



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

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## ABSTRACT

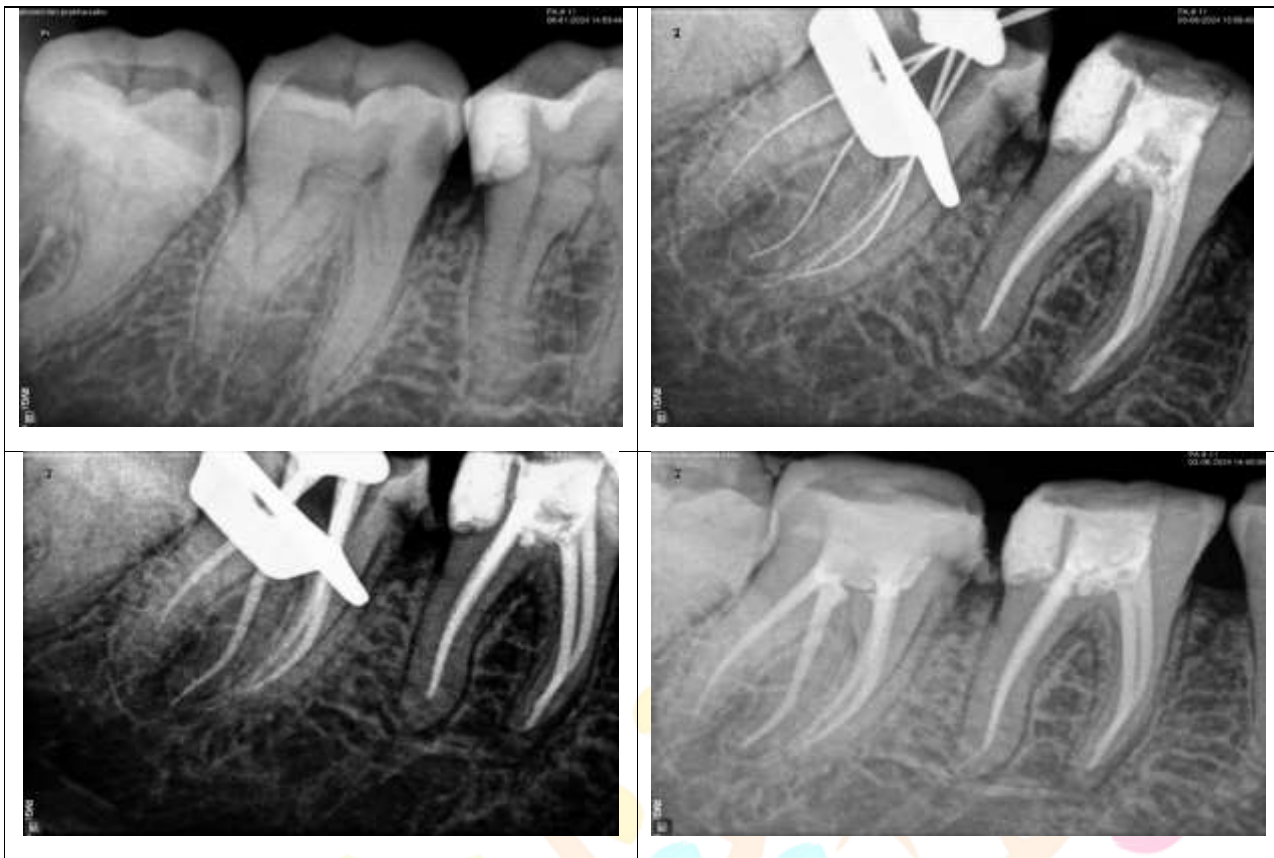
Radix Entomolaris (RE), a rare and complex anatomical variation distinguished by the presence of a supernumerary root in mandibular second molars, presents considerable challenges in endodontic treatment, underscoring the necessity of meticulous radiographic examination and awareness of this unusual morphology. This case report delineates the successful endodontic management of a tooth exhibiting RE, highlighting the critical importance of thorough canal identification, precise negotiation, and comprehensive obturation to ensure optimal treatment outcomes and minimize the risk of complications.

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

## CASE REPORT-1

A 31-year-old male patient presented with severe pain in the right lower back tooth region, exhibiting symptoms consistent with those reported in literature (Seltzer, 1989). Intraoral examination revealed mesio-occlusal and disto-occlusal caries in teeth #47 and #46, respectively. Radiographic examination revealed an additional root between the mesial and distal roots of tooth #47, characteristic of Radix Entomolaris (RE) (Carlsen & Alexandersen, 1990).

Under local anesthesia, access cavity preparation was performed using a round, safe-end tapered fissure bur, in accordance with established endodontic protocols (Cohen & Burns, 2000). Two mesial canal orifices and two distal orifices were located using DG-16 and #10 K-files, consistent with the anatomy of teeth with RE (Manning, 1990). Working lengths were determined radiographically, as recommended by the American Association of Endodontists (AAE) (AAE, 2015). 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 canals), following established endodontic procedures (Walton & Torabinejad, 2000). Obturation was performed using gutta-percha points with the Single Cone technique, as described in literature (Marshall & Massler, 1985).



(A)PRE-OPERATIVE ,(B)WORKING LENGTH,(C)MASTER CONE .(D)POST OBTURATION.

### CASE REPORT-2

A 27- year-old male patient reported with severe pain in second right molar region, continuous type of pain 47#



(a).POST OBTURATION ,(b) PRE OPR,(c) CBCT IMAGE SHOWING [RE]RADIX ENTEROMOLARIS.

Followed by endodontic treatment 47# .

## DISCUSSION

The presence of Radix Entomolaris (RE) in permanent mandibular second molars presents a formidable challenge in endodontic treatment, necessitating accurate diagnosis and precise localization of the RE canal to ensure successful treatment outcomes (Carlsen & Alexandersen, 1990). A meticulous correlation between clinical and radiographical examinations is crucial for identifying RE, as its presence may be obscured on radiographs due to superimposition with the mesial or distal roots (Manning, 1990). The trapezoidal access cavity modification is a critical step in locating and accessing the RE canal, facilitating enhanced visualization and instrumentation of the canal, thereby reducing the risk of missed canals and treatment failure (Walton & Torabinejad, 2000).

Notably, the incidence of RE in the South Asian and Indian population is significantly higher compared to other ethnic groups, underscoring the importance of awareness and attention to this anatomical variation in clinical practice (Gupta et al., 2015). Missed canals are a prevalent cause of endodontic treatment failure in RE cases, emphasizing the need for meticulous examination, accurate diagnosis, and careful treatment planning to ensure successful outcomes (Seltzer, 1989).

## CONCLUSION

The presence of Radix Entomolaris (RE) in permanent mandibular second 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.

## ACKNOWLEDGMENT NONE : CONFLICT OF INTEREST

## THE AUTROS REPORT: NO CONFLICT OF INTEREST.

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