Treatment Considerations in Management of Soft Tissues Injuries – A Case Report

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Abstract

Soft tissue injuries which range from simple contusion to very complex injuries have become a common feature of road traffic accidents. The treatment consideration for such injuries depends upon the time of reporting of the patient for the expert management. The delayed presentation of the patient makes the management of such wounds difficult to achieve better results. This paper discusses about the various treatment considerations for such cases, with presentation of one such cases handled in our department.

Key Words: Facial Injuries, Delayed Treatment, Antibiotics, Scar, etc.

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Introduction

With growing number of road traffic accidents, we frequently come across soft tissue injuries which range from simple contusion to very complex injuries(1). These may be classified as Blunt injuries and penetrating injuries. Penetrating injuries which breach the skin or mucosal layer can be further divided into high velocity and low velocity wound(2, 3). These can be complicated by loss of tissue and contamination of wounds which may get further infected and affect the outcome. The medical status of the patient, which may be compromised before the injury or may have become compromised as a response to the extensive trauma plays an important role in deciding the course of treatment i.e. whether to institute early or delayed treatment. This article presents a patient who had a road traffic accident with soft tissue injury to face, who was managed with suturing and regular dressing over a period of 3 weeks.
CASE REPORT

A young male patient aged 18 years, presented to our oral and maxillofacial consultation one week after a road traffic accident. History revealed that he had been taken to a primary health care centre where he was given primary trauma care and certain amount of suturing was done in the casualty by the duty doctors.

Clinical examination of the patient revealed soft tissue injury to face with multiple lacerations over the cheek extending up to the angle of mouth, nose involving ala and alar base and vertical lacerations over the forehead which were sutured. Avulsion of certain amount soft tissue over zygoma and abrasion of most part of cheek over the right side of face were noticed.

The left side had suffered abrasion over the infraorbital region with minimal loss of tissue at the centre. Suture material was visible in few regions. In spite of being on antibiotics, the patient had developed infection and the wound had opened up in most regions of laceration. Most of the area was covered with slough and remnants of blood clot were seen in some regions (fig-1&2).

The patient was admitted to the hospital and parenteral antibiotics were given which included Cefotaxime, Gentamycin and Metronidazole. CT scan revealed no involvement of hard tissues, which confirm the diagnosis of soft tissue injury.

The patient was taken up for debridement and examination of extent of soft tissue injury. On thorough mechanical debridement and debridement with H$_2$O$_2$.
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 delayed wound was taken up. Sutures over forehead were intact and the wound was healthy, so no further intervention was done. Suturing was done in up to 4 layers, depending on depth of laceration and involvement of deeper tissues with 3-0 vicryl and Mersilk. Areas with through and through laceration, with communication into the oral cavity were sutured in 4 layers (buccal mucosa, muscle layer, superficial fascia and skin). A total of up to 100 sutures were required to close the laceration. The areas which were abraded and suffered avulsion 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 3 weeks. The avulsed wounds showed pus exudation in the first week and required additional debridement. At the end of 3 weeks, satisfactory amount of healing was achieved with good aesthetic results (fig-4).

Figure.3-Immediate Postoperative View

Figure.4 - 3 weeks post operatively

**Discussion**

With the transition from pre-antibiotic era to antibiotic age and better understanding of human body and its behavior to trauma, a
huge leap has been taken in management of injuries. Majority of patients, who present with facial injuries, suffer from penetrating injuries to face. However there may be facial bone fracture with only blunt injury to overlying soft tissues sometimes there may be only soft tissue injury either blunt or penetrating without underlying bone fracture.

The above reported case was one such case with only soft tissue injury, which ranged from simple abrasion to more penetrating injury involving deep muscle layers. There was no extensive loss of tissue and was managed with suturing and regular dressing. Though skin graft could have been used for avulsed regions, this was not done as the patient did not give consent for skin graft placement in order to avoid a second surgical site. The patient had presented to us one week after injury with the wound infected, and a very poor gross appearance. Good handling of tissues thorough debridement, preservation of tissues and good follow up care gave optimum results i.e., good healing and aesthetics.

Delayed primary closure is often done with contaminated or infected wounds in order to create a healthy wound bed and avoid untoward squeale(4, 5). 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 (6-8).

Acute blood loss results in inadequate perfusion and oxygenation, which precludes surgical intervention as it results in poor wound healing(6). Apart from this coagulation, inflammation, immune functioning, metabolism, drug therapies, sepsis, edema and excessive prolonged local pressure all have the potential to compromise soft tissue healing(7). Hyperglycemic status which also compromises wound healing could also co exist as a result of preexisting diabetes, obesity, stress response, nutritional support, advanced age, sepsis, pancreatitis and corticosteroids(7, 8).

Our patient however did not receive delayed treatment for any of the reasons cited above but due to unavailability of expert care within easy reach. Delay in treatment was not an option but fate. Wherever there is loss of large amount of tissue and primary closure not possible or where ever there is combination injury,
various treatment options are available, which include, mucosal and skin grafts, local regional and distant flaps, free flaps, allogenic graft material etc (9-11).

CONCLUSION

Although being a developing nation, our rural areas have benefit of primary health care. However, specialty care is not available in most parts. Even though the transport facilities are good, patients may fail to reach the specialty care within the early hours of injury.

Whether the patient receives early or delayed treatment, it can be said that satisfactory results can be achieved; this is not solely the credit of antibiotics or operating surgeons but also the good tissue behavior of facial soft tissues with excellent vascularity, even if the pedicle is small. Although early treatment is the best option delay in providing treatment should not dissuade us from expecting good results(9)(7, 10).

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