

Case Report of a Penetrating Knife Injury to the Maxillofacial Region

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ABSTRACT

Objective: Penetrating injuries to the maxillofacial region are rare and rarely reported, however pose a significant risk of morbidity and mortality as it houses vital organs.

Case: A 25-year-old man presented to the emergency department with a knife inserted into the right side of the eye. CT showed it penetrated the medial wall of the orbit but not involving the septum. A multidisciplinary team approach helped in the removal of the knife and preparing for any complications arising from it.

INTRODUCTION

Penetrating facial injuries are reasonably rare traumas compared to other areas. These injuries can be caused by high or low velocity objects, blunt or sharp, or can be due to unintentional causes, such as motor traffic accidents, or intentional causes, such as stabbings.

Maxillofacial injuries can be life-threatening due to the presence of vital structures, which can result in ophthalmic, vascular, neurological, oropharyngeal, and skeletal complications. Hence, early stabilization of the patient, appropriate imaging, and early multidisciplinary interventions can reduce morbidity and mortality significantly.

Case Presentation

The ENT department was consulted to review a 25-year-old male patient at the emergency department. The patient presented with a knife wound on the left medial wall of the orbit after being stabbed in a fight. The patient was well oriented to time, people, and place; however, he admitted to drinking 2 bottles of beer. On examination, the knife was firmly impacted to the left medial wall, displacing the eye laterally, and a small incision on the entry, approximately 1 cm on the lower eyelid. Normal vision was reported by the patient.

The patient underwent a CT to visualize the trajectory and depth of the insertion of the knife, and to determine if the major anatomical structures were involved. The CT revealed the knife had penetrated the medial wall of the orbit, sparing the septum.

After further consultation with the oral-maxillofacial and ophthalmology team, it was decided to take the patient to the operating theater for the removal of the knife. Under sedation, an attempt was made to remove the knife following the trajectory and path of insertion after proper stabilization of the head. Initially, the knife was removed with minimal effort. Very minimal bleeding was observed post-removal. A 1cm laceration on the lower eyelid on the left side made during the entry path was sutured. No other injuries were noted to the adjacent structures.

The patient was admitted to the ward for observation and initiated on analgesics and antibiotics. The patient was seen one month after the operation, and healing was uneventful.



Fig 1; Knife in situ



Fig 2; Foreign body post removal



Fig 3; 2 day post operative view

DISCUSSION

There is a shortage of literature on penetrating knife injuries to the maxillofacial region. Bourguignon Filho et al, reported a similar case in which a knife penetrated the right orbit up to the skull base, but no major complications were reported post-removal (1). The age group most affected by gunshot wounds and penetrating knife injuries was 15-35 years, of whom most were from lower socioeconomic status, as reported by Jett et al (2, 3).

The intricate anatomy of the maxillofacial region, including the sinuses and buttresses, helps absorb blunt trauma to the area, which helps in reducing injury to the adjacent structures. However, penetrating or sharp injuries often have fatal consequences (4). Management of these injuries depends on the site affected, the anatomical structures involved, and the foreign body concerned (5). Immediate life-threatening complications should be dealt with first, including airway obstruction, hemorrhage, and shock. After stabilization of the patient and radiological studies, the true extent of the injury and anatomical structures involved are ascertained. An angiogram may be an important aid in ruling out vascular compromise (6). All the above steps help in the planning of the surgical intervention, which should be systematic and multidisciplinary.

The surgical plan should involve the simplest route for the removal of the foreign object, which is usually through the tract created during the penetration. There might be a need to extend the entry wound and expand the tract for adequate exploration and removal of the object. Always, the site, the depth, and nature of the foreign body should be considered during removal (5). When foreign objects are in situ for an extended period, the track becomes eradicated and thick fibrous tissue is formed, making it difficult in its retrieval. The team should be prepared for bleeding vessels in case the foreign object has acted as a tamponade following laceration during penetration (7). Proper debridement, irrigation, and approximation should be done to prevent dead space.

Most of the penetrating facial injuries can be repaired by primary intention. Primary treatment ideally should be done within 48 hours of the injury with the aim of closure of both soft and hard tissues (8). Delayed treatment should be considered if there is a potent oedema, infected laceration, and complex soft tissue injuries (9).

CONCLUSION

Maxillofacial penetrating injuries require a multidisciplinary team approach in which proper assessment should be made and preparations should be made for any possible complications during the removal of the foreign object.

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