

## Sports Related Dental Injury – A Case Study

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### Abstract

Dental emergency can happen to anyone but the athletes, both children and adults are particularly susceptible to injuries, including those on the face, mouth and teeth. From a pain stand point, and an economic stand point it becomes an aesthetic problem and a financial problem; they have to go through many procedures to get this whole thing corrected. In the present study a case of eight year old male child with fractured upper two central incisors in an angular fashion, involving incisal half of one and incisal third of other is presented. Treatment was carried out by composite build up of the fractured segment by using composite resins. The patient was recalled at three months for clinical evaluation of the restored tooth. During the recall appointment, an assessment of the stability and longevity of the restoration was performed. Color stability, surface staining, or fracture of the composite build-up material were evaluated and found to be acceptable. The patient had no complaints about the restoration. Dentists provide trauma treatment if and when unfortunate sports-related injuries affecting the mouth, teeth and other oral tissues do occur.

**Keywords: Incisor, Restoration, Composite Build up Material**

### INTRODUCTION

All sports activities are connected with a certain risk of orofacial injuries due to falls, collisions and contact with hard surfaces. Trauma to the anterior teeth is a common enough occurrence. The resultant manifestations are not a pleasant sight to behold: discoloured teeth due to pulp damage, intrusion, extrusion and even total luxation of the teeth and broken or fractured teeth. As neither of these is a desirable manifestation, management of different situations becomes a must so as to restore the patient to normal function and looks as soon as possible. The mental trauma alleviated in such situations is beyond compare, even though the physical discomfort is relieved as well (Andreasen, 1993). A particular challenge is the restoration of fractured segments to match form and color so as to be indistinguishable from the real thing. Direct composite restorations are the most

popular anterior esthetic restorative materials as they provide excellent esthetics, mechanical properties and also conserve healthy tooth structure. They are generally used as an aesthetic restoration for hypoplastic teeth, microabrasion, moderate to severe fluorosis, tetracycline staining. They are also important restorative options in fractured teeth where the loss of tooth structure is not substantial. Composite resins consist of a resin based matrix, bisphenol A-glycidyl methacrylate (BISGMA) or urethane dimethacrylate (UDMA) and inorganic filler such as silicon dioxide. The filler gives the composite wear resistance and translucency. A coupling agent such as silane is used to enhance the bond between these two components (Tuskiboshi, 1996).

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**Figure 1: Pre –Operative**



**Figure 2: Post –Operative**

An 8 year old male child reported to Gian Sagar Dental College, Banur with a chief complaint of broken front teeth while playing cricket (Figure 1). Clinical examination did not show any loosening, tenderness to percussion, and response to

pulp testing was normal. Therefore, direct composite restoration was given in this case (Figure 2).

Prior to giving composite restorations, it is mandatory to have good preoperative photographs and accurate shade selection for best results. Shade guides should be used under proper natural light and shade selection should go well with patient's complexion and age.

The fractured surface of the tooth was prepared. Under rubber dam isolation, etchant phosphoric acid (37%) was applied to the fractured surface for fifteen seconds, washed, dried and Bond1 single step bonding agent (acetone based) was applied. After a waiting period of 30 seconds for the bonding agent to soak, the surface was gently dried and light cured for 20 seconds. Prior to giving composite restorations, good preoperative photographs and accurate shade selection was done for best results. Shade guides were used under proper natural light and shade selection was going well with patient's complexion and age. The restorative procedure was completed by building up the tooth incrementally with a direct resin composite restoration of an appropriate shade. The occlusion was carefully adjusted to avoid any primary contacts or traumatic occlusal forces to the restored tooth. Finally, the composite resin restoration was polished with a composite polishing kit.

The patient was recalled at three months for clinical evaluation of the restored tooth. During the recall appointment, an assessment of the stability and longevity of the restoration was performed. Color stability, surface staining, or fracture of the composite

build-up material were evaluated and found to be acceptable. The patient had no complaints about the restoration.

## Discussion

Dental emergency can happen to anyone but the athletes, both children and adults-are particularly susceptible to injuries, including those on the face, mouth and teeth. An elbow to the mouth or a bad fall can occur unexpectedly, causing broken teeth, a torn lip, or worse, a broken jaw *Ravn (1981)*. Dental injuries suffered by professional athletes are treated slightly differently than an average person with the same type of injury.

Sports injuries to the mouth and oral environment can be disfiguring and costly, both financially and in terms of athletes' time away from school, work or training. Sports-related injuries to the mouth can become expensive, depending upon the nature and extent of the trauma. Fortunately, many sports-related injuries to the mouth can be easily prevented with properly designed mouth guard protection *Tuskiboshi (1996)*. Sports injuries to the mouth and oral tissues are not necessarily treated any differently than other traumatic injuries to the oral tissues. For instance, a sudden mishap while playing basketball could lead to injuries such as biting through the lip(s) and/or severely fracturing the front teeth. In addition, playing football could result in injuries such as losing some of the teeth as a result of blunt trauma to the face, or fractures to the upper arch of your mouth (*Stalhane & Hedegrrd, 1975*). There are various treatment options in sports related injuries like direct

composite veneers, removable partial dentures, dental bridges, dental crowns, reimplantation of avulsed tooth.

The present case report, discusses the sport related dental injury to the anterior teeth and its treatment.

## Conclusion:

Dental emergency can happen to anyone but the athletes, both children and adults-are particularly susceptible to injuries, including those on the face, mouth and teeth. Dental injuries are a major problem for players, and in some cases, they are a problem for the parent of the player with the injury. From a pain stand point, and an economic stand point. It becomes an aesthetic problem, it becomes a financial problem; they have to go through many many procedures to get this whole thing corrected. Now, with the introduction of performance enhancing mouth wear, dentists also may be able to help to improve the game, too

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