SEVEN ROOT CANALS IN A FIRST MOLAR: A CASE REPORT

*Gaurav Solanki¹, Namita Lohra¹, Renu Solanki²

¹Jodhpur Dental College General Hospital, Jodhpur, Rajasthan, India.
²Lachoo Memorial College of Science And Technology, Jodhpur, Rajasthan, India.

ABSTRACT

The purpose of this article was to focus on the importance of having knowledge about the root canal anatomy and different variations associated with it. This article tells us about the management of a maxillary first molar with three roots and seven canals. The detection of the seven canals was confirmed using CBCT scanning. CBCT images showed that both the palatal and disto-buccal root have a Vertucci type II canal pattern, whereas the mesio-buccal root showed a Sert and Bayirli type XV canal configuration. This report describes the variation in canal morphology of maxillary first molar.

Keywords: CBCT Scanning, First Molar, Root Canals Etc.

INTRODUCTION

The anatomy of the permanent first molar has been very complex and matter of research in the past few years. It has three roots with three canals and with the commonest variation is the presence of a second mesio-buccal canal. The incidence of second mesio-buccal canal has been reported to be between 18% and 96.1% [1]. Martínez-Berna and Ruiz-Badanelli reported six root canals with three mesio-buccal, two disto-buccal, and one palatal, whereas de Almeida and Bond reported six root canals with two mesio-buccal, two disto-buccal and two palatal [3]. Of the 140 extracted maxillary first molars, only a very few teeth showed seven root canals in which three mesio-buccal canals, 3 disto-buccal canals and one palatal canal were identified. The present article discusses the successful management of a maxillary first molar presenting with three roots and seven root canals. This unusual morphology was confirmed with the help of CBCT scans [3,4]

CASE REPORT

A 58 year old man presented with the complaint of toothache in his left posterior maxilla for 2 days. History revealed intermittent pain in the same tooth with hot and cold stimuli for the past 1 month. A clinical examination revealed a carious maxillary left first molar. From the clinical and radiographic findings, a diagnosis of symptomatic irreversible pulpitis with symptomatic apical periodontitis was made and endodontic treatment was suggested to the patient. The tooth was anesthetized followed by endodontic access cavity preparation. Clinical examination with endodontic explorer revealed two canal openings in each of the disto-buccal, mesio-buccal and palatal root. During examination, a third canal was located midway between the mesio-buccal and palatal orifices. To confirm this unusual morphology, it was decided to perform CBCT imaging of the tooth. Access cavity was sealed with IRM cement. The involved tooth was focused and the morphology was obtained in transverse, axial and sagittal sections of 0.5 mm thickness. CBCT scan slices revealed seven canals in the left maxillary first molar. CBCT images provided valuable information regarding the canal configuration and confirmed the seven canals that were not clearly seen in the conventional radiograph.

Cleaning and shaping was performed followed by irrigation using normal saline. The canals were dried with absorbent points and obturation was performed. The tooth was then restored with a posterior composite resin core. The patient was advised a full coverage porcelain crown and was asymptomatic during the follow-up period of 1 month.

DISCUSSION

X-ray examination is an essential tool for the management of endodontic problems.

Corresponding Author: Gaurav Solanki E Mail ID: drgauravsolanki@yahoo.com
The amount of information gained from radiographs is limited by the fact that the 3 D anatomy of the area being radiographed is compressed into a 2 D image [5,6]. Newer methods like CBCT greatly help in accessing the internal root canal morphology. One advantage of CT scanning over the conventional radiograph is that it allows looking at multiple slices of tooth roots and their root canal systems [7,8]. Other advantages of CBCT scanning over the conventional CT scans are x-ray beam limitation rapid scan time and effective dose reduction. It uses a cone-shaped beam instead of the fan-shaped one used in regular CT scanners which makes it even better. Rapid scan time is because of its ability to acquire the whole 3 D volume of data in a single rotation [9,10].

**CONCLUSION**

The case report discusses the management of an unusual case of a maxillary first molar with three roots and seven canals and also tells us about the role of CBCT scanning as an analytic tool to distinguish the root canal morphology.

**REFERENCE**