

SELF-MUTILATION: NEEDLES WITHIN THE HEART**SCHARINGER B.*, HECHT S., HERGAN K.**

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ABSTRACT

Intracardiac foreign bodies are rare and can lead to life-threatening complications. Posttraumatic and self-inserted foreign bodies within the heart are either a result of direct penetration due to local trauma, migration to the heart via the venous system or migration through adjacent tissue and are far less frequent.

Affected patients present with a wide variety of symptoms from having no symptoms to having fever, chest pain and shortness of breath, with dyspnea and arrhythmias being the most common. Diagnosis consists of several modalities including chest x-ray, echocardiography and computed tomography to accurately localize the foreign body and to diagnose possible complications such as cardiac effusion and cardiac tamponade. Therapeutic options involve either surgical or percutaneous removal of the foreign object or conservative management. However, optimal therapeutic management is controversial and the need for surgical removal of intracardiac foreign objects depends on location, size and shape of the foreign body and the severity of symptoms. Further, the risk of complications caused by the foreign body compared to the risk of surgical removal has to be considered. Therefore, therapeutic management should follow an individualized approach.

We report a case of a 25-year-old woman who self-inserted needles into her chest due to a psychiatric disorder. The patient presented to emergency clinic with shortness of breath. Computed tomography of the thorax showed needles in the aortic root and the left-ventricular myocardium with subsequent hemopericardium. Inspection of the second needle in the aortic root showed that it had caused a defect in the right leaflet of the aortic valve with signs of endocarditis and subsequent aortic valve insufficiency.

Surgical removal of foreign objects was carried out using cardiopulmonary bypass and mechanical aortic root replacement.

Primary reconstruction of the aortic valve was found to be insufficient with the consequence of a mechanical aortic valve replacement. Postoperative course was uneventful. The patient left the hospital two weeks after surgery.

KEYWORDS: *intracardiac foreign body, intracardiac needle.***INTRODUCTION**

Intracardiac foreign bodies are rare and can lead to life-threatening complications. We report a case of a 25-year-old woman who self-inserted needles into her chest due to a psychiatric disorder. The patient presented to our emergency department with shortness of breath. Computed tomography of the thorax showed needles in the aortic root and the

left-ventricular myocardium with subsequent hemopericardium. Surgical removal of the foreign objects with cardiopulmonary bypass and mechanical aortic root replacement was necessary.

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*To overcome it
is possible, due to the
uniting the knowledge and
will of all doctors in the world*



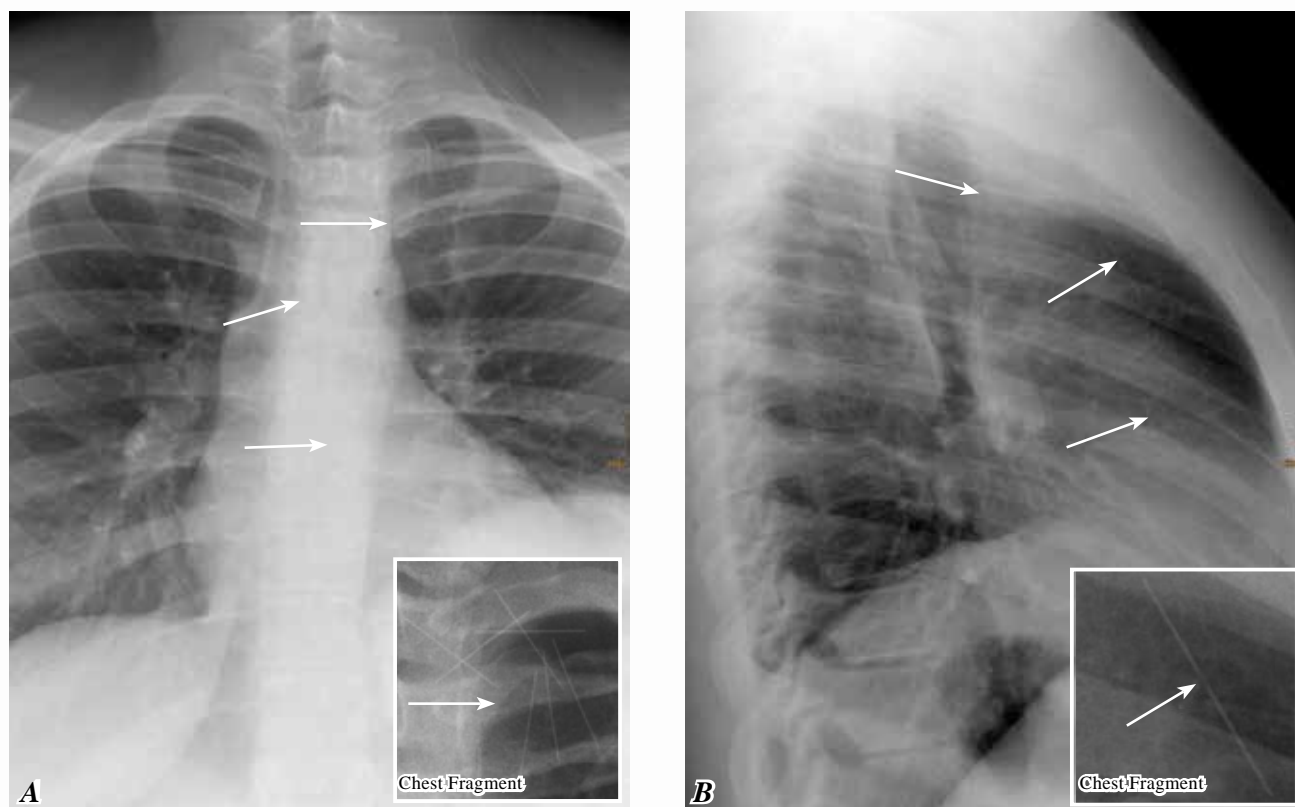


FIGURE 1. Chest (A) and lateral chest (B) x-ray p.a. one month prior to presentation at our emergency department showed multiple needles projected on the superior and anterior mediastinum (white arrows)

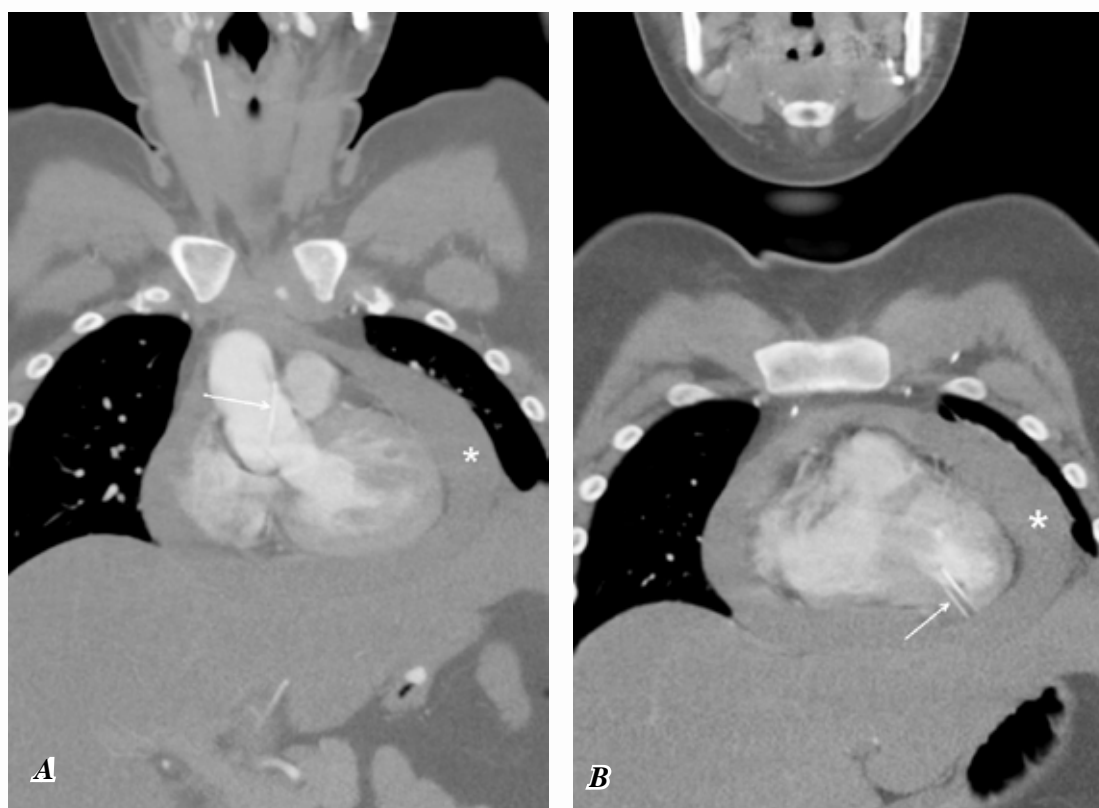


FIGURE 3. Coronal sections of computed tomography of the thorax showed a needle in the aortic root (A) and in the left ventricle/left ventricular myocardium (B) (white arrow) and hemopericardium (white star)

CASE REPORT

A 25-year-old woman presented to our emergency department with dyspnea. Laboratory tests showed elevated c-reactive protein and elevated leucocytes. The patient had a known history of self-inserted needles in the cervical soft tissue and the superior mediastinum. Chest x-ray acquired one month before demonstrated multiple needles projecting in the left cervical soft tissue and upper and anterior mediastinum (Fig. 1 and 2). A computed tomography of the thorax at the day of presentation showed a needle in the aortic root (Fig. 3) and another needle located in the left ventricular myocardium with the tip lying intracavitary (Fig. 4). Due to the additional presence of hemodynamically relevant pericardial effusion (Fig. 3 and 4), foreign body removal via open-heart surgery with cardiopulmonary bypass was indicated. Intraoperatively, the needle in the left ventricle was removed and the defect was sutured. Inspection of the second needle in the aortic root showed that it had caused a defect in the right leaflet of the aortic valve with signs of endocarditis and subsequent aortic valve insufficiency. Primary reconstruction of the aortic valve was found to be insufficient with the consequence of a mechanical aortic valve replacement. The postoperative course was unremarkable and the patient left the hospital two weeks after surgery.

DISCUSSION

Intracardiac foreign bodies are rare and most commonly associated with dislocated iatrogenic material. Posttraumatic and self-inserted foreign bodies within the heart are either a result of direct penetration due to local trauma, migration to the

heart, via the venous system or migration through adjacent tissue and are far less frequent [Actis Dato G et al., 2003; Leitman M, Vered Z, 2015]. Especially self-inserted intracardiac needles are associated with psychiatric disorders in young and middle-aged adults as an act of self-mutilation [Soren S et al., 2015]. Whether the needles in this case were inserted directly into the heart or migrated to the heart remains unclear. Affected patients present with a wide variety of symptoms from having no symptoms to having fever, chest pain and shortness of breath, with dyspnea and arrhythmias being the most common [Actis Dato G et al., 2003; Leitman M, Vered Z, 2015; Soren S et al., 2015]. Diagnosis consists of several modalities including chest x-ray, echocardiography and computed tomography to accurately localize the foreign body and to diagnose possible complications such as cardiac effusion and cardiac tamponade [Actis Dato G et al., 2003; Leitman M, Vered Z, 2015]. Therapeutic options involve either surgical or percutaneous removal of the foreign object or conservative management. However, optimal therapeutic management is controversial and the need for surgical removal of intracardiac foreign objects depends on location, size and shape of the foreign body and the severity of symptoms. Further, the risk of complications caused by the foreign body compared to the risk of surgical removal has to be considered [Symbas P et al., 1990; Actis Dato G et al., 1999; Harrer J et al., 2009]. Therefore, therapeutic management should follow an individualized approach. Due to the patient's symptoms and the findings of the computed tomography of the thorax (localizations of the needles and hemopericardium) surgical removal of the foreign objects was necessary.

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