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Endodontic management of a mandibular first premolar with deep split into three canals: case report

Introduction:

Mandibular first premolars usually have a one root and one root canal but it shows a wide variety of abnormal root canal anatomy. Especially, the occurrence of three canals with deep apical split in mandibular first premolars is very rare. The incidence of a three-canaled mandibular first premolar is approximately 0.2%. That's make such teeth most difficult to manage endodontically.

Knowledge of root canal morphology, proper radiographic interpretation, Cone beam CT scan interpretation, use of magnification in terms of dental operating microscope, and scouting of the root canals are important in detecting the presence of the multiple canals.

Case presentation: A middle age man presented to our clinic with pain in the right mandibular first premolar. The diagnosis of acute apical periodontitis was made on the basis of clinical and radiographic examinations. Hence, root canal treatment was recommended. After preparing the access cavity, the orifices were found by removing the dentinal shelves. The root canals were shaped using combination of hand and rotary files and were obturated using the bio ceramic sealer and gp cones. This clinical case report describes a case of a successful nonsurgical endodontic management of a mandibular first premolar with three root canals

Conclusion: Mandibular premolars can present with an extremely complex root canal morphology, which if not considered during the treatment, it can lead to post-treatment complications, failure, or flare-ups.

Key learning points

- Thorough clinical and radiographic interpretation is important in recognizing anomaly in root and root canal systems.
- The most common forms of root and canal systems and its aberrations must be understood to realize variations from normal do occur.
- Successful root canal treatment requires an accurate diagnosis of the root canal system using all available aids.
- Always better to take micro CT or cone beam CT scan to check the root canal anatomy

Keywords: anomaly, mandibular premolars, root canal, deep split, endodontic

Biography

Dr. Disha Gupta has Post Graduate Certificate in Endodontic (PGCE), Modern Dental College and Hospital, Indore, 2013, Bachelor of Dental Surgery B.D.S. 2010

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Practicing in Dubai (UAE) as a microscopic endodontist for 7 years.

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Also, Felicitation by HONORABLE CONSUL GENERAL OF INDIA IN DUBAI MR.VIPUL for outstanding work in medical field Dec 2019
Awarded VERSATILE DENTIST OF THE YEAR 2020 by Global Outreach Medical and health association GUEST SPEAKER - Dubai Dental Isthmus CME seminar
Speaker - Dentist channel online
INTERNATIONAL SPEAKER- DRDDS 2 summit- Dental reach & Dental Divas summit
INTERVIEW on - Practice in Dubai after BDS on YouTube channel by Dentowomen (40K views) EXECUTIVE MEMBER - DORI Doctors of Rajasthan International
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