A rare disappearing right atrial mass†

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Abstract

Cardiac tuberculosis is rare and usually involves the pericardium. Myocardial tuberculoma is a very rare occurrence and only a few cases have been reported. We describe a rare case of cardiac tuberculoma involving the whole of the lateral right atrial wall, extending from the superior vena cava/right atrial junction up to a tricuspid valve. The initial diagnosis of right atrial myxoma was made based on the echocardiography report and surgical excision was planned. Intraoperatively, the excision of the mass was deferred due to the extensive nature of the disease and a high suspicion of malignancy. Cardiac tuberculoma was confirmed by histopathological examination. The patient made a remarkable recovery with the complete disappearance of the mass after anti-tuberculous treatment, as viewed by a postoperative echocardiography during the follow-up.

Keywords: Tuberculoma • Anti-tuberculous treatment

CASE PRESENTATION

An 18-year-old male patient presented with exertional dyspnoea, left-sided chest pain and general weakness over a 12-month period. There was no relevant past medical history.

A clinical examination was unremarkable except for distended jugular veins. The electrocardiography revealed the enlargement of the right atrial wall. A chest radiograph demonstrated cardiomegaly with clear lung fields. The transthoracic echocardiography showed a heterogeneous echogenic mass measuring 3.8 × 4.5 cm occupying the lateral wall of the right atrium, extending up to the superior vena cava/right atrial junction. The right atrium and the right ventricle were dilated with mild tricuspid regurgitation. Mitral valve prolapse was present without mitral regurgitation and normal left ventricular function. A thoracic CT scan (Fig. 1) showed the right atrial mass, minimal left-sided pleural effusion and no lymphadenopathy. A provisional diagnosis of right atrial myxoma was made and surgical resection was planned.

Under general anaesthesia, a midline sternotomy was performed. Dense thickened pericardial adhesions were noted, especially around the right atrium and the superior vena cava. The adhesions were released. The lateral aspect of the right atrium had restricted mobility. Palpation revealed a hard mass occupying the entire lateral wall of the right atrium [1], which was confirmed by inserting a finger into the right atrium through a purse string suture. Due to the extensive nature of the disease and the suspicion of malignancy, excision was deferred and a biopsy was taken for histopathological examination. The peri- and postoperative periods were uneventful.

A histopathological examination (Fig. 2) revealed hyalinized fibrocollagenous tissue in which was attached an inflammatory mass made up of numerous epithelioid granulomas, caseation necrosis and Langhans giant cells confirming the diagnosis of tuberculosis (TB).

The patient was discharged on postoperative day 6 after anti-tuberculous treatments. The follow-up 2 months after the...
start of therapy showed that the patient was asymptomatic and echocardiography revealed a significant reduction in the size of the mass and, at the end of 6 months, showed the complete disappearance of the mass.

**DISCUSSION**

Although, tuberculosis primarily involves the lungs, 15–20% of all cases are extra pulmonary, the most common sites being the lymph nodes, pleura, abdomen and central nervous system. The involvement of the heart (apart from the pericardium) is extremely rare and was first reported by Morgagni in 1761. The involvement of the myocardium occurs due to direct extension from the pericardium or spread from mediastinal lymph nodes or haematogenous dissemination [1, 2].

Three distinct histological forms of myocardial TB are recognized: diffuse infiltrating (the most common form, characterized microscopically by giant cells and lymphocytes), miliary (resulting from the haematogenous spread) and nodular (characterized by central caseation).

Ziehl–Neelsen staining of the endomyocardial biopsy specimens often fails to reveal acid-fast bacilli and definitive diagnosis rests on seeing the typical histological changes. There are no specific features of a tuberculoma on a two-dimensional echocardiogram or CT scan to distinguish it from other intracardiac masses.

The clinical presentations of tuberculosis of the heart include pulmonary vein obstruction caused by left atrial mass lesions, right ventricular outflow tract obstruction, superior vena cava obstruction, aortic insufficiency and cardiac arrhythmia. Arrhythmia is a manifestation in patients with cardiac tuberculosis [3].

The treatment of choice for cardiac tuberculosis is principally the use of anti-tuberculous medications. Surgery is indicated only when a cardiac tuberculoma causes complications such as superior vena cava obstruction, myocardial rupture with a pseudoaneurysm [2], aortic insufficiency [4] or arrhythmias [5]. Although tuberculous involvement of the heart is rare [6, 7], it should be suspected in patients with a cardiac mass who are suspected to have pulmonary tuberculosis or cardiac arrhythmia. Better imaging techniques including nuclear magnetic resonance may help in tissue diagnosis preoperatively and can be a screening test preoperatively for all cardiac tumours [8] to avoid surgery.

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**REFERENCES**