CASE REPORT

Incidental Quiescent Metallic Foreign Body in a Case of Penetrating Neck Injury

Vishal Sharma[1], Peeyush Verma[2], Gurleen Gill[3], Amanjeet Singh[4]

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Abstract

Penetrating foreign bodies in the neck due to occupational injury may cause life-threatening complications, hence their urgent removal by neck exploration is incumbent. Finding this foreign body in the operative field may sometimes be arduous and demanding for the surgeon. We present a case of a metallic foreign body embedded into the scalene muscles of the neck and share our experience with a relevant review of the literature. Alongside this penetrating foreign body in the neck, what captivates our attention is a dormant foreign body lying in the buccal region for decades which did not demand any removal.

Keywords: Aerodigestive tract, Anterior neck injury, Buccal space, Button battery, Case report, Computed tomography scan, Foreign body, Forgotten foreign body, Neck, Metal, Penetrating.

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Background

The head and neck are the most important part of the body consisting of many significant neurovascular structures. Although foreign bodies in this area present commonly due to ingestion or inhalation, penetrating neck trauma due to knife or gunshot wounds is not uncommon. Penetrating foreign bodies in the neck due to occupational injuries is much rarer in occurrence. When surgery is required to manage patients with penetrating neck trauma due to foreign bodies, clinical findings and suitable imaging investigations must be carefully formulated to develop into an efficient secure, and least damaging mode of treatment for patients.[1]

Case Description

A 28-year-old male, metal forger by profession, presented to ENT Emergency Department with an alleged history of foreign body in the neck. The patient had been hammering on a metal sheet, a fragment of which broke off and flew deep into the patient's neck on the right side. He underwent radiographs of soft tissue neck anteroposterior view and lateral view at a peripheral hospital, which showed a radio opaque object in the soft tissues of the neck on the right side. The patient was hemodynamically stable and was referred to us for further management.

Local examination showed a 2 cm × 1 cm lacerated penetrating wound on the antero-lateral side (right) of the neck in the posterior triangle, 2 cm behind the posterior border of the sternocleidomastoid muscle, and 5 cm above the superior border of the clavicle. There was a slight oozing of blood from the wound site with mild erythema and surrounding soft tissue induration. The rest of the ENT examination was normal.

The patient underwent non-contrast computed tomography (CT) neck (NCCT Neck) which confirmed its presence as a hyperdense structure (mean attenuation value 2,500 s/o metallic foreign body) in the supraclavicular region on the right side piercing the scalene muscles (Fig. 1). Multiple air loculi were seen within the muscle and subcutaneous tissue. Another similar density structure mass was seen in the buccal mucosal space on the left side with surrounding fat stranding (Fig. 2). This incidental finding of a second metallic foreign body co-related with the accidental injury during childhood, although the patient had forgotten about the incident and was asymptomatic due to this foreign body, and history was revealed only on deep probing.

Exploration of the neck under general anesthesia and removal of foreign bodies was planned after routine investigations and a negative COVID test. Two horizontal incisions 2 cm each were given from the margin of the entry wound. Subplatysmal flaps were raised superiorly and inferiorly. The right external jugular vein was found to be lacerated and ligated. The right sternocleidomastoid muscle

[1]Department of Otorhinolaryngology, Government Medical College, Patiala, Punjab, India

[2]Department of Ear Nose Throat (ENT) and Head Neck Surgery, Employees, State Insurance Corporation (ESIC) Model Hospital, Punjab, India

[3]Department of Otorhinolaryngology, Civil Hospital Nabha, Punjab, India

[4]Department of Otorhinolaryngology, ESIC Model Hospital Ludhiana, Punjab, India

Corresponding Author: Peeyush Verma, Department of Ear Nose Throat (ENT) and Head Neck Surgery, Employees, State Insurance Corporation (ESIC) Model Hospital, Punjab, India, Phone: +91 9888815168, e-mail: peeyushverma42@gmail.com

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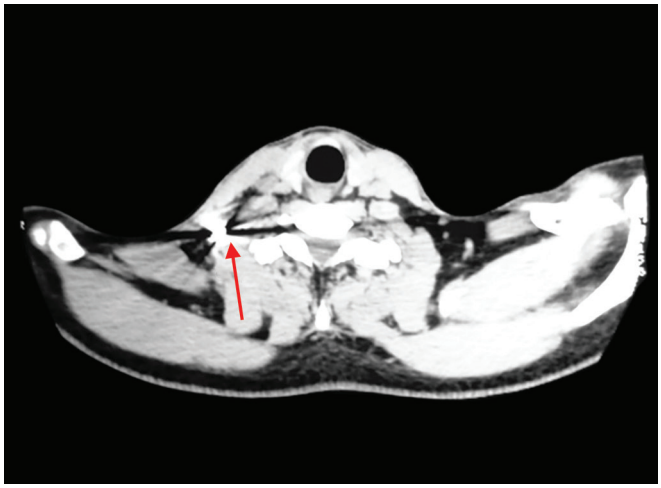

Fig. 1: Metallic foreign body lying over scalene muscles

Fig. 2: Quiescent foreign body in the buccal space

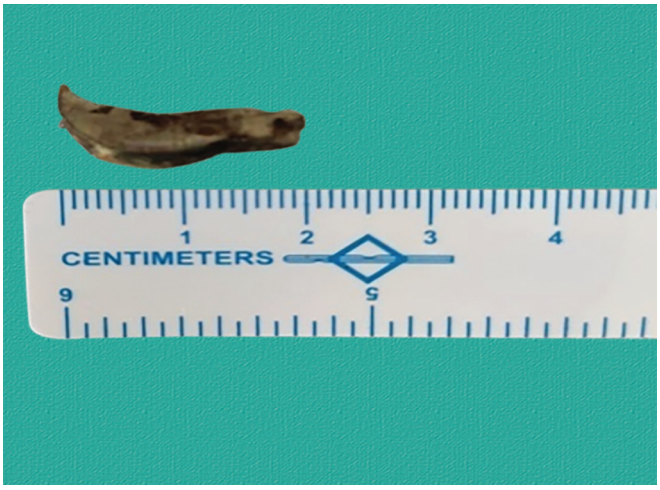

Fig. 3: 2 cm × 0.7 cm metallic foreign body

was identified and retracted medially. Soft tissue dissection was done circumferentially around the area where the foreign body was palpated. The foreign body was removed carefully without damaging the surrounding soft tissue (Fig. 3). Hemostasis was achieved. The suturing was done in two layers and the wound closed. The postoperative period was uneventful.

Discussion

Foreign bodies of the upper aerodigestive tract are one of the most common emergencies in day-to-day otolaryngological practice.[2] These foreign bodies may rarely penetrate extraluminal through the esophageal wall and then migrate to subcutaneous tissues and different fascial planes.

Foreign bodies in the neck can also result due to gunshot injuries or stab wounds by a knife or sharp object or less commonly a penetrating foreign body due to accidental or occupational injuries. Such penetrating foreign bodies to the neck require immediate removal otherwise they may lead to fatal complications. These penetrating foreign bodies could be a wooden splint, metal pin, metallic wire, or a piece of metal sheet as in this case.[3–5]

For foreign body identification, X-ray neck soft tissue (AP and Lateral view) are most commonly used. However, radiography has its own disadvantage of being less sensitive. So, CT scan becomes a more effective weapon in precisely locating foreign bodies.[6] Usually, a contrast-enhanced CT scan with 3-D reconstruction can also be used to determine proximity to neuro-vascular structures and guide surgical exploration without any complications. Magnetic resonance imaging (MRI) does not possess any extra benefit in such cases here unless we are confidently sure of the non-metallic nature of the foreign body.

A magnet is a handy and very simple instrument for the removal of metallic foreign bodies anywhere in the body, without subjecting the patient to the harmful effects of radiation by C-arm. Hence it is a very important tool in the armamentarium of ENT surgeons.[7] We also kept a magnet handy in case our search failed. The C-arm image intensifier was also kept as a backup for intra-operative radiography and foreign body localization.

Also, the presence of another long-standing foreign body in buccal space in this same patient makes it an unusual case. We did not remove this incidental foreign body (after discussing it with the patient's relatives intra-operatively) as it was lying inert for several years and the patient was fortunate enough that it had not undergone any complications. A similar case of a foreign body in the head and neck lying quiescent for several years is very rarely reported in the literature.[8] Usually, foreign bodies in the head and neck are not well tolerated and they require urgent removal.

Orcid

Vishal Sharma https://orcid.org/0000-0001-8497-6534

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