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Case Report

Extremely Rare Case of Maximum Dilaceration of Maxillary Second Premolar Tooth- Case Report

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ABSTRACT:
Trauma to primary teeth can lead to devastating sequels in development of permanent successors. The disturbance may range from enamel hypoplasia and/or hypo-calcification to arrest of dental bud development. Dilaceration is the angulation of root or crown in a =n aberrant direction, which poses problems during extraction and endodontic treatment. Here we present a case on a rare finding in a 26-year-old male patient who had a severe root dilaceration of maxillary second premolar tooth, which had approx. 117° palatal inclination.
Key words: Dilaceration, Endodontic challenge, trauma, developmental anomaly.

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INTRODUCTION

Trauma to primary teeth could leave serious consequences on permanent teeth. Some of these consequences include sequestration of permanent tooth germ, partial or complete arrest of root formation, root dilacerations, crown dilacerations, developmental disturbances of enamel (hypo-calcification and/or hypoplasia) and eruption disturbances etc.[1]

Dilaceration is the result of a developmental anomaly in which there has been an abrupt change in the axial inclination between the crown and the root of a tooth. Two possible causes of dilaceration are trauma and developmental disturbances. Dilaceration can be seen in both the permanent and deciduous dentitions, and it is more commonly found in posterior teeth and in the maxilla. Diagnosis, endodontic access cavity preparation, root canal preparation and filling, and other related treatments might be complicated by the presence of a dilaceration.[2]

Erlich, Pereira, Panella when examining all permanent teeth, except the third molars, said to be the permanent upper lateral incisors the most affected, followed by the upper second premolars and lower

first premolars.[3] There are some challenges in diagnosis and treatment planning of teeth with dilacerated crowns. The main challenge is particular morphology of such cases; therefore, a multidisciplinary approach is necessary.[4] Also, to achieve a favourable outcome, an astute clinician should consider different aspects including taking a proper dental history and precise clinical examination in addition to appropriate radiography.[5]

Severely dilacerated teeth pose a great hindrance to extraction as well. Dilacerated teeth which undergo extraction, there is an obvious need to replace missing teeth with dental implants, which is more common and predictable treatment strategy but concern should also be placed on growing adults for esthetic results.[6]

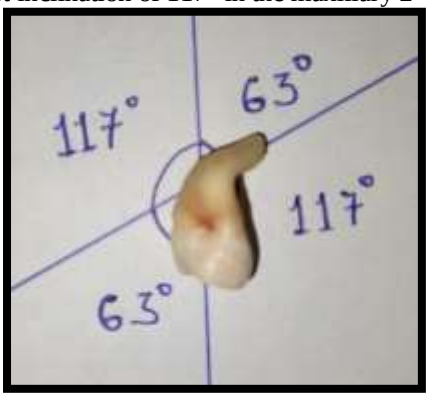
CASE DETAILS

A 26-year-old male patient reported to our clinic with the chief complaint of diffuse pain due to decayed tooth in the right upper posterior quadrant. On clinical examination, it was observed that 16 was grossly decayed and 15 was palatally placed. (Figure1) On radiographic examination, clinical findings were confirmed, where 16 had apical periodontitis and extraction was planned for both15 and 16. (Figure 2) An FPD was planned for the replacing missing teeth extending from 14 to 17. After extraction, Gross specimen of 15 revealed a severe dilaceration (approx. 117°) of the root which was palatally inclined. (Figure 3)

Figure 1- shows 16 which is grossly decayed and 15 which is palatally placed. 15 revealed to have severe dilaceration of the root.

Figure 2- IOPA shows grossly decayed 16 and extreme dilaceration of the root of 15.

Figure 3- shows extreme palatal root inclination of 117° in the maxillary 2nd premolar specimen.



DISCUSSION

An anomalous tooth poses definite diagnostic and treatment challenge to the clinician. The extent of malformation in permanent tooth germ is highly related to its developmental stage and to the severity and type of trauma sustained by the primary teeth. Injury to the deciduous predecessor might lead to root or crown dilaceration in permanent dentition in which the calcified portion of the tooth changes position and the remainder of the tooth is formed at an angulation.[7] Also, some authors proposed an idiopathic developmental disturbance as the possible cause in cases that have no clear evidence of traumatic injury.[8]

According to some authors, a tooth is considered to have dilaceration to ward mesial or distal direction if there is a 90-degree angle or greater along the axis of the tooth or root, whereas according to Chohayeb, dilaceration is a deviation from the normal axis of the tooth by 20 degrees or more in the apical part of the root.[2]

While it may be clinically detected by palpation high in the labial sulcus or hard palate; periapical radiography is the best method to detect this abnormal condition and is characteristic. The mesial or distal dilaceration is obviously detectable in periapical radiographs but buccal or lingual dilaceration appears as a round opaque region with radiolucent area in its center (bull's eye appearance).[9]

Risk of procedural accident during endodontic procedure increases in case of severe dilaceration. Modification in access cavity preparation is advocated i.e. "Shamrock preparation" (cloverleaf appearance) where an entire access cavity wall need not be extended, rather only a portion of wall is extended in the event of instrument impingement in case of dilacerated root.[10]

Some studies reported higher incidence of this dental anomaly in patients suffering from specific syndromes like Ehlers-Danlos syndrome or Smith-Magenis syndrome. Unwanted resorption of the root might happen if orthodontic forces are introduced to these teeth. In case of extraction of these teeth, horizontal or vertical bone loss may also occur.[9]

CONCLUSION

Knowledge of dilaceration prevalence and early diagnosis can help dentists to prevent procedural errors and improve the success rate by referring these cases to the specialists.

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