

*Case Report***Rare Case of Giant Left Atrial Thrombus in Patient with Critical Rheumatic Mitral Valve Stenosis with Embolic Stroke**

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Krishna Institute of Medical Sciences Deemed University (KIMSUDU), Karad Dist: Satara, Maharashtra, India.*Received: 22/05/2015**Revised: 17/06/2015**Accepted: 22/06/2015***ABSTRACT**

Cardiac mural thrombosis is a complication of mitral valve disease and often complicates systemic thromboembolism. Left atrial organized mural thrombus is usually observed with mitral stenosis. A large left atrial thrombus has risks of sudden circulatory collapse, syncope and systemic embolization. We report a patient with a very large and organised thrombus in the left atrium with critical mitral valve stenosis presented with embolic stroke.

**Keywords:** Critical mitral valve stenosis, left atrial thrombus, embolic stroke, systemic embolization.

**INTRODUCTION**

The prevalence of rheumatic disease is higher in developing nations than in the United States. In India the prevalence is approximately 100-150 cases per 100,000. <sup>[1]</sup> Mitral stenosis is associated in up to 17% with atrial thrombus. <sup>[2]</sup> Atrial fibrillation doubles the risk of left atrial thrombus. Most thrombi are located in the left atrial appendage, but in 2% of all mitral stenoses the auricular thrombus extends to the left atrial cavity. <sup>[3]</sup> Left atrial ball-shaped masses may be thrombi, vegetations or tumor. Most of the left atrial thrombus complicated with mitral stenosis. LA thrombus is common in mitral valve disease. They are even more commonly seen after an episode of AF. This thrombus may cause sudden circulatory arrest and systemic embolization and embolic stroke.

**CASE REPORT**

A 52 year male patient with known case of rheumatic valvular heart disease (RVHD) with mitral valve stenosis, irregularly taking oral anticoagulant drug and was presented with breathlessness with NYHA class-III and acute onset left sided hemiplegia. On clinical examination patient had irregularly irregular pulse due to atrial flutter fibrillation and JVP was raised. There was no pallor, clubbing and icterus. On neurological examination patient was conscious with left sided UMN facial palsy and left sided hemiplegia with grade -I power. Both the carotids were normal. There was grade -III mid diastolic murmur of rumbling character, better heard in left lateral position on expiration with bell of stethoscope at mitral area. There was grade - III systolic murmur at tricuspid areas.

Patient had bilateral lower zone rales in lung field.

**Laboratory investigations:**

Electrocardiogram was suggestive of ‘p’ mitral and atrial fibrillation. Chest radiogram showed left heart border straightening with dilated left atrium. The haemogram, WBC count, platelet counts, kidney function tests (KFTs), liver function tests (LFTs), fasting lipid profile and prothrombin time (PT, PT-INR) were within normal limits. ESR was 35 mm at the end of one hour. ASO titer and CRP was within acceptable limits. Blood culture was negative.

Transthoracic 2-D-Echocardiogram (TTE) and Doppler study showed Chronic rheumatic valvular heart disease (RVHD) with critical mitral stenosis (MVA: 0.67 cm<sup>2</sup>) with giant left atrial thrombus (5.2 × 5.8 cm in size). Left atrium was dilated (46.8 mm) with extension of LA thrombus into left atrial appendage (LAA).

The aortic valve was thickened with normal opening with moderate aortic regurgitation (AR). There was evidence of reverberation due to aortic valve calcification in parasternal short axis view (PSAX) and parasternal long axis view (PLAX). Right ventricle was dilated with moderate tricuspid regurgitation (TR), which was functional with moderate pulmonary hypertension (pulmonary artery pressure of 41 mmHg). (Figure no.1 & 2). CT brain shows right middle cerebral artery territory infarct.

**Management:** Patient was treated with anticoagulant, rate control therapy, treatment for failure and management of embolic stroke, and was referred to higher centre for further management of giant LA thrombus with critical mitral valve disease after stabilizing hemodynamically and neurologically.

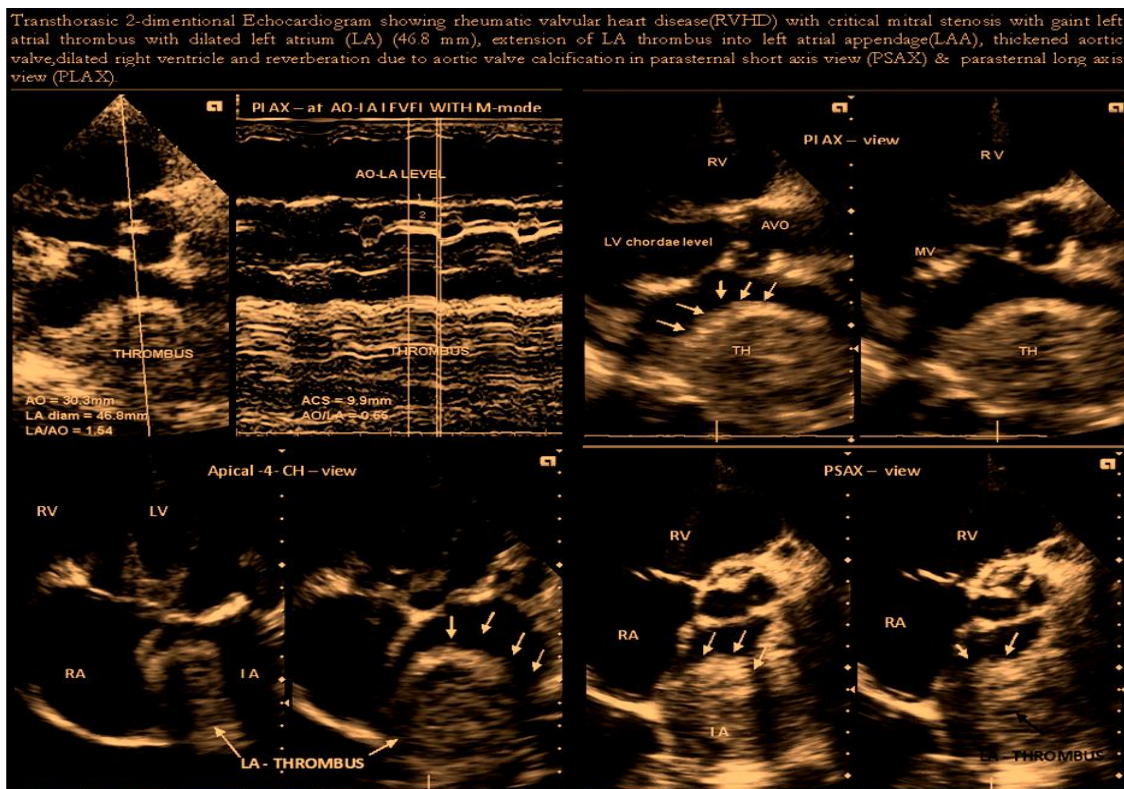


Figure no.1: Transthoracic 2-D-Echocardiogram and Doppler study showing rheumatic valvular heart disease with critical mitral stenosis with giant left atrial thrombus with dilated left atrium (46.8 mm) with extension of LA thrombus into left atrial appendage (LAA)

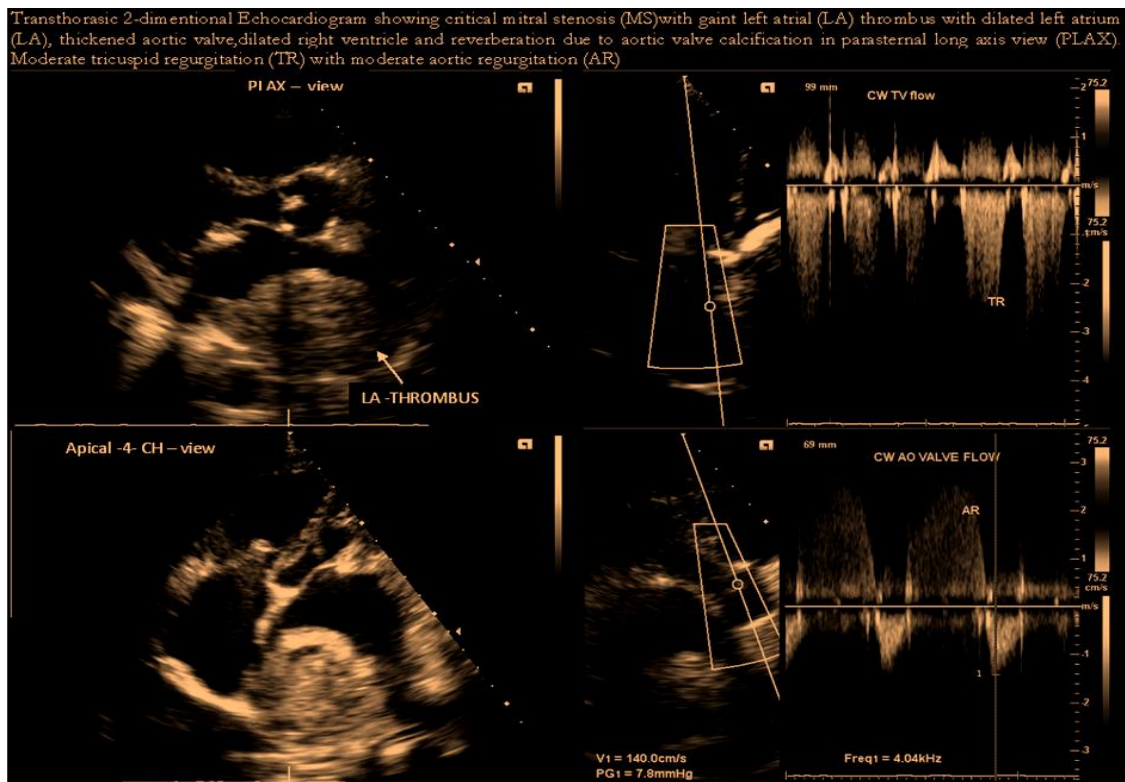


Figure no. 2: Transthoracic 2-D-Echocardiogram and Doppler study showing critical mitral stenosis with gaint left atrial thrombus with dilated left atrium with moderate tricuspid regurgitation with moderate aortic regurgitation

## DISCUSSION

Mitral stenosis is associated with atrial thrombus. [4,5] A pronounced thrombotic filling of the left appendage and atrium like in the present case is uncommon finding similar to the finding of Christian et al<sup>[1]</sup> Left atrial ball thrombus in the mitral valve disease has been reported frequently. It gradually enlarges and forms projecting mass that remains attached to the atrial wall by a pedicle. [4] During thrombus development and subsequent morphologic changes; it is very likely that the patient may experience transient embolisms or strokes. [5, 6,7] Tomomi et al reported a case of a huge left atrial thrombus with mitral stenosis, which was successfully removed surgically. [8] Similar to our case with LA giant thrombus with critical MS, Yunus et al reported a case of very large organized infected thrombus in the LA with severe MS treated with emergency open heart surgery

with successful removal of thrombus and mitral valve replacement with prosthetic valve. [9] Surgery should be considered as the treatment of choice in cases of organized left atrial thrombus and suspected tumor. Transthoracic and transesophageal echocardiography are the procedures of choice for the diagnosis of cardiac mass including left atrium like thrombus. About every fifth MS patient presents with thrombus in the LA. Most thrombi are located in the LA appendage, but atrial appendage thrombus can also extend to the LA cavity. LA thrombus without mitral disease is rare. [4,5] Atrial fibrillation (AF) is a common arrhythmia and major cause of morbidity and mortality not only in the western world but in India as well. Rheumatic valvular heart disease (RVHD) continues to remain the most frequent cause of AF in a recent survey. Surgery for AF in the Indian context should be utilized for

patients with associated RVHD undergoing valve surgery. Maze surgery and its modifications are extremely promising and have been successfully attempted by many investigators to restore sinus rhythm in RVHD and AF patients. Management of AF remains a challenging problem despite the advances in the treatment options. [10] Left atrial size is an important determinant of long-term freedom from AF recurrence and left atrial reduction surgery should be considered in patients with large LA (> 6 centimeters). In RVHD both the atria are important substrates for maintenance of AF and therefore cryo-ablation of right and left atrial isthmus in addition to the maze surgery should be considered. The threshold for mitral valve surgery is lower in patients with RVHD and AF as these patients become symptomatic earlier because of AF and the consequent loss of atrial kick. Surgery for AF is an additional incentive to the valve surgery in these patients to prevent future embolic episodes and stroke as in our case. [10]

## CONCLUSIONS

The case in present report is a representative example of a neglected and undertreated patient with giant thrombus in the left atrium (LA) with critical mitral valve stenosis (Chronic rheumatic valvular heart disease) presented with catastrophic consequences in the form of embolic stroke. Anticoagulant therapy in patients with significant mitral valve stenosis with dilated LA and LAA with atrial fibrillation should be considered according the currently available guidelines and standards. Mitral valve substitution should be considered in patients with mitral valve disease presenting thromboembolic complications.

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