ISSN: 0975-833X

Available online at http://www.journalcra.com

International Journal of Current Research
Vol. 8, Issue, 08, pp.37188-37189, August, 2016

INTERNATIONAL JOURNAL OF CURRENT RESEARCH

CASE REPORT

CBCT ANALYSIS- BIPRONGEDCUSPID WITH DUALISTIC CANAL

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ARTICLE INFO

Article History:
Received 22nd May, 2016
Received in revised form
19th June, 2016
Accepted 20th July, 2016
Published online 31st August, 2016

Key words:

Multiple Canals,
Vertucci's Classification,
Cuspid.

ABSTRACT

This is a case of an individual having bilateral canines with two canals. This is a rare entity and is often misdiagnosed leading to failure of endodontic treatment. The mandibular canine is usually considered a single-rooted tooth with a single root canal. However, twocanals and more occur rarely. This paper reports the case of a patient with bilateralmandibular canines with single root and two root canals.

Citation: Dr. Supratimtripathi, Dr.Tarun Gaur, Dr. Ramesh Chandra, Dr. Shailja Singh, Dr. HenaRahman, Dr. Jyoti Jain and Dr. Sanjay Jaiswal, 2016. "CBCT analysis- biprongedcuspid with dualistic canal", *International Journal of Current Research*, 8, (08), 37188-37189.

INTRODUCTION

Root canal system is an important paradigm which has varied parameters under which endodontic treatment should be accomplished with complete care which will directly affect the success of the root canal treatment (Soares *et al.,* 2009). Anomalous root and root canal morphology can be found associated with any tooth with varying degree and incidence (D'Arcangelo *et al.,* 2001; Sikri, 2003). Numerous studies have been conducted by various researchers which reveals, variation in the number of roots and canal pattern in mandibular canines. The occurrence of two roots and multiple canals is rare, ranging from 1% to 5% (Ouellet, 1995). Conventional radiographic imaging showed the anomaly but with no probable findings. Cone Beam Computed Tomography was used to assess the exact dimensions and extent of anomaly out of which three-dimensional images were constructed.

CASE REPORT

A 20 year old patient reported to the Department of Conservative Dentistry and Endodontics, Career Post Graduate Institute of Dental and Medical Sciences, Lucknow, UttarPradesh, India. The chief complaint of the patient was that she had pain with lower front portion of the mouth. On close observation clinically and of Intraoral periapical radiograph it was found that the patient had periapical lesion with both the central incisors. On detailed study it was observed that his cuspids had double canals. Cone bean Computed Tomography was planned in order to confirm the same finding.

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DISCUSSION

The initial radiograph isextremely important because it allows for the identification multiple roots, root canals and anatomical variations. Cone bean Computed Tomography showed the clear picture and full details (Figure 1,2).This picture shows the presence of double canals, one on the labial side and other one on the lingual aspect with both the canines. With respect to left mandibular canine the configuration of canal system is that of type II and with right canine it is type IV respectively. Bifurcations of the canal can be diagnosed at the cervical and middle thirds radiographically when angle does not superimpose the images (Victorino *et al.,* 2009). In the present case, identification of the second root was evident. Presence of single root with two canals inmandibular canines is observed rarely. Bilateral occurrence of cuspids with two canals is sporadic.

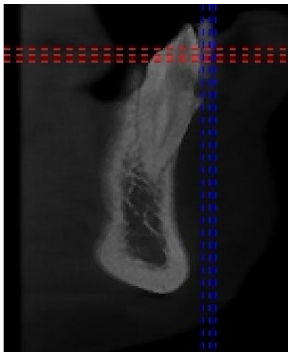

Figure 1. Mandibular left canine

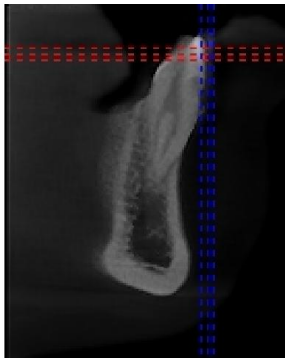

Figure 2. Mandibular right canine

Generally, the basic anatomy of canines comprises one root and one large canal centered through its axis, but approximately 15% of the case reported the presence of two canals in the mandibular canine; more rare is the report of the presence of two different angulated roots (Andrei *et al.,* 2011), observing the prevalence reported in the literature between 1.7% (Pécora *et al.,* 1993) to 5% (Ouellet, 1995). (Bilateral Two-rooted Mandibular Canines in the Same Individual, 2013) Quelletdescribed the occurrence of two roots and two canals in mandibular canines in only 5% of allanalyzed teeth (Green, 1973). A previous study that investigated the internal anatomy, direction and number of roots and size of 830 extracted human mandibular canines found only 1.7% of the teeth with two roots and separate two canals (D'Arcangelo *et al.,* 2001). Vertucci observed only 6 teeth with Type IV canal configuration (two s eparate and distinct canals from the pulp chamber to the apex) and14% of mandibular canine having Type II canals in mandibular canine (Permanentmandibular canine with two roots and two root canals, 2016).

Conclusion

This report presents the rare finding of mandibular canine with single root and two root canal systems. This case report is presented to increase the awareness of clinicians that variations in root canal anatomy may be present in any anterior tooth group. Clinicians must be aware of potential anatomical variations in the teeth they are treating, and should never assume that the root canal systems are simple.

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