Case Report

# Calcified Left Atrial Myxoma with Osseous Metaplasia

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## ABSTRACT

An intracardiac myxoma is the most common tumour of the heart with an estimated incidence of 0.5 per million population per year. Extensive calcification is rare in these tumours.[1] We describe a rare case of a large left atrial myxoma, visible on the chest radiograph, with extensive calcification and osseous metaplasia. **[Indian J Chest Dis Allied Sci 2012;54:201-203]**

**Key words:** Calcification, Cardiac tumours, Myxoma, Osseous metaplasia.

## INTRODUCTION

Atrial myxomas are the most common primary cardiac tumours. Upto 80% of these tumours are located to the left atrium with majority involving the septum. These are usually small to moderate in size at the time of diagnosis and manifest with non-specific cardiac or systemic symptoms. These are mostly soft and friable without microscopic sign of the ossification. Though patchy calcification has been described,[2,3] extensive calcification is rare. We describe here a rare case of heavily calcified left atrial myxoma with microscopic sign of osseous metaplasia.

## CASE REPORT

A 55-year-old female patient presented to cardiology department with complaints of dyspnoea and palpitation since last seven days. She had no history of rheumatic fever or a family history of cardiac disease. On examination, with an irregular pulse patient had pallor and she was in atrial fibrillation with a ventricular rate of 110 per minute. Her blood pressure was 90/60 mmHg. Chest examination revealed an apex beat in the 5th intercostal space just outside the midclavicular line, with a diastolic thrill on palpation. A mid-diastolic murmur was audible over precordium with bilateral basal crepitations.

Chest radiograph (postero-anterior view, Figure 1) revealed cardiomegaly with bilateral obliteration of costophrenic angle. There was an oval radio-opaque mass within the cardiac shadow (Figure 1). Electrocardiogram confirmed atrial fibrillation with an average ventricular rate of 110 per minute. Echocardiography revealed enlarged left and right atria with severe tricuspid regurgitation. There was a large heterogenous sessile mass in the left atrium of 5.9cmX4.3cm in diameter with well-defined margins and calcification, arising from the interatrial septum. Other chambers and valves were normal. The patient was referred to CTVS department with the diagnosis of a calcified left atrial myxoma.

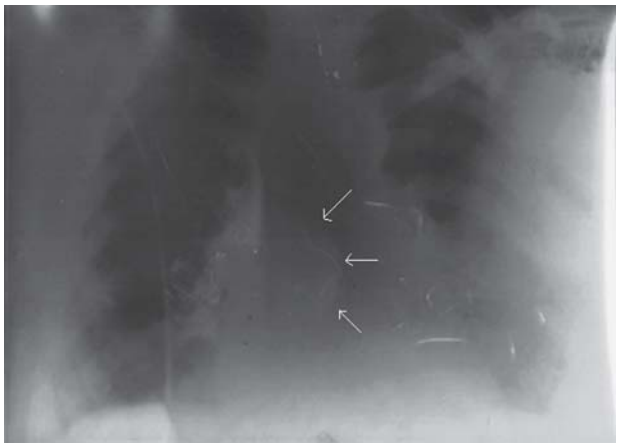

**Figure 1. Chest radiograph (postero-anterior view) showing an oval radio-opaque mass within the cardiac shadow (arrows).**

Surgery was performed through a median sternotomy using cardiopulmonary bypass and moderate hypothermia. Aortic and bicaval cannulation with antegrade cold cardioplegic arrest was done. A trans-septal approach through right atriotomy was used. The tumour was firm to hard in consistency with a wide base, and it was difficult to go towards left atrium through this approach.

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Therefore, a separate left atriotomy was done that revealed a hard, yellowish-white calcified mass of approximately 6cm in diameter (Figure 2) attached to the atrial septum with a wide base. The left atrial tumour was excised together with a cuff of the atrial septum. The defect was closed with 5/0 running prolene suture (Ethicon, Somerville, NJ, USA) using a pericardial patch. All other cardiac chambers were free of any residual and/or additional tumour. Tricuspid valve repair was done using De Vega's annuloplasty.

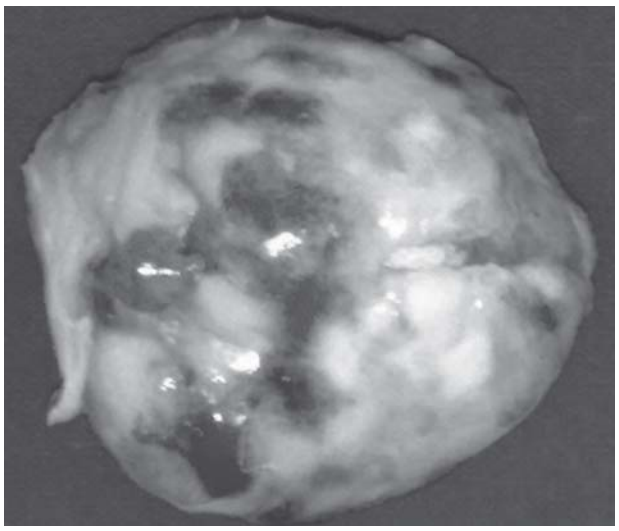

**Figure 2. Gross examination of the mass showed stone hard yellowish-white calcified mass of approximately 6cm in diameter.**

Pathological examination of the excised tissue showed an encapsulated spherical mass with smooth outer surface measuring 6cmx6cmx4cm having both cystic and solid areas, with foci of greyish-white calcification. Microscopic examination showed monomorphic features comprising of both stellate to fusiform tumour cells arranged in multiple cell layer pattern within the background of loose myxomatous stroma. The tumour cells were oval to round in shape having elongated nuclei with vesicular chromatin, and abundant eosinophilic cytoplasm. Interspersed within the tumour, variable sized irregular areas of osseous metaplasia were noted (Figure 3).

The post-operative course was uneventful except that the patient required external ventricular pacing for two days. The patient was discharged from the hospital on the fifth post-operative day. A follow-up echocardiography after six months did not showed any residual tumour or atrial septal defect.

## DISCUSSION

Atrial myxomas are benign slow growing neoplasms. Clinical manifestations are related to the location and

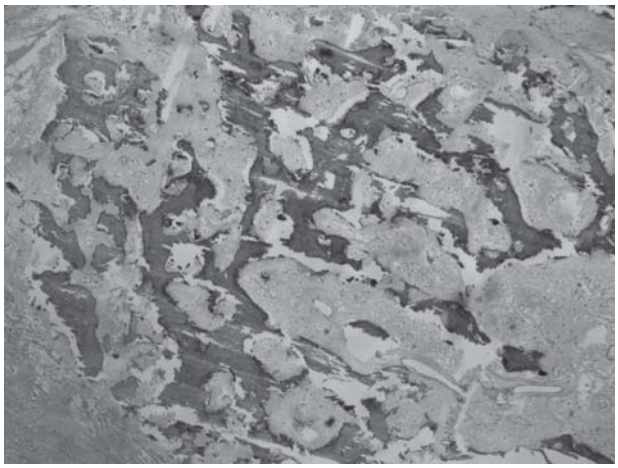

**Figure 3. Histopathological examination showing loose myxomatous stroma with stellate to fusiform tumour cells admixed with irregular osseous metaplasia area (Haematoxylin and Eosin x 200).**

caused by mechanical interference with cardiac function or by intra-cardiac obstruction. Embolisation to systemic or pulmonary circulation is a frequent phenomenon and is observed in about 30% to 40% of the patients. Asymptomatic cases are rare.

Auscultation of patients with left atrial myxomas usually reveals findings similar to those of mitral stenosis associated with an early diastolic third heart sound. Systolic murmurs may be heard and have been attributed to either associated mitral or tricuspid insufficiency. Echocardiography is currently the most important diagnostic modality available for imaging cardiac tumours. Two-dimensional echocardiography can quantitate the tumour size, shape, attachment, and mobility, and can screen other cardiac chambers accurately for additional tumours. Transesophageal echocardiography has increased the specificity and sensitivity of the diagnosis, especially in patients who have a poor transthoracic echocardiographic window.

Surgical excision of cardiac myxoma is advisable at the earliest because of the high risk of valvular obstruction or systemic embolisation. The surgical approach depends upon the location of the tumour. Recently, minimally invasive approach, using the Heart-Port system, has been used as an alternative.

It is known that calcification is present in 10% to 20% of myxomas and appears to be more frequent when the tumour is in the right atrium rather than in the left atrium.[2,3] However, massive calcification is uncommon.[1] Tumour necrosis secondry to central infarction, repeated trauma and compression lead to calcification within the tumour. This causes further necrosis by interfering with the blood supply of the myxoma leading to the formation of a hard calcified mass.[4] A calcified myxoma visible on a plain chest radiograph is a rare finding[1,4] as is the ossification or bone formation of an atrial myxoma.[1-3,5-8] A calcified

ball thrombus may present a similar appearance macroscopically, histopathological examination will differentiate a tumour easily.

Tumour recurrence has been reported and may be due to inadequate resection, intra-operative implantation, embolisation, or a multicentric growth. A wide excision of the tumour with a large cuff of atrial septum is the preferable surgical approach in such cases.

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## *Erratum*

In the *Indian Journal of Chest Diseases and Allied Sciences* (2012;54:99-104) for the article "Sarcoidosis in North Indian Population: A Retrospective Study. There is an error on page no. 102 (Ist Column, 2nd Paragraph):

The word "Hypocalcaemia" should be read as "Hypercalcaemia" in line 1 and line 7.

The Publishers/Authors apologise for this error.