

Orthodontic Management of Multiple Dilacerations

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ABSTRACT

Orthodontic alignment of un-erupted dilacerated teeth is challenging, as the bent roots resist forces applied to move them through the bone. Various treatment options are now available to treat this condition including providing prosthesis after extractions and apicectomies. However, to maintain alveolar bone in the area of the un-erupted tooth, especially if the involved tooth is in the anterior segment, the ideal treatment would be to try and bring the tooth in the arch orthodontically. Treatment requires increased time duration, compliance of the patient, and consistent force mechanics. This case report is of a 9-year boy with un-erupted and dilacerated teeth. Orthodontic treatment of prolonged duration was provided to bring these teeth into the arch, improving the esthetics and function.

Key Words: Dilaceration. Un-erupted teeth. Orthodontic treatment.

INTRODUCTION

Impaction of teeth occurs due to a number of causes, one of which is dilaceration, and it requires a complex and prolonged orthodontic treatment.^{1,2} Dilaceration is a distortion of a tooth, causing an angulation between the crown and the root. The etiology may include trauma and ectopic tooth development. The reported incidence of dilacerations in local literature is 4.3%.³

The orthodontic treatment of dilacerations varies according to the age of the patient, including surgical extraction of the tooth along with space closure, or prosthetic rehabilitation, and orthodontic treatment with apicectomy. Severity of dilacerations may dictate a complex and prolonged treatment plan and unpredictable outcome.⁴

This case presented with multiple impacted teeth with dilacerations, and was managed with orthodontic traction.

CASE REPORT

A 9-year male patient presented with a complaint of missing and mal-aligned teeth. Clinical examination revealed missing right upper central and lateral incisors and lower left canine and first molar. Radiographically, right upper central, lateral incisor, canine, and lower left canines were impacted. No specific cause was determined on OPG or on history (Figure 1) for the un-erupted teeth; however, periapical X-ray (Figure 2) done for the upper right central, showed dilaceration in apical

third. Patient was informed about the possibility of prolonged treatment due to presence of dilacerations. Fixed comprehensive treatment was initiated. After initial



Figure 1: Preoperative records: (A) Orthopantomogram; (B) Extra-oral view; (C) Right side in occlusion; (D) Maxillary occlusal view; (E) Frontal occlusion; (F) Peri-apical X-ray showing dilaceration of upper right central incisor.

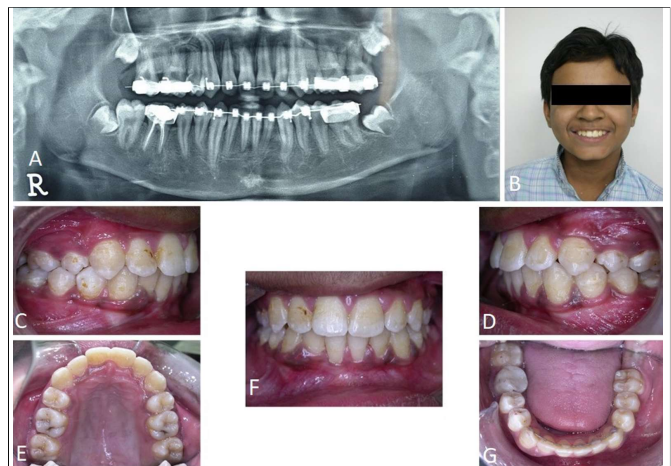


Figure 2: Postoperative records: (A) Orthopantomogram; (B) Extra-oral view; (C) Right side in occlusion; (D) Left side in occlusion; (E) Maxillary occlusal view; (F) Frontal occlusion; (G) Mandibular occlusal view.

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alignment, patient was referred to surgery department for exposure of un-erupted teeth. Buttons were placed for traction using elastics. Periapical radiographs were taken after 6 months to check for any root resorption. Once the impacted upper incisors and lower left canine were brought into the arches, upper first premolars were extracted, the midline was shifted to left and space was created for the upper right canine. The duration of the treatment spanned 4 years as the dilacerated incisor and lower canine took a long time for leveling. The finishing OPG showed that the teeth that were un-erupted preoperatively, had dilacerations in their apical third. The patient was finished in class I canine and a class II molar. Patient remained stable in the retention phase and on subsequent follow-ups.

DISCUSSION

Dilacerated teeth require prolonged treatment.⁵ Removal of the dilacerated teeth is not always an option, especially if several teeth are involved, as it will also need a lengthy prosthodontic follow-up. Surgical repositioning of the teeth is another option, though it has esthetic and biologic implications. Orthodontic traction of such teeth has been reported in literature.² The age of the patient, extent of dilacerations, degree of root completion, space available, and the position of the tooth are the deciding factors while selecting the best treatment option for such patients. Teeth with dilacerations at the apical third along with a more obtuse angle of dilacerations have better prognosis.⁶

This case had the dilacerations at the apical third and an obtuse angle of dilacerations that led to a belief that they could be brought into the arch.⁷ Nonetheless, it was important to inform the parents and patient of the possible risks.

Such cases invariably require cooperation and coordination of different dental specialties. An apical repositioning flap was utilized rather than using the closed eruption technique. This ensured that attached gingiva was present around the exposed teeth. There is

no consensus on choice of technique for exposure; however, we achieved a good gingival contour with no additional muco-gingival surgery. Periapical radiograph was used to verify the presence of dilacerations due to low sensitivity of OPG for observing anomalies.⁸ Although cone beam computed tomography is standard of care for imaging anomalies, it was not available at the time of initial appointment.

Although light continuous forces are required for the orthodontic movement of dilacerated teeth; however, the treatment may be of prolonged duration. Diagnosing the etiology of missing teeth is of utmost importance before undertaking any sort of treatment; and due to low sensitivity of OPG to diagnose anomalies, periapical X-rays of such teeth are of vital importance.

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