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Intrathoracic Retained Foreign Body: A Case of a Sewing Needle Embedded in the Right Ventricle

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Abstract

We present a rare case of a 36-year-old man with bipolar disorder who presented with chest pain. Fluoroscopy revealed a sewing needle lodged on the surface of the heart. Surgical exploration confirmed penetration into the right ventricle. The needle was successfully removed via a lower mini sternotomy without complications. This report underscores the importance of considering retained foreign bodies in patients with psychiatric disorders presenting with atypical chest pain.

Keywords: retained foreign body, sewing needle, bipolar disorder, cardiac surgery, chest pain, fluoroscopy

Introduction

Retained intrathoracic foreign bodies are rare, particularly in asymptomatic individuals. In most cases, these are discovered incidentally or due to complications [1]. Self-inflicted injuries, particularly in patients with psychiatric disorders, can lead to unusual presentations and challenges in diagnosis and treatment.

Case Presentation

A 36-year-old male with a known history of bipolar disorder was admitted to the emergency department due to complaints of intermittent chest pain. The patient reported that five years earlier, during a manic episode, he had stabbed his thorax with a sewing needle. He had not sought medical attention at that time.

Physical examination revealed normal vital signs and no visible scars or evidence of a stab wound. Electrocardiography (ECG) showed no abnormalities. Chest X-ray failed to reveal any foreign object.

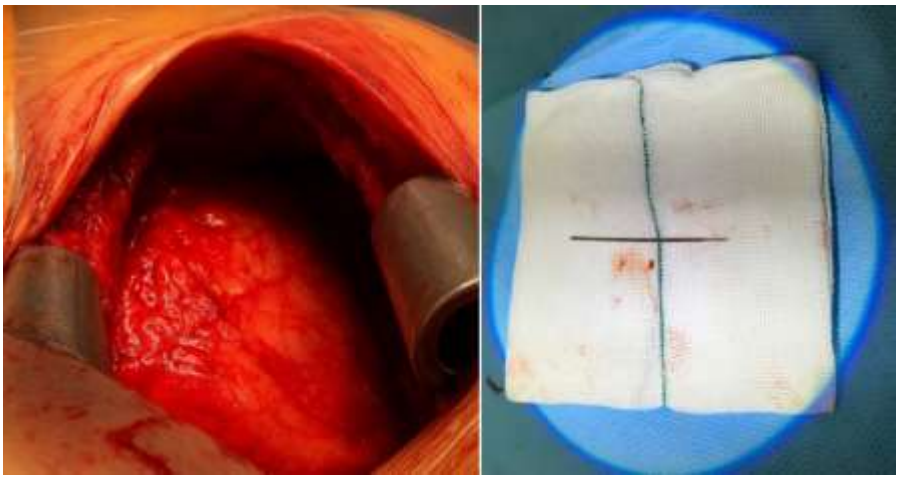
However, fluoroscopy was performed due to the patient's persistent symptoms and history, which revealed a linear metallic foreign body consistent with a sewing needle located in the cardiac silhouette (Figure 1) [2].

Figure 1: Fluoroscopy image showing linear metallic foreign body in cardiac silhouette.

The patient was taken to the operating room. A lower mini sternotomy approach was used. Intraoperative findings revealed a sewing needle penetrating the pericardium with approximately 1 cm embedded in the anterior surface of the right ventricle (Figure 2). The needle was carefully

extracted. Hemostasis was achieved, and a chest tube was inserted beneath the heart. The sternum was closed using two sternal wires.

Figure 2: Intraoperative photograph showing exposed sewing needle penetrating the right ventricle.



Postoperatively, the patient was monitored in the cardiac surgical ICU. On postoperative day one, the chest drain showed 50 cc of bloody fluid and was removed. The patient remained stable and was discharged in good condition on postoperative day three.

Discussion

Foreign body retention in the thoracic cavity, particularly the heart, is rare and potentially life-threatening. In cases involving psychiatric patients, the history may be unclear or underreported. A high index of suspicion and advanced imaging such as fluoroscopy or CT is crucial for diagnosis [3].

In this case, the needle was missed on chest radiograph, underscoring the limitation of conventional X-rays in identifying small or radiolucent foreign objects. Fluoroscopy and intraoperative assessment proved vital in confirming the diagnosis and guiding surgical management [4].

This report illustrates the utility of a minimally invasive surgical approach in safely managing a penetrating cardiac foreign body. The patient's history of bipolar disorder and absence of prior complications contributed to the delayed presentation.

Conclusion

Retained cardiac foreign bodies, although rare, should be considered in patients with psychiatric disorders and atypical chest pain. Advanced imaging techniques and minimally invasive surgery can facilitate effective diagnosis and treatment.

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Figure Legends

Figure 1: Fluoroscopy image showing linear metallic foreign body in cardiac silhouette.
Figure 2: Intraoperative photograph showing exposed sewing needle penetrating the right ventricle.

Acknowledgment

This case was managed at Imam Khomeini Hospital, Tehran University of Medical Sciences.

Conflict of Interest

The authors declare no conflict of interest.