

PREVENTION OF SPORTS RELATED MAXILLOFACIAL INJURIES A REVIEW

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ABSTRACT

About 4%–18% of all sports injuries are maxillofacial injuries. The commonest sports related maxillofacial injuries are lacerations of soft tissues, dentoalveolar fractures and minor fractures of facial bone. The most repeatedly reported maxillofacial bone fractures involve the lower jaw, the zygoma and nasal bone. A mouth-guard, perfectly fitted, should be worn at times of playing contact sports or activities where there is danger of facial injuries e.g., football, hockey, volleyball, soccer etc. Without an application of mouth-guards, sports injuries and accidents can potentially result in injuries to the gingiva, lips or teeth, tooth fractures, avulsed teeth and jaw fractures. Types of mouth guards include custom fitted, Boil and bite and stock mouth guards.

KEY WORDS: sports; sports-injuries; maxillofacial-injuries; mouthguards; sports related oral injuries.

INTRODUCTION

Sports related trauma can have a great impact on lesser protected sites of the body such as the maxillofacial region. The commonest sports related maxillofacial injuries are lacerations of soft tissues, dentoalveolar fractures and minor fractures of facial bone. The most repeatedly reported maxillofacial bone fractures involve the lower jaw, the zygoma and nasal bone.[1]. According to different studies, sports-related facial fractures constitute 4%–18% of all sports injuries and 6%–33% of all fractures of facial bone. Nearly 5 million teeth are lost every year due to sports injuries.

Most common sports which result in maxillofacial injuries include

A] rugby, basketball, football, handball which are team sports

B] bicycling, mountain biking, horse-riding, skiing, snowboarding, ice-hockey, in-line skating which come under vehicular sports

C] tennis, baseball, cricket, golf which are sports played with comparatively smaller balls

D] boxing, karate, Kung-fu, which are combat sports

E] swimming, diving, gymnastics, body-building which come under individual sports

MOST COMMON SPORTS RELATED MAXILLOFACIAL INJURIES

Soft tissue injuries: They are the lesser severe of all maxillofacial injuries associated with sports. The most commonly occurring soft tissue injuries are cuts, bruises, and lacerations of the cheek, eye brow, chin, lips and gingiva [1]

Fractures: Facial bones are kind of brittle to falls and break quite easily, which is very much possible while playing contact sports. While playing contact sports, the fractures that are more likely to occur include the zygoma and temporo-mandibular joint fractures.

Jaw injuries: A herculean strike to the jaw while playing contact sports can injure the TMJ and its surrounding structures. This can have an impact on

the way the jaw closes and opens wide and further progress to pain while speaking and chewing.

Tooth intrusion: A extremely powerful impact while playing sports might progress into an intrusion of the tooth, where the tooth is moved inwards towards the bone. Management may require repositioning of the tooth, surgical management, splitting of teeth, or extraction of the affected tooth.

Tooth extrusion: The following injury occurs when the tooth is “dislocated” from its socket but not fully popped out from the socket. It might be possible to reposition the tooth carefully as well as slowly and splint it so that the root heals. Endodontic treatment may also be required.

Cracked or chipped tooth: Minute chipping results in loss of enamel surface only, which goes on to affect the aesthetic but doesn't result in any pain. But if the cracks extend into the dentin, pulp or sometimes even the root surface it can result in severe sensitivity causing extreme pain.

Avulsion: It is the most common dental emergency; tooth is knocked out from the socket. Immediate replantation is the perfect treatment. If due to some reasons this cannot be carried out, there are resources such as using various types of storage media like saline, milk and Hanks Balanced Salt Solution [HBSS].

PREVENTION OF SPORTS RELATED MAXILLOFACIAL INJURIES

Mouth guards are the best preventive tools for sports related maxillofacial injuries.

Mouthguards are protective devices for the oral cavity that cover the teeth and gingiva to prevent and reduce injury to the teeth, arches, lips and gums.

A mouthguard is most commonly used to prevent injuries in contact sports, as a treatment for bruxism or TMJ problems, or as part of dental procedures, such as tooth bleaching of teeth or management of sleep apnea. [5] [11]

Benefits of using Mouthguards for athletes include
1. Reduce the possibility of teeth being fractured or

lost.

2. Reduce the possibility of jaw being dislocated or fractured.
3. Reduce the risk of cuts and bruising the mouth and disfiguring the face.
4. Help to reduce the possibility of being concussed and suffering brain damage.
5. Provide with more comfort and make it easier to breathe and speak.
6. Enable to compete more competitively and perform more confidently.

TYPES OF MOUTH GUARDS

Type I Stock Mouthguards

Stock mouthguards are bought directly by athletes from stores selling sports merchandise and are cheap among all the three types of mouthguards available. They come in a various styles and colours. They are ready to wear, one size is common for all the athletes using them. Because they are the less retentive and often very much bulky, stock mouthguards interfere most with the ability to respire and talk and often causes gag reflex. Because of all the following factors, stock mouthguards are not acceptable to most of the sports persons and offer the less protection for the prevention of sports related maxillo-facial injuries.[5] [11] [12]

Type II Boil-and-bite Mouthguard

They are intermediate mouthguards between the stock and custom fabricated types. These types of mouthguards are fabricated by keeping the mouthguard form into a boiling water bath to soften the material. The softened material is then kept into the oral cavity and adapted. Mostly there is uneven distribution of the material which does not allow a proper fit and protection to teeth and supporting structures.[5] [6]

Type III Custom-fabricated Mouthguard

These types of mouthguards are made professionally by a dentist over a dental cast from taking an impression of the oral cavity mouth. They are mostly

superior than stock or boil and bite mouthguards. Custom-fabricated mouthguards do not interfere with respiring and speech because of their excellent adaptation and retention. Because of greater fit and comfort, they are more accepted by the sports persons. These types of mouthguards are known to be more safe guarding because they confirm more closely with the oral cavity. Fabricated under supervision of a dental professional, they are either made in the clinics or sent by the dentist to labs for custom fabrication with proper guidelines to the technician. [5] [16]

CONCLUSION

With the global incidence of oral and maxillofacial injuries rising, purpose of a mouth guard to avert the trauma of the oral and maxillofacial region is growing in significance. Mouthguard has been recommended to shield injuries by (A) warding off tooth injuries by deflecting and absorbing powerful blows to the teeth and surrounding structures; (B) safeguarding the soft tissues from lacerating; (C) avert facing teeth from coming into stressful contact; (D) giving the lower jaw with strong support, which soaks up an effect that may fracture the angle or condyle of the mandible; (E) averting neck and brain injuries.

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