic decision making depends on three factors related to diagnosis, treatment planning and the clinician himself. Other parameters such as clinical, radiological, restorative and periodontal status could influence the endodontic outcome.

The aim of this presentation is to guide the clinician through a series of clinical cases to the best endodontic decision making, for a successful and long-lasting treatment.

Hisham Mahmoud Abada

Assistant Professor, Faculty of dentistry, kafrelsheikh university.

“Machine Minds: Exploring AI Applications in Endodontics”

This presentation aims to explore the emerging role of Artificial Intelligence (AI) in the field of endodontics, focusing on how machine learning and deep learning technologies are enhancing diagnosis, treatment planning, and clinical outcomes.: The integration of AI into dental specialties has opened new possibilities for precision, efficiency, and improved patient care. In endodontics, AI tools are being increasingly adopted to assist in tasks. This presentation provides a comprehensive overview of current AI technologies used in endodontic practice, supported by recent studies and clinical examples. It also addresses the challenges, limitations, and ethical considerations of implementing AI in a clinical setting. As AI continues to evolve, understanding its capabilities and constraints will be essential for endodontists seeking to enhance their practice through digital innovation.

Hesham Mohamed Salah

Future University in Egypt.

“Finding the Right Mind Map for Retreatment Cases”

Non-surgical endodontic retreatment success demands a comprehensive treatment planning “mind map” rooted in overall tooth longevity. This lecture, guides clinicians through a holistic decision-making framework, emphasizing restorability and periodontal support alongside endodontic factors. We’ll establish a structured diagnostic process leveraging 3D imaging (CBCT) to critically assess existing restorative integrity, periodontal health, and, critically, to identify the true cause of failure. The lecture explores a spectrum of treatment options: detailing non-surgical retreatment techniques, including efficient obturation material removal and complex anatomy negotiation. Crucially, we’ll examine when to consider endodontic microsurgery as an adjunct or alternative, and when prognosis dictates extraction with prosthetic replacement as the most predictable long-term solution. This includes a thorough discussion of the retreatment-versus-extraction decision and implications for definitive prosthesis. Attendees will gain a practical, integrated decision-making algorithm that prioritizes the overall longevity and function of the tooth within the patient’s dentition. This lecture aims to empower practitioners to make informed, patient-centred choices in retreatment cases, leading to truly predictable and sustainable restorative results.

Esen Ercan

Department of Endodont.cs, Faculty of Dentistry Akdeniz University, Antalya,Turkey Department of Nutrition and Dietetics Faculty of Health Sciences Akdeniz University, Antalya, Turkey

"The Effect of Files with Different Kinematics on the Amount of Bacteria Extruded Apically During the Shaping of Root Canals Containing Mixed Biofilm"

Objective: This study aimed to compare the apical bacterial extrusion associated with a rotary single-file system and a reciprocating single-file system using a mixed microbial infection model. Materials and Methods: 62 extracted human mandibular premolars with single canals were sterilized and inoculated with a mixed suspension of E. faecalis, S. mutans, and C. albicans. The samples were incubated at 37 °C for 7 days with daily medium replacement to establish a stable infection. Teeth were randomly allocated into two experimental groups (n=25): Rotary instrumentation with One Curve 25/.06 and reciprocating instrumentation with One RECI 25/.06. Control groups (n=6 for each system) were included. During root canal preparation, apically extruded material was collected, plated on selective agar, and incubated for 24 hours. CFU counts were obtained. Biofilm amount was assessed by optical density (OD: 595) and stereomicroscopy. Microbial adhesion and morphology were further examined by SEM. Data were analyzed using the Kruskal-Wallis H test and Bonferroni post-hoc correction. Results: In both experimental groups, colony counts for E. faecal)s (p = 0.012) and S. mutans (p = 0.011) were significantly lower compared with the control group; however, no statistical difference was observed between the rotary and reciprocating systems. For C. alb)cans, higher values were detected in the control group, but the difference among groups was not statistically significant (p = 0.071). OD measurements revealed no significant differences (p = 0.204) and showed inconsistency with CFU results. SEM and CV analyses confirmed that both systems reduced the presence of biofilm compared with controls. Conclus(on: Both rotary and reciprocating systems were effective in reducing the apical extrusion of E. faecal)s and S. mutans, with no superiority detected between them. A comparable pattern was observed for C. alb)cans, although the differences were not statistically significant. Moreover, OD measurements didn't fully correspond with CFU findings, highlighting the limitations of OD analysis in reflecting microbial extrusion. Keywords: E. faecal)s, S. mutans, C. alb)cans, biofilm

Medhat Samir

(BDS) Al Azhar university 2010
(Egyptian fellowship of family dentistry) 2021
Practice limited to microscopic dentistry since 2016
Full mouth rehabilitation and digital dentistry specialist

"To Restore or Not: A Critical Decision Before Starting Your RCT"

In cases of severely compromised teeth, the true challenge often arises after root canal treatment—how to achieve a predictable and functional restoration. This lecture will highlight essential clinical considerations that should be addressed before initiating endodontic therapy. By evaluating the restorability of the tooth at the outset, clinicians can make more informed decisions about whether to proceed with root canal treatment or explore alternative options. The session aims to provide practical guidelines that support better long-term outcomes and treatment planning.

AlBaraa Samir Alkady

Assistant Lecturer at Misr International University.

"Unlocking Success: Mastering the Art of Access Cavity Preparation in Endodontics"

The access cavity is the cornerstone of successful endodontic treatment, serving as the gateway to the root canal system. An optimal access cavity design ensures effective cleaning, shaping, and sealing of the root canal system, ultimately influencing the long-term success of the procedure. This abstract explores the latest advancements in access cavity preparation, focusing on techniques that enhance precision and minimize complications. Innovations such as the use of dental microscopes, ultrasonic tips, and digital imaging have significantly improved the accuracy and efficiency of access cavity creation, allowing for better preservation of tooth structure and reduced procedural errors. Furthermore, this presentation will examine the relationship between access cavity design and clinical outcomes, with particular attention to the reduction of post-treatment flare-ups and the promotion of healing. The role of access cavity preparation in minimizing risks such as perforation, ledging, and unnecessary removal of tooth structure will also be discussed. By mastering the intricacies of access cavity preparation, endodontists can significantly improve treatment success and enhance patient outcomes, making this skill essential for every practitioner striving for excellence in root canal therapy

Mohammed Abouel Seoud

Assosicate Professor of Endodontics, British University in Egypt.

"Recent Innovation and Concepts in Endodontic Microsurgery"

Endodontic microsurgery has witnessed transformative innovations in recent years, markedly enhancing precision, predictability, and clinical outcomes. The integration of advanced magnification through operating microscopes, high-intensity illumination, and ultrasonic micro instruments has elevated the standard of care, allowing for minimally invasive techniques with enhanced anatomical preservation. A major leap forward has been incorporating guided navigation systems, including static and dynamic platforms, which utilize cone-beam computed tomography (CBCT) data for preoperative planning and real-time intraoperative guidance. These systems significantly increase the accuracy of osteotomy and root-end resections, especially in anatomically complex regions. Further pushing the boundaries, autonomous and semi-autonomous robotic systems have recently emerged as promising adjuncts in endodontic microsurgery. These technologies offer haptic feedback, motion stabilization, and AI-powered path planning, enabling ultra-precise movements that minimize operator variability and improve safety. Additionally, advances in biomaterials such as next-generation calcium silicate-based bioceramics and the application of biologics like platelet-rich fibrin (PRF) and bone morphogenetic proteins (BMPs) have accelerated healing and enhanced periapical regeneration. The convergence of digital imaging, robotics, guided surgery, and biologically active materials represents a new era in endodontic microsurgery, redefining clinical protocols and setting the stage for more personalized, effective, and technologically driven care.

Marwa Sharaan

Professor in the Department of Endodontics, College of Dentistry at Suez Canal University, Ismailia, Egypt. Vice Dean of Education & Students' Affairs. Member of the Egyptian Association of Endodontists.

"Navigating the unseen: Microrobtics in Endodontics!"

Microrobotics is revolutionizing the field of endodontics by providing innovative solutions for navigating complex root canal systems. This emerging technology enables precise targeting of biofilms, retrieval of diagnostic samples, and targeted drug delivery. Our lecture in the congress will showcase the latest advancements in diagnosing and treating endodontic infections. We will bring together leading experts in microrobotics, endodontics, and biomedical engineering to discuss the latest research, technological advancements, and clinical applications. We will explore the potential of microrobotics to improve treatment outcomes and enhance patient care. Join us to learn about the future of endodontic treatment and the role of microrobotics in shaping the field.

Marwa Sharaan

Associate Professor at the 'Faculty of Dentistry, Suez Canal University.

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Microrobotics is revolutionizing the field of endodontics by providing innovative solutions for navigating complex root canal systems. This emerging technology enables precise targeting of biofilms, retrieval of diagnostic samples, and targeted drug delivery. Our lecture in the congress will showcase the latest advancements in diagnosing and treating endodontic infections. We will bring together leading experts in microrobotics, endodontics, and biomedical engineering to discuss the latest research, technological advancements, and clinical applications. We will explore the potential of microrobotics to improve treatment outcomes and enhance patient care. Join us to learn about the future of endodontic treatment and the role of microrobotics in shaping the field.

Omar Khaled Montaser

Department of Endodontics, Faculty of Dentistry, Suez Canal University, Egypt.

"The Endo GPS: Tips for Navigating Your Way Through Different Root Canal Morphologies"

Our enemy in Endodontics are the microbes inside the root canal system. The key is disinfection, which becomes challenging when such microorganisms hide in inaccessible areas of the root canal system. What You'll Learn: Evidence-based approaches to enhance treatment success, minimize procedural errors, and tackle different complexities such as apical splits, C-shaped canals, MB2s, unusual anatomy such as extra roots and root canals and root resorption. All via clinical cases and video demonstrations. Elevate your clinical skills and improve patient outcomes

Mohamed Abd ElRahman ElShreif

Assistant Professor of Endodontics Menoufia and HUE university.

“Retreatment: The Challenging Process”

Endodontic retreatment remains one of the most complex and demanding procedures in modern dental practice. Despite advancements in materials and techniques, failures in initial root canal therapy are still encountered due to factors such as persistent microbial infection, missed canals, inadequate obturation, or coronal leakage. This lecture explores the multifactorial nature of endodontic failure and the clinical decision-making process involved in selecting retreatment over alternative options like apical surgery or extraction.

Abdelhamied Saad

Head of Endodontic Department, Pharos University in Alexandria, Faculty of Dentistry, Alexandria, Egypt.

"Surgical Repositioning of Unerupted Anterior Teeth"

The result of surgical repositioning of 12 unerupted anterior teeth was studied. The unerupted teeth were gently exposed, gradually repositioned by shifting them bodily toward the occlusal plane without disturbing the periodontal ligament, and splinted for 3 weeks. Root canal therapy was performed at the end of the second week following repositioning. Obturation was performed at the end of the third week just before splint removal. Clinical and radiographic examination (follow-up period: 6 months. to 3.5 years) revealed no root resorption with satisfactory apical healing and healthy supporting tissues, indicating the success of this surgical technique.

Nirvana Khalaf Mansour

Independent Researcher, Endodontic Lecturer, Private Clinic.

"The Miracle of Autologous Growth Factors Enriched Bone Graft Matrix (Sticky Bone) In Regenerative Endodontic Micro-Surgery"

The use of platelet concentrates in dentistry evolves frequently, from the initial platelet-rich plasma (PRP) to sophisticated centrifugation procedures and injectable PRF preparations. Alveolar ridge augmentation, periodontal surgery, implant surgery, and endodontic regeneration are just a few of the disciplines that have used platelet concentrates for hard and soft tissue healing. With breakthroughs in surgical approaches, some authors have proposed the combination of platelet concentrates with bone graft materials such as synthetic bone, xenografts and allografts, a novel idea that involves creating "sticky bone," a growth factor-enriched bone graft matrix. This composite biomaterial is a promising autologous material, results in a significant release of cytokines and autologous growth factors that responsible for healing and tissue recovery, in addition, these growth factors promote proliferation of mesenchymal stem cells, fibroblasts, and osteoblasts, impacting the development of tissue neoformation. Sticky bone application in regenerative endodontic surgery in cases of through and through lesions, apico-marginal defects, and non-healed large apical lesions after root canal treatment will modulate the microenvironment in periapical defects that demand guided tissue regeneration (GTR), which combines the use of bone graft material plus a resorbable or non-resorbable membrane, and this may elicit some immunological response. So, using sticky bone after apicoectomy provides us with an autologous growth factor-enriched bone graft matrix that simplifies handling during the surgical operations due to its optimal moldability without disintegration into the surrounding soft tissues. It also allows stabilization of the bone graft in the defect to accelerate tissue healing with the elimination of graft loss and inhibits the ingrowth of soft tissue in the graft, which results in complementing the surgery and increasing the success rate.

Mohamed Kamal Abo Amo

Lecturer of endodontics Al Azhar University, Cairo, Egypt.

“Silent Roots, Loud Pain; Exploring Post Operative Endodontic Pain”

‘Pain is undesirable unwanted sensation that occasionally happens during or after root canal treatment. Pain may occur due to mechanical, chemical or bacterial causes. The aim of the presentation is directed to shine a light on the causes of post operative pain and how to decrease it.

Mostafa Anwar

Guest Lecturer, Faculty of Dentistry - Ajman University.

“Hacking Complex Endodontic Scenarios”

Complex cases in endodontics encompass a wide spectrum of clinical challenges, including severely curved or calcified canals, open apices, internal or external resorption, and separated instrument fragments. These scenarios often deviate from conventional treatment protocols and require a higher level of diagnostic precision, technical expertise, and clinical judgment. One particularly demanding complication is the retrieval or management of broken instruments, which can obstruct canal patency and impede disinfection. Advanced imaging modalities such as cone-beam computed tomography (CBCT) and the use of dental operating microscopes are indispensable in locating and managing such complexities. Retrieval techniques—especially ultrasonics and microtube systems—must be applied with minimal removal of dentin to preserve structural integrity. Other complex cases may necessitate the use of bioceramic materials for sealing defects or apexification procedures. A comprehensive approach that emphasizes individualized treatment planning, minimally invasive strategies, is essential for successful outcomes in complex endodontic cases. Identify various types of complex endodontic cases and their clinical implications.

Mohamed Nageh Tawfik Haridy

Faculty of Dentistry, Fayoum University.

"Cell-Free Regeneration: Unlocking the Therapeutic Potential of Secretomes and Exosomes in Endodontics"

Secretomes and exosomes offer a transformative, acellular approach to tissue regeneration, serving as potent alternatives to traditional stem cell therapies. Derived from mesenchymal stem cells and other regenerative sources, these bioactive agents modulate inflammation, promote angiogenesis, and stimulate repair processes critical for dental pulp and tissue regeneration. This presentation reviews the biological functions of these molecules, summarizes current in vitro and animal model findings, and addresses the challenges that must be overcome to enable safe, standardized clinical applications in endodontics.

Ehab Abdel Hamid Ahmed

Associate professor of Endodontics, Faculty of dentistry, El Minia university.

"Pulp-Dentin Regeneration: the dream is about to become truth"

Regenerative endodontic procedures (REPs) evolved as an attempt to restore the original anatomic structure and physiological function of the pulp-dentin complex after it was damaged based on the classic triad of tissue engineering. Although current protocols have shown promising results in managing necrotic immature teeth, which allowed resolution of signs and symptoms and continued root development, on the other hand, histological studies showed that the tissue formed was ectopic and couldn't function as pulp tissue. The classic triad of tissue engineering as described by Langer & Vacanti was modified to a quartet by incorporating disinfection and research have been directed toward developing effective disinfection strategies that could sterilize infected root canals without damaging stem cells to achieve pulp dentin regeneration. Finally, researchers succeeded in obtaining true pulp dentin regeneration in molar teeth by using the cell transplantation approach. However, there are several challenges for this approach to be applicable in daily clinical practice. That's why researchers directed their efforts to find alternatives for the development of clinically applicable protocol to regenerate dental pulp such as using stem cell-derived products in the hope of developing chairside therapy to regenerate dental pulp.

Mohamed Hamdy El-Tellawy

Teaching assistant at Badr University in Asyut.

“The Ghost of Endodontic File separation”

Instrument separation during endodontic treatment is a common clinical challenge that can compromise treatment outcomes. This presentation addresses how to manage such cases effectively, with a focus on two main strategies: bypassing and retrieval. An overview of the reasons for file fracture will be briefly outlined. Practical techniques will then be discussed in detail, including the ultrasonic method (Ruddle technique) and loop grasping approaches. Clinical case examples will highlight the importance of preoperative assessment, straight-line access, staging platform preparation, and the use of magnification. A conservative, safe, and systematic approach is emphasized to enhance success while preserving dentin structure.

Mosaad Mohamed Soliem

Consultant of restorative & digital Dentistry

“Teeth Auto-Transplantation; Truth or Myth?”

Although Teeth Autotransplantation is a reliable scientifically proven treatment option, many dentists don’t consider it in their treatment plan. In this lecture we will discuss when autotransplantation can be a good alternative to long orthodontic treatments or implant or combined with any of these options. We will present different real-life cases with long follow ups. We will discuss the technique, science behind it, risks, early and late failures also the differences in success & survival criteria as discussed in the last systematic review released in February 2022.

Mohamed Sohail Sayed Jacoub

Cairo university.

“Artificial Intelligence the New Era in Endodontics”

Artificial intelligence (AI) has emerged as a transformative tool in modern dentistry, particularly within the field of endodontics. By leveraging machine learning, deep learning, and image recognition technologies, AI systems are increasingly being integrated into diagnostic and clinical decision-making processes. In endodontics, accurate diagnosis of pulpal and periapical conditions, detection of anatomical complexities such as the second mesiobuccal canal (MB2), and assessment of radiographic images are critical to treatment success. AI-powered models, especially convolutional neural networks (CNNs), have shown high accuracy in interpreting periapical radiographs and cone-beam computed tomography (CBCT) images for detecting apical lesions, root fractures, and canal morphology. These intelligent systems reduce human error, standardize diagnostic accuracy, and enhance clinician confidence. AI also plays a significant role in treatment planning, outcome prediction, and patient monitoring through data analysis and pattern recognition. Furthermore, integration with robotic-assisted endodontic instrumentation and smart imaging software is shaping the future of precision dentistry. Despite its promise, the implementation of AI in endodontics faces challenges such as data privacy concerns, the need for large, annotated datasets, and the risk of overreliance on automated systems without clinical judgment. As research expands and computational power improves, AI is expected to become an indispensable adjunct in endodontic practice and education. Continued collaboration between clinicians, data scientists, and regulatory bodies is essential to ensure the ethical, accurate, and safe integration of AI technologies. Overall, AI holds the potential to elevate the standard of care in endodontics by enabling faster, more accurate, and personalized patient treatment.

Muhammad Salah-Uddin Anwar

Department of Endodontics, Faculty of dentistry, Tanta University.

"Clinical Management of Furcation Perforation using Internal Matrix"

Furcation perforation is defined as a pathologic communication between the root canal system and the external tooth surface in the floor of the pulp chamber of multirooted teeth. Its etiology could be pathologic or iatrogenic. The objectives of repairing furcation perforation are to seal the dentin defect and provide suitable conditions for formation of a new periodontal attachment. Two major problems may affect managing perforation repair include moisture control due to presence of blood and the placement of repair material without over extrusion into the periodontium. Moisture sensitivity compromises the seal resulting in unfavourable outcomes. Thus, achieving haemostasis during repairing the perforation is an important prerequisite to obtain proper seal. Repairing material extrusion into the bone may affect success regardless of the material used by producing more inflammation and a foreign body reaction. Taking into consideration the favourable outcomes of perforation repair procedures where some materials may provide adequate seal but may interfere with the formation of periodontal reattachment due to their extrusion into the furcation area, therefore the following lecture will describe the clinical management of furcation perforation using internal matrix dealing with the perforation as a heterogenous wound with periodontal and dentinal tissues as separate entities.

Şeyma Nur Pektaş

Akdeniz Unıversity Faculty of Dentistry
Department of Endodontics , Antalya , Türkiye

"Determination of the Amount of Bacteria Extruded Apically During the Shaping of Root Canals Containing Different Biofilms"

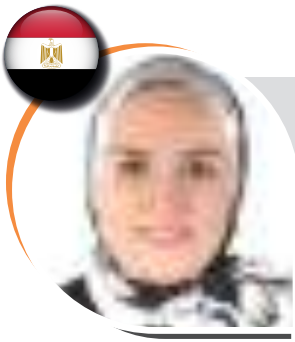
Objective: The aim of this study was to quantitatively evaluate apical microbial extrusion during root canal shaping in dentinal tubules colonized by Enterococcus faecalis (E. faecalis), Candida albicans (C. albicans), and a mixed biofilm formed by both microorganisms. Method: In this study, 54 extracted human mandibular premolars were used. After being sterilized in an autoclave, the teeth were contaminated with E. faecalis, C. albicans, or a mixed culture containing both microorganisms. Following a seven day incubation period to allow biofilm formation, a subset of randomly selected teeth from each group was allocated as the control group, in which no root canal shaping was performed. The remaining specimens constituted the experimental group and underwent mechanical root canal shaping. Subsequently, all samples were irrigated with sterile distilled water, and the apically extruded fluid was collected for microbial culturing and CFU enumeration. In half of the specimens, OD (optical density) measurement was performed, while in the other half, biofilm morphology was evaluated using light microscopy following crystal violet staining. Results: In both the E. faecalis and mixed biofilm groups, significantly higher colony counts were observed compared to the C. albicans group ($P < 0.05$). When control and experimental groups were compared, all microbial species exhibited a statistically significant reduction in colony counts in the experimental group. Conclusion: Mechanical instrumentation was found to be effective in biofilm removal, with E. faecalis maintaining its dominance in both single and mixed biofilm models, while C. albicans exhibited lower growth. These findings indicate that further studies using multispecies biofilm models are essential to better understand resistance mechanisms in endodontic treatment. Keywords: biofilm, bacteria, dentinal tubule, apical extrusion, E. faecalis, C. albicans, mix biofilm

Elias Hassan

DDS, MSc Endodontist, Private Practice Amman, Jordan

"Beyond the Apex: A Surgical Approach to Endodontic Failures"

Although micro apical surgery has advanced significantly in technique and outcomes, many clinicians still overlook it in favor of extraction when orthograde retreatment fails. This presentation aims to reposition apical microsurgery as a predictable, minimally invasive solution—especially for preserving teeth that would otherwise be lost. -Through a series of almost ten clinical cases personally performed by the author, the session will explore the surgical management of anterior and select posterior teeth, including cases with large periapical lesions and procedural mishaps corrected surgically. Utilizing high-definition microscope footage, the presentation demonstrates various flap designs—ranging from full mucoperiosteal to submarginal—paired with ultrasonic retrograde preparation, MTA-based fillings, and CBCT-guided planning. Anatomical challenges such as long or inclined roots and complex lesion enucleation will be discussed. All cases have follow-up periods exceeding six months, with documented outcomes including radiographic healing, resolution of symptoms, and high patient satisfaction. - This lecture encourages clinicians to consider micro apical surgery not as a last resort but as a valid, primary treatment option when conventional approaches fall short. By expanding the endodontic toolkit, dentists can preserve more natural teeth and enhance long-term success.



Maram Khallaf

Professor of Endodontics, National Research Centre.

"Artificial Intelligence: A Game Changer in Endodontics"

Artificial Intelligence (AI) is revolutionizing healthcare, and its impact on dentistry—particularly endodontics—is becoming increasingly significant. This presentation explores how AI technologies, including machine learning and deep learning, are being integrated into endodontic practice to enhance diagnostic accuracy, treatment planning, and overall clinical outcomes. AI systems can analyse radiographs, cone-beam computed tomography (CBCT) scans, and patient data with high precision, assisting in the detection of periapical lesions, root fractures, and canal morphology. By reducing human error and improving diagnostic consistency, AI can support clinicians in making faster and more accurate decisions. Beyond diagnostics, AI is also being used in predictive analytics for treatment success, automated documentation, and even robotic-assisted endodontic procedures. Despite its advantages, challenges such as data privacy, ethical concerns, and the need for large, diverse datasets must be addressed before widespread adoption. The presentation aims to provide a comprehensive overview of the current and future applications of AI in endodontics, supported by recent research and clinical examples. Ultimately, it emphasizes the role of AI as a supportive tool—enhancing, rather than replacing, the expertise of dental professionals.

Tarek Seniour

Lecturer of Endodontics, New Giza University.

"Navigating Complexity in Endodontics: A Clinical Showcase of Challenging Cases and Their Management"

Endodontic procedures often present challenges such as complex canal anatomies, calcifications, missed canals, and procedural errors. These complexities necessitate tailored treatment strategies to achieve favourable outcomes. This presentation discusses a series of challenging endodontic cases, including:
- Management of calcified canals using advanced instrumentation techniques.
- Negotiation of severely curved canals employing controlled-memory nickel-titanium (NiTi) files.
- Retreatment of previously failed cases with persistent periapical lesions.
- Management of iatrogenic complications such as ledge formation and perforations.
- Each case is analysed with respect to diagnostic approaches, treatment planning, and outcomes.

The application of contemporary endodontic techniques, including the use of cone-beam computed tomography (CBCT) for diagnosis, magnification for enhanced visibility, and advanced irrigation protocols, facilitated the successful management of these complex cases. The integration of these technologies allowed for precise identification of canal anatomy and effective treatment of complications. The management of challenging endodontic cases requires a comprehensive approach that combines advanced diagnostic tools, refined clinical techniques, and appropriate material selection. This case-based analysis underscores the importance of adaptability and continuous learning in achieving successful endodontic outcomes.

Živilė Grabliauskienė

Lithuanian University of Health Science.

"A Holistic Approach to Managing Chronic Apical Periodontitis: The Endodontist's Perspective"

Chronic apical periodontitis represents a complex clinical challenge, particularly when treating patients with systemic health conditions. This lecture presents a holistic endodontic approach that integrates systemic health considerations into diagnosis, treatment planning, and prognosis. From the perspective of the endodontist, we explore how conditions such as diabetes, autoimmune disorders, cardiovascular disease, and chronic inflammation influence periapical healing and therapeutic outcomes. Special attention is given to immune system dysregulation and its implications for clinical decision-making. By evaluating ethical boundaries, treatment limitations, and the role of interdisciplinary collaboration, the lecture offers practical strategies to optimize care for medically compromised patients and redefine success in modern endodontics.

Hala Fayek

Associate Professor of Endodontics, Faculty of Dentistry, The British University in Egypt.

"Shaping the Future: 3D Printing in Endodontics"

This lecture will review the current applications, benefits, limitations, and future potential of 3D printing in endodontics, emphasizing its role in improving patient care and advancing clinical outcomes. 3D printing is increasingly used in endodontics for enhancing diagnosis, treatment planning, and clinical procedures. It enables the creation of accurate, patient-specific models and guides, improving precision in complex cases such as calcified canals. The technology also supports regenerative endodontics through custom scaffolds and improves education via realistic printed teeth for training. While it offers many benefits, challenges like material limitations, cost, and printer resolution remain. Ongoing research aims to overcome these issues and expand clinical use. Overall, 3D printing holds strong potential to advance endodontic care and outcomes.

Sara El-Mallah

Associate Professor of Endodontics, Faculty of Dentistry, Fayoum University, Egypt. Misr International University, Egypt.

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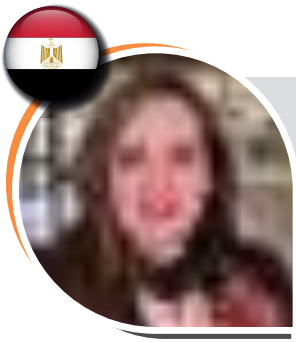
Wahiba Lagmou

Moroccan academy of endodontics.

"Endodontic Retreatment: Cleaning Your Way to the Apex"

Non-surgical endodontic retreatment addresses the failure of previous root canal treatments through a delicate approach. It requires specialized equipment to enable meticulous removal of filling materials, followed by proper canal cleaning and shaping. The removal phase is particularly critical, demanding efficient instrumentation that grants access to the canal and allows for optimal irrigation. This presentation begins by outlining the common challenges in endodontic retreatment, then introduces the principles and clinical rationale behind tridimensional approaches. It compares 3D retreatment methods with conventional ones by analysing the instruments used for gutta-percha removal and evaluating their cleaning efficacy based on scientific findings. Practical clinical considerations are also discussed through real case examples, offering a clearer perspective on the potential and limitations of 3D retreatment.



Yousra Nashaat

Vice Dean for Postgraduate Studies & Research, Professor of Endodontics, Faculty of Dentistry October 6 University,

"Artificial Intelligence; Paving New Road Map for Endodontic"

Robotics and Nano robotics are revolutionizing endodontics by offering enhanced precision, accuracy, and potentially safer treatment options. While traditional root canal therapy relies on manual skill, robotic systems can assist with canal shaping, irrigation, and obturation, reducing operator fatigue and improving success rates. Nano robots, even smaller than micro machines, hold promise for targeted disinfection, drug delivery, and even pulpal regeneration, potentially leading to less invasive and more effective treatments. It can also perform complex procedures with greater precision and accuracy, reducing procedural errors like ledge formation and canal transportation. Robotic systems reduce operator fatigue as it alleviates the strain on dentists involved in long and intricate root canal treatments. Improving Success Rates by optimizing canal preparation, irrigation, and obturation contributing to improved treatment outcomes. AI-Guided Diagnostics enable real-time assessment of canal morphology, identification of pathologies, and personalized treatment planning. Nano robotics in Endodontics is the new tool paving the road for new endodontic era through targeted disinfection; Nano robots navigate and destroy pathogens within the dentinal tubules, leading to improved disinfection and reduced risk of post-treatment failure. They can also be used to deliver medications directly to the affected area, optimizing drug concentration and reducing side effects. Pulpal Regeneration is officially enhanced by nano robotics potentially facilitating the growth of new pulpal tissue, restoring vitality to the tooth and preventing further infection. The integration of robotics and AI can enable more advanced diagnostics, treatment planning, and personalized care. Key words: Robotics, Nano Robotics, Artificial Intelligence, Endodontics, Treatment Outcomes.

Ahmed Negm

Associate Professor of Endodontics, Faculty of Dentistry New Giza University.

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Asmaa Ahmed Desouky

Lecturer of Endodontics, Faculty of dentistry, Assiut university.

“Root Canal Location: Pain Points and Main Challenge”

The aim of this presentation is to identify the incidence of additional or missed canal systems and the importance of various techniques and aides in detection of canals, in order to provide predictable root canal treatment and avoiding endodontic mishaps. Predictable endodontic therapy begins with good access preparation, which allows for the accurate location of any given orifice, facilitating the negotiating, securing, and shaping of the canal, as well as 3D disinfection and filling of the root canal system. Missed, unfilled, and untreated root canals have been identified as one of the leading causes of endodontic therapy failure in several investigations. Commonly missed canals are the MB2 canal in maxillary molars and to a lesser degree, the mid-mesial canal in mandibular molars, buccal canals of lower incisors and second and third canals in premolars.

Mostafa Omar Fahim

Lecturer, Endodontic department, Misr International University.

"Bending Without Breaking: Modern Strategies for Curved Canal Management"

Curved root canals present one of the greatest challenges in endodontic therapy, often increasing the risk of procedural errors such as ledging, zipping, transportation, and instrument separation. Successful management requires a comprehensive understanding of canal anatomy, proper instrumentation techniques, and the use of advanced materials and technologies. This review aims to highlight current concepts and best practices in the management of curved canals, focusing on glide path preparation, selection of flexible and heat-treated NiTi rotary instruments, and the role of reciprocating and adaptive motion systems. The incorporation of cone-beam computed tomography (CBCT) for preoperative assessment and magnification tools like the dental operating microscope further enhances precision and clinical outcomes. Additionally, effective irrigation protocols and disinfection strategies are emphasized to ensure thorough debridement while maintaining the original canal anatomy. By integrating these approaches, clinicians can improve the safety, efficiency, and success rates of endodontic treatments in anatomically complex root canals.

Kareem Mahmoud Taha

Lecturer, Endodontic department, Misr International University.

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Nermine Hassan

Lecturer of Endodontics, Cairo University, Egypt.

"From Injury to Healing: Regenerative Endodontic Treatment in Challenging"

Initially, RET aimed to treat immature necrotic anterior teeth with pulp necrosis and infection. The use of RET has evolved to successfully treat immature molar teeth, mature teeth, retreatments of failed previous endodontic treatment, root resorption, and fractures. Traumatic dental injuries in children and adolescents often result in pulpal necrosis and arrested root development, especially in teeth with open apices. External inflammatory root resorption (EIRR) is a significant complication that can occur following traumatic dental injuries, with a prevalence of approximately 18%. Regenerative endodontic treatment offers a biologically based alternative that allows the potential for healing, root maturation, and long-term tooth survival. This presentation reviews the evidence and clinical protocol for RET in the context of trauma-induced necrosis, discusses success rates and limitations, and explores case examples to illustrate outcomes. It also provides guidance on case selection, disinfection protocols, and patient factors influencing prognosis.

Reham Hassan

Professor of Endodontics, Head of Endodontic department, Egyptian Russian University/ Cairo University, Egypt.

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Dalia Abd-Allah Mohamed

Associate professor, Endodontic Department, Suez Canal University, Egypt.

"Irrigating with Confidence: Maximize the Disinfection and Control the Accident"

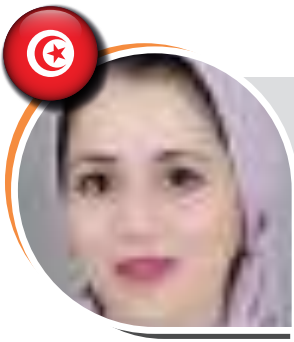
Sodium hypochlorite (NaOCl) remains the gold standard endodontic irrigant due to its unparalleled tissue-dissolving capacity and broad-spectrum biofilm eradication. Proper irrigation protocols should be followed to achieve maximum efficiency (concentrations, temperature, activation) with rigorous safety integration into daily practice. Accidental NaOCl extrusion beyond the apex poses severe risks, including tissue necrosis, neurovascular damage (e.g., inferior alveolar nerve injury), and persistent paraesthesia. Previous clinical analysis (2018–2024) have identified the key accident triggers: compromised apical constriction, excessive irrigation pressure, needle wedging, and anatomical complexities. Thus, studying new strategies to prevent and manage accidental extrusion is important.

Kareem Mahmoud Abdelhameed Hasan

Lecturer of endodontics, Misr International University.

"Revolutionizing Vital Pulp Therapy: Innovations Shaping the Future of Tooth Preservation"

Vital pulp therapy (VPT) has undergone significant advancements from 2020 to 2025, driven by innovations in materials, techniques, and a deeper understanding of pulp biology. Bioceramic materials, such as mineral trioxide aggregate (MTA) and biodentine, have become increasingly favoured for their biocompatibility, sealing properties, and ability to promote dentin bridge formation in pulp capping procedures. The period has also seen growing interest in regenerative pulp therapies, including the use of stem cells, growth factors, and scaffolds to regenerate pulp tissue and restore dental function. Additionally, laser-assisted techniques have shown promise in improving sterilization, haemostasis, and tissue healing, offering a less invasive approach to VPT. Early diagnosis and intervention, facilitated by advanced imaging technologies like cone-beam computed tomography (CBCT), have further enhanced the success of VPT. While these developments hold promise for enhancing treatment outcomes and preserving pulp vitality, challenges remain in terms of long-term success rates and the cost of emerging technologies. Overall, the evolving landscape of vital pulp therapy reflects a shift toward more biologically driven, minimally invasive treatments that prioritize the preservation of natural tooth structure and function.



Kawther Belhaj Salah

Lecturer of endodontics, Misr International University.

"Radiographic Healing of Periapical Lesions after Root Canal Treatment with Bioceramic Sealers: A Case Series"

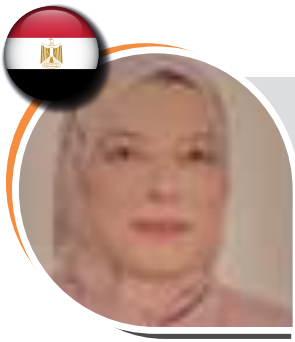
Bioceramic sealers are increasingly used in contemporary endodontics due to their bioactivity, biocompatibility, and sealing efficiency. This clinical case series illustrates the clinical and radiographic healing of periapical lesions in mature teeth treated with modern obturation techniques using bioceramic sealers. Each case includes pre-operative and follow-up radiographs using periapical radiograph and Cone-Beam computed tomography (up to 24 months), highlighting the favourable biological response of periapical tissues. Bioceramic sealers are highly biocompatible and non-cytotoxic to periradicular tissues. Their bioactive nature, through the release of calcium ions and the formation of an apatite-like interfacial layer, supports periapical tissue healing and regeneration. The presentation also discusses key clinical considerations including case selection, disinfection protocols, and obturation technique. Emphasis is placed on the importance of regular radiographic follow-up to assess the kinetics of healing and guide prognosis.

Mohamed Ahmed Mahmoud Hamed

Al Azhar university, Faculty of Dentistry.

“Bioceramics, A clinical Guide of Perfection”

Bio ceramics, since it’s invention, make a huge transformation almost in all aspects of endodontics starting from the top to bottom of area of interest in endodontics (pulp and its surrounding). The treatment protocols were modified or even changed, the materials that were used for decades were entombed, that’s not easy. The hydrophobic nature, chemical composition, physical properties and different forms for different situations aimed to fulfil these requirements.



Sara Ahmed Abou Ateya

Lecturer of endodontics at Delta University.

“Open Apex Between Regeneration and Apexification”

Clinical regenerative endodontics is considered a paradigm shift in the treatment of immature non vital teeth. It seeks to promote continued root development and restoration of pulp sensation and immune defence and strengthening immature teeth fracture resistance, unlike apexification which is a traditional method that encourages the formation of a calcific barrier ‘apical stop’ to allow for conventional root canal treatment.

APEC 2025
PANENDO

E Hall

Speakers & Abstracts

Dalia Abd-Allah Mohamed Moheb

Associate professor, Endodontic Department, Suez Canal University, Egypt

"Novel Strategies for Multidrug-Resistant Enterococcus Faecalis Biofilm Eradication: Bacteriophage (vB_EfaS_ZC1), Propolis, and their Combined Effects in an ex vivo Endodontic Model"

Aim: The aim of this ex vivo experiment was to evaluate the antibacterial activity of phage vB_EfaS_ZC1 and propolis extract as irrigants separately and in combination compared to sodium hypochlorite (NaOCl) irrigation. Methodology: A novel phage, vB_EfaS_ZC1, was isolated and characterized. Its lytic activity against E. faecalis was assessed in vitro through time-killing and biofilm assays. The phage's stability under various conditions was determined. Genomic analysis was conducted to characterize the phage and its virulence. The phage, propolis, and their combination were evaluated as an intracanal irrigation solution in comparison to NaOCl (positive control), saline and untreated samples (negative controls) against a 4-week mature E. faecalis biofilm, using an ex vivo infected human dentin model. The antibiofilm activity was analysed using a colony-forming unit (CFU) assay, field emission scanning electron microscopy, and live and dead assay using confocal laser scanning microscopy (CLSM). Data were statistically analysed with Analysis of Variances test (ANOVA) and Tukey's post hoc pairwise test at a 0.05 level of significance using GraphPad Prism software. Results: The isolated phage, vB_EfaS_ZC1, a siphovirus with prolate capsid, exhibited strong lytic activity against Vancomycin-resistant E. faecalis strains. The in-vitro assays indicated its effectiveness in inhibiting planktonic growth and disrupting mature biofilms. The phage remained stable under wide range of temperatures (– 80 to 60 °C), tolerated pH levels from 4 to 11. Genomic analysis strongly suggests the phage's virulence and suitability for therapeutic applications. The phage, both alone and in combination with propolis, demonstrated statistically significant antibiofilm effects ($P < 0.0001$) when compared to the negative and positive controls in the CFU and CLSM assays. On the other hand, Propolis showed comparable antibiofilm effect to sodium hypochlorite in both assays. Conclusion: Phage vB_EfaS_ZC1 demonstrates a promising therapy, either individually or in combination with propolis, for addressing challenging endodontic infections caused by E. faecalis.

Ahmed Adel Abdullah Soliman

Cairo University, New Giza University.

"Influence of Diclofenac Potassium versus Prednisolone on Post-endodontic Pain and Pulpal Interleukin-8 Expression in Symptomatic Irreversible Pulpitis Cases: A Randomized Placebo-controlled Trial"

Aim: This prospective, randomized, double-blind clinical trial investigated the impact of using a single oral dose of diclofenac potassium (50 mg) versus prednisolone (30 mg), as a pre-medication, compared to placebo on intensity and incidence of post-endodontic pain, and pulpal IL-8 expression in patients with symptomatic irreversible pulpitis. Methods: Thirty-six patients undergoing conventional endodontic treatment were assigned into one of 3 groups (n=12). Pulpal blood samples were taken after access cavity preparation and stored until they were analysed using enzyme-linked immunosorbent assay for quantification of IL-8. Post-endodontic pain was scored using the 10-cm visual analogue scale immediately and at 6, 12, 24 and 48 hours after treatment. Outcome data were statistically analysed using one-way analysis of variance, Kruskal-Wallis, Friedman's, Dunn's, Chi-square, and Fisher's exact tests and Spearman's correlation coefficient. The significance level (α) was set at 0.05.

Results: Apart from preoperative pain scores, all groups had similar baseline characteristics ($P > .05$). Immediate post-endodontic pain scores had a significant difference between all groups ($P < .05$) where placebo group showed the highest score. There was no significant difference between all groups at 6 and 12 hours postoperatively ($P > .05$). Furthermore, there was no significant difference in the incidence of post-endodontic pain and in mean IL-8 levels between the 3 groups ($P > .05$). Conclusions: The only impact the pre-medications had, was on the immediate post-endodontic pain intensity, and they had no influence on the later time points. Similarly, prednisolone and diclofenac potassium groups equally influenced the incidence of post-endodontic pain and pulpal IL-8 levels.

Ahmed Salim Mohamed Khalil

Tanta Dental university.

"Evaluation of Dentinal Microcracks Induced by Different Single File Systems Using Micro-Computed Tomography"

Aims: Evaluate dentinal microcracks induction and propagation post-instrumentation by different single-file systems (TruNatomy (TN), XP-endo shaper (XPS), and WaveOne Gold (WOG)), using micro-computed tomography(μCT).
Materials and methods: Forty-five freshly extracted mandibular premolars with straight, mature single canals were selected for this study. Teeth were decoronated, leaving approximately 15±1 mm root length, coated by a layer of wax, then an acrylic resin block was poured. Roots were scanned by μCT Pre-instrumentation. Then randomly divided into three groups (n=15) Group I was prepared using TN, group II by XPS, and group III by WOG. Post-instrumentation roots were rescanned by μCT. Photos of each root were equally divided into thirds: coronal, middle, and apical. Images of pre- and post-instrumentation were evaluated twice. Firstly, the number of complete and incomplete microcracks was counted to evaluate microcrack initiation. Secondly, the number of images containing microcracks was counted and scored 0, 1, and 2 for no, incomplete, and complete microcracks, respectively.
Results: All groups induced microcracks however WOG group showed the least and XPS showed the highest microcrack initiation. The highest number of microcrack propagations was identified in TN group. New microcrack initiation was higher at middle and apical thirds, while microcrack propagation was very high coronally.
Conclusion: Reciprocating single-file systems resulted in fewer new microcrack initiation and propagation than rotary single-file systems.

Ameera Lotfy Mahfouze

Former PhD Candidate in Endodontics - Ain Shams University. Lecturer of Endodontics – 6th of October University.

"Outcomes of REP using a Novel BCP Scaffold (A histological study and RCT)"

'Introduction: Regenerative endodontic procedures (REP) provide a biologically based treatment for immature necrotic teeth. This study evaluates clinical and radiographic outcomes of REP using a collagen-hydroxyapatite scaffold (Osteon III Collagen) compared to a conventional blood clot scaffold. Methods: A total of 20 patients with single-rooted immature necrotic permanent teeth were randomly assigned to two groups: Group S (Osteon III Collagen scaffold) and Group B (blood clot scaffold). Standardized disinfection protocols, including sodium hypochlorite irrigation and double antibiotic paste, were applied. Clinical assessments were performed at 6 and 12 months, and cone beam computed tomography was used to assess bony lesion healing, root lengthening, dentin thickness, and apical closure at 12 months. As for animal study, apical periodontitis was induced in the immature dogs' teeth, followed by a revascularization procedure using the same material. After euthanasia, histological evaluation was used to assess the inflammatory reaction and soft and hard tissue formation. Results: Of the 18 patients who completed follow-ups, 77.7% in the scaffold group and 100% in the blood clot group showed bony lesion healing. Root length and dentin thickness percentage increase were significantly greater in the blood clot group (p=0.059, p=0.011, respectively). Apical closure was more prominent in the blood clot group (p=0.019). Pulp sensibility was positive in 88.9% of blood clot cases and 44.4% of scaffold cases. Conclusion: REP successfully treated immature necrotic teeth, with conventional blood clot scaffolds yielding better outcomes. External scaffolds, despite bioactive properties, did not enhance regeneration.

Menna Allah Ali Abdeldaeim

Former PhD Candidate in Endodontics - Ain Shams University. Lecturer of Endodontics - MIU

"Outcomes of REP using a Novel BCP Scaffold (A histological study and RCT)"

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Khadija Sikkou

INTERNATIONAL UNIVERSITY of RABAT, International Faculty of Dental Medicine, College of Health Sciences.

"Regenerative Endodontics in Necrotic Mature Teeth: Where Do We Still Fall Short?"

Introduction: Regenerative endodontic procedures (REPs) have shown promising results in immature teeth, leveraging natural biological potential for tissue healing. However, their application to necrotic mature teeth remains limited by anatomical and biological constraints, technical challenges, and insufficient clinical validation. Aim: This review critically explores the main biological, technical, and clinical limitations hindering the success of REPs in mature necrotic teeth, with a view toward guiding future research and clinical innovation. Methods: A narrative literature review was conducted using a translational research framework. Relevant articles from 2000 to 2025 were selected through PubMed, Scopus, Web of Science, and the Cochrane Library using keywords including "regenerative endodontics," "mature necrotic teeth," "stem cells," and "scaffolds." Key Findings: Persistent challenges include biological barriers such as limited vascularization, closed apices, and reduced stem cell availability. Technical limitations in the controlled delivery of scaffolds or bioactive agents into complex root anatomies. Clinical inconsistencies, including non-standardized protocols and a lack of long-term outcome data in mature cases. Discussion: In contrast to immature teeth, regenerative procedures in mature teeth require more active intervention. Functional healing may represent a more realistic objective than complete tissue regeneration. Innovations such as chemotactic agents, vascularized injectable scaffolds, and guided delivery systems are under investigation. Conclusion: Although REPs offer new horizons for treating mature necrotic teeth, substantial progress is still needed. Multidisciplinary collaboration and the development of standardized protocols, biocompatible materials, and reliable clinical endpoints are essential to translate this potential into routine practice.

Amr Mohamed Mahmoud Elhenawy

'Conservative Dentistry Department, Faculty of Dentistry, Alexandria University.

"Effect of Different Methods of Heating Sodium Hypochlorite Irrigating Solution on the External Root Surface Temperature"

Introduction: The aim of this study was to examine the temperature changes on the external root surface across coronal, middle, and apical root thirds upon intracanal and extra-canal heating of 5.25% NaOCl. Methods: Seventeen mandibular premolar teeth were trimmed to a length of 20 mm and prepared up to the X3 file of the ProTaper Next rotary system. To measure temperatures on different thirds of the external root surface, three thermocouples were positioned outside the root. Irrigation was performed by heating the irrigation solution with different methods (room temperature, preheated to 50 °C, intracanal heating at 180 °C for 8 seconds). Temperature changes occurring on different root thirds were recorded and subjected to statistical analysis. Results: Using the irrigation solution, either extra-canal or intracanal heated, resulted in a significant increase in root surface temperatures compared to using at room temperature ($P < .05$). In intracanal heating group, coronal and middle thirds showed significant increase in root surface temperatures compared to apical third ($P < .05$). However, in extra-canal heating and room temperature groups, coronal third showed significant increase in root surface temperatures compared to middle and apical thirds ($P < .05$). None of the applications caused a temperature change on the root surface exceeding 10oC. Conclusions: Heating of irrigation solution, either extra-canal or intracanal, can significantly increase the temperature of the external root surface across its different thirds. Temperatures transmitted outside the root were considered safe for periodontal tissues.

Dina Nashaat Hussein

Lecturer of Endodontics – Misr International University - MIU.

"Autologous Transplantation of Dental Pulp Tissue: A Radiographic Evaluation"

Aim: The study used decellularized autologous pulp tissue as a scaffold for regeneration of root canals of immature infected teeth. Materials and Methods: Four male dogs' premolar teeth were used. 96 roots of premolars were divided into four groups according to the treatment protocol. Group I: Dental pulp tissue transplantation and blood clot. Group II: Dental pulp tissue transplantation. Group III: Conventional regeneration. Group IV: Negative control group. Each group was radiographically evaluated in a duration of one- and three-months post operatively. Samples were evaluated for statistical analysis for the following parameters by two examiners blinded to the experimental groups: increase in length, increase in dentin thickness, and decrease in apical diameter Results: Results revealed that after one as well as three months, there was no statistically significant difference between percentage increase in root lengths in the four groups, while in all groups, the percentage increase in root length after three months showed statistically significantly higher value than one month (P-value <0.001). Regarding dentin thickness, after one as well as three months, there was no statistically significant difference between the percentage increase in dentin thickness in the four groups, while in all groups, the percentage increase in dentin thickness after three months showed statistically significantly higher value than one month (P-value <0.001). After one as well as three months, there was a statistically significant difference between percentage of apical closure in the four groups. Pair-wise comparisons between groups revealed that Group IV showed the statistically significantly highest percentage of apical closure. In all groups, the percentage of apical closure after three months showed statistically significantly higher value than one month (P-value <0.001). Conclusion: Decellularized pulp tissue can be successfully used as a scaffold in promoting pulp tissue regeneration.

Eman Ali Abd El-Ghany Khalifa

Faculty of Dentistry, Cairo University, Egypt.

"Antibacterial Effect of Catalytic Iron Oxide Nanoparticles, Sodium Hypochlorite, Hydrogen Peroxide and QMix as a Final Rinse on Enterococcus Faecalis Colonizing the Dentinal Tubules of Single Rooted Teeth"

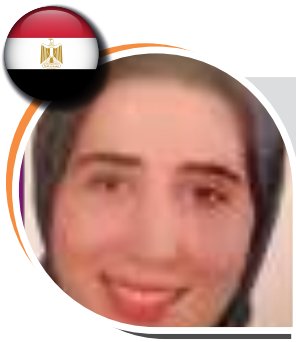
Aim: the study aimed to evaluate and compare the bacterial viability in dentinal tubules and the maximum depth of penetration of catalytic iron oxide nanoparticles with 3% H2O2, iron oxide nanoparticles, 3% H2O2, QMix, and NaOCl as a final rinse on Enterococcus faecalis colonizing the dentinal tubules of single rooted teeth. Materials and method: Fifty extracted human permanent single rooted teeth were selected for this study. Root canals will be prepared with ProTaper Next rotary files up to size X4 and irrigated with 3 ml of 2.5% NaOCl between each instrumentation cycle. The canals will be flushed with 5 ml of distilled water followed by 5 ml of 17% EDTA for 3 minutes then flushed with distilled water again. Final rinse will be carried out with 5 ml of any of the following irrigants: 2.5% NaOCl, QMix, 3%H2O2, IO-NP (0.5 mg/mL) OR IO-NP+H2O2 for 5 minutes for each group. Each root will be split longitudinally into two halves. One representative half will be viewed at standard levels: 6 mm and 12 mm from apex representing apical and middle thirds. Samples will be stained by using LIVE/DEAD BacLight kit and inspected with the CLSM to measure the bacterial viability as well as the depth of irrigant penetration. Results: The results of bacterial viability test showed a statistically significant difference between all groups with a p value (<0.001), the highest mean value was recorded for group IONP+H2O2. The depth of penetration of irrigants was evaluated using CLSM. The comparisons between the groups revealed that there was a statistically significant difference between all the groups with a p value (<0.001), with the highest value being recorded for IONP+ H2O2. Conclusion: IO-NP+H2O2 has more antibacterial effect and penetration depth than other irrigants.

Amira Gareer Ramadan

Former PhD Candidate – Ain Shams University. Senior Specialist of Endodontics – Dentocare Clinic.

"Effect of Addition of Omega 3 Fatty Acids to Nano-Hydroxyapatite on Healing of Intra-Bony Defects (In Vivo Study)"

Aim: This study evaluated the effect of incorporating Omega-3 (ω3) powder into nano-hydroxyapatite (nHA) at different concentrations on the healing of intra-bony defects in a canine model. Materials & methods: This study was conducted on nine dogs, where, standardized 4-round mono-cortical bone defects of 8 mm in size were created on both sides of the mandible. The first defect was filled with nanohydroxyapatite powder (nHA), the second was filled with a combination of nanohydroxyapatite powder & omega 3 powder (in a 2:1 ratio), the third with a combination of nanohydroxyapatite powder & omega 3 powder (in a 1:1 ratio) & the fourth defect was left empty as a control. Dogs were sacrificed at 2w, 1m, & 2m. Histological & histomorphometric analyses were done using H&E stain to evaluate inflammatory cell count and Masson trichome stain to evaluate new bone formation. Results were statistically evaluated using One-way ANOVA followed by Tukey post hoc test, the significance level was set at P ≤ 0.05. Results: The highest mean of inflammatory cell count was encountered in the control subgroup. While the lowest mean of inflammatory cell count was observed in (1nHA:1ω3), followed by (2nHA:1ω3), then pure (nHA) in all periods of 2w, 1m, & 2m. p-value <0. 001.Regarding the osteogenic ability of different groups, the control group showed no significant bone formation. In 2w & 2m period, the highest mean of total new bone area fraction was in (1nHA:1ω3) followed by (nHA) and finally, (2nHA:1ω3). While in two months, the highest mean of total new bone area fraction was in (nHA) followed by (1nHA:1ω3) and finally, (2nHA:1ω3). Conclusion: Adding Omega-3 to nanohydroxyapatite reduced inflammation and enhanced early bone formation compared to nanohydroxyapatite alone.



Pervine Hassan Sharaf

Assistant Professor of Endodontics, Endodontics Department, Faculty of Dentistry, Pharos University, Alexandria, Egypt.

"Microbiological Evaluation of Single versus Multiple Visit Regeneration using MALDI-TOF Mass Spectrometry (A Randomized Controlled Clinical Trial)"

Aim of the study: The aim of the present study was to compare single visit and multiple visits regeneration protocols microbiologically using matrix assisted laser desorption ionization-time of flight mass spectrometry (MALDI-TOF MS), as well as clinically and radiographically using cone beam computed tomography (CBCT). Methodology: Sixteen patients with traumatized immature permanent teeth showing periapical lesions were randomly divided in two groups: group (1) single visit regeneration (including irrigation with 20 ml of 2.5% sodium hypochlorite and 20 ml of 17% EDTA) and group (2) multiple visits regeneration (including irrigation with 20 ml of 1.5% sodium hypochlorite, calcium hydroxide application for one-two weeks or more and 20 ml of 17% EDTA.). Field decontamination and negative control samples were performed before each sample collection. A file was used to collect dentin debris cultured and examined by MALDI-TOF MS. Samples A 1, A2 were collected after the access cavity preparation. Samples B 1, B2 were taken after irrigation. In group (2) sample C was taken after the removal of the calcium hydroxide. Induction of bleeding, Biodentine cervical plug application, glass ionomer and composite restoration were performed. Cases were followed for 12months. The microbiological, clinical, and radiographic outcomes of both groups were compared using Mann-Whitney, Chi-square and Fisher exact tests ($p < 0.05$). Results: Samples A1 and A2 showed 37 reliably identified species. No statistically significant difference existed between the two protocols in the clinical and microbial outcomes. Radiographically, group 2 showed statistically significant decrease in lesion size and volume, increase in lesion bone density, root lengthening and thickening, and intracanal calcification presence. Group 1 did not show complete lesion resolution. Conclusion: Single visit regeneration protocol showed similar clinical and microbiological outcomes as multiple visits however, it failed to show complete healing of the periapical radiolucency.

Lamiaa Mohamed Ragaei Lasheen

Faculty of dentistry, Cairo university.

"Success Rate of Single Versus Two-Visit Regenerative Treatment Protocol in Non-Vital Mature Anterior Teeth (A Preliminary Randomised Clinical Trial)"

This study compared the success rate following single-visit versus two-visit regenerative endodontic procedures of non-vital ma- ture anterior teeth with periapical lesion. Thirty-two patients were randomly assigned into two groups: group A: single visit and group B: two visit. All assigned teeth were chemo-mechanically prepared. For group A, platelet rich fibrin was placed into the root canal followed by the placement of Biodentine and final restoration. For group B, calcium hydroxide was placed for 3 weeks, followed by the same regenerative procedures in the second visit. Follow-up visits were at 3, 6, 9 and 12months, and periapical lesion was assessed by CBCT at the beginning and 12months after treatment. There was no statistical difference between the success rate of group A (28.6%) and group B (64.3%). Regenerative endodontic procedure can be a promising treatment for mature non-vital teeth with further investigations needed for the single-visit protocol.

Maha Tarek AboulKheir

Lecturer of Endodontics at Faculty of Dentistry, Alamein International University

"Awareness and Misconceptions About Vital Pulp Therapy in Mature Permanent Teeth: A Questionnaire-Based Survey among Egyptian Dental Practitioners"

Background: Vital pulp therapy (VPT)- whether direct pulp capping, partial or complete pulpotomy- is currently considered a minimal invasive alternative to root canal treatment (RCT) in managing pulp exposures in mature permanent teeth. Despite the growing evidence of a high success rate, several myths and misconceptions continue to hinder its wider acceptance among dental practitioners. Aim of the study: To evaluate the awareness and misconceptions regarding VPT among Egyptian dental practitioners, and to identify the key factors influencing their clinical decision-making.Methods: A questionnaire-based survey was conducted among 150 Egyptian dentists. The questionnaire was distributed electronically and consisted of four sections: (1) demographics of the respondents, (2) knowledge of VPT, (3) clinical attitudes and practice preferences when managing pulp exposures in mature teeth, and (4) barriers to the clinical adoption of VPT in daily practice. Descriptive statistics and chi-square tests were used for data analysis. Results: A total of 130 valid responses were analysed. While most respondents (98%) reported being aware of VPT as a treatment concept, significant misconceptions persisted, including the belief that VPT is only applicable in immature teeth (85% of respondents). Root canal treatment remained the preferred option for managing pulp exposures in symptomatic teeth (92%), whereas direct pulp capping was the most frequently used VPT technique in asymptomatic cases (93%). The most cited barriers to adopting VPT included lack of confidence in case selection (90%), uncertainty about treatment outcomes (70%), and limited training in the use of MTA (65%). Conclusion: This study highlights a critical gap between current evidence-based recommendations and clinical perceptions surrounding VPT in Egypt. The specialty, years of practice, and age of dental practitioners were significant factors influencing clinical decision-making. Continuous professional education might be the key to enhance the clinical adoption of VPT in general practice in Egypt.

Marwa Baraka

Lecturer at Faculty of Dentistry, Alexandria University.

"Precision Endodontics with AI: Enhancing Canal Detection and Treatment Planning Through 3D CBCT Segmentation"

Background: Accurate 3D segmentation of the pulp chamber, root canal system, and variable configurations such as the middle mesial canal (MMC) in CBCT scans is vital for endodontic diagnosis and treatment. Variability in scan coverage limits deep-learning model generalization, and existing datasets lack diversity, reducing AI applicability.
Objective: To develop a comprehensive CBCT dataset encompassing diverse fields of view and to create a 3D U-Net-based segmentation model that enhances automatic segmentation of the pulp and root canal system. Additionally, to evaluate the accuracy of CBCT segmentation methods, manual, semi-automated, and automated, in detecting MMCs compared to the clearing technique.Methods: A dataset of 200 CBCT scans with expert annotations covering upper/lower arch, full/half arch, quadrants, and isolated teeth was curated. The 3D U-Net was trained to segment pulp and root canal structures, evaluated using Dice, IoU, Hausdorff Distance, precision, and recall. For MMC detection, 48 extracted mandibular molars were scanned, and segmentation methods were compared against the clearing technique (gold standard) in terms of sensitivity, specificity, accuracy, volumetric measurements, and processing time. Results: The deep learning model achieved a mean DSC of 0.89, IoU of 0.80, and HD95 of 1.83 mm, demonstrating high boundary accuracy. In MMC detection, CBCT segmentation methods achieved 100% sensitivity and specificity, outperforming digital radiography, which had 0% sensitivity. Automated segmentation significantly reduced processing time (0.20 min vs. 71.56 min manual) with no significant volume differences. Conclusion: A diverse CBCT dataset combined with advanced 3D segmentation improves the accuracy of pulp and canal system localization, including complex anatomies like MMCs. Automated segmentation methods offer rapid, reliable results, enhancing clinical diagnosis and treatment planning.
Clinical Implications: The integration of robust AI models and diverse imaging data can facilitate precise, efficient endodontic assessments, potentially improving patient outcomes and clinical workflow.

Michael Emil Labib Girgis

Faculty of Dentistry - Alexandria University.

"Evaluation of Minimally Invasive Regenerative Endodontics Clinically, Radiographically and Finite Element Analysis: A Randomized Controlled Clinical Study"

Background: Regenerative endodontic procedures have been hailed as an innovative treatment for the management of immature necrotic permanent teeth due to their capacity to regenerate vital intracanal tissues and allow root maturation, which enhances the tooth's resistance to fracture, Simultaneously, the concept of minimally invasive endodontics is also gaining popularity, with the primary aim of maintaining tooth structure. Given their capacity to maintain the natural tooth structure, regenerative and minimally invasive endodontics may be viewed as two innovative fields of study with a single objective. Accordingly, both treatment modalities could be combined as a new merged concept of "minimally invasive regenerative endodontic procedures (MIREPs). Modifying the clinical protocol of REPs by incorporating a minimally invasive access cavity design could be considered one important aspect of the new merged concept. Aim: This study aims to compare the conservative access cavity (Caries Driven access Cavity CDC) with the Traditional Endodontic access Cavity (TEC) in terms of fracture resistance and cleaning ability when used in necrotic permanent teeth which will be treated by pulp regeneration. Materials and Methods: A total of 26 necrotic permanent Molar teeth will be included for pulp regeneration using two different access cavity designs. They will be randomly divided into 2 groups (n=13): group I: will be treated by Traditional access cavity design and Group II: Caries Driven access cavity design. Clinical (fracture resistance by Finite element analysis) and radiographic (Periapical healing by CBCT) assessments will be performed after 6 and 12 months. Lab tests (Disinfection by Microbiology test) will be executed during the treatment period. Analysis: Research work still ongoing will be finished by the time of the conference

Mustafa Mahmoud Mohamed Sultan

Department of Endodontics, Faculty of Dentistry, Suez Canal University, Ismailia, Egypt.

"Effect of Apical Patency and Local Corticosteroid on Pain and Neuropeptides Release in Patients with Symptomatic Irreversible Pulpitis: A Randomized Clinical Trial"

Aim: This randomized clinical trial assessed the effect of apical patency and local corticosteroid on post-operative pain in patients with symptomatic irreversible pulpitis. Methodology: Forty patients who had preoperative pain at the levels of 5–8 on the visual analogue scale (VAS) were included were included in this randomized clinical trial. For all patients, root canal treatment was carried out in two visits without intracanal medication. The patients were randomly divided into four groups (n= 10): Group A (apical patency with corticosteroid), Group B (Apical patency without corticosteroid), Group C (No apical patency with corticosteroid), Group D (No apical patency without corticosteroid). Gingival crevicular fluid (GCF) samples were collected preoperative, after 3 days and 7 days. Patients recorded their postoperative pain intensity at 6, 12, 24, 48 hours, 3 and 7 days using a 10-cm VAS. Interleukin-1α(IL-1α) and Interleukin-10 (IL-10) levels were analysed from the GCF samples by enzyme-linked immunosorbent assay (ELISA) test. Friedman test was used for intragroup comparisons, and Kruskal-Wallis test was used for intergroup comparisons. The post hoc analysis was performed using Dunn's test. Results: Apical patency: there was a non-significant reduction in post-operative pain regarding the VAS score at all time points and the change percentage in the inflammatory mediators. Only there was a significant difference in the change percentage of IL-1αwhile using corticosteroids. Corticosteroid: there was a significant reduction in post-operative pain regarding the VAS score at all time points and the change percentage in the inflammatory mediators for all groups. Except for the IL-10, the difference was non-significant when the apical patency was not maintained. Conclusions: The used of corticosteroids reduces the post-operative pain, as seen in IL-1αand IL-10 change percentage, and the VAS scores especially in the first 48 hours.

Nourhan Naser

Suez Canal University.

"Assessment of Cleaning Ability of Two Instrumentation Motions Using Reciprocation or Rotation Motions in Conjunction with Either Continuous or Sequential Chelation: An in Vitro Study"

Aim of the study: This study aimed to evaluate the cleaning ability of two NiTi single-file systems using reciprocation motion and continuous motion, in conjunction with continuous chelation versus sequential chelation irrigation protocols using an environmental scanning electron microscope. Methods: Sixty single-rooted mandibular premolars were endodontically prepared and divided into the following two groups according to the type of file used (n = 30). Group A: one curve file system (rotation motion) and Group B: one RECI file system (reciprocation motion). Endodontically prepared teeth were then subdivided into the following three subgroups according to the irrigation protocol used (n = 10): Subgroup I: NaOCl + EDTA, subgroup II: continuous chelation (NaOCl/etidronic acid), and subgroup III: saline. Samples were observed using an environmental scanning electron microscope at 2000x magnification to measure the percentage of opened dentinal tubules using ImageJ software analysis. Data were analysed using one-way ANOVA followed by Tukey's post-hoc test for pairwise comparisons between different groups and thirds. Results: The mean overall percentage of open dentinal tubules was 3.42±3.80% for One Curve and 4.39±5.02% for One RECI. According to the Kruskal-Wallis test, the difference between the two files was not statistically significant. Conclusions: None of the tested files nor chelation techniques produced totally clean and open dentinal tubules. The coronal third showed the cleanest opened dentinal tubules in all subgroups. The cleaning ability of One RECI and One Curve are equal. Sequential chelation with reciprocation resulted in cleaner and more open dentinal tubules.

Omnia Abdel-Hakim Mohamed

Faculty of Dentistry, Cairo University.

"Metallurgical Influence of Separated Endodontic Instruments on the Retrieval Capability of Katana-Sword-like Ultrasonic Tip under Different Lubricants: In Vitro Study"

Aim: Ultrasonic retrieval is a time-consuming procedure sacrificing considerable amounts of dentin. This study aimed to assess the retrieval capability of katana-like tip on different alloys under different lubricants regarding dentin thickness and retrieval time. Methodology: Extracted premolars were used to reach 40 samples. The apical 4 mm of X2 ProTaper Next and A1 Neoniti instruments were fractured, and katana tip was utilized for retrieval, using ethylenediaminetetraacetic acid or olive oil as intracanal lubricants. Dentin thickness was assessed using cone-beam computed tomography, and the time of retrieval was recorded. Results: There was no significant difference in the retrieval capability among the groups. Different alloys and lubricants had no significant effect on dentin thickness. However, olive oil significantly reduced the retrieval time. Conclusion: Katana-sword-like tip proved to be efficient enough to retrieve apically separated instruments in curved canals, with instrument's metallurgical makeup presenting minimal effect on its capability. Katana tip and high-viscosity lubricants reduced the retrieval time, which might reduce the dentin removal amount.

Sarah Alaa El-Din El-Abyad

Assistant Lecturer in Endodontics, Suez Canal University.

"Is "Pain Relief Effect of Calcium Hydroxide" a Fact or Just a Claim? A Randomized Clinical Trial."

Introduction: In multi-visits treatment of infected cases as pulpal necrosis and apical periodontitis, application of anti-inflammatory or anti-microbial intracanal medicament is used for disinfection as well as post-operative pain preventing method. The purpose of the study was to assess and compare the post-operative pain in patients with necrotic teeth and symptomatic apical periodontitis medicated by calcium hydroxide intracanal medication with /without iodoform using a modified visual analogue scale (MVAS). Methods: Sixty patients with necrotic single-rooted lower premolars with root canals type I Vertucci's classification with symptomatic apical periodontitis were selected for the study. Endodontic treatment was performed in two visits. After chemo-mechanical preparation was performed, cotton pellet was introduced in the pulp chamber in the control group. In the other two groups, calcium hydroxide intracanal medication was applied according to the manufacturer's instructions. Then temporization by glass ionomer. The patients recorded their pain scores in (MVAS) at 4, 6, 12, 24, 48, 72 hrs and after one week. At the second appointment (After 1 week); medication was removed then obturation was done following cold lateral compaction technique. Data were presented as median, range, mean and standard deviation (SD) values. For non-parametric data, Kruskal-Wallis test was used to compare between the three groups. Statistical analysis was performed with IBM SPSS Statistics for Windows, Version 23.0. Armonk, NY: IBM Corp. Results: No statistically significant difference was found between pain scores among the three groups in all time intervals. Conclusions: Calcium hydroxide with /without iodoform has neutral effect on post-operative pain.

Yasmin Tawfik Mohamed Sobh

Lecturer of Endodontics, Department of Endodontics, Faculty of Sinai University - Kantara branch, Ismailia 41636, Egypt.

"The Effect of Two Different Contemporary Chelating Agents on Vital Pulp Therapy in Mature Permanent Teeth with Irreversible Pulpitis using Bio Ceramic Material: Randomized Clinical Trial"

Background Vital pulp therapy-maintained functionality, vitality, and asymptomatic teeth. Compared to normal root canal treatment, pulpotomy was more helpful for irreversible pulpitis in adult permanent teeth. The research was aimed to assess effectiveness of vital pulp therapy using mineral trioxide aggregate with Apple Vinegar and Ethylene diamine tetra acetic acid (17%) for five minutes in adult carious exposed pulp of permanent teeth. Methods Forty patients between 18 and 50 years old with a clinical diagnosis of symptomatic irreversible pulpitis but no periapical radiolucency were then divided randomly into two groups based on the irrigation method: ethylene diamine tetraacetic acid or apple vinegar. If pulpal bleeding could not be managed in less than six minutes, the assigned procedure was abandoned. After mineral trioxide aggregate application as a pulpotomy agent, glass ionomer and composite restoration were placed. Using a visual analogue scale, the pre- and post-operative pain were recorded after 2,6,24,48, and 72 h. Success was assessed using radiographic and clinical examination data at three, six, and twelve months. Results The success rate was discovered to be non-statistically significant in both groups after a year follow-up. Apple vinegar had a lower mean value than ethylene diamine tetra acetic acid at the preoperative baseline pain level, which was significant. Postoperatively, the ethylene diamine tetraacetic acid group reported the greatest mean value after two hours while Apple vinegar group reported the lowest mean values after 48 h ($P<0.05$). After 72 h, pain level recorded insignificant difference. Conclusion Apple vinegar yielded a marginally successful outcome but substantially improved pain alleviation. Trial registration the trial was registered in Clinical trials.gov with this identifier NCT05970536 on 23/7/2023.

Marwa M. AbouShadi

Faculty of Oral and Dental Medicine, Future University in Egypt.

"The Activation Paradox: Unlocking the Hidden Strength of Bioceramic Sealersl"

Aim of the study : This study aimed to (1) compare the push out bond strength of ION + (bioceramic) and AH Plus (epoxy resin-based) sealers in root canals obturated with three techniques (cold lateral compaction [CLC], single-cone [SC], and continuous wave [CW]), and (2) explored the impact of agitation (via XP Finisher) on the performance of bioceramic sealers (EndoSequence BC Sealer and ION+ Bioceramic Sealer). Methodology Forty-two single-rooted teeth were divided into six groups (*n* = 7/group): Groups 1–3 used Ceraseal with CLC, SC, or CW; Groups 4–6 used AH Plus with the same techniques. Push-out bond strength and failure modes (cohesive/adhesive) were analysed for agitated bioceramic sealers. Statistical analysis employed one-way ANOVA with post hoc tests for comparisons. Results: Agitation impact: Agitation (XP Finisher) significantly improved bond strength for certain bioceramic sealers, with cohesive failures indicating stronger adhesion. Warm vertical condensation and activated single-cone techniques outperformed cold lateral compaction in select scenarios. Conclusions: The choice of obturation technique should align with sealer type: Ion + bioceramic sealer demonstrated superior adaptation and biocompatibility over AH Plus. Agitation enhanced bioceramic sealer performance, suggesting activation methods critically influence outcomes. Clinically, ION + with CLC or activated techniques may optimize sealing, while its biocompatibility supports tissue preservation.

LIVE Show

Waleed Kurdi

International speaker, Clinician, Lecturer and Course Director of the Endo-Dam Team.

"(Prep Less, Engage Well) Conservative Broken File Retrieval Kurdi's Protocol"

Radicular separation of endodontic instruments is the worst nightmare facing every dentist in modern dentistry. Instrument separation inside the canal worsens the root canal procedures and makes cleaning and shaping the canal more difficult. Hindering the procedures will affect the outcome and the prognosis of the case. Separation mode is a complicated phenomenon affected by many factors which I will clarify in my lecture and how to prevent that. Managing a separated instrument will range from orthograde to surgical option. Orthograde conservative conventional options including removal or bypassing the fragment will be the specific part of our lecture. A decision should be taken either to bypass or to retrieve according to many affecting factors which I will clarify. The main goal is not only removing the separated fragment but also the tooth integrity should be maintained so bypass is a good option in many situations and if retrieved it should be in a conservative way. I will clarify when, why and how to retrieve broken file fragments through different protocols and trials. I will clarify all the available treatment options that clinician can perform in broken file cases. I will clarify all non-surgical retreatment protocols and related instruments and techniques. Clinicians should be familiar with all options in facing broken file cases even before referral if needed, with a specific predictable and successful protocol for broken file retrieval.

Ahmed Ibrahim Salim Mohammed

Assistant lecturer at Endodontic department, Tanta university.

"Endodontic Retreatment Gone Wrong: Strategies for Recovery and Success"

Endodontic retreatment is a challenging procedure aimed at resolving persistent infections and failures of primary root canal therapy. However, the process is associated with several potential mishaps that can compromise treatment success. Ledge formation, often caused by improper instrumentation, can prevent adequate cleaning and shaping of the apical third. Instrument separation may occur due to cyclic fatigue or excessive torsional stress, making canal negotiation more difficult. Additionally, perforations can develop due to excessive dentin removal or misdirection of files, leading to potential bacterial contamination. Managing these mishaps requires a strategic approach, including use of magnification, such as an operating microscope, for enhancing visibility, cone-beam computed tomography (CBCT) for preoperative assessment, ultrasonic instruments for controlled removal of obstructions, and bioceramic materials for defect repair. In cases of separated instruments, bypassing or retrieval techniques should be attempted. Perforations require immediate sealing with biocompatible materials to prevent bacterial infiltration. Ultrasonic tips and flexible NiTi files are essential for ledge correction, reshaping the canal and regaining access to the apical third. Successful retreatment relies on accurate diagnosis, careful case selection, and adherence to evidence-based protocols to minimize procedural errors. Clinicians must be well-versed in risk assessment and prevention strategies to improve the prognosis of retreatment cases. By understanding potential complications and employing meticulous techniques, endodontists can enhance success rates and minimize patient discomfort.

Amr ElDeeb

BDS, MSc, MBA Specialist Microscopic Endodontist Dental Practice Management Consultant

"Beyond the Basics: Tackling Complex Premolar Anatomy with Confidence"

The primary aim of root canal treatment is to eliminate existing bacterial infection in the root canal system and prevent bacterial regrowth, thus preventing or treating apical periodontitis. This includes removal of all debris, necrotic tissues, bacterial biofilm, and other microbes from the root canal system. This can be achieved through the Endodontic Triad of mechanical preparation, chemical disinfection and hermetic three-dimensional obturation. However, the process of bacterial elimination is often challenged by several factors including - but not limited to - complex root canal anatomy, bacterial biofilm resistance and smear layer formation. Premolar root canal system can have very challenging anatomical variations such as bifurcated roots, C-shaped canals, deep apical splits and calcified pathways. These challenges can complicate even the most routine treatments. This lecture focuses on addressing the unique challenges posed by complex premolar root canal anatomy, emphasizing the importance of precise diagnosis, meticulous treatment planning, and the application of advanced techniques for treatment execution. Through an in-depth exploration of anatomical complexities and clinical case examples, the presentation will provide a roadmap to effectively overcome those limitations and navigate those complexities confidently, thus enhancing treatment outcomes while minimizing procedural errors.

Ashraf Aref ElMalky

'Former Assistant Lecturer of Operative Dentistry, MUST and PhD candidate of Conservative Dentistry, Minia University.

"How to Avoid Post-Operative Hypersensitivity? (A Pre-Endo Recipe)"

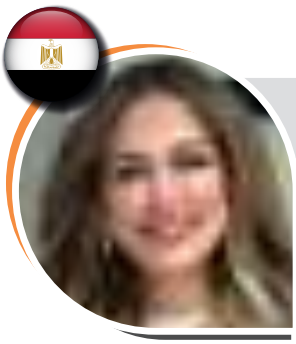
Resin composite restorations nowadays are considered daily routine work in almost all dental clinics, but still a headache to a lot of dentists because of its technicality, with endless questions & fears regarding the "tooth vitality"; How to respect the pulp health? How to avoid the annoying post-operative sensitivity? What shall I do more to save it from endodontic treatment? To overcome this issue, we have to give concern not only to the application techniques -as a lot do-, but in the first place to the "selection criteria" of each step during the "restoration process" in the clinic. Our key of success in the battle is a FULL PROTOCOL not just a technique or a material type, starting from the micro-brush you are going to use! Putting in mind that we are treating a living person not only a tooth, respecting biological & mechanical aspects, in a biomimetic approach.

Fatma Betul

Professor Fatima Betul Basturk,
Istanbul Gelisim University, Istanbul, Turkiye

"Root Canal Treatment and Biological Dentistry: Confronting the 'Elephant in the Room'"

Few topics provoke as much controversy in dentistry as root canal treatment within the framework of biological dentistry. For many biological dentists, endodontics is not just questioned—it is rejected outright, often shown as a hidden source of chronic disease. Critics raise concerns about residual infection, systemic health implications, and the biocompatibility of endodontic materials, fueling the perception that root canals may represent a hidden health risk rather than a therapeutic solution. To endodontists, this perception is not only unsettling but also challenges the very basis of our specialty. This lecture will confront the taboo head-on: examining why biological dentistry views root canals as a systemic threat, exploring the logic behind these claims, and debating whether our current protocols sufficiently address concerns of infection control and biocompatibility. Rather than dismissing the controversy, we invite the endodontic community to engage with it. Could endodontics evolve to reclaim its place in biological dentistry—or will it remain the "elephant in the room"?



Rehab Ali Farag

Lecturer in Endodontic Department, MUST University.

"When Endo-Perio Lesions Collide: Save the Tooth or Extract?"

The presentation aims to provide clinicians with a clear decision-making framework to navigate these challenging cases and balancing science, skills, and judgment in choosing whether to fight for the tooth or extract. Combined endodontic-periodontal lesions present one of the most complex diagnostic and therapeutic challenges in clinical dental practice. These cases often raise critical questions: Can we truly save the tooth, or is extraction inevitable? How can we classify the lesion, and what are the implications for treatment sequencing?

Ghada Gehad

PhD Student, Periodontology, Faculty of Dentistry, Cairo University.

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Umesh Kumar

Additional Professor and In-charge: Unit of Restorative Dentistry & Endodontics, Oral Health Sciences Centre, Post Graduate Institute of Medical Education & Research (PGIMER) Chandigarh

"A Cross-Sectional Study using a 3D-Printed Model for Training Purpose in Apical Barrier Placement Technique."

Aim: The application of three-dimensional (3D) printing in dentistry is becoming increasingly valuable from clinical dentistry to student training, teaching, and simulation training. Mastering 3D-printed models' usage is essential for general dental practitioners (GDPs) as it allows them to choose and necessarily know what is offered, as well as how to implement it in everyday practices, thereby contributing to the betterment of the dental profession. The study aims to assess and quantify GDPs knowledge, understanding, and practices related to the use of 3D-printed tooth model for apical barrier placement technique. Methods: A cross-sectional study was conducted in the form of self-explanatory questionnaire in the form of 18 questions that evaluated their knowledge and awareness regarding 3D printing. The sample size of 94 GDPs was asked to respond to questionnaire. After the workshop, GDPs were questioned regarding their satisfaction with the simulation of the apical barrier technique with a 3D model. Responses were structured by a five-point Likert scale (1, strongly disagree; 2, disagree; 3, neither agree nor disagree; 4, agree; and 5, strongly agree). Results: A total of 94 replies were obtained after the questionnaire was circulated. Awareness regarding the apical barrier placement technique in open apex cases was known by 61% of practitioners before the workshop. Most of the GDPs strongly agreed with the skill acquisition on a 3D open apex tooth model after the training workshop and it met their expectations. Conclusion: 3D modelling of open apex cases with the application of apical barrier placement technique is useful to give a simulation experience to GDPs. However, with consideration of costs and long processing times, 3D printing may be used optimally for technique-sensitive cases.

Amatallah Hussein AL-Rawhani

Cairo University.

"Regenerative Endodontic Procedures for the Treatment of Necrotic Mature Teeth with Apical Periodontitis"

The purpose of this presentation is to evaluate the effectiveness of regenerative endodontic procedures (REP) in healing periapical lesions and regaining pulp sensitivity in mature single-canal permanent teeth with pulp necrosis and apical periodontitis. REP has primarily focused on immature teeth to regenerate functional pulp tissue and support ongoing root development. However, it is suggested that the application of these procedures be extended to mature teeth as an alternative to traditional root canal treatment (RCT). REP in mature teeth may encounter more challenges than in immature teeth. One significant difficulty is achieving an adequate blood supply through the narrow apical pathways. The limited size of the apical access in mature teeth restricts the number of stem and progenitor cells available for regeneration. Additionally, effectively disinfecting the root canals of mature teeth, particularly those that are necrotic and have periradicular infection, can be quite challenging. Evidence suggests that regenerative endodontic procedures (REPs) can be an effective treatment for managing mature teeth with pulp necrosis and apical periodontitis. Radiographic assessments show promising results, indicating either complete healing or a significant reduction in the size of periapical lesions. Additionally, there is a higher likelihood of a positive response to electronic pulp testing (EPT) when REPs are employed, reflecting a substantial decrease in EPT readings. Furthermore, the response to the sensibility test has shown improvement over time. It could be considered a suitable treatment for mature permanent teeth with pulp necrosis and apical periodontitis.

Nada Omar

Professor of Endodontics ,New Giza University.
Researcher professor of Endodontics, National Research centre.

"From Dull to Dazzling: Exploring Promising Approach to Enhance the Colour of Discoloured Teeth"

Although tooth bleaching has aesthetic benefits, it has also been linked to several drawbacks. These include temporary tooth sensitivity, changes in the tooth's surface, a decrease in tooth microhardness, and an increase in surface roughness. For endodontically treated teeth, internal bleaching has additional disadvantages. Tooth bleaching can pose risks to hard and soft dental tissues, including external cervical resorption (ECR) and chemical gum burns. The use of peroxide compounds, particularly 35% H2O2, has been linked to ECR, which can lead to tooth loss. This lecture will address new safe approaches for tooth whitening. Presenters: Haidy Salem(1) & Nada Omar(2) Professor and Researcher specializing in Dental Biomaterials , New Giza University and National Research Centre -B.D.S., M.Sc., and PhD from Ain Shams University. Professor and Researcher of Endodontics, New Giza University and National Research Centre- B.D.S., M.Sc., and PhD from Cairo University University

Haidy Salem

Professor of dental biomaterials new giza university
Researcher professor of dental biomaterials national research centre

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Ahmed Ali Youssef

Lecturer in endodontics, Minia and Derya University.

“Challenges in Pulpal Treatment of Young Permanent Teeth”

Endodontists face many challenges and difficulties when treating paediatric patients, especially if they are under 12 years old, starting with behavioural management and with each step in the endodontic procedure. Those patients may have immature permanent teeth that need pulpal treatment, so the endodontists try to maintain their vitality as much as possible or resort to treatment modalities that are not usual for fully developed teeth.

Asmaa Abd El-Hady

Lecturer of Endodontics, Faculty of Dental Medicine for Girls, Al-Azhar University, Cairo, Egypt.

"Endodontic Irrigation Controversies: Tailoring Protocols for Optimal Outcomes"

This presentation will explore the significant controversies surrounding irrigation protocols in endodontics and their impact on clinical practice and patient outcomes. Effective irrigation is critical for successful root canal therapy, yet there is ongoing debate regarding the selection of irrigants, techniques, and volumes. We will delve into key discussions on the efficacy and safety of sodium hypochlorite, the advantages of continuous versus passive irrigation methods, the role of ultrasonic activation, and the use of alternative irrigants. By reviewing current literature and clinical evidence, we aim to provide a well-rounded perspective that supports informed decision-making among practitioners.

Hebatullah Ahmed Safwat

Lecturer of Endodontics, Faculty of Dental Medicine for Girls, Al-Azhar University, Cairo, Egypt.

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Ali Ayad Gargom

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"The Power of Non-Surgical Treatment of Large Periapical Lesions"

Periapical lesions are common sequelae of pulpal infection and can lead to significant destruction of periapical tissues. While surgical interventions like apicoectomy are often considered for large lesions, non-surgical treatment remains a preferred first-line approach due to its minimally invasive nature. This presentation explores the principles, techniques, and outcomes of non-surgical management of large periapical lesions, emphasizing the role of endodontic therapy and advanced biomaterials. Primary root canal therapy serves as the cornerstone of treatment, aiming to eliminate microbial infection, promote healing, and preserve the natural teeth. Supplemental approaches, such as intracanal medicaments like calcium hydroxide and triple antibiotic paste, are crucial in disinfecting the canal system and facilitating periapical healing. Clinical evidence suggests that large periapical lesions often regress significantly with proper debridement, sealing of the root canal system, and adjunctive therapies, thereby avoiding the need for surgical intervention. Case selection and patient compliance are critical for successful outcomes. This presentation will highlight the potential of non-surgical management as a viable and effective option for large periapical lesions, supporting the paradigm shift towards conservative treatment strategies in modern endodontics.

Abdel Moneim Ahmed ElKalashy

Lecturer of endodontics-Tanta university.

"Navigating the Curve: Curved Canals Challenges and Solutions."

Root canal systems with severe curvatures represent one of the most challenging scenarios in endodontic practice. The complexity of cleaning, shaping, and subsequently obturating these canals increases significantly due to anatomical variations that hinder direct access, compromise instrument navigation, and elevate the risk of iatrogenic errors and procedural mishaps including ledge formation, apical blockage, zipping, canal transportation, and even root perforation, all of which can negatively impact the prognosis of treatment. This presentation provides a comprehensive overview of the challenges associated with curved root canals, categorizing the types and degrees of curvature commonly encountered in clinical practice. It further discusses evidence-based strategies for negotiating and instrumenting these canals safely, highlighting key aspects such as preflaring, canal scouting, glide path preparation, and the importance of working length control. The role of advanced endodontic instruments and auxiliary tools—such as flexible NiTi files, apex locators, operating microscopes, and ultrasonic activation—is examined in detail. Finally, the presentation addresses modern obturation techniques tailored to curved canals, emphasizing the need for case-by-case selection of materials and methods to ensure optimal sealing and long-term success.

Mohammed Naguib Zyada

Lecturer of endodontics-Tanta university.

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Ahmed Yaser Abu Bakr

Delta University for Science and Technology.

"Causes, Diagnosis and Different Treatment Modalities for Dental Pulp Calcification"

Dental pulp calcification can lead to root canal stenosis or obliteration. It is usually difficult to negotiate the root canal if the affected tooth needs to be treated and intraoperative complications are easily brought about during the root canal treatment. The aetiologies of dental pulp calcification are complicated, and careful considerations should be given to the diagnosis and treatment. Only by weighing the advantages and disadvantages can appropriate treatment plan be chosen. Based on the literature and authors' clinical experiences, the present article summarizes the causes, pathogenesis, diagnosis and treatment strategies of dental pulp calcification, in order to provide some references in diagnosis and treatment for the dental clinicians.

Peter Nabil Naguib Abdullah

Department of Endodontics - Faculty of oral and dental medicine - Cairo University.

"Modern Strategies for the Management of Severely Curved Root Canals"

The purpose of this presentation is to provide clinicians with updated, evidence-based approaches for effectively managing severely curved root canals. It emphasizes technological advancements, improvements in instrumentation techniques, and enhancements in clinical decision-making to improve treatment outcomes and minimize complications.

Endodontic treatment of severely curved root canals is challenging and often carries an increased risk of technical errors, including ledging, transportation, instrument separation, and insufficient debridement. This presentation will demonstrate the anatomical complexities of curved canals and discuss the modern best practices for negotiation, shaping, disinfection, and obturation. The selection and utilization of suitable flexible NiTi rotary instruments, glide path preparation, irrigation activation methods, and the use of CBCT imaging will be highlighted. Real clinical cases will be shown to demonstrate the techniques of management and outcomes. The purpose of the session is to provide clinicians with practical and reproducible strategies that can enhance their confidence and success when dealing with severely curved canal anatomies.

Mohamed Allaeldin Ali Shemes

Misr International University (MIU)

"Single Cone Obturation vs Cold Lateral Compaction Tech. with Bioceramic and Resin Sealers"

Objectives: This study compared the obturation quality and push-out bond strength of single cone obturation (SCO) and cold lateral compaction (CLC) with AH-Plus and Sure Seal Root (SSR). Materials and Methods: This in vitro experimental study was conducted on 88 single-rootedsingle-canal teeth with straight roots that were randomly divided into four groups (n = 22). All teeth were decoronated and underwent cleaning and shaping. Obturation was performed with AH-Plus and SCO technique in group 1 (SAH), AH-Plus and CLC technique in group 2 (LAH), SSR and SCO technique in group 3 (SS), and SSR and CLC technique in group 4 (LS). The roots were then sectioned into 3-mm thick slices and underwent digital photography at x25 magnification to assess the quality of obturation in the coronal, middle, and apical thirds by Image J software. The PBS was measured by a universal testing machine. The mode of failure was also determined under a stereomicroscope. Results: The PBS was significantly higher in the LSS group than LAH and SAH groups, and also in the SSS group than the SAH group in all sections. The PBS in the LSS group was significantly higher than SSS in the coronal and middle thirds. Voids were significantly lower in LAH than in the SAH group in all sections. In LSS, voids in the coronal third were significantly lower than in LAH. In the middle third, voids in SSS were significantly lower than in SAH. The groups had no significant difference in the mode of failure ($P > 0.05$). The mean percentage of gutta-percha in the use of AH-Plus sealer was significantly higher than SSR ($P < 0.05$). The mean percentage of gutta-percha in the coronal third was lower than that in the middle and apical thirds ($P < 0.05$). Conclusion: SSR showed higher PBS and less voids than AH-Plus. High PBS of the CLC/SSR group showed that CLC should still be preferred to SCO, and in the case of using SCO, SSR should be preferred to AH-Plus.

LIVE Show

Giovanni Olivi

Adjunct Professor at School of Dentistry and the Scientific Coordinator of the post-graduated" Laser Dentistry" Master at Catholic University of Sacred Hearth of Rome. Active Member (Endodontist) of Italian Society of Endodontics (SIE) and Italian Academy of Endodontics (AIE), member of Academy of Laser Dentistry (ALD), Funder Member and 2021-2023, and ad interim President of the International Academy of Innovative Dentistry (IAID).

"Lasers in Endodontics: A New Era in Non-Surgical and Surgical Treatment"

This workshop will include a classification of available dental lasers, emphasizing differences in wavelengths and their clinical indications. We will also explore advanced disinfection protocols, such as SWEEPS (Shock Wave Enhanced Emission Photoacoustic Streaming), and compare their effectiveness to traditional disinfection techniques. Understand Basic Laser Physics and Tissue Interactions, Gain foundational knowledge of laser physics and its role in various dental procedures. This includes cavity preparation, root canal re-treatment (e.g., vaporization of gutta-percha), and understanding how to select the right laser settings to avoid collateral tissue damage. Master Laser-Activated Irrigation (LAI) in Endodontics. Learn the mechanism and clinical benefits of Laser-Activated Irrigation, particularly the SWEEPS protocol. Participants will explore how laser energy enhances irrigant activation, improving debridement and disinfection of complex root canal systems for superior endodontic outcomes. Apply Laser Wavelengths in Soft Tissue Procedures. Understand the significance of laser wavelength selection in soft tissue applications. Topics include Laser-assisted apicoectomy, soft tissue management in invasive cervical resorption, Photobiomodulation for pain control, accelerated healing, and reduced postoperative inflammation.

Mohamed Fayad

Adjunct Professor at School of Dentistry and the Scientific Coordinator of the post-graduated" Laser Dentistry" Master at Catholic University of Sacred Hearth of Rome. Active Member (Endodontist) of Italian Society of Endodontics (SIE) and Italian Academy of Endodontics (AIE), member of Academy of Laser Dentistry (ALD), Funder Member and 2021-2023, and ad interim President of the International Academy of Innovative Dentistry (IAID).

Director of endodontic research, and a clinical associate professor in the Endodontic department at College of Dentistry at UIC.

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Eman Nabil El-Ezaby

Lecturer of Endodontics, MSA University.

"Continuous Chelation Concept; A Recent Approach on Root Canal Disinfection"

The presentation will be divided into three parts:
The first part; starting by highlighting the drawbacks of "sequential chelation" on mechanical properties and ultrastructure of root dentin, delayed removal of smear layer and its negative impact on root canal disinfection. Then the evolution of "continuous chelation concept", with its assumed positive impact on the endodontic treatment. The second part; representing a comprehensive review of literature on the continuous chelation, figuring out its advantages and its promising impact on root canal treatment procedures. Finally, the third part providing a conclusion and suggesting ideas for future research about "continuous chelation" as a promising approach of root canal disinfection.

Mariam Ahmed

Candidate of Masters of endodontics at Cairo university and teaching assistant of endodontics at Egyptian Russian University.

"One File Doesn't Fit All: Customizing Instrumentation in Endodontic Retreatment Cases"

The primary aim of this clinically oriented presentation is to emphasize the critical need for abandoning rigid, standardized instrumentation protocols in endodontic retreatment. It will highlight that each retreatment case presents unique complexities, demanding a flexible and customized approach to file selection and procedural execution for predictable and successful outcomes. Brief Summary: Endodontic retreatment cases involve diverse clinical challenges like varied anatomies, heterogeneous obturation materials, and intracanal obstacles. A "one-size-fits-all" approach to canal preparation is often inadequate, risking complications and compromising long-term success. This discussion will explore how meticulous pre-operative assessment, often enhanced by Cone Beam Computed Tomography, is foundational. It will then detail the strategic selection from a wide array of tools and the essential integration of adjunctive aids like ultrasonics and magnification.

Yasser Ibrahim Mokhtar

Candidate of Masters of endodontics at Misr International University.

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Nader Wadie Ramsis Haroun

Egyptian Russian University.

“Access Denied? Unlocking the Secrets of Calcified Canals”

Calcification of root canals is a common finding, especially in aging populations and following trauma or restorative procedures. These cases often pose diagnostic and technical difficulties that can compromise treatment success. This lecture explores the etiology of canal calcification, the clinical and radiographic features that aid in detection, and the strategic use of tools such as CBCT, magnification, Endodontic Guides and ultrasonic tips. Clinical protocols, access refinement, and the selection of appropriate instruments will be discussed in depth. Real case examples and troubleshooting strategies will be used to bridge the gap between theory and practice, helping clinicians approach calcified cases with confidence and precision. This presentation aims to enhance clinicians’ understanding and skills in diagnosing and managing calcified root canals, which remain a significant obstacle in endodontic practice. It will provide practical insights into modern diagnostic tools and clinical techniques for negotiating and treating calcified canals safely and effectively.

Khaled Khalifa

Private Endodontic Practitioner & Educator

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Soha Alaa Emam

Lecturer of Endodontics at Misr International University.

"4D Innovations in Endodontics: Smart Materials Shaping the Future of Regeneration"

The emergence of 4D smart materials—dynamic constructs that adapt to biological cues over time—is revolutionizing the endodontic therapy. This discussion highlights how 4D-printed scaffolds, shape-memory hydrogels, and time-responsive biomaterials enhance pulp regeneration by promoting stem cell recruitment, vascularization, and tissue remodelling. Clinical applications include 4D-engineered grafts that conform to root canal anatomy and drug-eluting matrices that release bioactive agents in stages. By integrating these innovations with minimally invasive protocols, endodontics is shifting from inert fillings to biologically active solutions. The topic explores the transformative role of 4D-printed biomaterials and bioactive scaffolds in advancing regenerative endodontics, offering new possibilities for pulp revitalization and dentin repair.

Dalia Abdelfattah Tantawy

Lecturer of Endodontics at Future University in Egypt.

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Salam Abu Arqub

Conservative and restorative Dentistry specialist and owner of Dr Salam Abu Arqub Dental Lounge. KOL of several dental companies.

"Pre-Endo Build Up, Why?"

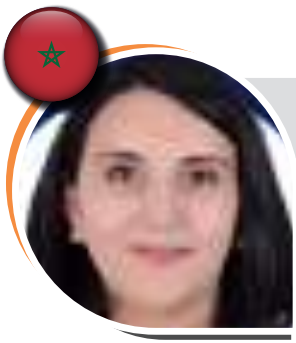
Coronal leakage is one of the most common causes of failure in both primary root canal treatments and retreatments. An effective pre-endodontic buildup can play a crucial role in preventing leakage by sealing the coronal portion of the tooth and providing optimal conditions for endodontic procedures. This lecture will focus on the importance of pre-endo buildup in enhancing treatment outcomes. Attendees will learn how this step contributes to increasing the long-term success of root canal therapy by minimizing contamination and structural compromise. The session will also cover clinical techniques and material selection to ensure proper isolation and support during endodontic procedures.

Menatullah ElSayed Abdelghany

Lecturer of endodontics, Azhar university.

"Success and Failures of Single Visit Endodontic Treatment: "Efficiency Meets Efficacy"

Single-visit root canal treatment refers to a conservative, non-surgical approach, it involves in just one appointment and reduces treatment time and material use compared with multiple-visit treatment. Multiple visit procedures characterized by antimicrobial property of inter appointment calcium hydroxide placement to ensure successful periradicular healing. Single visit appointment shows levels of bacterial reduction via refined cleaning and shaping techniques is one appointment. Several factors play an important role in the decision-making process: the accuracy of the initial diagnosis, infection control measures, the complexity of root canal anatomy, the management of procedural complications, patient's signs and symptoms and sealing problems. Anterior aesthetic problems: Cases involving trauma to anterior teeth are commonly treated in a single visit. Restorative considerations: in severe coronal breakdown where the tooth cannot retain a restoration and teeth that require preparation for desired alignment should be treated intentionally by single visit. Vital pulp exposure and symptomatic pulpitis: pulp exposures due to trauma, caries and teeth showing clinical sensitivity to heat or cold but not percussion, can be treated effectively in single visit. Health considerations: In physically compromised patients but cooperative patients and in medically compromised conditions, single visit root canal treatment was considered. Time: The primary reason for increased patient acceptance was the reduced number of visits to the dental clinic and saves time for both operators and patients. Steps to consider in success of single visit root canal treatment: ▪ Access cavity preparation: Conservative access opening exhibits more success in single visit root canal. In multiple visit excess loss of coronal dentin was seen during removal of access seal in subsequent visits leading to decrease fracture resistance of teeth. ▪ Biomechanical Preparation: Determination of Working Length using apex locator and types of Files used either rotary or reciprocating exhibits success in single visit root canal treatment. ▪ Irrigation techniques and activation.



Nisrine El Arouf

Conservative Dentistry and Endodontics Department, Dental Medicine Faculty, Mohammed V University in Rabat.

"Mapping the Adoption Curve of Emerging Endodontic Innovations among Moroccan Practitioners"

Introduction: Emerging endodontic technologies offer enhanced precision and tooth preservation. Yet, their uptake among Moroccan private practitioners has not been systematically explored. This pilot study assesses awareness and use of these technologies to inform broader future research. Methods: An online questionnaire surveyed 125 private-sector dentists in Morocco. Respondents reported their familiarity with, and frequency of use for, key technologies: rotary files, EALs, bioceramic sealers, CBCT.... Data were summarized descriptively, and Chi-square tests explored associations with graduation year (significance at $p \leq 0.05$). Results: ▪ Awareness: 82% aware of rotary systems; 86% of EALs; 45% of bioceramic sealers; 30% of CBCT. ▪ Usage: 79% routinely used rotary files; 86% used EALs; 33% used bioceramic sealers; 12% employed CBCT; 68% applied rubber-dam isolation. ▪ Barriers: Major obstacles included high costs (72%), limited hands-on training (64%), and increased chair time (58%). ▪ No statistically significant link between graduation year and technology use, reflecting early-stage adoption patterns. Discussion & Future Directions: This pilot exploration reveals strong interest in modern endodontic tools but a gap between awareness and routine application—particularly for bioceramics and CBCT. To support wider adoption, targeted practical workshops and financial strategies (subsidies, group purchasing) are recommended. Larger-scale, mixed-method studies—combining surveys, clinical audits, and longitudinal follow-up—will validate these trends, measure clinical impact, and guide tailored integration of advanced endodontic technologies in Moroccan practice.

Hesham Salah

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"Healing from Within: Bioceramics and the Future of Root Repair"

This course provides a comprehensive exploration of bioceramic materials and their transformative impact on the practice of endodontics. We will move beyond traditional concepts to analyze how the unique bioactive and hydrophilic properties of bioceramics have fundamentally altered our approach to vital pulp therapy, the management of immature teeth, perforation repair, and surgical endodontics.

1.Differentiate between the classifications, chemical compositions, and properties of various bioceramic materials (e.g., MTA formulations, calcium silicate-based putties, and sealers).

2.Explain the "bioactive" mechanism of action, including hydration, hydroxyapatite nucleation, and the material's interaction with pulpal and periradicular tissues.

3.Appraise the paradigm shift from bio-inert materials to bioactive materials and its implications for long-term treatment success

4.Formulate evidence-based treatment plans for vital pulp therapy (indirect/direct pulp capping and pulpotomy) in mature teeth, leveraging bioceramics to promote predictable hard tissue barrier formation.

5.Master the clinical techniques for managing non-vital immature teeth, including the creation of a bioceramic apical barrier (apexification).

6.Critically evaluate the role of bioceramics in regenerative endodontic procedures (REPs) for immature teeth with open apices.

7.Select the appropriate bioceramic material and clinical protocol for the non-surgical repair of iatrogenic root and furcal perforations

8.Integrate bioceramic putties as the gold-standard root-end filling (retro-filling) material in modern endodontic microsurgery.

9.Evaluate the impact of hydraulic bioceramic sealers on modern obturation philosophies, including single-cone techniques and the concept of a true "monoblock" seal.

Ali El-Tahan

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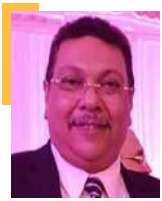

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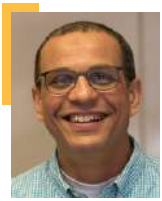

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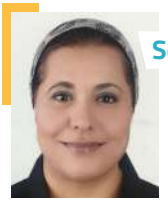

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