

Thrombotic Occlusion of Bilateral Popliteal Arteries by Ball Valve Thrombus in Left Atrium

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Abstract

We present a patient of mitral stenosis with a left atrial ball valve thrombus. The diagnosis was confirmed by transesophageal echocardiogram. No clot was detected in the left atrium or the left atrial appendage at surgery. At completion of surgery, the distal pulses of lower limbs were not palpable. Vascular Doppler study of lower limbs revealed thrombus-laden bilateral popliteal arteries. Emergency vascular surgery restored circulation in lower limb vessels.

Introduction

Ball valve thrombus in the left atrium (LA) is a spherical clot which are freely mobile and intermittently occlude the mitral valve orifice. Because of the excess of their diameter in comparison to the mitral valve, they are imprisoned in the LA. It is a rare condition with propensity for thromboembolism and therefore portends a sinister prognosis.¹

Case Report

A 47 year old female presented with recurrent episodes of 'gray-out' spells. She was a known case of rheumatic mitral stenosis with atrial fibrillation. A recent echo report showed she had severe mitral stenosis with suspected thrombus in the left atrium (LA).

The findings of physical examination were consistent with the diagnosis of mitral stenosis. Due to the poor quality of transthoracic images, transesophageal echo (TEE) was performed. TEE revealed severe mitral stenosis (mitral valve area 0.9 cm²; mean pressure gradient of 14 mmHg at a heart rate of

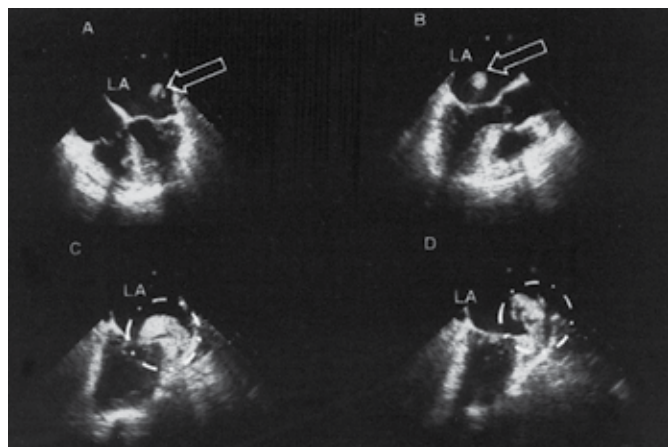


Fig. 1 : Panel A and B showing freely mobile thrombus in LA (arrow). Panel C and D shows thrombus arising from LAA (broken circle).

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78 /min) without any mitral regurgitation. The dilated LA had a mobile thrombus originating in the left atrial appendage (LAA) and intermittently occluding the mitral valve orifice (Figure 1).

She was taken up for mitral valve surgery. No clot was detected in the LA and LAA at surgery. Immediately after surgery the distal pulses of lower limbs were not palpable. A vascular Doppler examination of lower limbs showed thrombus-laden bilateral popliteal arteries without any distal flow. Emergency vascular surgery restored circulation of lower limbs. Postoperative recovery was uneventful and our patient is doing well till date.

Discussion

Any condition which promotes stasis of blood flow in the LA predisposes to thrombus formation. Mitral stenosis with atrial fibrillation provides the ideal environment for the same. Mobile thrombi in the LA are at a high risk of systemic embolism with a reported event rate of 10.4% per year.² Indeed we were shocked that the thrombus was missing at surgery. We consider ourselves fortunate to have averted an untoward event in timely fashion. Similar situations have been confronted by others.³ In some instances the embolism may be silent.⁴ But some have even questioned the true nature of the clot in the absence of any event.⁵ A stenotic mitral valve orifice is not an effective sentinel against thromboembolism. We aim to highlight the risk associated with this condition and hence the need for urgent surgical intervention.

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