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FOREIGN BODIES IN THE NECK: GLASS SHARDS IN SUSPENDED ANIMATION – A CASE REPORT

Otorhinolaryngology

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ABSTRACT

Penetrating neck injuries and resultant foreign bodies are quite common in otorhinolaryngology emergency and out-patient department, more so in case of road traffic / industrial work site accidents. However, these conditions require immediate medical evaluation and management as lodging of foreign bodies over a period of time may lead to altered clinical course due to complications. Residual foreign bodies in neck are quite rare. Here, we present a case of silent residual glass shards in neck in close proximity to the carotid sheath over a period of 45 days.

KEYWORDS

Glass Shard, Penetrating Neck Trauma, Carotid Sheath, Retained Or Residual Foreign Body

Introduction

Penetrating head and neck injuries often drive foreign bodies into the soft tissues. Usually in the emergency room, immediate closure of soft tissue wounds after thorough irrigation and debridement is for control of bleeding. Foreign bodies driven into soft tissues may remain unnoticed if they are away from trauma site.

Foreign bodies in the head and neck region, which are long-standing, may initiate inflammatory reaction which may spread to potential deep neck spaces and upper mediastinum depending on the object's composition. This defense mechanism, however, acts as a beacon and attracts the clinician's focus to rule out retained foreign bodies. Problem arises if the foreign body is inert and not much inflammation ensues. They remain mostly asymptomatic and have variable presentations which are ambiguous enough to mislead clinicians. Their removal can be quite an uphill task especially if it is embedded in soft tissues. The purpose of reporting this case of post-traumatic silent glass shards in the neck is to emphasize the need for thorough clinical and radiological evaluation of the patient especially in case of inert foreign bodies like glass, porcelain, etc.

Case report

A 27 year old gentleman met with a road-traffic accident while riding a bike (head-on collision with a car) 45 days earlier in which he suffered head and neck injuries. He was shifted to a hospital elsewhere for emergency medical aid where he underwent maxillary and mandibular fracture reduction and wiring. Multiple penetrated glass shards (from the car's windshield) in the right side of neck were removed. After complete recovery, he was discharged. He presented at our OPD with a small hard swelling in the right side of neck and cheek which was noticed incidentally. On retrospective evaluation of history, the road-traffic accident, treatment and recovery was recorded which aroused suspicion of residual glass shards.

An antero-posterior and lateral X-ray view of neck were taken which confirmed 2 residual foreign bodies, one impacted in right parotid and the other lateral to right ala of thyroid cartilage. A suspicious third radio-opaque shadow just in parasagittal plane overshadowed by cervical vertebra was also noticed (**Fig. 1,** red block arrow – suspicious 3rd foreign body). Trismus and restricted jaw opening (>1 finger breadth) was noted – mandibular fracture site mal-union. On palpation, one glass shard was just anterior to right carotid artery pulsation. To rule out impingement on right common carotid / right internal jugular vein / right carotid sheath, computed tomography (CT) of neck was done. It revealed the 3rd bigger glass shard on the right side just near thyroid prominence. It also confirmed close proximity of one glass shard to right carotid sheath **(Fig. 2)** with no impingement on the vital vascular structures. With a provisional diagnosis of residual / retained glass shards on right side of neck and cheek, surgical excision was planned.

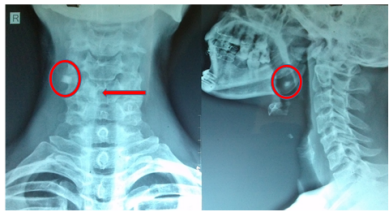

Figure 1. X- Ray Lateral and Antero-Posterior views of neck showing foreign bodies

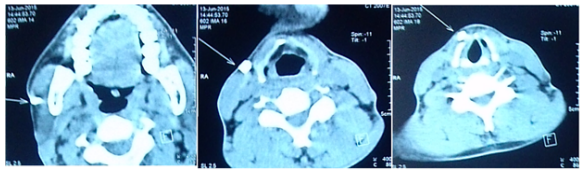

Figure 2. Computed Tomography of neck showing glass foreign body at various levels

Fiber-optic naso-tracheal intubation was done under general anesthetic as there was difficult oro-tracheal intubation and also to provide a controlled environment for managing unpredicted complications. Under meticulous palpation and control of the right carotid artery, the sites of foreign body were identified. The glass shards were fully encapsulated with no significant inflammation / adhesion which eased the delivery of the 3 foreign bodies **(Fig. 3)**. Wounds were irrigated and sutured. Oro-maxillo-facial surgeons treated trismus with necessary corrective mandibular osteotomies and plating. Procedure and recovery in the hospital was uneventful.

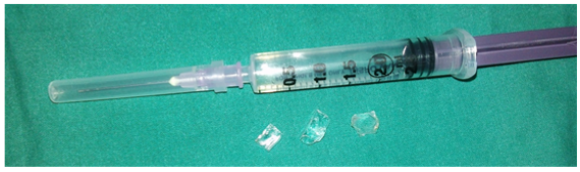

Figure 3. Surgically removed glass shards from neck

Discussion

Residual foreign bodies in the neck might result in life-threatening complications depending on the nature of the object. This case report illustrates that the glass shards which had penetrated the neck became symptomatic later due to degenerative changes around the foreign body. At the outset, close proximity of foreign bodies to vital structures in the head and neck region makes their removal quite a challenge [1].

Delayed presentation after initial trauma such as in this case have also been reported [2]. This patient is an example to remember that in case of glass associated injuries, even seemingly superficial wounds may harbor deep penetrated fragments. More so if the wounds appear deceptively minor without any symptoms. This emphasizes the fact that thorough and meticulous assessment of penetrating neck trauma is mandatory and residual shards afar from entry site should also be kept in mind [3].

Computed Tomography is the imaging modality of choice for detection of majority of foreign bodies [4]. Only CT of maxilla and mandible for fracture reduction and wiring were taken at the initial presentation, elsewhere. No initial CT scans of neck were available. In this patient, all the 3 residual foreign bodies were not confirmed until a CT scanning of the neck was done since the plain x-ray (AP and Lateral) views readily singled out 2 of the 3 foreign bodies. The X-ray, however, showed only an ambiguous radio-opaque shadow in line with cervical vertebra and did not reveal the 3rd foreign body. It was obscured by the opacity of cervical vertebra resulting in disappearance of the foreign body on a regular AP and lateral view of neck [5]. The cross-sectional view of CT imaging is of tremendous use in determining the location of the foreign body and its relationship to vital structures in the head and neck [6]. It will also warn the surgeon of any impending complication.

The removal of foreign bodies becomes easier if it is tracked from definitive anatomical landmarks. The search for foreign body in an indefinite area can further damage adjacent structures [7]. There are reports about delayed neurological and vascular injuries in similar situations but these describe thoracic penetrating trauma and delayed medullary injury, or cervical trauma with immediate nervous, aero-digestive and / or vascular damage [8]. Another problem to keep in mind when dealing with inert foreign body is the possibility of migration within neck spaces. Therefore, in such cases, it might prove appropriate and prudent to repeat imaging on the day of surgery, rather than start surgical intervention based on the patient's older imaging films / reports [9].

Conclusion

In case of residual foreign bodies, a contributing history, high degree of clinical suspicion and appropriate investigations should reduce chances of morbidity. Conventional / digital X-rays taken at the time of acute presentation has a role in evaluation, but may be misleadingly normal. Computed tomography images provided better spatial orientation of the foreign bodies along with details of size, shape, etc. This case illustrates that the absence of clinical signs does not exclude hidden pathology in penetrating injuries of head and neck, even with a delay in presentation.

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