



Contents lists available at ScienceDirect

Oral and Maxillofacial Surgery Cases

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A fully retained knife blade within the face - An unusual sight[☆]

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1. Introduction/Abstract

Penetrating knife injuries to the face are uncommon, even rarer are impacted knife blades. Interpersonal violence has resulted in more cases reported from South Africa than elsewhere, but still retained knife blades remain uncommon. We present the case of a 25 year old gentleman admitted to Chris Hani Baragwanath Hospital with a penetrating knife injury to the orbit and a 10.6cm retained blade. Management included multidisciplinary evaluation of the patient, radiological assessment of bony and vascular injury, and removal of the blade under general anaesthetic. Despite such a gruesome injury, all visual parameters were fully restored on discharge Fig. 1.

2. Case presentation

A 25 year old male was transferred from Bertha Gxowa hospital after being stabbed with a knife in the left infraorbital region by an unknown male assailant. Upon arrival he was haemodynamically stable with a GCS of 15. There was no evidence of cerebrospinal fluid (CSF) leak. Pupils were equal and reactive to light and gross vision was normal bilaterally. Extraocular eye movements were normal but reduced in all directions in the left eye. On ophthalmic consultation, visual acuity was recorded as 6/9 in the left eye. There was no papilloedema and intraocular pressure was normal in both eyes on digital palpation. There was an isolated 30mm by 20mm left infraorbital laceration with no visible or palpable foreign object in situ. There was no associated paraesthesia in the infraorbital nerve distribution and cranial nerves were intact. Radiographic imaging was performed to exclude intracranial and/or vascular injury (Fig. 1).

Lateral and anteroposterior plain radiographs identified a large radiopaque object suggestive of a retained knife blade. Computed tomography (CT) was performed to determine the position of the foreign object in relation to the vital structures. The knife blade was visualised entering the face inferior to the left globe, then travelling through the left medial orbital wall, ethmoid air cells, turbinates and right sphenoid bone with the inner tip lying adjacent to the styloid process. There was no visible intracranial injury and no need for neurosurgical intervention. A CT angiogram (CTA) was requested to identify any vascular injury or proximity to significant vasculature which may complicate surgical retrieval of the foreign body. The CTA excluded major blood vessel involvement.

Removal of the retained knife blade was performed under general anaesthetic jointly with ophthalmology. The existing laceration was used for access and upon retraction the blade was visualised (Fig. 2). A bony window was produced within the infraorbital rim periosteum in order to better visualise and access the blade. The blade was extracted in the opposite direction of entry (Fig. 3). Heavy artery forceps were attached to the knife blade and a mallet was used to uneventfully tap it out of the maxillofacial skeleton. Forced duction postoperatively was 4/4 and the globe remained uninjured. The bony defect did not need plate reconstruction, and the

[☆] We present a case report of a fully retained 10.6cm knife blade within the face that was successfully removed in Chris Hani Baragwanath Hospital, South Africa.

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<https://doi.org/10.1016/j.omsc.2018.10.002>

Received 7 June 2018; Accepted 20 October 2018

Available online 22 October 2018

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Fig. 1. Posteroanterior radiograph showing foreign object position.



Fig. 2. Knife blade visualised upon exploration of the infraorbital laceration.

laceration was closed with interrupted sutures. Postoperative recovery was uneventful and there were no symptoms or signs of ocular trauma on discharge, other than the left infraorbital laceration.



Fig. 3. 10.6cm knife blade removed wholly.

3. Discussion

Penetrating knife injuries to the face are more commonly reported in South Africa. In Europe blunt trauma is more likely following interpersonal violence. However in a study of 179 cases of cranio maxillofacial stabbings, only nine were isolated to the orbit [1]. Rarer still are retained knife blades. A thorough initial assessment and prompt intervention are vital as substandard management can result in loss of vision, intracranial haemorrhage and CSF leakage acutely, and later complications of reduced ocular motility and diplopia [2].

Radiographic imaging with two plain films in two different planes is essential to localise the foreign body. Indications for subsequent imaging with CT include low density foreign bodies and deep penetrating injury with metal foreign bodies [3,4]. Maxillofacial trauma can result in profuse bleeding and airway compromise, major vessels at risk are best visualised with a CTA [5,6]. Even if there is no active bleeding, trauma to vessels can result in pseudoaneurysms therefore CTA allows the clinician to pre-empt vessel rupture prior to retrieval of the blade [7]. Retrieval with vascular surgery or interventional radiology may be indicated in a high risk case.

The foreign body was removed by clamping the blade with heavy forceps, and tapping it out with a mallet in the opposite direction of entry. Ballim et al. proposes an alternative 'double bone nibbler' technique arguing more controlled removal with reduced risk of knife recoil [8]. Foreign objects within the orbit have also been reported as manually removed if not firmly embedded. The method of retrieval should minimise damage to vital anatomical structures.

Conflicts of interest

None.

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