

## Enormous Thrombus Complicating a Moderate Rheumatic Mitral Stenosis

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### Abstract

Moderate mitral stenosis, associated to left atrium enlargement and atrial fibrillation, can accelerate thrombo embolic formation. If not found quickly, medical treatment may not be enough. We report a case of 64 years-old women with dyspnea and palpitation related to a moderate mitral valve stenosis, atrial fibrillation and enlargement of left atrium containing a large thrombus. Despite a well conducted anticoagulation treatment, she presented an episode of syncope with a thrombus that was more developed than previously. She underwent mitral prosthesis, thrombectomy and reduction of left atrium with good outcome.

**Keywords:** Enormous thrombus Mitral Stenosis Complicating.

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### CASE REPORT

We report a case of a 64 years-old women, with a high blood pressure well balanced, and no history of rheumatic fever, presented for years a dyspnea class II of NYHA classification, that evolved 4 months ago in a class III, associated to a fluttering heartbeat on exertion, with sudden onset and end. She started vitamin K antagonist after diagnosis of a moderate mitral stenosis complicated by a left atrial thrombus measuring 8.1x2.34 cm, and controlled INR monthly (figure 2). She was brought to the emergency department for a recent episode of syncope. The principal findings on physical examination included an irregular heart beat with a diastolic murmur in the apical region.

Electrocardiogram showed an atrial fibrillation. Chest ray demonstrated cardiomegaly with left atrial enlargement (figure 1). Transthoracic echocardiography showed a commissural fusion responsible of a moderate fibrous mitral valve stenosis associated to an insignificant regurgitation.

The left atrium was highly enlarged (surface: 52 cm<sup>2</sup>) (figure 4). Inside the left atrium and a gigantic thrombus (8.4 x 2.1 cm), with a large base and a regular outline, attached to the left atrium free wall (figure 3). There was also a pulmonary hypertension (PAPs: 56 mmHg).

She was treated with unfractionated heparin for 10 days with no improvement of the thrombus. Therefore, she underwent a mitral valve replacement surgery with a prosthetic valve and thrombectomy and reduction of the size of left atrium with good outcome.



**Fig-1: chest ray showed cardiomegaly and the left atrial enlargement**



**Fig-2: Transthoracic apical four chamber view showed a large thrombus attached to the left atrium wall**



**Fig-3: Transthoracic apical four chamber view showed a larger thrombus**



**Fig-4: Transthoracic apical four chamber view showed enlargement of the left atrium**

## DISCUSSION

Rheumatic valve disease is the leading cause of mitral stenosis. Rheumatic valve disease is more common in women than in men. Up to 50% of the time,

a person with newly diagnosed mitral stenosis will not report a history of rheumatic fever as a child.

Mitral valve stenosis occurs from leaflet thickening, commissural fusion, and chordal shortening and fusion [5]. The thrombus formation is commonly associated to a severe mitral valve stenosis. The rheumatic valve stenosis, and HTA, is responsible of left atrium enlargement through the higher intracavitary pressure, inflammatory process due to the carditis and myocardial fibrosis [1, 2].

This dilatation can be responsible of atrial fibrillation. Furthermore, mitral stenosis increases coagulation factors formation [3]. In this case, the early thrombus formation, even without a severe mitral stenosis, is explained by the association of those multiple factors: mitral stenosis, atrial fibrillation and left atrium enlargement.

The organized aspect of the thrombus in echocardiography suggests its seniority, confirmed during surgery through the white aspect of the thrombus, with an evolving formation suggested by red layer. This may explain the ineffectiveness of medical therapy. Other anticoagulants, especially dabigatran, have not been shown to work in this case [6]. Therefore, surgical therapy remains the only treatment.

The prevalence of left atrium thrombus is up to 30% in patients on ineffective anticoagulation [4]. There is no guideline for a mitral valve surgery with a moderate mitral valve stenosis, but the damaged valve, due to the rheumatic process, is more likely to be changed.

## CONCLUSION

Rheumatic valve disease is very common, and may cause a mitral valve stenosis, and damage to its valvular system. When associated to left atrium enlargement and atrial fibrillation, that may cause thrombus formation, even with a moderate mitral valve stenosis. This thrombus, due to the seniority of its evolution, may resist to medical anticoagulant treatment. Therefore, the mitral valve replacement is in order due to the damaged valvular system.

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