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ENDODONTIC MANAGEMENT OF RADIX ENTOMOLARIS: A CASE SERIES

Dental Science

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ABSTRACT

Mandibular first molars present with anatomical variations in terms of an extra canals to extra root either lingually or buccally. Presence of an extra root is one of the complex morphological variations. It is essential to make a correct diagnosis, identification of complexity and plan the treatment accordingly .The main reason for failure of endodontic therapy is either a missed canal or root .Endodontic microscope provides a better visualization in identifying and locating the canals .This case report discusses the treatment of two cases of radix entomolaris using endodontic microscope .

KEYWORDS

Mandibular first molar, Distolingual root, Endodontic microscope, cone beam computed tomography.

INTRODUCTION:

A successful endodontic therapy requires a thorough knowledge of tooth anatomy and root canal morphology[1] .Human dentition presents a wide range of anatomical variations in terms of root canal shape, number of root canals[2] .One of the major reason for endodontic failure is missed canals. The anatomy of mandibular 1st molar is such that it has two roots (mesial and distal) and three canals .The prevalence of two distal canals is (54.4%) than those with just one distal canal (13.7%).However ,the prevalence of two mesial canals is (54.7%) and three canals in the mesial root is (7.2%)[9]. Identification and diagnosis of extra root can be routinely done with radiographic techniques .However; three dimensional imaging such as cone beam computed tomography can be useful[4].

This case report discusses the diagnosis and successful endodontic therapy of two cases showing radix entomolaris using endodontic microscope.

Case I

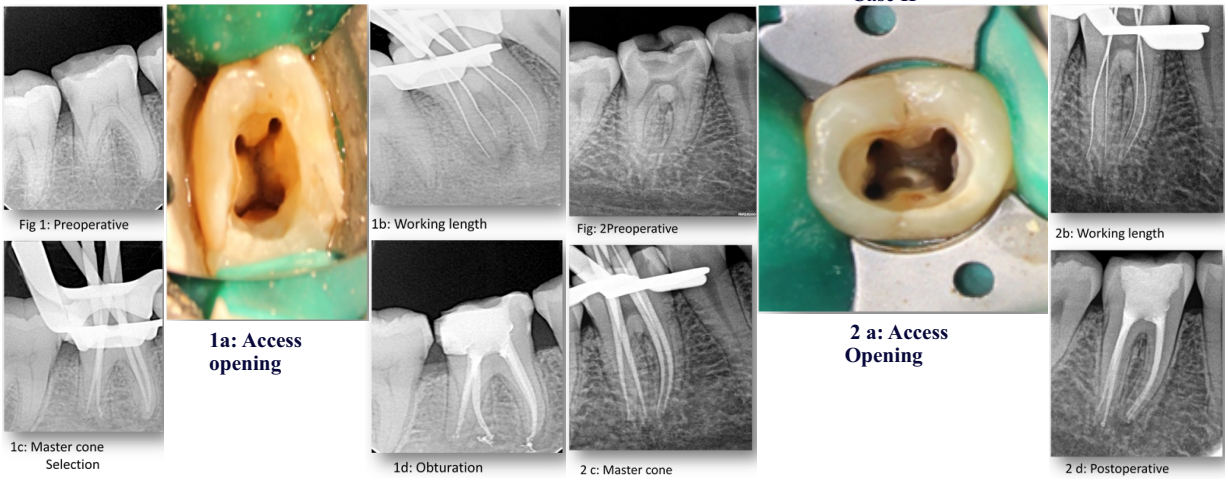
A 20 years old female reported to private clinic with history of pain in the lower left tooth region since a week on clinical examination .The tooth showed presence of deep proximal caries with tooth number 36 and tenderness on percussion with same tooth . The tooth showed negative on vitality testing .On radiographic examination, the caries were involving pulp and also showed presence of extra root distally (Figure .1)

Case II

A 35 years old female reported to private clinic with history of pain in the lower left tooth region since a week on clinical examination .The tooth showed presence of deep occlusal caries with tooth number 36 and tenderness on percussion with same tooth .On radiographic examination, the caries were involving pulp and also showed presence of extra root distally (Figure .2)

Endodontic therapy:

Prior to the beginning of treatment an informed consent from both patients was taken. Endodontic therapy was initiated under rubber dam isolation .Access opening was done with endo access bur A0164 (Dentsply) under microscope (Figure 1a, 2a).Three canals i.e.mesiobuccal, mesiolingual and distal were located ,further the search for second distal canal with DG16 .The access cavity was modified from triangular to trapezoidal shape. The distal canal was located (Figure1b, 2b).The working length was determined by electronic apex locator (J.Morita) Figure (1c, 2c). The canals were prepared upto size 254% using protaper next files (Dentsply).All the canals were irrigated with 5.25%sodium hypochlorite and 17% EDTA followed by final irrigation with normal saline .The master cone was confirmed radiographically Figure(1d,2d).All the canals were dried with paper points and obturated with Gutta percha and Sealapex. (Figure 1e,2e).



DISCUSSION:

Identifying and accessing root canal is challenging particularly with atypical canal configuration[5]. The presence of radix entomolaris or paramolaris has an direct implication in endodontics [6].A missed canal can lead to endodontic failure .Radix entomolaris is mostly situated in the same buccolingual plane as the disto-buccal root ,a superimposition of both roots can appear on the periapical radiograph resulting into missing of the root or canal[7]. Hence, it is essential to consider a three dimensional imaging such as CBCT for accurate diagnosis and preoperative assessment of atypical canal anatomy.

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