



DILACERATION OF A MANDIBULAR CENTRAL INCISOR – A CASE REPORT

Clinical Research

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ABSTRACT

Traumatic injury to primary teeth can result in a wide range of disturbances to their permanent successors. Type and severity of the disturbance depends on the stage of tooth development (age at the time of injury) relationship of the permanent teeth to roots of primary tooth and direction and degree of force. This is a rare condition, representing only 3% of the total of injuries to developing teeth and usually occurs in permanent mandibular incisors because of the close proximity of their tooth germs to the primary incisors which are more susceptible to trauma. This paper presents an endodontically managed mandibular central incisor dilaceration in a nine year old male patient.

KEYWORDS

Dilaceration, Endodontic treatment, Trauma

INTRODUCTION

The term dilacerations was first used by Tomes in 1848 and it is defined as a deviation or bend in the linear relationship of a crown of a tooth to its root. According to this definition, dilaceration is thus distinguished from the rarely used term flexion which is defined as a tooth with a hooked or bent root. Moreau used the term scorpion tooth for this condition.¹ Tooth dilaceration might present in various ways including non-eruption of the affected tooth, prolonged retention of the primary predecessor tooth and apical foramen fenestration of the labial cortical plate or it can be asymptomatic.²

Most authorities agree that there are two possible causes of dilaceration. The most widely accepted cause is mechanical trauma to the primary predecessor tooth. The calcified portion of the permanent tooth germ is displaced in such way that the remainder of the permanent tooth germ forms at an angle to it.³ Although the prevalence of traumatic injuries to the primary dentition ranges from 11% to 30%, the incidence of dilacerated permanent teeth is very low and disproportionate to the high prevalence of trauma. An idiopathic developmental disturbance is proposed as another possible cause, in case that have no clear evidence of traumatic injury.⁴

Other possible contributing factors that have been include scar formation, developmental anomaly of the primary tooth germ, facial clefting, advanced root infections, ectopic development of the tooth germ and lack of space, the effect of anatomic structures, the presence of adjacent cyst, tumour or odontogenic hamartoma, orotracheal intubation and laryngoscopy, mechanical interference with eruption, tooth transplantation, extraction of primary teeth and hereditary factors.⁵ This paper presents a case report of a nine year old patient with endodontically treated dilacerated mandibular central incisor tooth.

CASE REPORT

A nine year old boy reported to the Department of Pedodontics with a chief complaint of unusual shape of lower right front tooth. History revealed that the child had a history of trauma at the age of 2 years. No dental treatment was taken for the same. Patient was asymptomatic and his familial and medical history were non-contributory.

Intraoral examination revealed mixed dentition with a local curvature of the longitudinal axis of the permanent lower central incisor. Besides periapical radiographs, occlusal and panoramic radiographs may more clearly identify the position and extent of mandibular central incisor dilaceration. A diagnosis of crown dilacerations was made on the basis of history, clinical and radiographic findings.



Fig-1 Dilaceration of crown in 41

Initially oral prophylaxis followed by oral hygiene instructions was done. The mandibular central incisor was endodontically treated and crown was made to restore esthetics and phonetics. A six months follow-up presented with no signs and symptoms. The patient continued to be on periodic evaluation.

DISCUSSION

Developmental disturbances in permanent teeth which are caused by trauma to their predecessors, have a frequency that ranges from 12% to 74%. The highest frequency of malformations was found following subluxation injuries.⁶

Among the luxation injuries, intrusion injuries were associated with the more severe malformation. The severity depends on the age of the child at the time of injury, the grade of root resorption of the traumatized deciduous tooth, the type and extension of the injury and the developmental stage of the successor at the time of injury.⁷

Among the developmental disturbances, impaction and alteration in tooth morphology represent a clinical challenge with regards to diagnosis, treatment plan and prognosis.⁸ Crown dilaceration can result from an intrusion of the primary incisor when a child is around the age of 2 years, when half the crown is already formed. Subsequent to invasion of the partially formed follicle by the apex of the primary tooth, the permanent tooth crown twists lingually over the papilla. The displaced enamel epithelium may become activated in the new position forming a peculiar shape of deformed enamel projecting into the pulp canal or externally at the crown-root junction.⁹

Teeth with dilacerated crowns may erupt normally or buccally or

palatally/ lingually placed. Unfortunately, even without evidence of caries, they might later develop pulpal necrosis, followed by apical periodontitis and chronic abscess. To avoid such complications, the dilacerated portion of the crown should be removed after its eruption and a provisional crown should be placed until final restoration is made.¹⁰ In our case the endodontic management followed by crown was made to recover both esthetics and function. In other cases failure to erupt requires surgical exposure and orthodontic alignment followed by an esthetic restoration.

Dilaceration might occur anywhere along the root length or just at the root apex and this depends on the root formation extent by the time of injury. Depending on the position of the tooth and severity of dilaceration, the non-eruption of the affected tooth into the oral cavity, the primary predecessor tooth prolonged retention or labial cortical plate apical fenestration may occur.¹¹

Many dilacerated teeth especially anterior mandibular teeth, will be pulpless and infected with periapical inflammatory lesions. Hence the outcome of root canal treatment will depend largely on complete biomechanical debridement of the canals and the elimination of the microorganisms from the root canal system.¹²

The prognosis of dilacerated teeth that require endodontic treatment varies according to the severity of the deformity and the practitioners skills. It will also depend on many other factors such as the reason why endodontic treatment was required, how much tooth structure remains, and the prognosis for any restoration that is placed on the tooth. It is difficult to predict the prognosis before treatment and in many cases, the prognosis will not become evident until the practitioner has undertaken initial endodontic treatment to determine whether the canal can be negotiated completely and then adequately disinfected and filled.¹³

CONCLUSION

Dilaceration of teeth is a rare phenomenon, but they do pose a number of diagnostic management and prognostic challenges to dental practitioners. The presence of a dilaceration must be identified before treatment and this can be achieved by a thorough clinical and radiographic examination. An interdisciplinary approach is considered necessary to ensure an optimal outcome.

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