

## MANAGEMENT OF ENIGMATIC PREMOLAR: A CASE REPORT

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### ABSTRACT:

Mandibular premolars are considered to be the most enigmatic teeth since they show lot of anatomical variations. Pyramid of successful endodontic treatment has optimal biomechanical preparation followed by three dimensional obturation at its base. 2.5% incidence of second canal was reported by Vertucci in his studies on extracted teeth.<sup>[1]</sup> This case report depicts treatment of mandibular premolar with two canals.

**Keywords:** Enigmatic premolar, case-report

### INTRODUCTION:

Thorough knowledge of root canal anatomy is mandatory for appropriate cleaning and shaping of the root canal system. Cases tend to fail owing to missed canals. Intraoral radiograph and ability to interpret it are utmost important before starting any case for endodontic treatment. 11.7% and 0.4% occurrence of two and three canals respectively were reported by Zilich and Dawson in their studies.<sup>[2]</sup> It was stated by Ingle that variations in canal anatomy of mandibular first premolar might be the reason for increased failure of endodontic treatment. Also it was reported by Slowey that mandibular premolars are difficult teeth to treat endodontically due to vast variation in its canal morphology.<sup>[3]</sup>

### CASE DETAIL:

A 64 year old patient was referred to the department of conservative dentistry and endodontics from department of prosthodontics and crown and bridge for intentional root canal treatment in 34 since the patient reported with the chief complain of missing teeth in lower left back tooth region since 2 months. 34 was seen to be supra-erupted due to missing antagonist. Patient had no contributory medical history. Pulp vitality test was conducted and the tooth was vital. The patient was infiltrated with 2% Lignocaine hydrochloride in 1:1,00,000 adrenaline.

Access opening was done and explored with endodontic explorer. Two openings were found. Working length was established with #15 k-file (Figure 2). On

changing the angulation of x-ray tube, it was observed that the mandibular first premolar had two roots and two canals. Cleaning and shaping procedures were carried out with Protaper hand files upto F2. 2.5% Sodium hypochlorite and Normal saline were used as irrigants. Master cone X-ray was taken and the obturation was carried out with Protaper F2 gutta percha cones and zinc oxide eugenol sealer (Figure 3 and 4). Post endodontic restoration was done and patient was recalled for a follow up after 1 week.

### DISCUSSION:

Mandibular premolars may be the most difficult teeth to treat endodontically in oral cavity. The most probable reason is the failure of clinicians to recognize the numerous variations in canal morphology that may exist in these teeth. If the entire root canal system is not located and

properly treated, flare-ups and / or failures may be encountered.<sup>[4]</sup>

In the present case report, having failed to recognize the presence of two roots and two canals in mandibular first premolar could lead to failure of endodontic treatment followed by failure of prosthesis which is to be placed over it with 34 acting as an abutment tooth.

Taking intra-oral radiographs at different angulations hence prove to be beneficial in such cases.

### CONCLUSION:

As it is truly said, "Eyes see what the mind knows" hence making it imperative for an endodontist to have an in-depth knowledge of possible canal variations especially in such enigmatic teeth as mandibular first premolars and treat them successfully.

### REFERENCES:

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**FIGURES:**

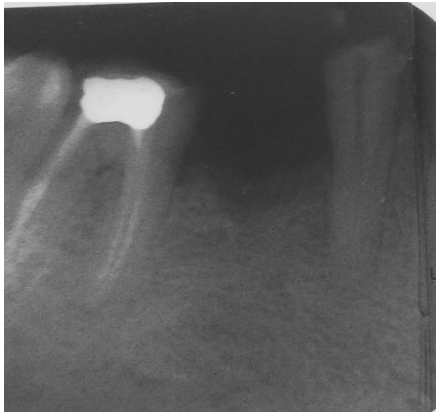


Figure 1: Preoperative Xray



Figure 3: Master Cone X-ray



Figure 2: Working length X-ray



Figure 4: Post-obturation X-ray