Unilateral radix entomolaris in primary first molar: A rare entity

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Abstract
In present, Pediatric dentistry is not just about teeth and gums that are easily visible to everyone in children’s mouth rather it has now become about those structures that are difficult to identify/hidden and often remain undiagnosed under some circumstances. An awareness regarding the variations in root morphology in primary teeth is very important among clinicians to render the best treatment and to maintain these teeth into the oral cavity. Primary mandibular first molars usually exhibit two roots with three canals. It is very rare that and additional root is present. The aim of this case report is to present the case of Radix Entomolaris in primary mandibular first molar and to describe its clinical significance.

Keywords: Mandibular primary first molar, radix entomolaris

Introduction
A complete knowledge of primary teeth and their root canal anatomy is very important for clinical success of the treatment. The presence of dental anomalies is lesser in primary teeth than in the permanent dentition. A supernumerary root is a developmental anomaly which can affect treatment planning as well as prognosis of any tooth and is known as ‘Radix entomolaris’ (RE). It is also known as ‘extra distolingual root’ or a ‘distolingual root’ or an ‘extra third root’. Root in RE can be a short conical or a mature root of its usual length. Tratman in 1938 has reported that three rooted mandibular molars are rare with a frequency of <1% in the deciduous dentition and common in the permanent dentition. Molars are most frequently affected by dental caries at an early age and may require successful endodontic treatment for their long-term retention in the oral cavity. The main objective of pediatric endodontic therapy is thorough removal of the pulp tissue from all the roots and canals followed by chemo-mechanical cleaning and filling with a suitable obturating material. Failure to diagnose and treat the supernumerary roots in molars may lead to the endodontic treatment failure and even tooth loss at an early age resulting the patient to suffer functionally, esthetically, and psychologically. Therefore, pediatric dentist must be aware of these unusual root structures to provide the overall benefit to a child patient because when they are present are highly challenging to diagnosis as well as to endodontic treatment.

Case Report: A 6-year-old male patient reported to the Department of Pedodontics and Preventive Dentistry with a chief complain of pain, difficulty while chewing and sensitivity to cold in the right lower back tooth region of the jaw since 1 week. On intraoral clinical examination it was found that deep carious lesions were present in relation to 74, 84 and pit and fissure caries in 75 and 85. (Figure-1A) Based on the chief complaint and history, IOPAR of 84 was taken and (Figure-1B) a provisional diagnosis of chronic irreversible pulпитis was made and endodontic therapy was planned under strict sterilization protocol. Tell-show-do technique of behavior management was done before starting the treatment. After administration of local anesthesia, tooth 84 was isolated under rubber dam. All the carious part was removed and access cavity was made. Canals were explored using a size 10 H file and pulp was extirpated with debridement. Working length was taken (Figure-2A) and after chemo-mechanical cleaning canals were obturated with Metapex followed by stainless steel crown placement. (Figure-2 B, C) The other active carious lesions in 85 and 75 were sealed (Figure-3) and pulpectomy was done in 74 which exhibited normal root anatomy on taking IOPAR.
Discussion
Knowledge of teeth and their anatomical variations are important for clinical point of view, anthropological data, and for the forensic record. Three rooted permanent mandibular first molar and deciduous mandibular second molar have been reported widely in literature, however, the presence of three roots in deciduous mandibular first molar is relatively rare and only a few cases are being reported. Studies have shown that there is 15.2% of higher incidence rate is seen in the population of Mongolian origin (Japanese, Malaysian, Chinese, Thai, Eskimo, Aleutian, and American Indian). However, the etiology of supernumerary roots is unknown, it has been proposed that if during the development of root, epithelial sheath of Hertwig is folded or disrupted, it can lead to formation of an accessory supernumerary root canals. This can be attributed to the most probable cause of the presence of three roots in the present case.

First case was reported by Winkler and Ahmad in 1997 followed by two more cases reported by Gupta et al. and Ramamurthy et al. in the Indian population. Badger reported a case of unilateral three-rooted primary mandibular first molars in a 5-year-old Caucasian boy which was similar to our case.

So, while performing endodontic therapy in primary teeth, the clinician should be aware of the possibility of an anomalous root. During exodontic procedures, the clinician should make sure that the crown of the premolar is not trapped in the interradicular area of the primary teeth as this could cause accidental removal of the developing permanent tooth. The clinician should always check clinically and radiographically to ensure that all roots of anomalous primary tooth have been retrieved. Since it is not known whether these abnormal root configurations affect the normal exfoliation of the primary teeth, it is unclear whether these anomalous teeth present orthodontic problems. The presence of a third root, whether primary or permanent, may have forensic value for identifying people of the Mongolid race.

Conclusion
Knowledge of unknown variation in the root morphology is necessary as non treatment of one additional root or root canal can lead to failure of endodontic treatment. So before starting with extraction or endodontic procedure, a clinician should take two periapical radiographs (taken at different angles) to confirm the presence of an extra root in order to prevent the trauma to developing premolars as well as for the successful endodontic treatment.

References
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