

**SLOW AND STEADY HEALS THE FACE – A CASE OF AN EXTENSIVE SOFT TISSUE TRAUMA****<sup>1</sup>Dr. Udupikrishna M. Joshi, <sup>2</sup>\*Dr. Kundan Shah, <sup>3</sup>Dr. Satishkumar G. Patil and <sup>4</sup>Dr. Aisha Siddiqui**<sup>1</sup>Professor and HOD, Department of Oral and Maxillofacial Surgery, Hkes S N Dental College, Gulbarga.<sup>2</sup>Department of Oral and Maxillofacial Surgery.<sup>3</sup>Professor, Department of Oral and Maxillofacial Surgery, Hkes S N Dental College, Gulbarga.<sup>4</sup>Professor, Department of Oral and Maxillofacial Surgery, Albadar Dental College, Gulbarga.**\*Corresponding Author: Kundan Shah**

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Article Received on 19/03/2017

Article Revised on 09/04/2017

Article Accepted on 29/04/2017

**ABSTRACT**

Traumatic soft tissue injuries are commonly encountered in the emergency department by the maxillofacial surgeon either alone or in combination with bone injuries. Although seldom life threatening, they result in functional and cosmetic defects which are extremely disfiguring and negatively impact the emotional well being of the patient. Here we present a case of a driver who encountered a serious life threatening injury to his face due to Road Traffic accident presented to the casualty with injuries so extensive that the immediate prognosis was deemed to be poor. However after three long months of aggressive use of antibiotics and meticulous care of his wounds, he was discharged from the hospital with a reasonably good outcome, thanks to the wonders of the healing capacity of the human body which was synergistically helped by the treatment rendered to him.

**KEYWORDS:** Traumatic Soft Tissue Injuries, Functional and Cosmetic Defects, Road Traffic Accident, Healing Capacity.**INTRODUCTION**

Nowadays, maxillofacial trauma have become a everyday situation in the casualty as the face is highly vulnerable to trauma due to the fact that it is the most exposed region of our body. It refers to any injury to the face caused due to road traffic accidents, fall from height, interpersonal violence, sports, gunshot or blasts. The spectrum of presentation of these injuries may range from superficial lacerations, abrasions over the face or even fractures of the facial skeleton. Facial soft tissue injuries are amongst the most challenging problems faced by the maxillofacial surgeon. The very nature of such facial trauma imparts psychological trauma to the patients.

Soft-tissue injuries may or may not have associated fractures. The aim of management is functional and aesthetic recovery in the shortest period. Many such cases come to the casualty after having incorrect, randomly single layer deep stitches with misaligned tissue. Variety of foreign bodies and unnoticed hematoma complicates the situation. Due to the complexity of face, it is essential to anticipate the injuries in various structures underneath the wound. The first chance is the best chance for repair as it decides the outcome.<sup>[1]</sup> These injuries account for nearly 10% of all emergency department visits.<sup>[2-4]</sup> Despite this high incidence, there are few studies that systematically

investigate the management of these injuries,<sup>[5]</sup> and therefore, no widely accepted classification scheme or treatment algorithms exist to guide evaluation and treatment.

This article presents a case of a patient who had a road traffic accident with soft tissue injury to face, and was managed with suturing and regular dressing over a period of 3 months.

**CASE REPORT**

A young male patient aged 19 years, presented to the department of oral and maxillofacial surgery at our institution 4 hours after a road traffic accident.

History revealed that he had been taken to a government hospital where he was given primary trauma care and dressing of the wound was done in the casualty by the duty doctors.

Clinical examination of the patient revealed soft tissue injury to face with abrasions over the cheek, forehead, lips, orbit and nose. Vertical lacerations were present over the forehead and left lateral part of upper 1/3<sup>rd</sup> of the nose. Lacerations were seen over the cheek, left infraorbital region and upper lip (Fig 1). Laceration with avulsion of some amount soft tissue were seen over the

infraorbital region of the right orbit exposing the eyeball (Fig 2).

Foreign bodies were seen in the lacerated and avulsed wounds. Most of the area was covered with slough and remnants of blood clot were seen in some regions. The patient was admitted to the hospital and parenteral antibiotics were given which included Cefotaxime, Gentamycin and Metronidazole.

#### CT scan revealed

- Fracture of left parasymphysis of mandible
- Right ramus of mandible
- Bilateral zygomaticomaxillary complex involving anterior wall of maxillary sinus and left frontozygomatic suture indicating involvement of hard tissues, which confirm the diagnosis of soft tissue injury with hard tissue involvement.

The patient was taken up for debridement and examination of extent of soft tissue injury. On thorough mechanical debridement and debridement with hydrogen peroxide and saline, the wound was studied. On finding the wound suitable for repair, further cleaning was done with betadine followed by saline.

Aggressive excision of tissue was not done, as it is not advocated in either primary or delayed treatment in facial tissues.

Primary repair of wound was taken up. Suturing over forehead, nose, upper lip and left infraorbital region was done in 2 layers whereas at the right infraorbital region done in up to 4 layers position the eyeball, depending on depth of laceration and involvement of deeper tissues with 3-0 vicryl and 3-0 Prolene. The areas which were abraded were only debrided (Fig 3).

The dressing of Sofra-Tulle (Roussel Laboratories Ltd., Uxbridge, UK) was given to cover all of the involved areas. The dressing was changed every day for a period of 4 weeks. Some areas of the wounds showed pus exudation in the first week and required additional debridement. At the end of 3 months, satisfactory amount of healing was achieved with good aesthetic results (Fig 4, Fig 5).



**Figure 1 : Preoperative profile showing extensive soft tissue trauma of the face.**



**Figure 2 : Preoperative profile showing infraorbital region of the right orbit exposing the eyeball.**



**Figure 3 : Immediate post-operative profile.**



**Figure 4 : Post-operative profile at the end of 1 month.**



**Figure 5 : Post-operative profile at the end of 3 months showing satisfactory amount of healing with good aesthetic results.**

## DISCUSSION

Facial injuries themselves are rarely life-threatening, but are indicators of the energy of injury. The types of soft-tissue injuries encountered include abrasions, tattoos, simple or complex contused lacerations with loss of tissue, avulsions, bites and burns.<sup>[6]</sup> There may be echymosis, oedema, sub-conjunctival haemorrhage, crepitus, hyperaesthesia, evidence of facial nerve palsy, inadequate excursion of the muscles of expression and mastication, wound with or without exposed vital structures and fractures. One should realize that usually a horizontal injury across the face is likely to damage more vital structures than a vertical injury as it passes through more number of zones. The aesthetic units on the face are frontal, temporal, supraorbital, orbital, infraorbital, nasal, zygomatic, buccal, labial, mental, parotid-masserteric and auricular. In deep injury, it is necessary to evaluate communication with oral cavity, nasal cavity, and maxillary or frontoethmoid sinuses.<sup>[1]</sup>

Facial soft tissue is most common since the incidence of road traffic accidents is very high and the face being the most exposed part of our body. Facial soft tissue injury is given maximum attention because the management is based on both aesthetic and functional aspect. Necrosis of the soft tissue is one of the major complications of deep or massive soft tissue injury. Since orofacial region has numerous blood supplies from branches of facial artery, the end result of treatment is most often positive.<sup>[7]</sup> With the change from pre-antibiotic age to the antibiotic age and better understanding of human body and its response to trauma, a huge difference has occurred in the management of such injuries. Majority of patients, who present with facial injuries, suffer from penetrating injuries to face. The presentation of such injuries may range from only injury to the overlying soft tissue to the injury of overlying soft tissue associated with fracture of the facial bones.<sup>[8]</sup>

The above presented case was one such case with soft tissue injury which ranged from simple abrasion to more penetrating injury involving deep muscle layers associated with the fractures of maxillofacial bones. Initially the soft tissue injury was managed with suturing and regular dressing. The patient had presented to us immediately (within 4 hours of injury) hence, good handling of tissues by thorough debridement, preservation of tissues could be made possible and good follow up care gave optimum results i.e., good healing, function and aesthetics.

Wounds in the face should be closed in layers to attain anatomic alignment and to avoid dead space. The most common reasons for suture scar or suture mark is closing the wounds under tension and delayed removal. Ideally facial sutures should be removed between post operative days 4 to 6. Pressure dressing should be avoided in devitalised tissues to prevent anaerobic infection.<sup>[9]</sup> Even in the case discussed above the wounds were closed in

layers and the skin suture were removed on the 7<sup>th</sup> day post operatively.

Delayed primary closure is often done with contaminated or infected wounds in order to create a healthy wound bed and avoid untoward sequelae.<sup>[10,11]</sup> However treatment is also delayed for various other reasons, these include loss of blood, medical status of patient which was compromised either before injury or has become compromised as a result of extensive injury, patients religious beliefs (Jehovah's Witness) and financial constraints<sup>[12-14]</sup>, but in our case the patient received early primary closure of the wound as they were non infected and presented to us immediately after injury.

In spite of not having any accepted treatment algorithms for the evaluation and treatment of such facial wounds but there is a wide range of options for repairing a given defect. These include healing by secondary intention, primary closure, placement of a skin graft, mobilization of local or regional flaps, and free flaps.<sup>[15]</sup> In this case satisfactory healing with good functional and esthetic results were achieved by primary closure of the wound.

## CONCLUSION

It is an important and arduous task to repair and restore the function and aesthetics of the face because the face is an important physical feature, for complex social interactions in every-day life. Wounds of face with different etiologies offer a significant challenge to the maxillofacial surgeon. Case factors such as time of presentation in relation to injury, degree of injury, and anatomy involved play critical roles in determining the optimal method of management and the ultimate surgical outcome. Adequate understanding of vascularity and meticulous execution with regular follow up to ensure proper healing of the wound, in order to prevent functional & esthetic facial derangement is the key to success in the management of soft tissue facial trauma.

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