

# Management of Unerupted Dilacerated Central Incisor– A Case Report

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## ABSTRACT

Dilaceration refers to an angulation that may occur anywhere along the length of the tooth, that is, its crown, cemento-enamel junction, along the root, or by only involving the apex of the root. Cases of dilacerations have been treated by 2 different approaches: first is surgical exposure with orthodontic traction vs extraction and prosthetic replacement with fixed bridge or implant placement. In this case, first orthodontic traction was carried out, which failed and so finally surgical extraction of impacted tooth was done followed by prosthetic rehabilitation.

**KEYWORDS:** Impacted, Dilaceration, Rehabilitation

## INTRODUCTION

Eruption of a tooth refers to the change in position of tooth from the earliest time of development going through the successive stages until its emergence in the oral cavity.<sup>1</sup> The shape or position of tooth may get changed even before it erupts into the oral cavity and it sometimes may remain unerupted. The factors responsible for noneruption of tooth are unknown except in cases which the teeth are impacted. Dilacerations is one of the most common reasons for noneruption of tooth.<sup>2</sup>

Dilaceration refers to an angulation that may occur anywhere along the length of the tooth, that is, its crown, cemento-enamel junction, along the root, or by only involving the apex.<sup>3</sup> The condition commonly occurs due to trauma to the deciduous predecessor or extraction of deciduous tooth when the formation of the permanent tooth is incomplete so the calcified portion of the tooth changes its position and remainder of the tooth is formed at an angulation. Also, some author's proposed and idiopathic developmental disturbance as possible cause in cases that have no clear evidence of traumatic injury.<sup>4</sup>

The frequency of impaction has been found in the range of 0.006% to 0.2% in case of maxillary central incisor.<sup>5</sup> Dilacerations commonly affects maxillary central incisor probably because of the propensity for trauma.<sup>6</sup> Prognosis depends on early diagnosis, position, direction of the impacted tooth, degree of root formation, the amount of dilaceration, availability of space for the impacted tooth and patient motivation.<sup>7</sup>

Machtei et al also include the condition of the periodontium.<sup>8</sup> McNamara et al underlined significance of the posttraumatic status of the Hertwig's epithelial root sheath for a successful outcome.<sup>10</sup> Cases of dilacerations

have been treated by 2 different approaches: first is surgical exposure of the tooth followed by orthodontic traction or extraction followed by prosthetic replacement with fixed bridge or implant. The most commonly used, but often complex, technique is the surgical exposure of the tooth and its orthodontic traction into the dental arch.<sup>6</sup>

## CASE REPORT

Reported here is a case of a 14-year-old male child who came with a complaint of missing maxillary anterior tooth. The child was physically healthy, had a history of dental trauma during childhood and had undergone dental treatment for maxillary left lateral incisor which was left uncompleted. Examination of oral cavity revealed a healthy dental status with permanent dentition and showed a missing maxillary left central incisor and fractured maxillary lateral incisors. The occlusal radiograph revealed that the maxillary left central incisor was vertically placed with dilacerated root. Radiograph showed lack of space between maxillary right central incisor and maxillary left lateral incisor. [Figure 1]



Figure 1

How to cite this article:

Bhadoria N, Maran S, Kukreja R, Nehete A, Aphale H. Management of Unerupted Dilacerated Central Incisor – A Case Report. *Int J Oral Health Med Res* 2016;2(5):106-108.

Considering the unfavourable position of the tooth, the patient, and the parent were both informed if orthodontic treatment is unsuccessful then the next option is extraction and prosthetic replacement of the tooth.

A combined surgical-orthodontic approach was used to treat the dilacerated tooth. Surgical exposure of the crown of the impacted incisor provided access for coronal bracket attachment. Orthodontic traction with a fixed appliance was done, and kept for follow up for 12 months [Figure 2]. But the results were not favourable because of the acute bend of the root. So surgical extraction of impacted central incisor was planned.



Figure 2

Presurgical investigations were done; surgery was done under local anaesthesia. The tooth was extracted with great care so as to remove it in toto [Figure 3] and sutures were placed. 22 and 12 were diagnosed to be non vital due to trauma, so root canal therapy was performed followed by placement of a fixed prosthesis. As the patient was highly conscious about the aesthetics after root canal therapy, crown preparation was done on 12 and 22, crown and bridge was fabricated and delivered to the patient [Figure 4]. The patient was explained that the gingival margins may get exposed so regular follow-ups are necessary. Follow up was done in every 3 months for a year.



Figure 3



Figure 4

## CONCLUSION

Impacted maxillary permanent central incisor due to dilacerations is rare and has impact on aesthetics, phonetics, mastication, and psychology in young patients.<sup>5</sup>

Dilaceration is a deformity that results from a disturbance in relationship between uncalcified and already calcified portions of a developing tooth. Trauma is considered as the main etiological factor.<sup>7</sup>

The sequelae of impacted permanent teeth is migration of adjacent teeth leading to space loss which results in insufficient space for the movement of impacted tooth in desired position.<sup>8</sup> Dilacerations are clinically classified into crown dilacerations, crown-root dilacerations, and root dilacerations according to their location. Four treatment options exist for the impacted dilacerated teeth: observation, intervention, relocation and extraction.<sup>9</sup> Ted Mc Namara et al have suggested that successful outcome of dilacerated incisor is increased when the treatment is started early; it results in redirection of epithelial root sheath so the root develops in the correct spatial relation of the aligned crown.<sup>10</sup> The patient presented here was in permanent dentition with completely formed root with acute dilaceration, which was a challenge for the clinicians.

Because of the acute bend of the root the first line of treatment that is surgical exposure followed by orthodontic traction and repositioning failed, hence extraction was planned followed by replacement with a fixed prosthesis. According to Uematsu et al the orthodontic traction of offending tooth should be performed initially even if extraction and subsequent restoration of such teeth is planned to maintain proper bone height and to improve aesthetics.<sup>11</sup>

Therefore, early consultation with an orthodontist should be stressed in order to make a choice of either ligation and orthodontic treatment or extraction followed by orthodontic closure of diastema or prosthetic replacement.

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Source of Support: Nil  
Conflict of Interest: Nil