

FRAGMENT REATTACHMENT: A CASE REPORT

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Abstract

Anterior teeth crown fracture is one of the common dental trauma that occurs mostly in adolescents and children. Reattachment of the fragment of tooth can be an alternative for treating fractures of crown provided that the fragment is obtainable with no or very little contravention of the biological width. This approach for treating the fractured tooth is helpful in attaining superior esthetics. Patient cooperation and understanding of the limitations of the treatment is of utmost importance for good prognosis. This article reports a case of fractured crown that was successfully treated using tooth fragment reattachment.

Keywords: Fractured tooth fragment, Reattachment, Trauma.

Introduction

Tooth fractures are one of the most common reasons for seeking dental care. Majority of the dental injuries occurs between 2-3 years and 8-12 years being more prevalent in boys than girls due to their involvement in extracurricular activities.¹ The most common etiology of trauma are falls, sports activities, car, motorcycle, and bicycle accidents, domestic violence fights and physical assault.² About 37% of the trauma involves maxillary incisors, which may be due to the protrusion of teeth.³ In the permanent dentition the most frequent type of dental trauma is fracture of crown.⁴ In 80% of traumatized incisors the fracture line extends in an oblique direction from labial to lingual aspect.⁵ In a young patient, trauma to the anterior teeth is a very tragic experience, that requires immediate attention due to damage to dentition and psychological impact on the parents and patients. The reattachment of tooth fragment delivers an esthetic, conservative and cost effective restorative option and a better alternative approach to full-coverage crown or resin-based composite.³ Fragment reattachment to the fractured tooth delivers good and long-lasting esthetics (as the surface texture, color and original anatomical form of the tooth are maintained) restores the function, results in a positive psychological attitude of the patient and is a reasonably simple procedure with minimal sacrifice of the remaining structure of tooth. Furthermore, this is less time-consuming technique that provides a more predictable long-term wear than to the direct composite.⁶ This article reports a case with the coronal tooth fracture that was treated successfully using reattachment of the fragment of tooth.

Case report

A 13 years old male patient reported to Teerthanker Mahaveer Dental College & Research Centre with the complaint of fractured tooth in upper front tooth region since 2 days due to fall during playing. The fragment of the tooth was retrieved by the patient at the injury site and preserved in the milk acting as the storage media. Clinical and radiographic examination of the patient

revealed Ellis class II fracture in 21 (Figure 1,2). Since the patient was carrying the fractured tooth fragment which was in good condition (Figure 3), reattachment of the fragment was planned. First of all, the tooth and the fractured fragment was cleaned properly with pumice powder followed by acid etching of both the fractured fragment and the tooth with 37% phosphoric acid gel for 20 seconds. After washing the tooth with water and proper air drying of the tooth, bonding agent was applied on the tooth and the fractured fragment. Finally the fractured fragment was placed back to its original position with the help of composite resin (Figure 4).



Figure 1: Preoperative frontal view



Figure 2: Preoperative occlusal view



Figure 3: Fractured Fragment



Figure 4: Postoperative frontal view

Discussion

Studies have revealed that one individual out of four, below 18 years of age experiences fracture of the anterior tooth.^{7,8} The first choice of the treatment should be reattachment whenever there is accessibility of the fractured fragment.^{9,10} In the later years, because of the exceptional progress of resin composites and adhesive systems, it is currently feasible to attain best results with tooth fragment reattachment if the biological factors, materials, and methods are reasonably judged and controlled.¹¹ The success of conventional restoration relies on correct case selection, precise adherence to correct principles of endodontic and periodontal treatments, and the method and materials for modern adhesive dentistry.¹²⁻¹⁴ In the current case of the fracture of crown reattachment of the fragment was accomplished. The use of the natural tooth substance offers a conservative, esthetic, and economical option that provides good and long lasting esthetics, restores function, results in a positive psychological response, and is certainly a simple procedure. The operator should contemplate that a moisture free and clear working field and correct utilization of bonding materials is essential to gain victory in adhesive dentistry. Failure to this procedure can arise as a consequence of parafunctional habits or recent trauma.

Conclusion

The reattachment of the tooth fragment is possible only when the fragment is available in viable condition, emphasis should be made to educate the population to preserve the fractured fragment in aseptic environment and pursue instant dental care.

References

1. American Academy of Pediatric Dentistry Council on Clinical Affairs. Guidelines on management of acute dental trauma. *Pediatr Dent.* 2009; 30: 175–183.
2. Castro J, Poi WR, Manfrin TM, Zina LG. Analysis of the crown fractures and crown-root fractures due to dental trauma assisted by the Integrated Clinic from 1992 to 2002. *Dent Traumatol.* 2005; 21(3): 121–126.
3. Tennery TN. The fractured tooth reunited using the acid-etch bonding technique. *Texas Dent J.* 1988; 96(8): 16–17.

4. Simonsen RJ. Restoration of a fractured central incisor using original tooth fragment. *J American Dent Assoc.* 1982; 105(4): 646–648.
5. Joshi N, Shetty N, Kundabala M. Immediate reattachment of fractured tooth segment using dual cure resin. *Kathmandu University Med J.* 2008; 6(23): 386–388.
6. Buonocore MG, Davila J. Restoration of fractured anterior teeth with ultraviolet-light-polymerized bonding materials: a new technique. *J Am Dent Assoc.* 1973; 86(6): 1349–1354.
7. Andreasen JO, Ravn JJ. Epidemiology of traumatic dental injuries to primary and permanent teeth in a Danish population sample. *Int J Oral Surg.* 1972; 1(5): 235–239.
8. Petti S, Tarsitani G. Traumatic injuries to anterior teeth in Italian schoolchildren: prevalence and risk factors. *Endod Dent Traumatol.* 1996; 12(6): 294–297.
9. Belchema A. Reattachment of fractured permanent incisors in school children (review). *J of IMAB.* 2008; 14(2): 96–99.
10. Yilmaz Y, Zehir C, Eyuboglu O, Belduz N. Evaluation of success in the reattachment of coronal fractures *Dent Traumatol.* 2008; 4(2): 151–158.
11. Vashisth P, Mittal M, Singh AP. Immediate reattachment of fractured tooth segment: a biological approach. *Ind J Dent Res Review.* 2012: 72–74.
12. Andreasen FM, Steinhardt U, Bille M, Musksgaard. Bonding of enamel-dentin crown fragments after crown fracture. An experimental study using bonding agents. *Endod Dent Traumatol.* 1993; 9(3): 111–114.
13. Cavalleri G, Zerman N. Traumatic crown fractures in permanent incisors with immature roots: a follow-up study. *Endod Dent Traumatol.* 1995; 11(6): 294–296.
14. Lowey MN. Reattachment of a fractured central incisor tooth fragment. *Br Dent J.* 1991; 170(8): 285.

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