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Concomittant Bilateral Radix Entomolaris with Dens Evaginatus: A Rare Dental Anomaly: Case Report

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Abstract: A major anatomical variant of two rooted mandibular first molar is a tooth with an additional root (Radix Entomolaris and Radix Paramolaris). It is a rare macrostructure which is a radiographic diagnosis. Proper angulations and interpretations of radiographs help to identify pulp chamber and root anatomy. So a proper knowledge and understanding of this unusual anatomical variation can contribute to the successful outome of any treatment. The authors present here an unusual combination of dens evaginatus and bilateral radix entomolaris in a young girl. To confirm the diagnosis in this patient an IOPA and OPG was done with respect to lower mandibular first molar. Radiographs revealed an extra root present disto lingualy bilaterally in mandibular first molar.
Keywords: Radix Entomolaris, Radix Paramolaris, mandibular, radiographs

INTRODUCTION

Mandibular first molar can display several anatomical variations [1, 2] in the number of root canals, number of root, accessory cusp etc. Major variant in this root is the presence of an additional root which is found distolingually. This macrostructure was first mentioned in the literature by Carabelli in 1844 and is called Radix Entomolaris [3, 4]. Radix paramolaris is known for the mesiobuccal root which was described by Bolk in 1915 [5, 6]. Dens evaginatus represents extra cusp which is found most frequently in premolars. It is composed of enamel covering over a dentine core with a fine extension of pulpal tissue [7]. It occurs almost exclusively among people of mongoloid racial stock such as Chinese, Japnese, Eskimos and to a lesser extent the Malaysians, American Indians and the Thai [8]. It was named as Leongs premolar after M.O. Leongs who first draw attention to the anomalous premolar at a meeting of the Malayan Dental Association in 1946 [9].

CASE REPORT

A 19 year old North Indian female patient came to the dental OPD of Oral Medicine and Radiology of Jaipur Dental College, Rajasthan with the chief complaint of pain in the right upper back tooth region since one month. Medical and family history was non- contributory. There was no history of consanguineous marriage. Patient has a past dental history of restoration one year back in left maxillary first molar. General physical examination was non contributory. On intraoral examination a small, round occlusal tubercle, measuring approximately about 3 *3 mm was present between the buccal and lingual cusps of right mandibular second premolar (Fig. 1). It was diagnosed as dens evaginatus. Patient had otherwise a good oral hygiene, except mild amount of stains. With the patient's consent radiographic examination were done. OPG revealed grossly decayed tooth with respect to right maxillary first molar, RCT with respect to left maxillary first molar and an additional well formed root were evident distolingualy in IOPA with respect to mandibular first molar bilaterally (Fig. 2, 3 & 4). To confirm the diagnosis IOPA radiograph were taken at different angulations with respect to lower first molars. Study cast were made. Oral prophylaxis was advised and she has been followed up for other treatment.

Fig. 1: Intraoral picture shows dens evaginatus with second premolar

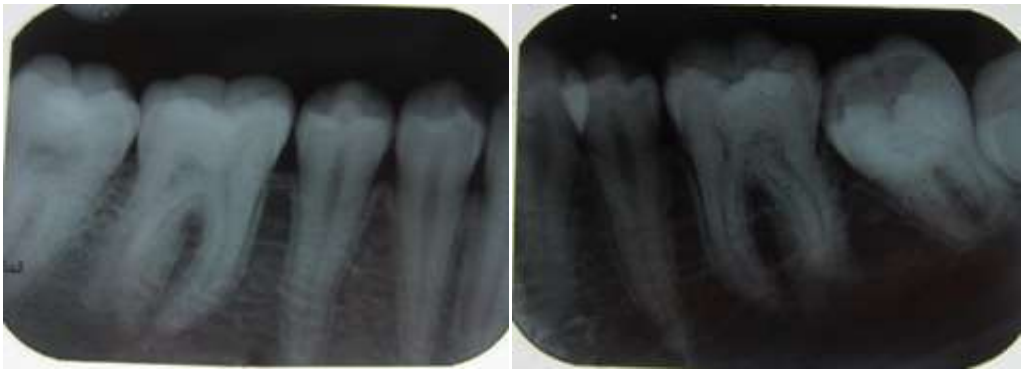

Fig. 2, 3: IOPA showing bilaterally extra root disto lingualy

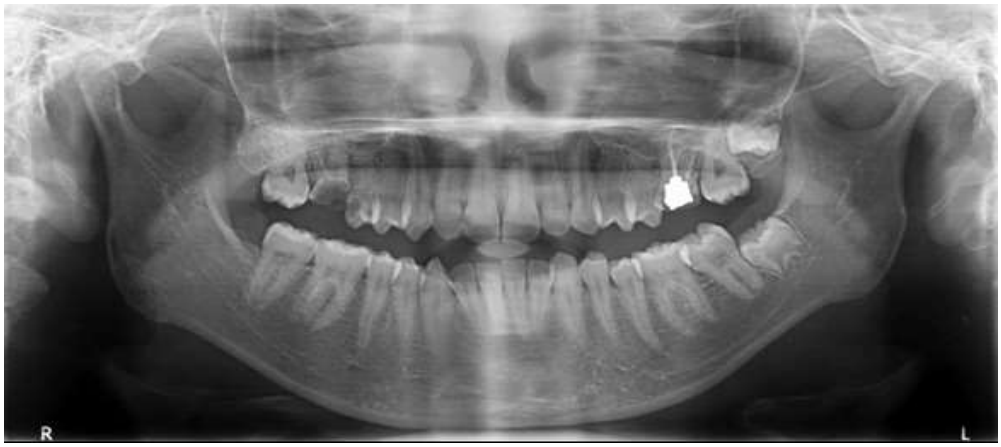

Fig. 4: OPG showing grossly decayed tooth and RCT with respect to right maxillary first molar and left maxillary first molar, impacted left mandibular third molar and extra root disto lingual to mandibular first molar

DISCUSSION

Authors in this article present an unusual combination of bilateral radix entomolaris with dens evaginatus. This is a rare occurence seldom reported in the English literature.

Calberson *et al*. [10] classified RE into 4 types and De Moor *et al*. [3] classified REs into types I–III. RE or extradistolingual root of permanent mandibular first molars is curved buccolingually and typically smaller than the distobuccal root which could be confirmed by working length determination [5, 11]. RE can be classified into four different types depending on the location of its cervical part [5] –

Type A

The RE is located lingually to the distal root complex which has two cone-shaped macrostructures.

Type B

The RE is located lingually to the distal root complex which has one cone-shaped macrostructures.

Type C

The RE is located lingually to the mesial root Complex.

Type AC

The RE is located lingually between the mesial and distal root complexes.

There authors have reported the occurrence of supernumerary roots, both permanent and primary mandibular molars of different populations. But studies are few in number regarding the prevalence of extra root variants in Indian population [12]. Garg *et al.* [13] have found 5% prevalence of three-rooted permanent Mandibular first molars in Indian adult patients.

Most of the three-rooted mandibular fist molars in Asians show a bilateral occurrence [14-16]. The incidences of bilateral occurrence were 67.8%, 64.0%, and 39.3% for the first permanent, second primary and first primary molars, respectively, reported in a study [17].

Dens evaginatus is a developmental anomaly that manifests as a tubercle that emerges from the surface of the affected tooth, mostly frequently occur in

the premolars. Great racial differences in occurrence are observed [18].

Dens evaginatus is clinically important; as fracture or wear of the tubercle could lead to pulp necrosis before root formation is complete [18]. But in the present case the tubercle showed no morphological changes so, as such no treatment was indicated and she was called for regular evaluation of the same.

Many prophylactic treatments have been proposed for dens evaginatus that include selective grinding of the tubercles, placement of restorations, application of resin to reinforce the tubercles and even partial pulpotomy [19].

CONCLUSION

Radix entomolaris bilateral with dens evaginatus is a rare dental anomaly. Clinicians should be aware of this unusual root morphology of mandibular first molar in Indian populations.

The initial diagnosis of a Radix entomolaris before root canal treatment is important to facilitate the endodontic procedure, and to avoid 'missed' canals and also in case of extraction [20]. Canal configurations can be well understood conventional and advanced imaging for successful outcome of the treatment.

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