

Tooth Reattachment: Report of a Case

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ABSTRACT

Background: Coronal fractures of anterior teeth are a frequent dental trauma that affects mostly children and adolescent. The most valid modality of treatment for such dental trauma when the fragment is available is reattachment of the fragment. The reattachment of fractured fragment restores the natural esthetics. It also restores functions, provides a positive psychological response, and is a relatively simple procedure. Patient cooperation and understanding of the limitation of treatment is of paramount importance for good prognosis. The present article reports a case of fracture reattachment with successful outcome.

Keywords: Coronal fracture, dental trauma, reattachment.

INTRODUCTION

The crown fractures in anterior teeth are most frequently encountered form of dental trauma in children and adolescent.^{1, 2} Most cases of dental trauma present mainly in anterior teeth especially in maxillary central incisors (because of its location in the arch) whereas the mandibular central incisors and maxillary lateral incisors are seldom involved. Dental trauma mainly affects single tooth whereas certain trauma types like automobile accidents and sports injuries involve multiple teeth.³ Now-a-days restoration of traumatized incisors reattachment found to be the most conservative approach.⁴

The reattachment procedure usually involves storage and preparation of the fragment prior to its reattachment, and these procedures are important determinants of the overall clinical outcome. The results of several studies have shown that fragment discoloration is due to dehydration of dentin in the fragment and decreased bond strength between the tooth remnant and fragment. Accordingly, it recommended that the fragment be

kept moist in either tap water or physiologic saline until its reattachment to prevent the occurrence of these problems.^{5,6} Here we present a case report of coronal fracture reattachment in left permanent central incisor in a 14-year girl.

CASE REPORT

A 14 year girl reported to the department of Pedodontics at Index Institute of dental sciences Indore with the chief complaint of trauma in relation to the upper front teeth. Intra-oral examination revealed Ellis Class II fracture in relation to upper left central incisor with the fracture line extending across in the middle third. The involved teeth didn't show any evidence of pulp exposure and periodontal injury consequent to dental injury. The operative protocol before restorative step began with a clinical examination in order to evaluate the traumatic injury, and the condition and margins of the fragment. The fractured tooth was evaluated with trans illumination to rule out cracks in enamel. In the radiographic assessment, there was no fracture of the root or alveolar bone. (fig 1& 2) The fractured

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Fig 1: Pre-treatment photo of 21 with Ellis class II fracture.



Fig 2: Fractured fragment to be reattached.



Fig 3: Post Reattachment

fragment was disinfected with 0.2% chlorhexidine & stored in physiologic solution (sodium clorum 0.9%) to maintain hydration. The vitality test was performed & tooth responded positively. Before reattachment procedure the fractured tooth was cleaned & polished. (fig 3)

The fragment was treated with an “etch & rinse technique” using 37% phosphoric acid. The fractured teeth was etched and treated with the same adhesive system. The fragment was thus placed in its proper position on tooth making sure the perfect alignment. No tooth preparation was done. Now the two portions attached by applying bonding agent and flowable composite respectively. The shade mismatch was almost corrected with proper shade composite on both labial and lingual

sides. The patient was followed for 6 months & vitality and esthetics both were found to be positive. The clinical as well as radiographic evaluation was found to be satisfactory.

DISCUSSION

Among the child and teenage population, the possibility of suffering orofacial trauma is high and is considered a serious dental public health problem⁷. Of these traumas, dental crown fractures play a major role, comprising an estimated 70% of all orofacial trauma⁸. The present case report throws light on certain aspects of reattachment procedures for fractured teeth. Among many possible modalities we tried to be conservative for the procedure & didn't perform any tooth preparation. Reattachment of the fragment to its original position is considered an excellent approach for the management of a coronal fracture.⁹The application of dental adhesives capable of reattaching a fragment to the remaining tooth structure appears to offer a number of advantages compared with the conventional methods for restoring fractured teeth.¹⁰

The inflammatory process in cases of coronal fractures with minor dentin involvement is transitory, since the vascular supply of the pulp remains intact and bacterial invasion can be prevented. The vascular supply depends fundamentally on the trauma occurred, however, bacterial invasion can be prevented by immediate dentin sealing.¹¹ In the absence of a large pulp exposure, is frequently formed reparative dentin in response to the fracture, so when it is restored with composite resin or with direct adhesive fragment reattachment. These procedures seem to ensure the continuity of function of the pulp.¹¹

The time at which the trauma occurred is fundamental; the success of reattachment depends partly on how dehydrated the tooth fragment is. Fragments dehydrated for longer than 1 h have significantly reduced resistance to fracture. Also, prolonged dehydration may cause esthetic problems. In the present case, the patient reached our clinic 2 h after the accident but, because they were maintained in a humid environment until reattachment, the fragments did not show dehydration.¹²

The best restorative option for treating fractured anterior teeth is reattachment of the tooth fragment because the tooth's original anatomic form, contour, surface texture, color, occlusal alignment, translucence, and function are maintained. Also, reattachment provides a positive psychological response, and it is a relatively simple procedure.¹²

CONCLUSION

The reattachment of the fractured crown fragment using the bonding technique has been invariably found to be satisfactory for many similar cases.

CONFLICT OF INTEREST

No potential conflict of interest relevant to this article was reported.

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