BIFID ROOT IN A MANDIBULAR SECOND PREMOLAR
A CASE REPORT

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ABSTRACT: Congenital and developmental odontogenic anomalies encountered in dental practice are usually evident clinically or may be an incidental finding on dental radiographs. We present such a case, where a mandibular second premolar had a bifid root and was asymptomatic.

INTRODUCTION

The roots of teeth "..! in shape, size and number1. Most of these abnormalities may not be clinically evident but could be detected on a radiograph taken while investigating other clinical disease developmenal odontogenic abnormalities that involve only the roots are few in number2.3. Normally, the lower first premolars have single root unlike the upper first premolars which have two roots4. Various malformations associated with the tooth include concrescence, taurodontism, dilaceration and enamel pearls2.1. This report draws attention to the unusual appearance of lower second premolar with a bifid root.

CASE REPORT

A 40 year old male had pain in the area of the mandibular right first premolar of three days duration. Patient was sensitive to cool water. There was no other positive history. Clinical examination showed that the tooth was moderately inflamed. The mandibular right second premolar as well as the molars appeared sound and there was no evidence of discoloration. The tooth was vital with no history of any trauma.

A periapical radiograph of right lower posterior region was taken and it showed extensive angular bone loss in relation to first premolar with resorption of root apex, bifid roots in second premolar and furcation bone loss in relation to first molar (Fig.1). This bifid root in relation to lower second premolar provoked our interest to report an unusual appearance of mandibular second premolar.

Fig 1: Radiograph showing extensive angular bone loss with root resorption in the mandibular first premolar and bifid root in the second premolar.
The patient was advised scaling of teeth with extraction of the first premolar. The patient seems to be doing fine at the end of second follow-up.

DISCUSSION

Developmental odontogenic abnormalities like dens in dente, fusion, gemination, lingual root grooves, enamel projections are quite common.

Hertwigs epithelial root sheath functions to determine the number, size and shape of the roots to be formed. This root sheath initiates dentin formation as the mesenchymal cells of the primitive pulp adjacent to the inner epithelial cells of the sheath differentiate into odontoblasts and lay down dentin. Thus the formation of dentin follows the lengthening of the root sheath1·5. At the same time the connective tissue of the dental sac surrounding the root sheath proliferates and divides the continuous double epithelial layer into a net work of epithelial strands. As the epithelium moves away from the surface, the connective tissue cells come in contact with the outer surface of the dentin and differentiate into cementoblasts that deposit a layer of cementum onto the surface of dentin and thus root formation gets completed.

At times there could be developmental disturbance in the differentiation of the Hertwigs epithelial root sheath resulting in a malformed root or bifid root in a single rooted tooth. This must have possibly happened in our case.

Congenital and developmental odontogenic abnormalities can cause serious treatment problems. Pulpal or periodontal problems resulting from these anomalies may necessitate extractions. In this case, the developmental odontogenic abnormality was only an incidental radiological finding requiring no active dental intervention.

REFERENCES