

Traumatic Facial Avulsion – A Case Report

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1. Abstract

Severe facial injuries resulting from high-speed motor vehicle collisions, assault and domestic violence, animal bites, and falls, etc pose significant management challenges due to their associated morbidity and potential mortality. Extensive facial avulsion and degloving injuries resulting from such mechanisms can lead to airway compromise, profuse bleeding, soft tissue loss, severe disfigurement, and subsequent post-traumatic aesthetic changes and functional limitations. Here we present a case of facial avulsion due to high speed road traffic accident which was managed successfully with good functional outcome.

2. Introduction

Facial aesthetics and symmetry are an important aspect of an individual's personality. Maintaining facial avulsion while maintaining facial symmetry is challenging. Severe facial injuries resulting from high-speed motor vehicle collisions, assault and domestic violence, animal bites, and falls, etc pose significant management challenges due to their associated morbidity and potential mortality. Extensive facial avulsion and degloving injuries resulting from such mechanisms can lead to airway compromise, profuse bleeding, soft tissue loss, severe disfigurement, and subsequent post-traumatic aesthetic changes and functional limitations. Deformities resulting from such injuries have long-lasting psychological effects which if not addressed can be devastating [1-3].

Here we present a case of young male patient who sustained facial avulsion injury following a road traffic accident.

3. Case Report

A 30 years old male patient, who was injured in a road traffic accident due to collision of patient's four wheeler with a heavy vehicle. Patient had taken primary treatment at primary health care

centre and was later referred to us within few hours of sustaining the injury. On receiving the patient, the patient was stabilized and tetanus prophylaxis was given and patient was evaluated. After examination patient was taken for a CT 3D face and brain and was found to have bilateral nasal bone fracture with bony septum, right maxillary sinus fracture, medial wall of right orbit fracture and fracture of anterior aspect of hard palate with bony loss in alveolar process of maxilla with loss of upper incisor teeth. The cerebral parenchyma was normal. Routine blood investigations were within normal limits. As the patient had normal tooth occlusion and adequate mouth opening, decision was taken to manage facial fractures conservatively

3.1. Patient was taken for reconstruction of facial avulsion.

Firstly, tracheostomy was done to prevent airway compromise, and then the avulsed flap, which was highly contaminated as the patient was injured in a road traffic accident, was reflected and was cleaned with pulse lavage.

There was upper lip tissue loss with injury to bilateral nasolacrimal duct. Minimal debridement was done so as to avoid further tissue loss. Nasal reconstruction was done. Nasal mucosa was identified and a catheter was passed through the nasal cavity and nasal mucosa was sutured with polyglactin suture 3-0. Pack was inserted. Alveolar muscles were closed with polyglactin suture 2-0. Intra oral mucosa was closed with polyglactin suture 3-0. No attempt was made to repair the injured lacrimal ducts. At last, the avulsed flap was closed in two layers with polyglactin suture 3-0 and prolene 4-0. However, tissue loss was found near right side of jaw, and at cheeks at both angle of mouth, which was covered with split thickness graft harvested from right arm. Other wounds at forehead were closed with polypropylene suture 5-0. On post operative day 2, nasal pack was removed and dressing was done under all

aseptic precautions. Antibiotics cover was given till suture removal was done. Stitch removal was done on postoperative day 10 and patient was discharged. The overall duration of hospital stay was uneventful.

The patient had left side full thickness upper lip defect and epiphora from right eye. After a period of 3 months, the upper lip

defect reconstruction was planned with full thickness Abbe's flap to improve the sphincteric action of lips and to prevent microstomia. Final inset was given after 21 days. The post operative result were satisfactory. The epiphora which was expected due to injury to nasolacrimal duct during the avulsion injury, was treated with dacryocystorhinostomy later. The patient was advised augmentation rhinoplasty and scar revision but the patient was not willing for it.



Figure 1 and 2: Avulsion injury of right side of face post road traffic accident.



Figure 3: Upper lip defect in the patient after 3 months of postoperative period



Figure 4 and 5: After lip reconstruction with Abbe's flap



Figure 6: Follow up picture after seven years

4. Discussion

Gross maxillofacial injuries are extremely challenging to manage because they can be complicated by the presence of airway obstruction and concomitant injuries to the cervical and cranial structures. However, physicians must focus on the principles of trauma care to promptly recognize life-threatening conditions and intervene appropriately. Patients with serious avulsion and degloving facial injuries may not be able to protect their airways due to their deformed anatomy and bleeding. Soft tissue avulsion flaps can act as a foreign body in their airway. These patients usually end up being intubated early in the course of their condition [4]. Hallock et al. emphasized that degloving injuries of the external nose are severe soft tissue avulsions requiring meticulous repair to prevent airway embarrassment and to provide the best aesthetic result [5].

Local tissues are always the best option for resurfacing the face [6]. We used this principle to correct the upper lip defect with Abbe's flap.

Soft tissue reposition was done in layers because improper repositioning of soft tissues predispose the site to deformities with subsequent adverse effects on the aesthetics of the final outcome [7].

Face is a very important aspect of an individual's personality. It not only has physical but also social and psychological importance in a person's life. Hence timely and precise intervention for treating facial avulsions is of utmost importance.

5. Conclusion

With successful management of this case of facial avulsion, we think that timely intervention is the key to a successful reconstruction. Adequate debridement and layer wise closure will improve

the surgical outcome in such cases of contaminated avulsions. The tissue defect, if any, should be dealt with at a later stage with good cosmetic and functional outcome.

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