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"ENDODONTIC MANAGEMENT OF A MANDIBULAR FIRST MOLAR WITH RADIX ENTOMOLARIS: A RARE ANATOMICAL VARIATION"-A CASE REPORT-2.

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ABSTRACT

Radix Entomolaris (RE) is a rare anatomical variation characterized by the presence of a supernumerary root in mandibular first molars. This case report documents the endodontic management of a tooth with RE. The unique anatomy of RE poses challenges in endodontic treatment, emphasizing the importance of thorough radiographic examination and awareness of this variation. Successful management of RE requires careful canal identification, negotiation, and obturation to ensure optimal treatment outcomes.

KEY WORDS: Anatomical variation,Endodontic treatment,Mandibular molar,Radix entomolaris.

INTRODUCTION

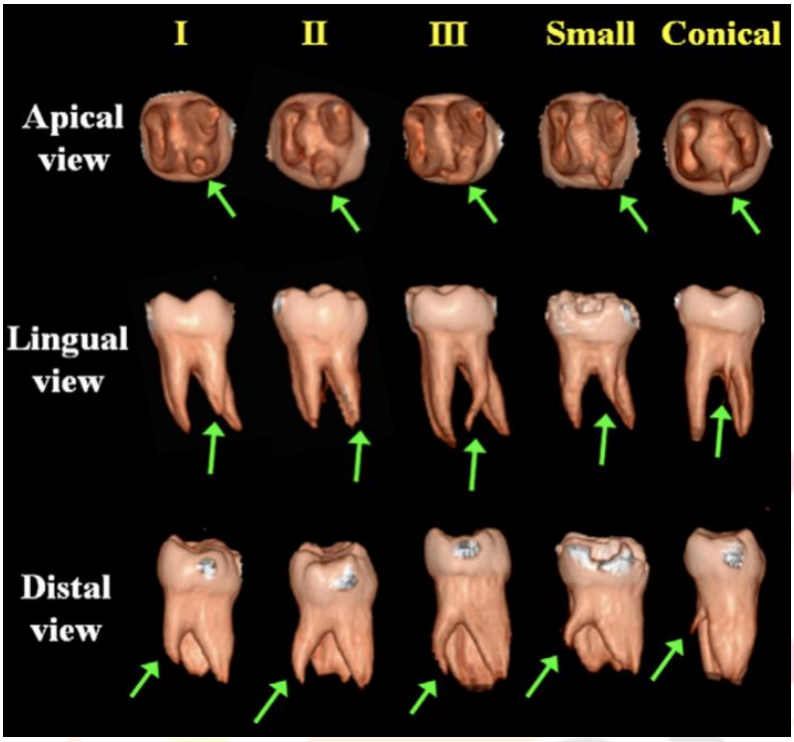
The primary objective of endodontic treatment is to eliminate microbes from the root canal system and prevent reinfection. This is achieved through biomechanical cleaning and hermetic sealing with obturating material. The anatomy of mandibular first molars is complex, typically featuring one mesial and one distal root with two mesial canals and one distal canal. However, variations in root morphology, including the presence of a supernumerary root known as radix entomolaris (RE), have been reported. The prevalence of RE varies among populations, with higher incidence rates observed in Mongoloid populations, such as Korean, Chinese, and Native American populations. This case report presents a unique clinical scenario involving a mandibular first molar with a radix entomolaris.

Song et al. (2010)

Added two more newly defined variants of RE.

1. Small – Length shorter than half of the length of the distobuccal root

Conical – Smaller than the small type and having no root canal within it



CASE REPORT -1

A 27-year-old male patient presented with severe pain in the right lower back tooth region. Intraoral examination revealed mesio-occlusal and disto-occlusal caries in teeth #46 and #45, respectively. Radiographic examination revealed an additional root between the mesial and distal roots of tooth #46.

Under local anesthesia, access cavity preparation was performed using a round, safe-end tapered fissure bur. Two mesial canal orifices and two distal orifices were located using DG-16 and #10 K-files. Working lengths were determined radiographically. Canals were cleaned and shaped using 3% sodium hypochlorite and EDTA, with ProTaper files (F1 for mesiobuccal and mesiolingual canals, and F2 for the distal canal). Obturation was performed using gutta-percha points with the Single Cone technique. The access cavity was restored with composite resin, and tooth preparation was completed for teeth #46 and #45.

DISCUSION

The presence of Radix Entomolaris (RE) in permanent mandibular first molars poses a significant challenge in endodontic treatment. Accurate diagnosis and localization of the RE canal are crucial for successful treatment outcomes. A careful correlation between clinical and radiographical examinations is essential for discovering RE, as it may not be apparent on radiographs due to overlapping with the mesial or distal roots.

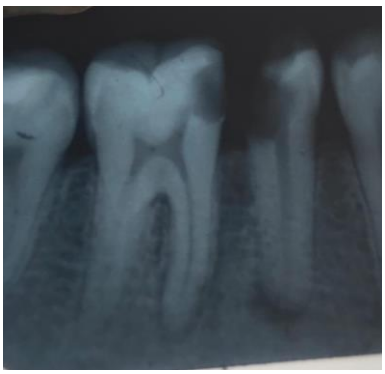
The trapezoidal access cavity modification is a critical step in locating and accessing the RE canal. This modification allows for better visualization and instrumentation of the canal, reducing the risk of missed canals and treatment failure.

The incidence of RE in the South Asian and Indian population is notably higher compared to other ethnic groups, highlighting the importance of awareness and attention to this anatomical variation in clinical practice.

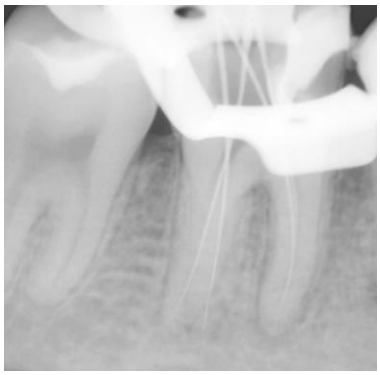
Missed canals are a common cause of endodontic treatment failure in RE cases. This emphasizes the need for meticulous examination, accurate diagnosis, and careful treatment planning to ensure successful outcomes.

RADIOGRAPHIC AND CLINICAL PICTURES (PRE-&-POST-OPERATIVE)

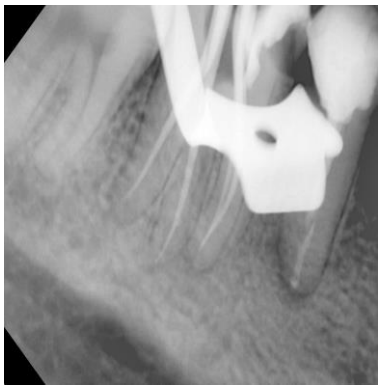
PRE-OPERATIVE



WORKING LENGTH



MASTER CONE



OBTURATION DONE

CLINICAL PICTURE

CROWN PREPARATION DONE

MAXILLARY IMPRESSION

MANDIBULAR IMPRESSION

MAXILLARY CAST

MANDIBULAR CAST

CROWN FABRICATION

POST -OPERATIVE

CASE REPORT -2

A 31-year –old male patient presented with pain in left lower back tooth region .Radiographic examination revealed an additional root between the mesial and distal roots of tooth #36,peri apical lesion in distal roots.

RADIOGRAPHIC AND CLINICAL PICTURES (PRE-&-POST-OPERATIVE)

CONCLUSION

The presence of Radix Entomolaris (RE) in permanent mandibular first molars is a significant anatomical variation that requires attention and awareness in clinical practice. Successful endodontic treatment of RE cases depends on accurate diagnosis, meticulous examination, and careful treatment planning. The trapezoidal access cavity modification and thorough exploration of the root canal system are essential for locating and treating the RE canal. By recognizing and addressing this anatomical variation, clinicians can improve treatment outcomes and reduce the risk of missed canals and endodontic failure.

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THE AUTROS REPORT: NO CONFLICT OF INTEREST.

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