

Endodontic Treatment of a Maxillary Second Molar with Two Separate Palatal Roots: A Case Report

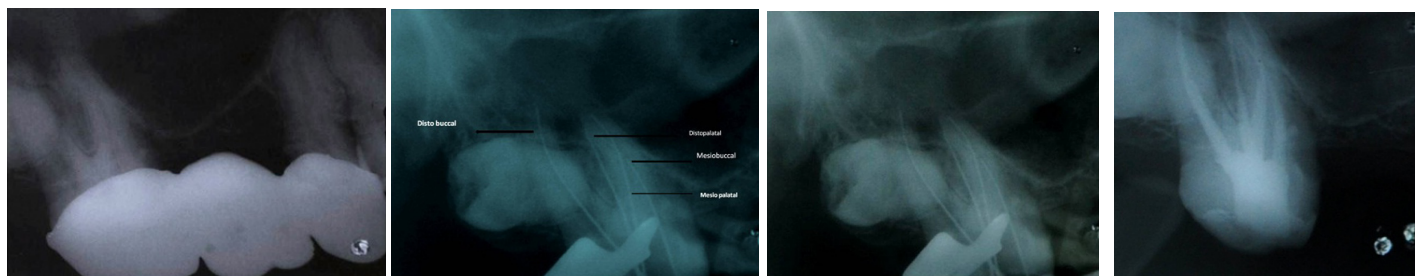
BONNY PAUL¹, KAVITA DUBE²**Keywords:** Additional canal, Palatal root, Maxillary second molar

The incidence of a two palatal rooted maxillary second molar has rarely been seen in literature [1]. Libfeld and Rotstein, in a radiographic survey done on 1200 teeth, reported a 0.4% incidence of four rooted maxillary second molars. Christie reported 14 cases of maxillary second molars with two palatal roots in a period of 40 years. Slowey reported a maxillary molar with two palatal roots [2]. A precise radiographic examination alerts the clinician to the presence of a varied root canal anatomy. A surgical operating microscope has been found to be particularly useful, as it gives the clinician the opportunity to distinguish microstructures that are not distinctly seen with the naked eye [3].

A 32-year-old, female with a non contributory medical history was referred to the Department of Endodontics, Hitkarini Dental College, Jabalpur, with spontaneous pain in maxillary right posterior teeth, which aggravated on chewing and thermal stimuli since the past 3 days. Clinical examination revealed a fixed partial denture (FDP) involving second premolar and second molar as abutments [Table/Fig-1]. Cold vitality testing done on maxillary second molar caused severe lingering pain. The FPD was removed under local anaesthesia and the teeth were temporized. Second molar still revealed severe tenderness to percussion and a premature response to electric

stimulation on the next day. A diagnosis of symptomatic irreversible pulpitis with apical periodontitis was made. An access cavity was prepared under local anaesthesia after rubber dam isolation. A clinical examination done with a DG 16 explorer revealed four orifices (mesioibuccal, distobuccal, mesiopallatal and distopalatal). The access cavity was modified to a square shape, to clearly expose the distopalatal orifice. The working length was determined using an apex locator (Root ZX; Morita). Multiple radiographs taken [Table/Fig-2 and 3], confirmed the presence of four separate roots. The case was classified under Type 3 Christie et al's. classification. A biomechanical preparation was made by using crown down technique. The middle and apical third of the teeth were instrumented using flexfiles (Dentsply Maillefer) while irrigating with normal saline and 3% NaOCl. The canals were dried and obturated using lateral condensation technique with guttapercha and AHplus (Dentsply) sealer [Table/Fig-4]. A recall after one week showed that the patient was asymptomatic.

The prevalence of maxillary second molar with two palatal roots is very rare. However, clinicians ought to be aware of the possibilities, as nontreatment of one canal could lead to endodontic failure.



[Table/Fig-1]: Pre Operative Radiograph

[Table/Fig-2]: Diagnostic radiograph 1

[Table/Fig-3]: Diagnostic Radiograph 2

[Table/Fig-4]: Post obturation radiograph

REFERENCES

- [1] Christie WH, Peikoff MD, Fogel HM . Maxillary molars with two palatal roots: a retrospective clinical study. *J Endod.* 1991; 17: 80-4.
- [2] Libfeld H, Rostein I . Incidence of four rooted maxillary second molars: literature review and radiography survey of 1200 teeth. *J. Endod.* 1989; 15:129-31.
- [3] Slowey R. Radiographic aids in the detection of extra root canal. *Oral Surg Oral Med Oral Radiol Endod.* 1974; 28:419 -25.

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