

PRIMARY MANDIBULAR FIRST MOLAR WITH THREE ROOTS: A CASE REPORT

¹SAEEDAH MOKHTARI

²SEPIDEH MOKHTARI

³BAHMAN SERAJ

⁴IMAN SANATI

ABSTRACT

Knowledge of the size, morphology and variation of the root canals is required to achieve a successful endodontic treatment. Primary mandibular first molars usually have two roots. Three rooted primary mandibular first molar with the formation of accessory roots is uncommon. This paper reports a case of three-rooted primary mandibular first molar in a four year old male patient.

Key Words: Primary molar, Mandibular, Three roots.

INTRODUCTION

Knowledge of the morphology and variation of the root canals is required to achieve a successful endodontic treatment.¹ Primary and permanent teeth are different in size and external and internal root morphology. However, fewer abnormalities of size and morphology occur in the primary dentition compared to permanent teeth.²

Primary mandibular first molars usually have two roots and three root canals and the formation of accessory roots is uncommon.¹ This paper reports a case of three-rooted primary mandibular first molar in an Iranian male patient.

CASE PRESENTATION

A healthy four-year-old boy was brought to the department of pediatric dentistry, faculty of Den-

tistry, Islamic Azad University, Tehran, Iran with the chief complaint of food impaction in the area of lower right first primary molar. Intra oral examination revealed that the patient is in primary dentition and had no abnormality of teeth. He had healthy oral soft tissues but there were some carious lesions in some teeth. He had also a history of dental treatment and his lower left first primary molar had Stainless Steel Crown. Initial periapical radiographic examination showed that the lower right first primary molar needed pulpotomy and pulpectomy had been applied for the lower left first primary molar (Figure 1, 2).

Radiographic examination also indicated that the lower right first primary molar had three separated roots, however it had clinically normal shape and size. This tooth had a mesial root, a distal and a lingual one. Parental consent was obtained to proceed with treatment approach of teeth. So all caries were gone under treatment. For lower right first primary molar pulpotomy and then Stainless Steel Crown were applied (Figure 3).

DISCUSSION

Studies of the tooth anatomy have shown that anatomical variations can occur in each group of teeth, in each person and they should be considered as frequent possibilities.³⁻⁴ Diagnosis and identification of the shape and number of roots of teeth are a critical factor in their restorative and endodontic treatment or extraction procedures if needed. Also supernumerary root in primary teeth may have potential of interfer-

¹ Assistant Professor, Department of Pediatric Dentistry, Dental School of Shahid Beheshti University of Medical Sciences, International Branch, Tehran, Iran

² Assistant Professor, Department of Oral and Maxillofacial Pathology, Dental School of Shahid Beheshti University of Medical Sciences, Tehran, Iran

³ Associate Professor, Department of Pediatric Dentistry, Dental School, Tehran University of Medical Sciences, Tehran, Iran

⁴ Pedodontist, Private Practice, Tehran, Iran

Correspondence: Sepideh Mokhtari, Department of Oral and Maxillofacial Pathology, Faculty of Dentistry, Shahid Beheshti University of Medical Sciences, Velenjak St., Tehran, Iran
Tel.: +98-912-5173177

Email: Sepidemokhtary@yahoo.com

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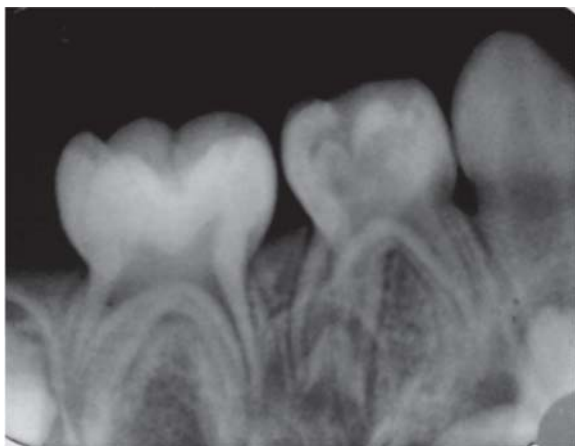


Fig 1: Lower right first primary molar with three roots (arrow); before treatment.



Fig 2: Lower left first primary molar.



Fig 3: Lower right first primary molar with three roots (arrow); after treatment.

ence with eruption of the succedaneous teeth. Initial radiographic examinations help to identify tooth root morphology and its anatomical variations.⁵

The mechanism of normal development of multiple roots is completely known. The inner and outer enamel epithelium proliferate from the cervical loop of the enamel organ and make a doubled layer of cells named Hertwig's epithelial sheath. The epithelial diaphragm is formed by bending of the outer and inner

enamel epithelium at the future CEJ site. The rim of this sheath encloses the primary apical foramen. In multirooted teeth, morphodifferentiation continues but the stimulating factors are not known yet.⁶ If during dental development the epithelial sheath of Hertwig is disrupted or folded, supernumerary roots and accessory root canals may be formed. Odontogenesis is overall very sensitive to numerous exogenic and endogenic factors, such as diet and fluoride intake, that may modify tooth-bud growth in maturation, thus resulting in anatomical variations in dental morphology.⁷ Some investigators suggest that the potential for developing supernumerary roots may be throughout the course of root elongation.⁶

There are few case reports of three-rooted first primary molar.⁸⁻¹⁰ Here this anatomical variant has been seen in an Iranian male. More studies are needed to identify the prevalence. Diagnosis of this variation should be of concern before restorative and endodontic treatment and their extraction. Also follow-up examination around the time of exfoliation of these teeth is appropriate to control any potential interference with eruption of the permanent teeth; however these teeth usually resorb and exfoliate normally.⁶

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