Endodontic Treatment of Mandibular Canine with Two Canals – A Case Report
Ashwini Gaikwad

Abstract
The success of endodontic treatment depends on dentist’s knowledge about root canal morphology and its possible anatomic variations. The majority of mandibular canines have one root and root canal, but 15% may have two canals, and a smaller number may have two distinct roots. This paper reports a case of mandibular canines with two roots canals.

Key Words: Canal Configuration; Endodontic Treatment; Mandibular Canine.

Received on: 01/12/2010   Accepted on: 02/01/2011

Introduction
The anatomy of the root canal system determines the parameters under which the endodontic treatment will be accomplished and directly affects the success of the root canal treatment. (1) Many investigators have reported the anatomical variations associated with mandibular canines. Mandibular canines are recognized as usually having one root and one root canal in most cases, although approximately 15% may have two canals or sometimes two roots. (2)

An in Vitro study of permanent human mandibular canines show variation in canal configuration as Type I -70%, Type I I-4-12%, Type II I-4-6%, Type IV-4-10%, Type V-2%, straight canals in 53.84-60.71%, curved canals in 46-39%, apical foramen located centrally in 34.61-57.14%, & apical foramen located laterally in 65.38-42.85% of cases. (3) This paper discusses a case of an endodontic treatment performed on mandibular canine with two canals with two separate apical foramina.

Case Report
A 20 year old female patient reported to the author’s clinic with a chief complaint of pain in lower left anterior region for last six months. Pain was continuous in nature. Radiographic examination revealed grossly carious canine with two roots and two separate root canals (fig.1a). The access cavity was prepared with round diamond point bur and caries was excavated completely. After reaching the pulp chamber, the roof and overhanging dentin from lateral walls were removed. The orifices of labial and lingual canals were explored and canals were located with #8 & #10 k files (fig 1b). For the straight line access, GG drills were used with crown down method to enlarge the orifices. Irrigation was done using 5.25% sodium hypochlorite. Working length was estimated with an apex locator and confirmed by a radiograph. Both the canals were instrumented using K files till apical preparation #25 size. Canals were then prepared and then obturated with protaper gutta percha points and AHplus sealer (Figure 1c). For post endodontic restoration, post and core followed by a ceramic crown was preferred.

Discussion
The complex nature of root canal morphology of canines should be thoroughly understood. Good quality radiographs are taken at two different horizontal angulations are very helpful in providing the clues about the number of root canals a tooth can have. Interpretation of radiographs is equally important. During radiographic examination, a careful interpretation of periodontal ligament space could suggest the presence of an extra root or canal. Additional root canals if not detected, are a major reason for failure. (4) Nevertheless, manual exploration of root canal system with an endodontic file or explorer is a reliable way to identify the exact configuration of root canal, especially the number of foramina. (1)
Care should be taken at access opening because exploration and location of canal orifices helps to navigate the canal. Practice of extension of access cavity buco-lingually, is mandatory to find extra and hidden canals. Efforts should be made to locate the point where the root or the canals divide. The more apically a root canal divides, the more difficult is the case. (4) In this case, root canals were divided immediately below the pulp chamber, so, it became easy to carry out further treatment.

**Conclusion**

Successful and predictable endodontic treatment requires knowledge of biology, physiology and root canal anatomy. It also requires proper instruments and the knowledge of use these instruments effectively. Radiographs and magnification devices are important tools in diagnosing and treating such complicated cases.

**Author Affiliations:** Dr. Ashwini Gaikwad, Professor and Head, Dept. of Conservative Dentistry, YCCD&H, Ahmednagar, India.

**References**


**Address for Correspondence**

Dr. Ashwini Gaikwad, M.D.S., Professor and Head, Dept. of Conservative Dentistry, YCCD&H, Ahmednagar, India.

Email: jpdentdoc@gmail.com

Source of Support: Nil, Conflict of Interest: None Declared