College of Dentistry and Stomatology of Sri Lanka

C/o- Sri Lanka Dental Association,
275/75, Prof. Stanley Wijesundara Mawatha,
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March 2024

NEWSLETTER

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President's Message



It's a great pleasure and honour to convey this message to the annual newsletter of the College of Dentistry and Stomatology of Sri Lanka (CDSSL). The college as a pioneering professional body represents all dental specialties in Sri Lanka. One of the main objectives of the CDSSL is to promote post graduate dental education in Sri Lanka. During this year college was able to conduct the DHDP preparatory course and MD preparatory course for the selection examination for Post Graduate Diploma in Hospital Dental Practice and selection examination for MD (Orthodontics/OMF surgery/Restorative Dentistry) respectively. I wish to express my sincere gratitude for all the resource personnel and the course coordinators of the two courses for their contribution towards the success.

CDSSL has a responsibility towards improving knowledge and skills of the members by various academic activities. During this year few online clinical sessions conducted while giving an opportunity to postgraduate trainees to present their cases and discuss with an expert panel of relevant field. Furthermore, few webinars were conducted on different topics as well. All these activities were planned to cater for all specialties and encouraging participation was noted. A workshop on 'Disseminating your research findings" was conducted physically with collaboration of the Association of Advancement of Science. I would like to thank all the resource persons for their valued contribution for the success of all these academic activities.

To encourage and promote the research activities among the membership, College offers two research grants each year. The research grants will be awarded at the annual scientific session this year as well. Furthermore, trainees are encouraged to present their research work as a free paper and the best free paper will be selected and awarded with a cash prize and a certificate.

During this year CDSSL contributed national level activities as a stakeholder. College represents the National Advisory committee for Oral Health Sri Lanka. Furthermore, CDSSL contributed giving expert opinion for the National oral health policy document preparation as well. CDSSL has been recognised as the expert body to evaluate dental devices, equipment and materials prior to registration at National Medicine Regulatory Authority (NMRA) since 2015. During this year also the expert panel contributed immensely for this important task by spending their valuable time and energy. I would like to pay my honest gratefulness for the members of the expert panel.

Continuing the college's activities at a higher level and achieving significant progress is not an easy task. With the immense contributions from members the activities could be conducted successfully achieving the objectives. I wish to pay me heartfelt gratitude to the members who supported us to make this year productive. My special note of appreciation should be forwarded to the members of the council for the enormous contribution and generous support throughout this year to make it dynamic. Finally, my sincere appreciation is dedicated to the three past presidents who are coopted members of the council for the guidance and support given in need.

It is my wish that the CDSSL will be able to contribute to the advancement of postgraduate dental education in Sri Lanka to a higher level in the future.

Dr Sonali Ranathunga
President
CDSSL

36th Annual Scientific Sessions 2023

The CDSSL Annual Scientific Sessions took place on the 25th and 26th of March 2023, centred around the theme "Strategies to Triumph Challenges in Dentistry." This significant event in the College calender saw the participation of numerous esteemed speakers, adding depth to the scientific program.

The program comprised three symposia, several guest lectures, a postgraduate forum, and a free paper session, all carefully designed to deliver the best outcomes aligned with the theme. The three symposia included: ***"A clinical journey of a patient with oral cancer - Challenges and current trends in management",*** **"Taxation and Finance",** and **"Intervention of Dental development defects - When and How?"** Each symposium provided valuable insights and discussions.

Postgraduate forum provided a platform for trainees to enhance their presentation and communication skills while sharing knowledge and experiences gained during their postgraduate training.

The highlight of the event was the fourth Sunil Fernando oration during the inauguration ceremony on 25th March 2023. It was titled ***"How a profession was built up: the footsteps of Oral and Maxillofacial Surgery",*** delivered by **Dr. D.K. Dias**, Consultant in Oral and Maxillofacial Surgery at Teaching Hospital Karapitiya. The event was honoured by the esteemed presence of **Dr. Ananda Wijewickrama**, Consultant Physician at the National Institute of Infectious Diseases, as the chief guest and **Dr. Sriyani Basnayake**, retired Consultant Orthodontist, as the guest of honour. **Dr. H.M.K.G. Handapangoda** was awarded the Best Free Paper Award during the ceremony on for her presentation on ***"Clinical and Radiographic outcome in patients treated with Mineral Trioxide Aggregate (MTA) in Apexification at the Restorative dentistry unit B - Institute of Oral Health Maharagama."***

The council extends its sincere appreciation to all the resource personnel who contributed to making the annual sessions a resounding success. Additionally, heartfelt thanks are extended to all participants for their active engagement and valuable contributions, which enriched the overall experience of the event.



Lighting of the traditional oil lamp by the President CDSSL



Speech by Guest of Honour Dr Sriyani Basnayake



Awarding of orator's medal and certificate to the orator Dr D.K. Dias



Awarding of the best free paper prize to Dr H.M.K.G. Handapangoda

Preparatory Courses for Examinations

Selection examination for the Postgraduate Diploma in Hospital Dental Practice (PGDHDP)



Preparatory course for the selection examination for PGDHDP were carried out as two full day physical programme on the 11th and 18th of February 2024 at the auditorium of the National Dental Hospital Colombo with participation of 26 dental surgeons. The College would like to extend its heartfelt appreciation to all the subject experts who persist in their support, contributing to the success of the program. The college also wishes to thank Dr A. Rajaganesh and Dr S. Kalubowila for coordinating these sessions.





MD preparatory course 2023

Preparatory course for the Common Selection Examination for MD in Oral and Maxillofacial Surgery, Orthodontics and Restorative Dentistry were carried out successfully as online sessions. The college wishes to appreciate the meticulous work carried out by Dr Randilini Angammana in organising the sessions.

Continuing Professional Development (CPD) Programmes 2023/2024

A series of highly effective case-based discussions, online clinical meetings and workshops were conducted, exploring various topics covering a wide spectrum of critical areas. These sessions proved to be immensely valuable for postgraduate trainees and dental surgeons. The college expresses gratitude to all the resource persons for their valuable contributions towards online as well as physical sessions.



Auto transplantation of teeth

Case presenters
Dr. Keerththana Balabaskaran
Dr. Ruwandi Weerasinghe
Dr. Kosala Abeypala

Resource persons
Dr Sriyani Basnayake Consultant Orthodontist
Dr Sunil Karunathilake Consultant OMF Surgeon
Prof. Manil Fonseka Professor in Restorative Dentistry

Moderators
Dr. Amirthavarshini Rajaganesh
Consultant Orthodontist
Dr. Samudi Kalubowila
Senior Registrar in Restorative Dentistry



Haematology in Dentistry

Case presenters
Dr S Jeevadas
Dr Kanisha Handapangoda

Resource person
Dr Shanika Vitharana
Consultant Haematologist
Bone Marrow Transplant Unit
LRH Colombo

Moderator
Dr Thanuja Prathiraja
Consultant OMF Surgeon



Anterior Dental Implants

Case presenters
Dr Kanisha Handapangoda
Dr Gayani Shanika
Dr Anushka Jinasekara

Resource person
Prof. Nadeena Jayasuriya
Prof. Manori Jayasinghe

Moderators
Dr Samudi Kalubowila
Senior Registrar in Restorative Dentistry
Dr Pasan Senevirathne
Senior Registrar in OMF

How to Get Ahead in Conducting Clinical Audits



Resource person
Dr Upuli Wijemanne
MD in Medical Administration
Director
(Planning)
Ministry of Health

Moderator
Dr Danushi Wickramasinghe
Consultant in Community Dentistry

Management of Complications Following Traumatic Dental Injuries



Resource persons
Dr Dilhan Rupasinghe
Consultant in Restorative Dentistry
DGH Ampara

Moderator
Dr Ruvinath Rajapakshe
Senior Registrar in Restorative Dentistry

Workshop on Disseminating Your Research Findings



A successful physical workshop on Disseminating your research findings, jointly organized by the College of Dentistry and Stomatology of Sri Lanka and the Sri Lanka Association for Advancement of Science (SLAAS) was held on 26th August 2023 at the auditorium of NDHSL. The Resource Persons from the Association of Advancement of Science, **Dr. Nadeeka Chandraratne**, **Dr. Yasaswi Walpita** and **Dr. Dushyanthi Jayawardene** who proved to be invaluable assets to the workshop, generously sharing their expertise and knowledge to enhance the experience for all participants. Additionally, the college extends gratitude to Dr. Nilantha Rathnayake for his exceptional coordination of the workshop.







The collaboration with the National Medicines Regulatory Authority (NMRA)

The ***5 member expert panel*** appointed by the CDSSL was involved in evaluation of dental materials and devices prior to the registration at NMRA. Few committee meetings were held at NMRA for this purpose. The honorarium will be deposited to the college account. Furthermore, members participated for the meetings to discuss the issues related to the registration of dental materials in Sri Lanka. The council wishes to thank all the members who were involved in these activities for their commitment.

The collaboration with the Ministry of Health (MOH)

1 Registration as a CPD provider – CDSSL registered as a CPD provider in the National Continuous Professional Development programme for health care professionals organized by Ministry of Health.

2. Developing National Oral Health Policy – Members of the council actively involved and contributed giving expert opinion in the process of development of the oral health policy in Sri Lanka.

3. National advisory board on Oral Health – CDSSL participated for this national level activity as a responsible professional body.

EXAM RESULTS

The College of Dentistry and Stomatology of Sri Lanka would like to convey heartiest wishes to all the successful candidates of the following PGIM examinations in 2023/2024.

MD in Oral & Maxillofacial Surgery Examination May/June 2023

Dr. Appu Arachchige Gayani Harindi Anupama
Dr. Eleperuma Arachchige Don Jayanga Sameera De Alwis
Dr. Jayasekara Mohottiralalage Dilshan Sandeep Gunawardhana
Dr. Dewalegama Gamacharige Chanaka Manoj
Dr. Prasangi Madubhashini Peiris
Dr. Diyunugalge Kelum Priyantha Rajakaruna
Dr. Maththaka Gamage Malinda Udara Senadhirathna
Dr. Pasan Chathuranga Senevirathna
Dr. Lindamulage Dinusha Dilhani Kumari Silva

MD Orthodontics Examination November 2023

Dr Anjalee Ariyaratne
Dr Madhuka Nadeeshani Jayasena Abeysiriwardana Ramanayaka
Dr Hingure Arachichilage Senani Saumya Ranasinghe

MD Restorative Dentistry Examination July 2023

Dr Ruvinath Daham Weerasinghe Rajapaksa
Dr Rasnayaka Mudiyanselage Sumudu Geethika Kumari Rasanayaka
Dr Bruntha Santhanagopalan

MD Community Dentistry Examination July 2023

Dr. Hegodage Thilini Randima Hegoda
Dr. Kaha Widanalage Dona Eyoshitha Nilmini
Dr. Piyumi Thilina Rathuwadu

Selection Examination in MD Community Dentistry July 2023

Dr. Deenamulla Kankanamage Heshanka Sachindri
Dr. Kaluperuma Chathurangi De Silva Widyaratna

Common Selection Examination for MD Oral & Maxillofacial Surgery, Orthodontics & Restorative Dentistry October/ November 2023

Dr Diyagahage Prasadi Weerawarna De Silva
Dr Mohamed Amir Fathima Haneena
Dr Maneesha Madhubani Hatharasinghe
Dr Bhagya Piyumali Muthuthanthirige
Dr Hirimbura Gamage Harshani Piyusha Sewwandi

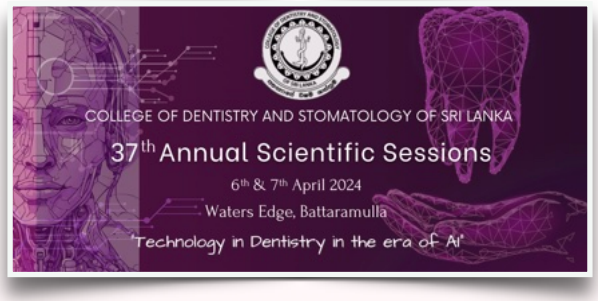
CONGRATULATIONS!

The College congratulates the following new specialists who received Board certification from the PGIM 2023/2024

Oral and Maxillofacial Surgery	Orthodontics	Restorative Dentistry	Community Dentistry
Dr LAH Jayasinghe	*Dr W Mithula*	*Dr LAA Pradeepika*	*Dr D Wickramasinghe*
Dr Nadun Dhammika	*Dr GW Prasanna*		*Dr Krishna Thilakarathne*
Dr SS Withanage	*Dr NKKG Samarasinghe*		*Dr Shanika Muthuthanthri*

ANNOUNCEMENTS & NOTICES FROM THE COLLEGE

37th Annual Scientific Sessions of the CDSSL 2024



CDSSL Annual Scientific Sessions will be held on the 6th and 7th of April 2024 at Water's Edge - Colombo, under the theme ***"Technology in dentistry in the era of AI"***.

Several renowned speakers will join to enrich the scientific programme which will consists of three symposia, lectures and a free paper session. The three symposia will be on ***"Breakthrough innovation - Maxillofacial reconstruction", Artificial Intelligence"*** and ***"Technological advances in Dentistry".***

Simultaneously with the Sessions, the Postgraduate forum will take place, providing a platform for trainees to enhance their presentation and communication skills, while also facilitating the exchange of knowledge and experiences acquired during postgraduate training.

Fifth Sunil Fernando Oration 2024 will be delivered by **Dr AHTS Karunathilleke,** Consultant Oral and Maxillofacial Surgeon.

The upcoming session aims to comprehensively explore the intersection between dental advancements and artificial intelligence (AI). This programme will offer valuable insights into the evolving landscape of dental care in the age of AI.

6th of April 2024 Saturday			
8.30am-12.00pm	Postgraduate forum		
1.00pm-1.30pm	Registration		
1.30pm-3.30pm	Symposium I	"Break through innovation" Virtual Maxillofacial reconstruction	Moderator: Dr. Thanuja Prathiraja Speakers: Dr. Buddhika Dassanayake, Dr. Manjula Herath, Dr. Lasantha Liyanapathirana
3.30pm- 4.30pm	Free paper session		
4.30pm- 5.00pm	Evening tea		
6.00 pm	Inauguration ceremony	Sunil Fernando Oration	Dr A.H.T.S. Karunathilleke

7th of April 2024 Sunday			
8.15am-8.45am	Registration		
8.45am- 9.30am	Guest Lecture I	Advancements in Bonding Dental Materials	Dr. Pubudu Perera
9.30am- 10.15am	Dr. Reggie Gunatileke Memorial Lecture	Communication Skills in Clinical Dental Practice	Dr. W.M. Senadeera
10.15am- 10.45am	Morning Tea		
10.45am- 11.30am	Keynote Address	Application of AI in Implant Dentistry	Dr. N.S. Colombage
11.30am- 1.00pm	Symposium II	The Role of AI in the Future of Dentistry	Moderator: Dr. Dhanushka Leuke Bandara Speakers: Prof. R.G. Ragel, Dr. Asitha Bandaranayake, Prof. Ruwan Jayasinghe
1.00pm- 2.00pm	Lunch		
2.00pm- 2.45pm	Guest Lecture II	Medical Humanities: Towards Perfecting the Art of Medicine	Prof. Dinithi Fernando
2.45pm- 4.15pm	Symposium III	Technological Advances in Dentistry	Moderator: Dr. Niroshana Gunatissa Speakers: Prof. Manil Fonseka, Prof. Manori Jayasinghe, Dr. Ajith Premarathne
4.15pm - 4.30 pm	Evening Tea		
4.30pm	AGM- CDSSL		

CDSSL Research Grant

(i) Research Grant

The recipient of the CDSSL research grant 2022/2023 was **Dr. S.A.D.N. Amarasena**, Registrar in Community Dentistry, attached to the Family Health Bureau. she was awarded the grant by the President elect CDSSL, Dr. S. Ranatunga at the Annual Scientific sessions held in 2023. She received the grant for the proposal titled ***"Evaluation of effectiveness of an intervention package to strengthen the referral and utilization of oral health care during pregnancy in Colombo district".***



(ii) Research Grant

Dr P.L.B.C.S.Kodikara, Registrar in Community Dentistry attached to the Health Promotion Bureau was awarded the research grant 2022/2023. It was awarded to her by the President elect CDSSL, Dr. S. Ranatunga at the Annual Scientiffic sessions 2023. She received the grant for the proposal titled ***"Evaluation of the effectiveness of an intervention to improve oral health-related behaviours among 1 to 3-year-old children to prevent Early Childhood Caries (ECC) in selected urban slum areas in Colombo district".*** The council extends its gratitude to the research grant committee of the CDSSL for their dedicated efforts and expertise in undertaking this crucial task. Special recognition is also extended to Dr. Rasika Ekanayake for her coordination of the project.



MD Preparatory Course 2024

The MD preparatory course for the common selection Examination for MD in Oral and Maxillofacial Surgery, Orthodontics and Restorative dentistry for the year 2024 will commence on the ***28th of April.***

Unusual Pathways: A Challenge for Endodontists



I.P.S.Gamage, Consultant in Restorative Dentistry, DGH Matara.
BDS (Sri Lanka), MD in Restorative Dentistry (Colombo)

Introduction

Hidden within the dental root, the root canal system is vastly complex and variable displaying a remarkable diversity across individuals and teeth. A quality three-dimensional obturation following thorough chemo-mechanical debridement of the entire root canal system attributes to endodontic success preventing potential complications or persistent infections. This demands a deep understanding of the normal root canal and pulp chamber anatomy and common variations from the norm[1]. Unusual anatomical variations in teeth, such as extra roots, extra canals, unusual canal configurations, calcified canals, curved canals and dilacerations present unique challenges for endodontists. Successful navigation through these challenging pathways requires precision, expertise and adaptability from the endodontist to ensure thorough cleaning, shaping and sealing of the root canal system. This article presents a series of intriguing cases that illustrates the challenges endodontists encounter and the innovative strategies employed in negotiating uncommon root canals. .

Case 1: Re - Root canal treatment of a mesotaurodont mandibular first premolar with two roots

A 35- year- old male presented with localized dull pain and numbness in tooth 44. He gave a history of previous root canal treatments of both 44 and 45 seven months ago. The clinical examination revealed temporary restorations in both 44 and 45. 44 was tender to percussion and the preoperative radiograph revealed it to be two rooted with an unobturated root / root canal (Figure 1). The root canal treatment (RCT) of 45 was satisfactory. It was diagnosed as unsatisfactory RCT of 44 with apical periodontitis and was planned to re-treat. Existing gutta-percha (GP) was removed using H files and GP solvent. The conventional access was modified to be wider bucco lingually, to gain sufficient access. Upon thorough tactile exploration of the endodontic space with an ISO #10 K file, a split was detected at the lingual wall in the apical third of the main canal. Working length was determined with an electronic apex locator and chemo-mechanical debridement was done with hand protaper files, following standard protocols. The root trunk was enlarged using Gates glidden bur to ease access to both canals during obturation. Subsequently lingual canal was obturated first and the GP was cut at the level of the bifurcation using Gutta pen. The Buccal canal was then obturated along with the root trunk using the cold lateral condensation technique. Post-operative radiograph showed a satisfactory root canal obturation (Figure 2).

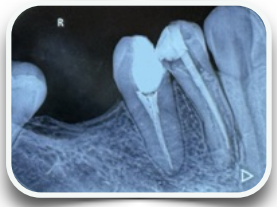


Figure 1



Figure 2

Case 2: Root canal treatment of a hypertaurodont mandibular left second premolar with two roots

A 51- year- old male reported with acute constant pain in previously restored tooth 35. The clinical examination revealed occlusal temporary restoration and a positive response to pulp testing, indicating irreversible pulpitis. The periapical radiograph showed a bifid root at the most apical part of 35 (Figure 3). The temporary restoration was removed providing access to the root canal system. The access cavity was widened bucco-lingually to reach both canals. Using a # 10K file the canals were scouted and identified. Obturation followed the same method described in the previous case report. (Figure 4)



Figure 3



Figure 4

Case 3: Root canal treatment of a mandibular Right permanent first molar with five root canals.

A 25-year-old female presented with irreversible pulpits in tooth #46. The Periapical radiograph revealed deep caries with no apical changes and no anatomical abnormalities. Endodontic treatment was planned for 46. After accessing the pulp chamber, four canals were negotiated, two in the mesial root and two in the distal root. A hidden third mesial canal (mid mesial canal) was discovered in the developmental groove between the mesio-buccal and mesio-lingual canals during ultrasonic troughing of the groove. The canal was scouted using a 10K file and successfully negotiated (Figure 5). The working length was obtained for all five canals and they were successfully prepared using rotary files. The cold lateral compaction technique was used in the obturation of 46 (Figure 6).

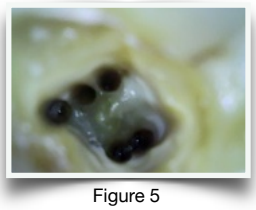


Figure 5

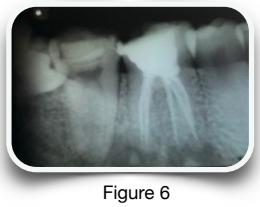


Figure 6

Case 4: Root canal treatment of right mandibular permanent molar with Radix Enteromolaris

An 18-year-old male with severe spontaneous pain in the lower right back teeth was diagnosed with symptomatic irreversible pulpitis in toot #46. The Periapical radiograph showed evidence of an extra distal root (Radix Enteromolaris) RCT was planned for 46 with careful attention to the narrow extra distal root.

Endodontic treatment involved careful removal of the inflamed pulp tissue, extension of the access cavity farther lingual to locate the disto-lingual canal carefully following the floor map and standard debridement of all four root canals. Obturation was done using cold lateral compaction (Figure 7).

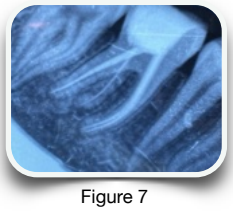


Figure 7

Case 5: Endodontic treatment of a dilacerated maxillary permanent central incisor

A 16-year-old girl, referred for pain and swelling in relation to tooth 21, had a history of trauma resulting in the loss of her primary predecessor at 2-3 years of age. The misaligned and malformed permanent successor was found to be restored to a normal appearance. Clinical examination revealed a hooked-like appearance on palatal probing, tenderness to percussion and a negative sensibility response to electric pulp tester. The periapical radiograph showed an abnormal curvature with a bend at the cemento-enamel junction region and periapical radiolucency at the root apex (Figure 8). Angulated radiographs did not reveal the exact anatomy of the tooth. A diagnosis of dilaceration with apical periodontitis was made on clinical and radiographical findings.

Non-surgical RCT was carried out with careful access cavity preparation on the palatal side. The orifice was located more palatally and distally than in a tooth with normal anatomy. Working length was measured and the canal preparation was done very carefully. Coronal enlargement of the canal using Gates glidden burs was avoided due to the possible risk of perforation. Copious irrigation was done and preparation was restricted to the size F3 protaper file. Temporary dressing with Calcium hydroxide with Iodoform was applied and obturation was planned after symptom resolution(Figure 9).



Figure 8



Figure 9

Discussion

A comprehensive understanding of root canal morphology, meticulous clinical examination, radiographic investigations and the use of illumination and magnification are crucial for optimal endodontic treatment outcome. The preoperative radiograph serves as the primary diagnostic tool for assessing tooth morphology and internal pulp space anatomy. While, the periapical radiograph using paralleling technique is the most widely used, it offers limited assessment of bucco-lingual dimensions as it is a 2- dimensional projection of a 3-dimensional object. Angulated radiographs employing the SLOB rule (Same lingual opposite buccal) can overcome this limitation to some extent, but require a comparison of images taken at different angles. Cone beam Computed Tomography (CBCT) is increasingly used for its ability to provide three-dimensional image volumes, enhancing precision in pulp space evaluation. In the management of cases 1, 2, and 4, the preoperative conventional radiographs sufficed, eliminating the need for additional radiographs. However, for a more comprehensive assessment in case 5, CBCT would have been the ideal adjunct, yet, practical constraints led to cautious treatment based solely on clinical assessment and the preoperative radiograph.

The external morphology of a tooth reflects its internal pulp space anatomy. Variations in tooth size, shape and presence of additional cusps may indicate the possibility of aberrant root canal anatomy. A prominent lingual cusp in a mandibular premolar provides a clue to the presence of an extra root canal and similarly an extra cusp (tuberculum paramolare), or more prominent distolingual lobe, in combination with a cervical prominence or convexity in a mandibular molar may suggest the presence of an additional root[1,2]. None of these was evident in the described cases, perhaps, due to carious tooth substance loss.

Literature reports atypical canal anatomy in almost all teeth, with higher prevalence in premolars and molars[3]. Extreme variations in root canal morphology of mandibular premolars pose a considerable challenge in their treatment having a high flare-up and failure rate[1]. They commonly exhibit a single root and canal, classified as type I according to Vertucci's canal classification[4]. Yet, various studies have documented a notable prevalence of multiple canals, with the majority falling into Vertucci type V[5]. In a minority of cases, two or more separate roots have been reported, with apically displaced pulp chamber floor leading to a taurodont premolar[6,7]

Taurodontism, characterized by an enlarged pulp chamber, apical displacement of the furcation, and absence of constriction at the cemento-enamel junction, presents many challenges in root canal location, instrumentation and obturation. Based on the degree of apical displacement of the pulp chamber, it is further categorized in to hypotaurodont, mesotaruodont, and hypertaurodont. While taurodontism commonly affects molars, limited literature documents cases of taurodontism in mandibular premolars as observed in the described mesotaurodont and hypertaurodont premolars[8].

Being the tooth exposed to adverse oral environments for the longest time, the mandibular first molar is the most frequently subjected to RCT. Typically it has one mesial and one distal root with two canals in the mesial root (Mesio-buccal and Mesio-lingual) and one or two canals in the distal root. Additional canals, such as the mid-mesial and mid-distal canals, may be found in the developmental grooves between the two mesial and two distal canals[1]. The prevalence of mid-mesial canal varies according to the population studied, with Baugh et al, reporting an incidence ranging from 1-15%[9]. In rare instances, a third root can be found mesio-buccally or distolingually, identified as "Radix paramolaris" and "Radix enteromolaris" respectively[10,11].

Dilacerations, defined as "an abrupt deviation of the long axis of the crown or root portion of the tooth, which is due to a traumatic non-axial displacement of already formed hard tissue in relation to the developing soft tissue", complicate endodontic procedures due to the altered root canal anatomy. While the fundamental principles of endodontics apply universally, successful outcomes in aberrant cases may demand a deviation from the norm. Straight-line access to the apical foramen or initial curvature of the root canal is crucial for effective root canal debridement, three-dimensional obturation and to prevent endodontic mishaps. Modifications to access preparations are necessary in cases of aberrant root canal anatomy to ensure direct line access and sufficient visual control. Thus, in the cases described here, access cavities were widened bucco-lingually to locate extra canals, while a more palatal/ gingival access was necessary for the dilacerated central incisor.

In RCT of teeth with bifurcated roots or canals, hand files are preferred over rotary files, as they preserve the tactile feedback to the maximum at the apical part of the ramification. Further, Rotary files may precipitate cracks or fractures in slender roots in taurodontic teeth[12]. Literature suggests modified obturation techniques for taurodonts considering canal orifice proximity, long root trunk and the complex root canal anatomy. The described technique combines cold lateral condensation in the apical part with warm vertical compaction in the elongated pulp chamber / root trunk[13]. While the cold lateral condensation technique was used in the obturation of the taurodontic teeth in the reports described here, warm vertical compaction of the root trunk could offer improved outcomes. Similarly, in dilacerated root canals, warm vertical compaction ensures proper adaptation of the root canal filling material to its walls providing a better hermetic seal.

Conclusion

Root canal anatomy is variable and aberrant root canals pose challenges to the endodontist. Complete knowledge of both normal and complex root anatomy is crucial for successful outcomes, as missed or improper handling of the canal system can lead to the failure of an entire endodontic procedure. Thorough clinical assessment, appropriate investigations and technique modifications are essential to enhance outcomes in complex situations.

References

1. Cohen S, Hargreaves K. Pathways of the pulp. 10th edn. St Louis, MO:Mosby, 2011.
2. Calberson FL, De Moor RJ, Deroose CA. te radix enteromolaris and paramolaris: clinical approach in endodontics.
3. Cantatore G, Berutti E, Castellucci A. Missed anatomy: frequency and clinical impact. EndodTopics 2006; 15(1):3-31.
4. Vertucci FJ. Root canal morphology of mandibular premolars. J Am Dent Assoc 1978;97:47-50
5. Arayasantiparb R, Banomyong D. Prevalence and morphology of multiple roots, root canals and C-shaped canals in mandibular premolars from conebeam computed tomography images in a Thai population. J Dent Sci. 2021;16(1):201-207
6. Dosunmu OO, Sulaiman AO, Olaesmi FS. Mandibular premolars with multiple roots: A case repot. Niger Postgrad Med J. 2015,22:126-128.
7. Llamas R Jimenez-Planas A. Taurodontism in premolars. Oral Surg Oral Med Oral Pathol 1993 Apr;75(4):501-505.
8. Mokthari H, Niknami M, Zand V. Managing a mandibular second premolar with Three canal and Taurodontism. A case report. Iran Endod J. 2013;8(1):25-28.
9. Baugh D, Wallace J. Middle mesial canal of the mandibular first molar: A case report and literature review. J Endod. 2010;36:542-5.
10. Carlsen O, Alexandersen V. Radix paramolaris in permanent mandibular molars; identification and morphology. Scan J Dent Res 1990;98:363-73.
11. Carlsen O, Alexandersen V. Radix paramolaris in permanent mandibular molars:identification and morphology. Scan J Dent Res 1991;99:189-95
12. Prakash R, Vishnu C, Suma B, Velmurugan N, Kandaswamy D. Endodontic management of taurodontic teeth. Indian J Dent Res 2005; 16(4):177-181.
13. Tsesis I, Shifman A, Kaufman AY. Taurodontism: An edodontic challenge. Report of a case. J Edondod 2003;29:353-5.

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