

## **Reimplantation of Avulsed Tooth – A case Study**

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The purpose of clinical study is reimplantation technique used in the treatment of an avulsive teeth case. This case report is related to an avulsed tooth and its management in case of a 17 year old female gymnast player. A 17 year old girl reported to the dental clinic with swelling of upper lip and displacement of upper right central incisor and avulsion of left lateral incisor. She got the injury while she was doing gymnastics. She had lost her upper left central incisor at the gymnastic ground. Clinical examination showed swelling of upper lip, laceration on lower chin, displaced right upper central incisor, avulsed left lateral incisor and missing left central incisor. Tooth reimplantation was carried out by rinsing the avulsed tooth carefully with saline and all the contaminants were removed. The socket was then flushed with saline and the avulsed tooth was slowly reimplanted with digital pressure. Splinting of the avulsed tooth was done with a semi rigid splint for 4 weeks. Antibiotic coverage was given to the patient. Root canal treatment of the left lateral incisor and right central incisor was done. Splint was removed after 4 weeks. The avulsed teeth were placed back into the socket with the help of finger pressure. Patient was advised to avoid biting on the splinted teeth and continue to brush the other teeth, only soft foods were advised to be eaten and refrain from acidic beverage consumption. After 4 weeks the splint was removed. The results of the treatment were teeth remained symptomless and showed no sign of discoloration, gum abscesses, pulp death, teeth pain and root resorption.

**Key words: Gymnast player, Avulsed tooth, Incisor, Reimplantation, Splinting**

### **Introduction**

Favorable healing subsequent to an avulsion injury requires immediate emergency interference followed by assessment and possible treatment at crucial times during the healing phase. The urgency of the emergency visit and the multidisciplinary nature of follow-up evaluations necessitate both the public and practitioners from different dental disciplines to possess knowledge of the treatment strategies involved. Dental emergency can take place with anyone. The athletes, both children and adults-are predominantly prone to injuries, including those on the face, mouth and teeth. An elbow blow on the mouth or a bad fall can occur all of a sudden, leading to broken teeth, a torn lip, or worse, a broken jaw. When participating in a sport, particularly contact sports, the risk of sports related dental injury is generally high (*Andreasen*

*et al, 1993*). 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 the mouth (*American Academy of Paediatric Dentistry, 2002*).

When a tooth is avulsed, attachment damage and pulp necrosis occurs. The tooth is ‘separated’ from the socket, mainly due to the tearing of the periodontal ligament which leaves viable periodontal ligament cells on most of the root surface. In addition, due to the crushing of the tooth against the socket, small localized cemental damage also occurs (*Andreasen, 1981*). If the periodontal ligament left attached to the root surface does not dry out, the consequences of tooth avulsion are usually minimal (*Soder et al, 1977; Andreasen, 1981*). The hydrated periodontal ligament cells maintain their viability, allowing them to reattach on reimplantation with minimal destructive inflammation. In addition, since the crushing injury is contained within a localized area, inflammation stimulated by the damaged tissues is correspondingly limited, meaning that healing with new replacement cementum is likely to occur after the initial inflammation has subsided. Avulsion is defined as displacement of the tooth totally out of the socket (*Andreasen and Andreasen, 1994*). Clinically, the tooth socket is found empty or filled with a coagulum. The treatment of this is reimplantation of the tooth back into the socket with minimum extra-alveolar time. The patient is required to seek an emergency service or dental treatment, including splinting and antibiotic prophylaxis.

This case report is related to an avulsed tooth and its management in case of a 17 year old female gymnast player.

## Materials & Methods

A 17 year old girl reported to the dental clinic with swelling of upper lip and displacement of upper right central incisor and avulsion of left lateral incisor. She got the injury while she was doing gymnastics. She had lost her upper left central incisor at the gymnastic ground. Clinical examination showed swelling of upper lip, laceration on lower chin, displaced right upper central incisor, avulsed left lateral incisor and missing left central incisor. (Figs. 1, 2)



**Figure 1: Extraoral picture of the patient**



**Figure 2: Intraoral picture of the patient**



**Figure 3: Splinting done using semi rigid splint**



Figure 4: Patient given periodontal pack



Figure 5: Splint removed after 4 weeks

Tooth reimplantation was carried out at dental department and consisted of the following steps:

- (1) The avulsed tooth was rinsed carefully with saline from a syringe. All the contaminants were removed.
- (2) The socket was flushed with saline and the avulsed tooth was slowly reimplanted with digital pressure.
- (3) Splinting of the avulsed tooth was done with a semi rigid splint for 4 weeks. (Figure 3)
- (4) Antibiotic coverage was given to the patient.
- (5) Root canal treatment of the left lateral incisor and right central incisor was done.
- (6) Splint was removed after 4 weeks. (Figure 5)

### Conclusions

Avulsion is the most common dental injury experienced by the sportspersons.

The general public especially the sportspersons should be educated to know the basic steps to deal with such situations so as to save the avulsed tooth. The basic steps need to be educated are:

- (1) Reimplantation of the avulsed tooth should be preferably done at the site of injury in order to minimize the extraalveolar time. In these cases, the tooth should be immediately reimplanted in its socket or, if contaminated, rinsed for 10 seconds in cold running tap water.

If immediate reimplantation is not possible, the avulsed tooth should be restored in milk, or in the oral vestibule. Recently special storage media have been developed which offer excellent protection to the tooth (e.g. Vispan)

In conclusion, our study suggest that reimplantation of an avulsed tooth as soon as possible and using appropriate splint for such a case, and follow up after treatment by a dentist show good prognosis.

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