Uncommon Penetrating Cervical Wound by a Metallic Projectile in a Truck Driver : A Case Report

Abstract

We report the case of a 31-year-old truck driver who presented with an unusual lateral cervical injury caused by a metallic projectile lodged at the C7 level, a zone known for its high vascular vulnerability. Despite the patient's stable clinical status upon admission, the anatomical characteristics of the wound necessitated concern for potential vascular damage and vigilant monitoring. This observation highlights the paramount importance of meticulous assessment and management in cases of cervical wounds caused by projectiles.

Introduction

Penetrating neck wounds are defined by the disruption of the platysma muscle (1). They represent a true surgical emergency due to the potential involvement of vital cervical structures, including major vessels, nerves, and aerodigestive tract. Mortality most commonly occurs in the prehospital setting, secondary to hemorrhage or asphyxia, particularly when bleeding appears minimal and is underestimated (1–3). We report a case of penetrating cervical wound caused by a metallic projectile in a truck driver.

Case presentation

A 31-year-old male truck driver from Zoueratt, Mauritania, with no significant medical or surgical history, presented with a penetrating cervical wound caused by a metallic object. There were no immediate life-threatening signs on admission with absence of signs of active bleeding, dyspnea, dysphonia, or dysphagia.

The incident occurred while the patient was striking a truck rim with a hammer. A fragment broke off, becoming a high-velocity projectile, and penetrated the right lateral neck, embedding beneath the skin and causing minimal external bleeding.

The initial management of the case at Zoueratt emergency department included dressing the wound without attempting to remove the foreign body. A cervical CT scan was performed, after which the patient was referred to the ENT department of the National Hospital Center in Nouakchott.

Upon admission, the patient was awake and alert, afebrile, with normal oxygen saturation (98% in ambient air), blood pressure (130/70 mmHg), and heart rate (80 bpm). He reported localized pain on cervical movement. Clinical examination revealed a mildly blood-stained dressing and a hematoma over the wound site **(Fig1)**. No abnormalities were noted on systemic examination.

A cervical CT scan demonstrated a metallic foreign body measuring 9 × 5 mm located in the right lateral cervical region at the level of the C7 vertebra. No osseous or vascular injury was detected **(Fig2)**.

Surgical intervention involved removal of the foreign body, which was lodged near the internal jugular vein **(Fig3)**. The postoperative course was uneventful, and the patient was discharged on postoperative day 3.

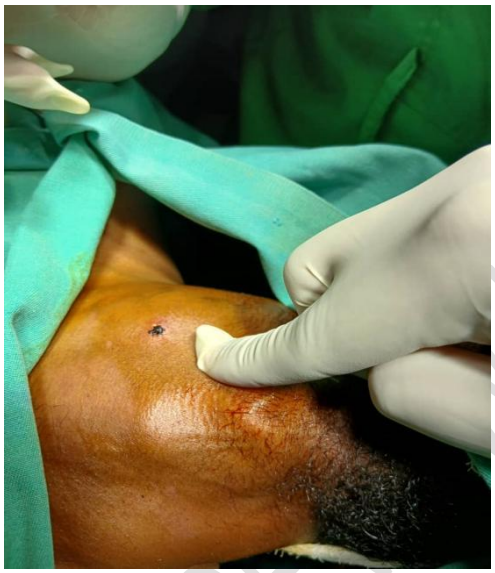

Fig1: Right lateral cervical wound with associated hematoma.

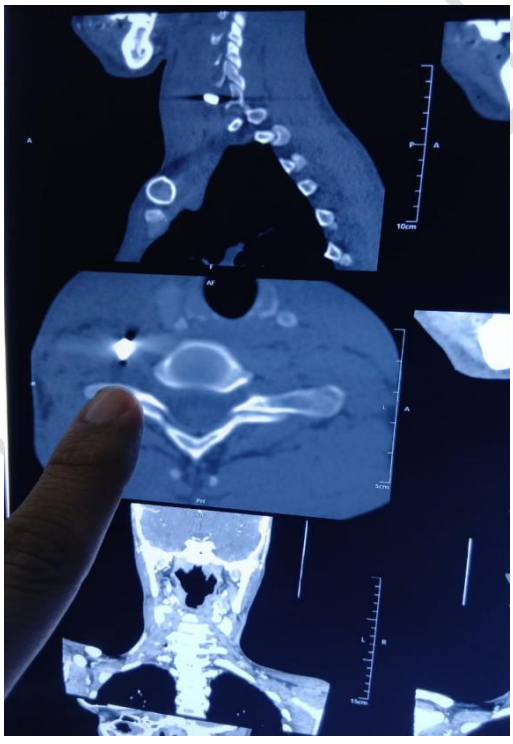

Fig2: CT scan showing a metallic foreign body **Fig3**: Extraction of the metallic object.

at the level of C7 .

Discussion

Penetrating neck wounds are among the most life-threatening injuries, with a reported mortality rate of 3–6% from uncontrollable hemorrhage (2,4,5). Leurs fréquences varient en fonction de la zone géographique. The incidence varies by region, with 1.3 cases per 100,000 population reported annually in Finland (6) and much higher rates up to 70% of neck traumas in North America (7). In African studies, Tall et al (8) reported 1.7 cases per year, while Ndour et al (1) noted an increase to over 20,3 new cases annually. These wounds are more frequent in young adult males engaged in manual labor or high-risk occupations (9).

Cervical vascular injuries are typically caused by bladed weapons or firearms (5). In our case, the injury was due to an occupational hazard, a metallic fragment from a hammer, that penetrated the right sternocleidomastoid region, an anatomically vulnerable area. These injuries may cause hemorrhagic, respiratory via compressive hematoma, or neurological threats. Vascular injury should be suspected regardless of the mechanism or localization (5,10). In our case, the foreign body was located in the region of the sternocleidomastoid muscle. Based on its location on the CT scan, a vascular injury was highly suspected, even in the absence of active bleeding and despite the patient's hemodynamic stability. Signs suggestive of vascular injury include : active hemorrhage, hypovolemia, pulsatile or expanding hematoma, diminished carotid or radial pulses, or audible vascular bruits (5). Venous injuries are more commonly observed. (1,9).

Thorough and repeated clinical examination is fundamental (11). Two situations can be recognized:

- **Absolute emergency**, requiring immediate surgical intervention, includes sucking wound, laryngeal dyspnea, subcutaneous emphysema or expanding hematoma.
- **Relative emergency**, where additional imaging can refine the diagnosis in stable patients in the case of a non-hemorrhagic wound, mild dyspnea, dysphonia and dysphagia (8,11).

In this case, despite clinical stability and absence of pathognomonic signs, CT scan was essential to rule out vascular involvement. Surgical exploration was deemed necessary given the foreign body's proximity to major vessels. The indication for exploratory and reparative cervicotomy is not debatable in patients presenting an absolute emergency (11). Meanwhile, in the case of hemodynamically stable patients with relative emergency, there are two possible therapeutic approaches. Some advocate for an **interventionist approach** and immediate exploratory surgery in settings lacking advanced diagnostic capabilities according to Stroud and Landry criteria (12). Meanwhile, others favor the **conservative approach** relying on clinical and imaging findings to guide selective exploration or close observation (11,12).

For our patient, surgical removal was indicated due to the nature of the foreign body and potential for complications. The outcome was favorable, with no postoperative sequelae before discharge after 48 hours.

Conclusion

Any cervical wound, regardless of initial presentation, requires a structured injury assessment protocol. Emergency CT scanning should be therefore systematically performed in order to detect life-threatening complications during the initial phase.

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