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Case Report

A case of biatrial mass mimicking myxoma with rheumatic mitral stenosis with regurgitation of moderate severity

Surendra Nath Khanna *, *Mathews Paul*, *Vikas Sharma*, *Anil Karlekar*

Fortis Escorts Heart Institute, Okhla Road, New Delhi 110025, India

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ABSTRACT

Atrial masses are uncommon and mainly consist of tumours, thrombus and vegetation.[1] Cardiac myxoma is the most common type of benign cardiac tumour and accounts for 30–50% of all primary tumours of the heart.[2] Most of them occur in the left atrium, but the occurrence of biatrial mass/myxoma or concomitant left atrial mass with rheumatic valvular disease is uncommon. We describe a case of biatrial mass mimicking myxoma with rheumatic mitral stenosis. A 40-year-old woman presented with exertional dyspnoea and palpitation was diagnosed to have biatrial mass with rheumatic mitral stenosis and underwent a successful biatrial mass excision and valve replacement.

1. Introduction

Cardiac myxoma is the most common primary tumour of the heart, accounting for about half of all cardiac tumours, but biatrial myxoma is uncommon.[2] The association of left atrial myxoma and rheumatic mitral stenosis is a rare condition and very few cases have been reported[3,4] but concomitant biatrial mass or myxoma with mitral stenosis has not been reported. We describe a case of rheumatic mitral stenosis with biatrial myxomatous mass in a patient who underwent a successful surgery.

2. Case report

A 40-year-old female known case of rheumatic heart disease on anticoagulation for atrial fibrillation presented with complaints of exertional dyspnoea and palpitations. On examination, her pulse was irregular with 72 beats per minute, but chest auscultation showed a mid diastolic murmur at the mitral area. Electrocardiogram demonstrated atrial fibrillation and routine chest radiograph revealed increased cardiothoracic ratio with features of left atrial enlargement. Transoesophageal echocardiography (TEE) was done, which showed

* *Corresponding author*. Tel.: +91 9810943535.
E-mail address: surendrank@hotmail.com (S.N. Khanna).
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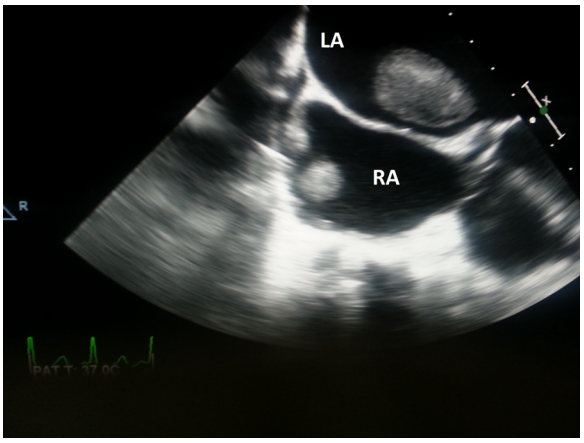

Fig. 1 – TEE image showing LA and RA mass.

moderate mitral regurgitation with mitral stenosis with valve area of 1.2 cm^2 by planimetry. Additionally, there was a large left atrial mass and a mobile right atrial mass with short stalk suggestive of myxoma (Fig. 1). Preoperative coronary angiogram revealed normal coronary anatomy.

Through a standard midline sternotomy, heart was exposed; left atrium and right atrium (RA) were found to be dilated. After heparinization, the aortic and inferior vena cava (IVC) cannulas were inserted, partial cardiopulmonary bypass (CPB) was established, and the heart was cooled down to 30 °C. Later, high superior vena cava (SVC) cannulation was done meticulously at innominate vein junction in a way to prevent the risk of right atrial mass detachment, as the mass seems to be up to SVC-RA junction. On full CPB, aorta cross-clamped, antegrade cold blood cardioplegia was instituted, supplemented with topical myocardial cooling. The RA was opened obliquely and mass (measuring 25 mm × 20 mm) with the stalk, which was attached to the posterior lateral atrial wall, was excised (Fig. 2a). Left atrium opened through interatrial groove. The mass was so large that it was projected from the left atrium and seems to be calcified solid material with haemorrhage (measuring 35 mm × 30 mm). The mass was attached to the posterior layer of left atrium and removed meticulously. The inner smooth layer of left atrial floor was also shaved to remove the entire calcified mass (Fig. 2b). The mitral valve was found to be severely stenosed and the mitral valve was replaced using a 27 mm St. Jude mechanical valve (St. Jude Medical Inc., St. Paul, MN, USA) with posterior mitral leaflet preservation. The left and right atria were closed during rewarming, and routine deairing was done; the aortic cross-clamp was removed and gradually weaned off from CPB. Histology reports of mass showed features of myxoid strands (Fig. 3). Vimentin test was significant for myxoma but calretinin was inconclusive. So the diagnosis of myxoma was not concluded. Postoperative course was uneventful and the

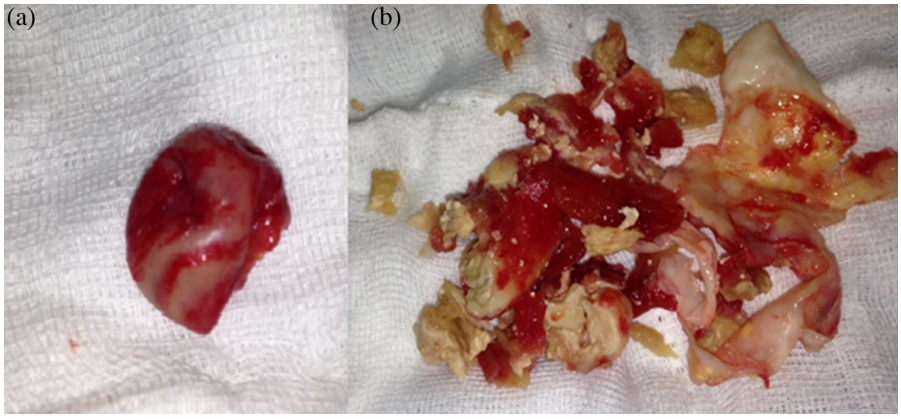

Fig. 2 – (a) Right and (b) left atrial mass.

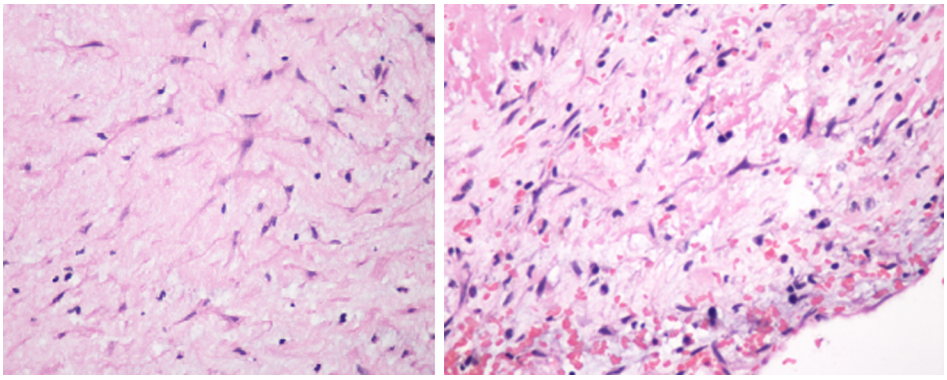

Fig. 3 – Histopathological images showing myxoid strands.

patient was discharged after 1 week. She is doing well and follow-up echocardiography showed normal prosthesis function.

3. Discussion

Atrial masses are uncommon and mainly consist of tumours, thrombus and vegetation.[1] Cardiac myxoma is the most common type of primary cardiac tumour and accounts for 30–50% of all primary tumours of the heart.[2] Among these 70% originate from the left and 18% from the RA. The incidences of biatrial myxoma are less than 2.5%.[2] The occurrence of left atrial myxoma and rheumatic mitral stenosis is also an extremely rare condition and very few cases have been reported.[3,4]

Cardiac myxomas are more frequent in females with a female-to-male ratio of 2:1 and occur frequently in age group of 30–60 years.[5,6] Incidentally our patient is female of 40 years of age. The location of right atrial myxoma is usually found to be attached to interatrial septum,[5] near fossa ovalis. Atypical locations and biatrial myxomas occur in rare cases with familial incidence.[7] Imperio et al. reported that biatrial myxomas had two stalks from the same area of the interatrial septum and growing in opposite directions toward the right and left atria[8] whereas Irani et al. reported that there was no evidence of extension across the interatrial septum, and this means separate origin for two separate tumours.[9] Our patient's right atrial mass was situated at the posterior lateral atrial wall, adjacent to the SVC-RA junction. The left atrial mass had a calcified solid surface attached to the base of left atrium and was hard to remove. Adequate excision of the entire mass, along with resection of tissue surrounding the base, prevents recurrence of myxomas.[10]

The heart should be minimally manipulated prior to aortic cross-clamping in order to avoid systemic embolization of the tumour fragments like in our case, as the right atrial mass was mobile and adjacent to the SVC-RA junction. While cannulation, the method we have described was appropriate using a single cannula in the IVC, and then inserting a cannula into the SVC on partial CPB in order to prevent embolization. But in histopathological tests, the calretinin test was inconclusive for myxoma. The other possibility of mass can be a thrombus as the patient was on chronic atrial fibrillation. Tasdemir et al. reported a similar case of biatrial thrombus with mitral stenosis in a patient with history of deep vein thrombosis.[11] Some studies have reported biatrial thrombus in cardiac amyloidosis[12] and protein C deficiency[13] also.

Conflicts of interest

The authors have none to declare.

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