



# MITRAL VALVE REPLACEMENT WITH SUCCESSFUL REMOVAL OF VERY LARGE LEFT ATRIAL ORGANISED CLOT [300GMS] SECONDARY TO CORONARY CAMERAL FISTULA

\* Dr Suraj Wasudeo Nagre<sup>1</sup> | Dr Manisha Suraj Nagre<sup>2</sup>

<sup>1</sup> Assistant Professor. V.T.S. Grant Medical College, Mumbai. \* Corresponding Author

<sup>2</sup> Amo, Kasturba Hospital, Mumbai.

## ABSTRACT

Left atrial clot is common in mitral valve disease. They are even more commonly seen after an episode of atrial fibrillation. This clot may cause sudden circulatory arrest and systemic embolization. Here we reported a case of mitral stenosis with very large organized clot in the left atrium secondary to coronary cameral fistula opening in left atrium. The patient underwent successful mitral valve replacement with removal of large left atrial clot of 300gm and closure of coronary cameral fistula opening with internal closure of left atrial appendage.

**KEYWORDS:** left atrium, mitral stenosis, mitral valve replacement, coronary cameral fistula

## INTRODUCTION

Nearly every fifth mitral stenosis patient presents with clot in the left atrium. Most clots are located in the left atrial appendage, but atrial appendage clots can also extend to the left atrial cavity<sup>1</sup>. Left atrial clots without mitral disease is rare<sup>2</sup>. The diagnosis of a left atrial clot should be regarded as an urgent indication for preventive surgery<sup>3</sup>. But associated coronary cameral fistula opening into left atrium was not reported yet. The incidence of congenital coronary fistulae is about 0.5%.<sup>4</sup> Only 10% open into the left heart chambers and most of those (80%) enter the left atrium. Heart auscultation rarely reveals a continuous murmur; cardiomegaly or plethora may be present. Diagnosis is usually confirmed by means of cardiac catheterization. When clinically necessary, fistulae are usually treated with surgical or percutaneous closure.<sup>5</sup>

## CASE REPORT

A 45-year-old woman presented with complaints of fever, shortness of breath, palpitation and facial puffiness. She had longstanding mitral stenosis and atrial fibrillation and was classified as NYHA-III. She never had any episode of embolism or syncope. Physical examination revealed signs of right-sided heart failure with decreased air entry along both lung bases. A mid-diastolic murmur was heard at the apex. Her ECG showed an atrial fibrillation rhythm, chest x-ray revealed cardiomegaly with dilated LA, transesophageal echocardiography revealed dilated LA with a large clot [Figure-1], PASP of 95mmHg, severe MS with ejection fraction of 55%. Laboratory data was normal. Accidentally coronary angiography showed coronary cameral fistula between the left circumflex coronary artery and the left atrium [Figure-2]. Moreover, the fistula had a double communication with the atrium, with 2 separate outflows: the 1st emptied into the left atrial roof and the 2nd, at the end of the fistula, emptied into the left superior pulmonary vein at its origin. An urgent surgery was performed using standard CPB with moderate hypothermia and antegrade blood cardioplegia. The stenosed mitral valve was exposed through left atrial incision. A huge organized clot measuring 11 × 10 × 5 cm [Figure-3] and weighing 300 gm was removed. Mitral valve was replaced with St. Jude mechanical valve 31-mm. Openings of coronary cameral fistula in left atrium were identified and closed. Left atrial appendage was closed internally by prolene 4-0 suture. Minimal inotropic support was used during weaning from bypass. Postoperatively, the patient remained hemodynamically stable. She was ventilated for 5 hours and had minimal blood loss. She stayed in ICU for 2 days, during which intensive chest physiotherapy was performed. The patient was discharged after 8 days on tablet warfarin 5 mg with INR of 2.5.

## DISCUSSION

Coronary artery fistulas are communications between one of the coronary arteries and a cardiac chamber (CCF) or a major vessel (venae cavae, pulmonary artery, veins, or coronary sinus). Major sites of origin of fistulae are the right coronary artery (55%), left coronary artery (35%), and both coronary arteries (5%). Only 10% open into the left heart chambers and most of those (80%) enter the left atrium. Cardiac catheterization with coronary angiography remains the gold standard for the diagnosis of coronary artery fistula. It can demonstrate the size, anatomy, number, origination, and termination site of the fistulas.

All symptomatic patients with coronary artery fistula should undergo closure of the fistula by either surgical or transcatheter approaches. The advantages of the transcatheter approach include less morbidity, lower cost, shorter recovery time, and avoidance of thoracotomy and cardiopulmonary bypass. Hemodynamically significant fistula with a left to right shunt may lead to congestive heart failure, pulmonary artery hypertension, and myocardial ischemia due to a steal phenomenon. Associated mitral stenosis with large left atrial clots was not reported in literature. In our case, the cause for left atrial clots was atrial fibrillation with mitral stenosis along with coronary cameral fistula opening into left atrium. Removal of an organized clot from the left atrium can be challenging especially when it is huge in size. The presence of dense adhesions and absence of cleavage plane makes its removal difficult.

## CONCLUSION

To the best of our knowledge, this is the only case report of an mitral stenosis with left atrial clot secondary to coronary cameral fistula opening into left atrium which was treated successfully with mitral valve replacement by prosthetic valve and closure of coronary cameral fistula via left atrium along with internal closure of left atrial appendage.

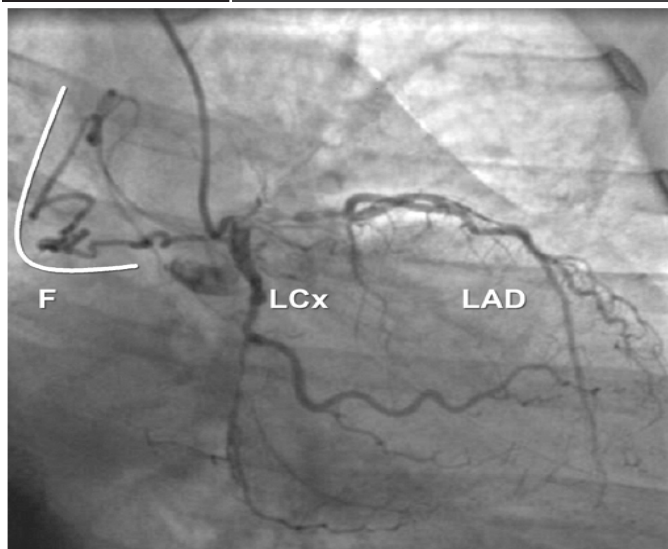


Figure 1-Coronary angiography. Selective angiography of the left main coronary artery displays an anomalous vessel originating from the proximal segment of the circumflex coronary artery. F = fistula; LAD = left anterior descending coronary artery; LCx = left circumflex coronary artery

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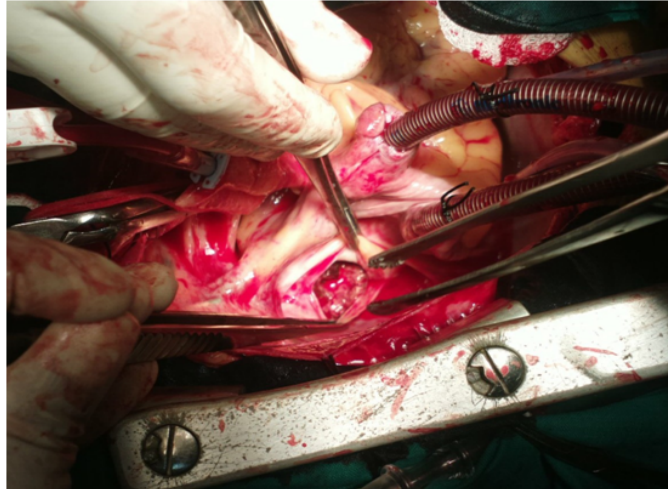


Figure 2 -Clot in the left atrium.

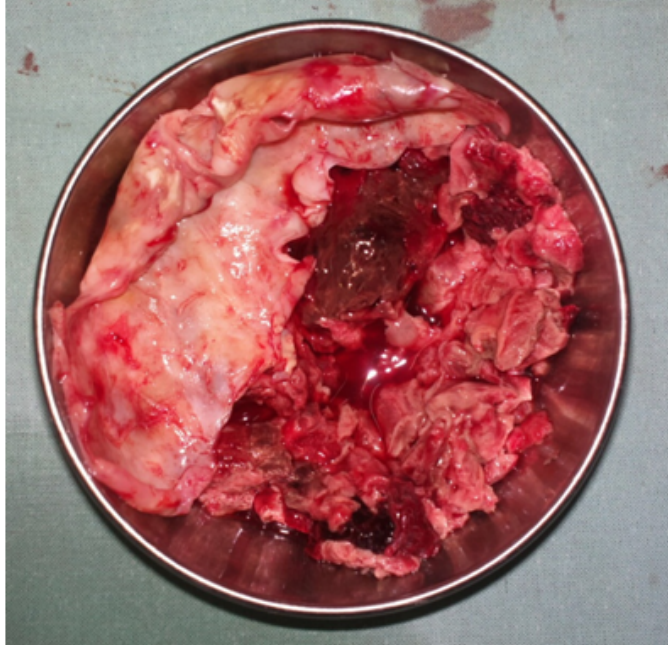


Figure 3-Extracted clot outside the cardiac cavity.