

## Case Report

# Metallic Foreign Body in the Neck – a Rare Incidence

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## ABSTRACT

Penetrating injuries of the neck comprise up to 10% of all cases of trauma. We report the case of a 19 years old female who was admitted to the Neurosurgery department of Lahore General Hospital with complaints of upper and mid back pain for 3 weeks, numbness of legs, abdomen, and chest for 2 weeks, and weakness of legs for 10 days. There was no preceding history of trauma, major surgery, or systemic illness. Her neurological examination suggested upper motor neuron signs in both lower limbs. She underwent a series of extensive investigations to rule out the differential diagnosis of myelitis, arteriovenous malformation, and caries spine. In parallel with ongoing investigations, she received symptomatic treatment and empirical antituberculosis therapy. Her MRI report showed a photon-deficient area at the level of T1, which was also seen in the chest X-ray but was overlooked as an artifact. Later on, it was found to be a stray bullet that was causing the symptoms.

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## INTRODUCTION

Neck injuries that advance beyond the level of platysma are defined as penetrating injuries.<sup>1</sup> Such wounds constitute up to 10% of cases of trauma.<sup>2</sup> Penetrating trauma to the neck may

cause serious injury to the vital structures and hence needs vigilant assessment and management.<sup>3</sup> In these patients meticulous correlation between clinical features and radioimaging is required to adopt the treatment strategy either conservative or invasive.<sup>4</sup> There are various case reports of retained foreign objects in the spine ranging from iatrogenic to traumatic. These retained foreign bodies may cause early symptoms or sometimes stay silent for long periods<sup>5</sup>.

## CASE REPORT

We report an unusual case of a young female from a rural area who presented to the outpatient department of Neurosurgery Unit-I Lahore General Hospital with primary complaints of

upper and mid back pain for 3 weeks, numbness of legs, abdomen, and chest for 2 weeks associated with weakness and spasms of legs for 10 days. The pain was characterized by heaviness starting from the midline and radiating to the sides and lower mid back. There were no particular aggravating factors and she was not much relieved by analgesics. The patient sought medical attention when the pain started worsening and ascended to the chest just below the level of the neck. Later on, she also developed numbness on the inner side of her left forearm. Arms were not involved, cranial nerves were spared and sphincters were intact. She denied a history of trauma, recent or past surgery, and prolonged systemic illness. Her neurological examination was suggestive of upper motor neuron signs in both lower limbs. Joint position sense was impaired at distal joints. Temperature and touch sensations were intact and Nurick Grade was 5. She was investigated for Myelitis, AV malformation, and Pott's disease. While undergoing investigations she was treated with steroids (dexamethasone/methyl prednisolone), analgesics, muscle relaxants, and antituberculosis therapy.

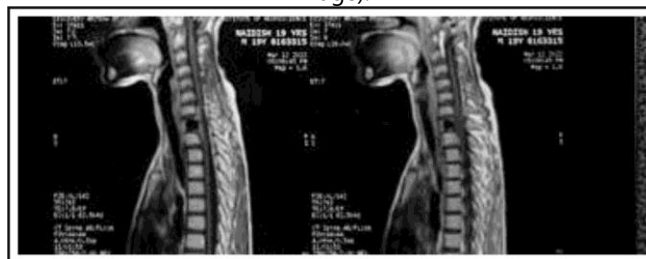
Her MRI revealed an artifactual photon deficient area at the level of T1 (Figures 2 – 4). SPECT/CT images revealed a dense (metallic density) area at the level of T1 extending into the intrathecal sac-likely due to bone cementing (Figure 6). The foreign body was evident in the initial chest radiograph performed at the time of admission, but it was assumed as a radiological artifact due to clothing or ornaments (Figure 1). A lateral view would have resolved the matter. The issue would have been sorted out if the x-ray technician had looked for the presence of metallic objects on the patient's clothes and jewelry. Thus avoiding a cascade of unnecessary investigations and solving the diagnostic dilemma meanwhile saving the patient from the agony of undergoing extensive workup.

Although the patient could not retrieve any

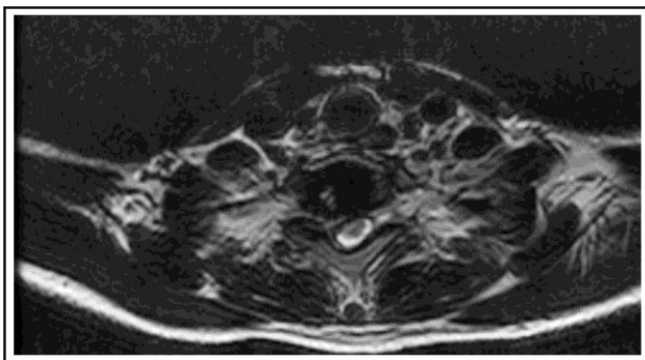
preceding history of neck trauma, she belonged to a village where sleeping in the courtyard is a common lifestyle, and symptoms were first noticed after awakening hence the probability of unobserved affliction by a stray bullet was the most likely possibility in this case. It was assumed that the bullet remained silent for a definite period before causing clinical manifestations therefore the entry wound had been closed by that time.



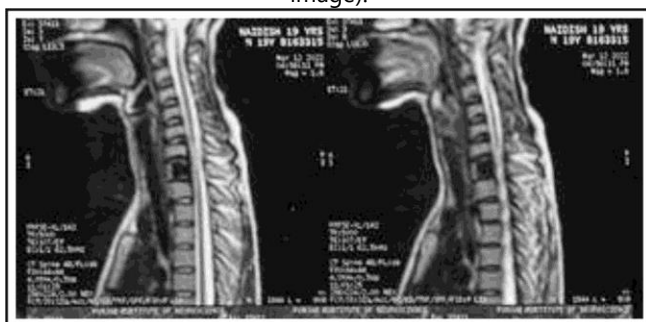
**Figure 1:** Plain X-ray of Cervical spine (Patient consented for image).



**Figure 2:** T1 weighted Sagittal MRI sequence (Patient consented for image).



**Figure 3:** Axial T2 weighted MRI (Patient consented for image).

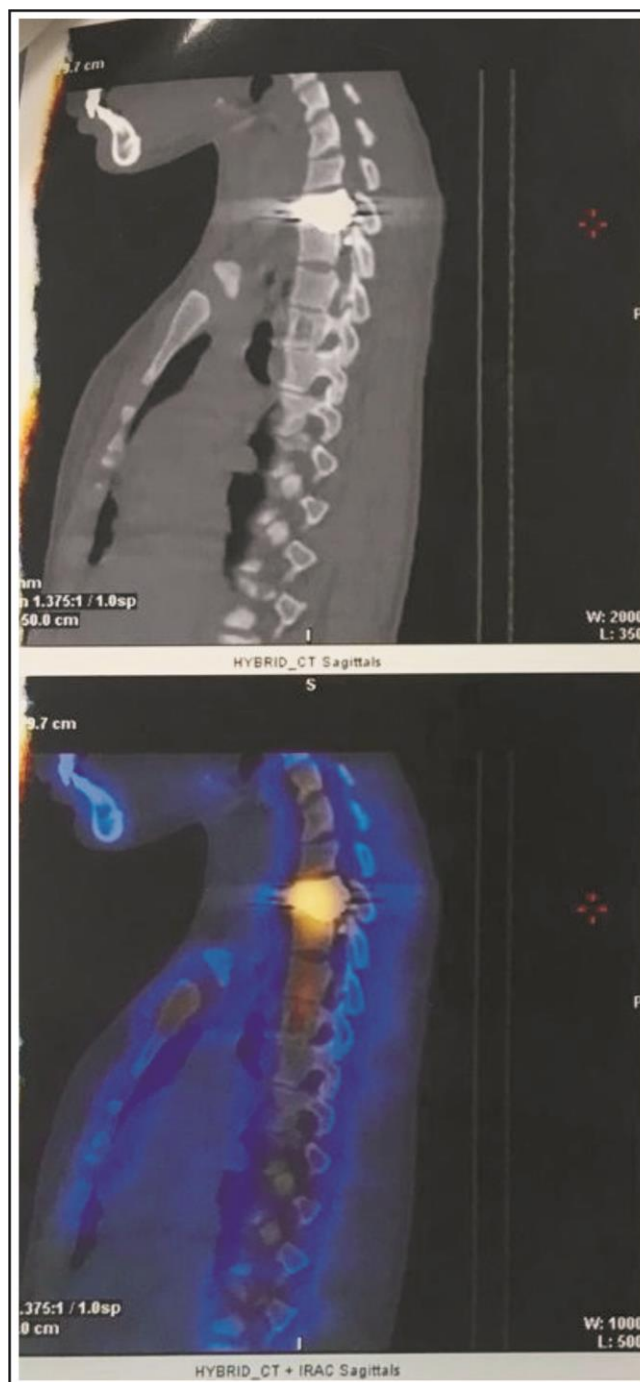


**Figure 4:** T2 Weighted Sagittal Image (Patient consented for image ).

## DISCUSSION

Penetrating injuries neck may prove fatal because of damage to important anatomic structures, therefore prompt management is warranted in such cases.<sup>6</sup> Radiological investigations are required to localize and plan treatment because diagnosis is not possible based on examination.<sup>7</sup> Objects impacted or retained in midline may be hard to visualize due to the opacity of the spine therefore it is advised to take both lateral and anteroposterior views of radiographs.<sup>8</sup> A study conducted on 57 patients afflicted by penetrating neck injuries concluded that in these patients a safe and practical approach to management should be decided based on clinical presentation.<sup>9</sup>

Selective management is advocated in patients with a definite history of penetrating neck injury (PNI). This relies on physical examination and judicious use of investigations (no zone approach).<sup>10</sup>



**Figure 5:** Sagittal CT scan showing Metal Artifact (Patient consented for image).

## CONCLUSION

Clinical data obtained from the patient is not always dependable and can sometimes be perplexing due to poor recall. In this case, a difficult history collection and the assumption of a



**Figure 6:** CT axial image (Patient consented for image).

metallic artifacts on the x-ray were the main confounding factors that resulted in a diagnostic delay. Hence it is concluded that history is the best investigation tool and radiological artifacts should never be overlooked.

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## Additional Information

**Disclosures:** Authors report no conflict of interest.

**Ethical Review Board Approval:** The study was conformed to the ethical review board requirements.

**Human Subjects:** Consent was obtained by all patients/participants in this study.

**Conflicts of Interest:**

In compliance with the ICMJE uniform disclosure form, all authors declare the following:

**Financial Relationships:** All authors have declared that they have no financial relationships at present or within the previous three years with any organizations that might have an interest in the submitted work.

**Other Relationships:** All authors have declared that there are no other relationships or activities that could appear to have influenced the submitted work.

### **AUTHORS CONTRIBUTIONS:**

<b>Sr.#</b>	<b>Author's Full Name</b>	<b>Intellectual Contribution to Paper in Terms of:</b>
1.	Rizwan Ahmed Khan	1. Study design, paper writing, and methodology.
2.	Amjad Ali	3. Data collection and calculations.
3.	Khalid Mahmood	4. Analysis of data and interpretation of results.
4.	Madiha Fayyaz	5. Literature review, editing, and referencing.