IOSR Journal of Dental and Medical Sciences (IOSR-JDMS)
e-ISSN: 2279-0853, p-ISSN: 2279-0861.Volume 22, Issue 2 Ser.8 (February. 2023), PP 57-59
www.iosrjournals.org

CustomisedFace Guard fora Football Player: A Case Report

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ABSTRACT
Individuals worldwide are participating in all types of physical activities as well as competitive sports at all levels. The healthful benefits of such activities are unfortunately associated with injury risks. This case report discusses the importance of preventive sports gear and customisation of face shield for an football player. This customised face-shield was economical and mush better fit for the patient as compared to commercially available protective gears. Thus, providing opportunity to a Prosthodontist to get actively involved in sports dentistry .

Date of Submission: 02-02-2023 Date of Acceptance: 13-02-2023

I. Introduction

Individuals all over the world are participating in an expanding arena of vigorous physical activities as well as competitive sports at all levels. The healthful benefits of such activities are unfortunately associated with injury risks that include orofacial soft- and hard-tissue trauma. According to different reports, 5.6–33.1% maxillofacial fractures are related to sports.[1]To lessen the effects of trauma and to prevent facial fractures, and thus the soft tissue injuries and functional harm associated with them, facial protection has evolved throughout the years. These protective measures were developed by support from sports communities and dental community, as well the armed forces.[2]These protective masks are intended to cover and protect face from maxillary, nasal, zygomatic and orbital injuries.. This case report describes how a protective face shield was made to prevent injury during active sports. This protective mask was custom made and economical compared to commercially available protective gear.

II. Case Report

A 25 year old male football player with recent history of surgery for deviated nasal septum, came to the Department of Prosthodontics for a protective gear for his face during the healing period of six months. On obtaining the consent from operating surgeon, a full-face impression was made. After this on the facial moulage, marking was made covering the critical areas of the face which required protection while playing football(Figure1). A thin layer of wax was applied all over the marked area. Double sided tape of size 4cm *2cm was used as a tissue-stop-on the bridge of the nose and on prominent portion of forehead and cheek bones, to provide space on the face shield for high density foam to provide cushioning effect(Figure2). After this auto polymerizing resin was mixed according to manufacturer's instructions and molded on the moulage, on complete polymerization, the fit of prosthesis was checked on the patient(Figure3-4). The Muller face guard was considered as a guide, modification on the face shield were made to avoid blocking of peripheral vision.At all the four corner of the facemask holes were made and the elastic straps were attached on both the sides.One with the occipital support and second with the parietal support. The trial of the face-shield was done, and then the prosthesis was finished and polishedanddelivered to the patient.(Figure 5-6)

III. Discussion

Sports activities are unfortunately associated with injury risks that include orofacial soft- and hard-tissue trauma and such accidents often have life-long consequences.

A study by Selva et al , showed that 75% of players had undergone some form of orofacial injury.[3]These findings are similar to the studies done by Tulunoglu and Ozbekand[4]and Persic et alwhere 22.3% and 20.4% of the participants were reported to have experienced oral injuries, respectively. [5] The prevalence of dental trauma among Pan American games athletes was 49.6%, where 63.6% of them sustained injuries during training or competition.[6]Sports-related dental injuries have accounted for high percentage among all types of traumatic injuries worldwide.[3-7]These statistics explain that players and associated sports officials should be aware of sports related injuries and how to prevent them. Various published articles, suggest that mouthguards offer significant protection against orofacial injuries. Meta-analysis indicates that the overall risk of an orofacial

injury is 1.6–1.9 times higher when a mouthguard is not worn, relative to wearing a mouthguard.. Mouthguard use should be promoted in sports activities where there is a significant risk of orofacial injury.[3]Similarly , protective facial shield can prevent facial injuries, and may reduce the chances of concussion as suggested by Benson et al.[8] Sports-related maxillofacial injuries result in considerable morbidity and may necessitate surgical intervention leading to extended hospital stays and decreased quality of life. With this in mind, primary prevention of such injuries is essential, particularly in high-risk contact sports. Helmets and face guards have been effective in facial injury risk reduction by 28 to 69%.[9]

Face masks and guards following reduction of facial fractures have gained popularity, especially as an increased number of professional athletes are seen in the media with the device.[2]Custom masks made over an impression cast of the face can act as a physical guard and can dissipate impact forces to the surrounding tissues and supporting structures. Thus, it is believed that the impact will be lessened and the risk of reinjury decreased after reduction of fracture.However, given the lack of literature, a standardized face mask or guard is not agreed upon.[9]This article describes a procedure for fabricating a customised face guard that will permit protection of the facial bones when worn while playing football. The patient in this clinical report has successfully worn the facial guard for almost a year while playing the competitive football. The patient only required adjustments to the ocular openings to increase his peripheral vision. No further injuries have occurred to the facial area while the patient has worn the shield, despite being hit in the face during the matches. The fabrication of the facial shield has allowed this 26 year-old man to continue playing without further injury.

IV. Summary

In this case , the patient was satisfied with the mask provided to him. he regularly used it during competitive matches. It is essential to understand that these kind protective mask have their own limitations. Protective gear should be made mandatory in all contact sports by the higher authorities, as prevention is always better than cure.

References

[1]. Reehal, Paul. Facial Injury in Sport. Current Sports Medicine Reports2010;9:27-34

[2]. Kim r, Shokri T, Wang W, Ducic Y. Facial Protection to prevent facial trauma and allow for optimal Protection after facial fracture repair. Facial Plast Surg.2021;37:781-789.

[3]. Selva S, Karthi R, Aparna S, Madan Kumar PD. Awareness, prevention and management of dental injuries among the kabbadi players of Madurai District. J Dent Res Rev 2018;5:97-101.

[4]. Tulunoglu I, Ozbek M. Oral trauma, mouthguard awareness, and use in two contact sports in Turkey. Dent Traumatol 2006;22:242- 6.

[5]. Persic R, Pohl Y, Filippi A. Dental squash injuries – A survey among players and coaches in Switzerland, Germany and France. Dent Traumatol 2006;22:231- 6.

[6]. Andrade RA, Evans PL, Almeida AL, da Silva Jde J, Guedes AM, Guedes FR, *et al.* Prevalence of dental trauma in pan American games athletes. Dent Traumatol 2010;26:248- 53.

[7]. Knapik JJ, Marshall SW, Lee RB, Darakjy SS, Jones SB, Mitchener TA, delaCruz GG, Jones BH. Mouthguards in sport activities : history, physical properties and injury prevention effectiveness. Sports Med. 2007;37:117-44.

[8]. Benson BW, Hamilton GM, Meeuwisse WH, McCrory P, Dvorak J. Is protective equipment useful in preventing concussion? A systematic review of the literature. Br J Sports Med. 2009;43 :56-67.

[9]. Kaplan S, Driscoll CF, Singer MT. Fabrication of a facial shield to prevent facial injuries during sporting events: a clinical report. J Prosthet Dent. 2000 ;84:387-9.

FIGURES

Figure1. Facial moulage of the patient with blockout

Figure 2. Space created by high density foam for shock absorption


Figure 3. Modified face-shield of auto-polymerizing resin

Figure 4. High Density foam placed as shock absorber


Figure 5. Placement of face-shield and check-up done to check for peripheral vision clarity


Figure 6. Use of Faceshield During active Sports

Ambika Shrivastava, et. al. "Customised Face Guard for a Football Player: A Case Report."*IOSR Journal of Dental and Medical Sciences (IOSR-JDMS)*, 22(2), 2023, pp. 57-59.