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Co-Existing Left Atrial Thrombus and Myxoma in Mitral Stenosis – A Diagnostic Challenge

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ABSTRACT

We report an unusual case of an adult who underwent a mitral valve replacement with concomitant excision of the left atrial myxoma and thrombus. Echocardiography showed the presence of a large "thrombus" within the left atrial appendage, body and atrial septum. There was difficulty in trying to distinguish between the atrial thrombus and myxoma due to their morphological similarities. At time of surgery, frozen section confirmed the atrial septal component of the thrombus to be an atrial myxoma and the atrial septum was excised to obtain a clear margin.

Keywords: differential diagnosis, mitral stenosis complications, myxoma diagnosis, myxoma surgery

INTRODUCTION

Intracardiac myxomas are rare with a frequency of 0.001% to 0.280% in reported or collected postmortem series. Most myxomas (75%) are located in the left atrium (LA), although some are also found in the right atrium (18%), right ventricle (4%) and the left ventricle (4%)[1]. Attached to the endocardium by a broad base, myxomas are usually pedunculated and may appear as a soft, gelantinous, mucoid mass with areas of haemorrhage or thrombosis. Left atrial thrombus is relatively common in mitral valve stenosis with a reported frequency of about 10% – 25%[2]. However, the combination of LA thrombus and LA myxoma is exceedingly rare and to our knowledge, has not been previously described. We report here a patient who presented with mitral stenosis, extensive LA thrombi and a small LA myxoma.

CASE REPORT

The patient was a 52-year-old Asian woman who presented with chronic mitral valve disease and exertional dyspnoea. She was asthmatic and also had dyslipidemia. An ECG performed showed atrial fibrillation. The patient then underwent a two-dimensional Doppler echocardiography study which showed severe mitral stenosis. The mitral valve leaflets were thickened with two focal areas of calcification. Mobility was mainly restricted to the tips of the leaflets. There was also subvalvular thickening of the upper third of the chordae tendinae.

The mitral valve area assessed by pressure half-time was 1cm^2 and the mitral score was 7 – 8. Mild tricuspid regurgitation was also noted and the calculated pulmonary artery peak systolic pressure was 70 mmHg. A large thrombus was also seen in the LA appendage extending into the LA cavity and merging with a layered thrombus involving the free wall of the LA. In addition, a small echo-dense LA mass was noted to be attached to the inter-atrial septum.

In view of the above findings, a percutaneous transvenous mitral commissurotomy (PTMC) was not performed even though the mitral valve morphology was assessed to be suitable for this procedure. This was due to the risk of thrombo-embolism. The patient was then started on warfarin therapy with the hope that the LA thrombus would spontaneously dissolve. The INR level was kept in the range of 2.5 to 3.5 and she was scheduled to return for assessment for PTMC at a later date. However in a repeat echocardiographic study done one year later, the left atrial thrombus was again present and PTMC was abandoned.

Open heart surgery was then performed via the median sternotomy approach. Aortic cross-clamp was applied and antegrade cardioplegia was administered through the root of the aorta. The patient then underwent extended transeptal approach. The large layered thrombus in the LA was excised. The small mass which was attached to the inter-atrial septum and which had been noted in the echocardiographic study earlier, was also excised. Frozen section histopathological examination of this small mass confirmed that it was a myxoma. Following this, a wide excision of the inter-atrial septurn was carried out.

The mitral valve was replaced with a size 27 mechanical prosthetic St Jude valve. The operation was uneventful and our patient was discharged from hospital on the eleventh post-operative day. When reviewed in the outpatient clinic several months later, she was found to be well.

DISCUSSION

The diagnosis of myxoma is rarely made clinically, largely because there are few symptoms, physical signs, radiological and electrocardiographic abnormalities

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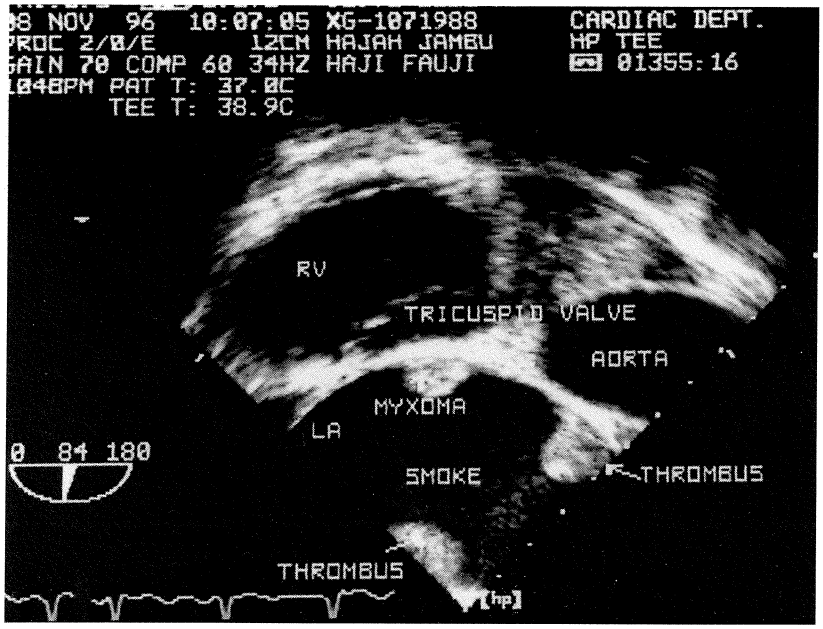

Fig 1 – Multiplane transoesophageal echocardiogram with the transducer at 84° showing the myxoma attached to the interarterial septum and thrombus in the free wall of the left atrium. Spontaneous contrast seen in the left atrium.

that are specific for this condition. Some type of cardiac imaging technique such as echocardiography is nearly always required to establish the diagnosis[3]. Atrial thrombus is a common cardiac manifestation of mitral valve stenosis. Atrial myxoma is very rarely associated with mitral stenosis and it may be mistaken for an atrial thrombus in the echocardiographic study. Only two cases of left atrial myxoma associated with mitral stenosis have been previously reported in the past few years[4,5]. The fact that the morphological characteristics of the atrial myxoma in the echocardiographic study in our patient resembles that of a thrombus resulted in considerable diagnostic difficulties. The clinical presentation, echocardiographic and angiographic findings of an LA atrial myxoma may simulate closely those of a LA atrial thrombus. Stoddard[6] and colleagues described a case of a LA myxoma simulating an atrial thrombus when they were asked to discuss the advantages of transoesophageal echocardiography compared with that of transthoracic echocardiography.

This case emphasises that a myxoma may mimic an atrial thrombus on echocardiography and thus may present considerable diagnostic difficulty. Despite this however, it is important to differentiate a thrombus from a myxoma, as the operative procedure is different in both these conditions. When performing the corrective operation of mitral stenosis in the presence of an atrial thrombus, the surgeon must take care to exclude a cardiac tumour if the mass appears suspicious. Any unusual looking tissue growth noticed during the operation should be sent for frozen section histology. If the diagnosis of a myxoma is confirmed by histology, the entire broad base which the myxoma is attached to should be excised surgically. Complete removal is essential because myxomas can recur if the initial resection is inadequate[1].

In recent years, echocardiography has been proven to be invaluable in the diagnosis and management of patients with intracardiac tumours. It is the imaging technique of choice for the initial evaluation of patients in whom the diagnosis of cardiac myxoma is suspected[7]. However, this case illustrates that despite major recent advances in techniques, echocardiographic diagnosis of combined LA thrombi and LA myxoma is today still difficult and poses a big challenge to practicing cardiologists and surgeons.

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