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**Case Report**
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# Acute Myocardial Infarction as A Rare Clinical Presentation of Left Atrial Myxomas

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**ABSTRACT**

Myxomas are the most common of all benign cardiac tumours. They have female preponderance with peaks in 3rd and 6th decades of their life. Their presentation can vary from causing obstruction to the blood flow in the heart chambers, systemic embolization, to systemic constitutional symptoms. However, myxoma's presentation as an acute myocardial infarction is very rare mainly due to anatomical location of the coronary arteries and the fact that they are covered by the aortic cusps during systole. Here we present a case of left atrial myxoma in a 73-year-old lady who presented with acute myocardial infarction.

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## INTRODUCTION

Primary cardiac tumours are 20 to 40 times rarer than cardiac metastases.[1]The reported incidence of primary cardiac tumours is less than 0.1%[2], and about 90% of them are benign[3]with predominance in left atrium.[4]Of all the cardiac tumours, myxomas are the most common type[5]that is a jelly like mass attached to the endocardium by a stalk and their surface could be smooth, villous or friable. The villous or friable myxomas, which are about one third of all the myxomas, are most commonly presented as emboli.[2]The sporadic cases are more common among the females from fourth to seventh decade of their life. Carney complex is the familial type which presents with a triad of symptoms: (1) Cardiac myxomas and fibroadenomas, (2) Abnormal skin pigmentation, and (3) Endocrine tumours e.g., testicular/ovarian, adrenal, thyroid.[6]

The clinical presentation is variable and could range from obstruction, emboli to constitutional symptoms. As they primarily occur in the left atrium, systemic embolization is common resulting in stroke, renal failure or limb ischemia. However, the incidence of coronary embolization is 0.06%. In myxoma related myocardial infarction; right coronary artery is most commonly involved and around 33% of the angiograms are unremarkable.[7]

The commonly utilized diagnostic modalities are echocardiography, cardiac MRI or CT scan, PET scan and surgical excisionis the treatment of choice, to prevent complications.[1] We are reporting the rare presentation of atrial myxoma as an acute ST-elevation myocardial infarction.

## Case Report:

We are presenting an unusual case of a73-year-old lady who presented with sudden onset of chest pain in the A&E department. She had a past history of stroke 6 months ago with residual weakness in left hand and numbness in the fingers. ECG showed widespread ST-segment elevation (II, III, aVF, V4-6)(fig.1) with a Troponin level of 19641. Transthoracic echocardiography revealed a mobile left atrial mass lesion attached to the interatrial septum measuring 3cm x 3cm which was partially obstructing the mitral valve. (fig.2) The provisional diagnosis of atrial myxoma was made with possible embolization to the coronary arteries. She had moderate LV systolic dysfunction and was in pulmonary oedema on admission to the

coronary care unit for which appropriate treatment was instituted. Angiogram showed unobstructed left main stem and right coronary artery but the flow in LAD and circumflex arteries was restricted. Truncated appearance distally in all branches of left coronary arteries was seen which was indicative of embolised thrombus. Thrombus aspiration in the cath lab was attempted but was unsuccessful as occlusion was very distal. After further attempts, modest improvement in left coronary arteries flow was observed but ST-elevation remained unchanged. She was referred for emergent surgical intervention and IABP was inserted to support the coronary circulation and cardiac function. Median sternotomy was performed, and cardiopulmonary bypass was established with aorto-bicaval cannulation. Right atriotomy was performed, and a 5.5 X 4 cm mass with macroscopic appearance of myxoma was removed and sent for histopathology. (fig. 3) The interatrial septal defect was closed with a bovine pericardial patch and the atrium was closed. The patient was shifted to ICU where she had an uneventful recovery and was discharged home later and followed up in clinic. Histopathology report confirmed that it was a myxoma.

**DISCUSSION:**

Almost 50% of benign cardiac tumours are myxomas.[2] The cardiac myxomas are more common on the left than the right side. They are more common in females during their 3rd and 6th decade of life,[7] however our patient presented at the age of 73 years.

The myxomas are usually pedunculated and attached to the interatrial septum near fossa ovalis. Only 0.06% of the cases embolise to coronary arteries making acute myocardial infarction as a rare presentation of atrial myxoma.[7]This could be explained by the fact that the coronaries arteries originate at 90 degree angle from the aortic sinuses and are protected by the aortic valve cusps during systole.[8]Our patient had a previous history of stroke six months before current presentation. Cardiac tumours or thrombus should be ruled out echocardiographically in stroke patients who otherwise don't have any vascular pathology. Over half of the patients have cardiac auscultatory findings on clinical examination and 1 in every 6 have characteristic "tumour plop".[6] She had dynamic obstruction of the mitral valve, but it was not significant enough to cause any cardiac signs or symptoms hence she never sought medical advice for it. Only a quarter of the patients presenting as acute MI have anterior wall involved.[7] Our patient presented

with acute myocardial infarction of anterolateral walls which was initially mistaken as atherosclerotic disease but on angiography the coronary walls were disease free and there was low flow in the vessels suggesting embolization. Echocardiography confirmed the presence of left myxoma.

The treatment of choice is surgical excision of the myxoma.[1] In our patient due to the embolization, macroscopic features of the tumour and dynamic obstruction of the mitral valve indicated for emergent surgery and excision of the left atrial mass. The recurrence rate is one in ten of the operated patients, hence annual follow up with transthoracic echocardiography is advisable for up to at least four years.[9]The diagnosis is confirmed on histopathology.[7]

The lesson learned from this case is that in any otherwise healthy patients having stroke, cardiac causes should be aggressively sought after. The question here is that whether these patients should go straight for surgery or should they have coronary angiography first. But this is still unanswered because this presentation is very rare, and all the patients go down the primary PCI pathway on presentation.

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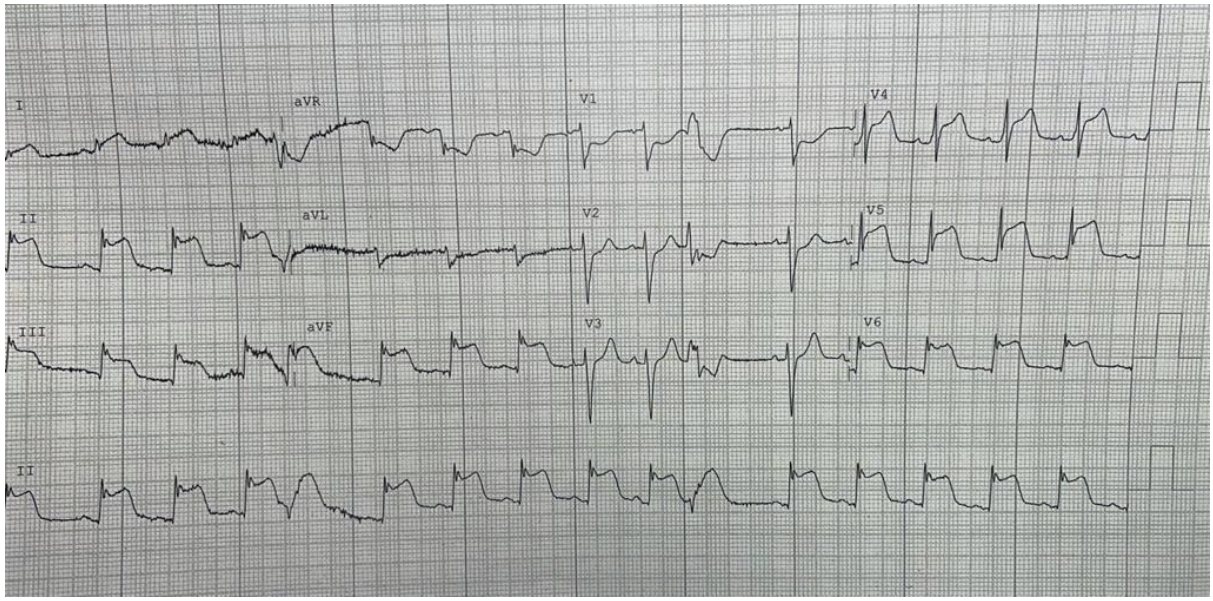


**Fig.1**

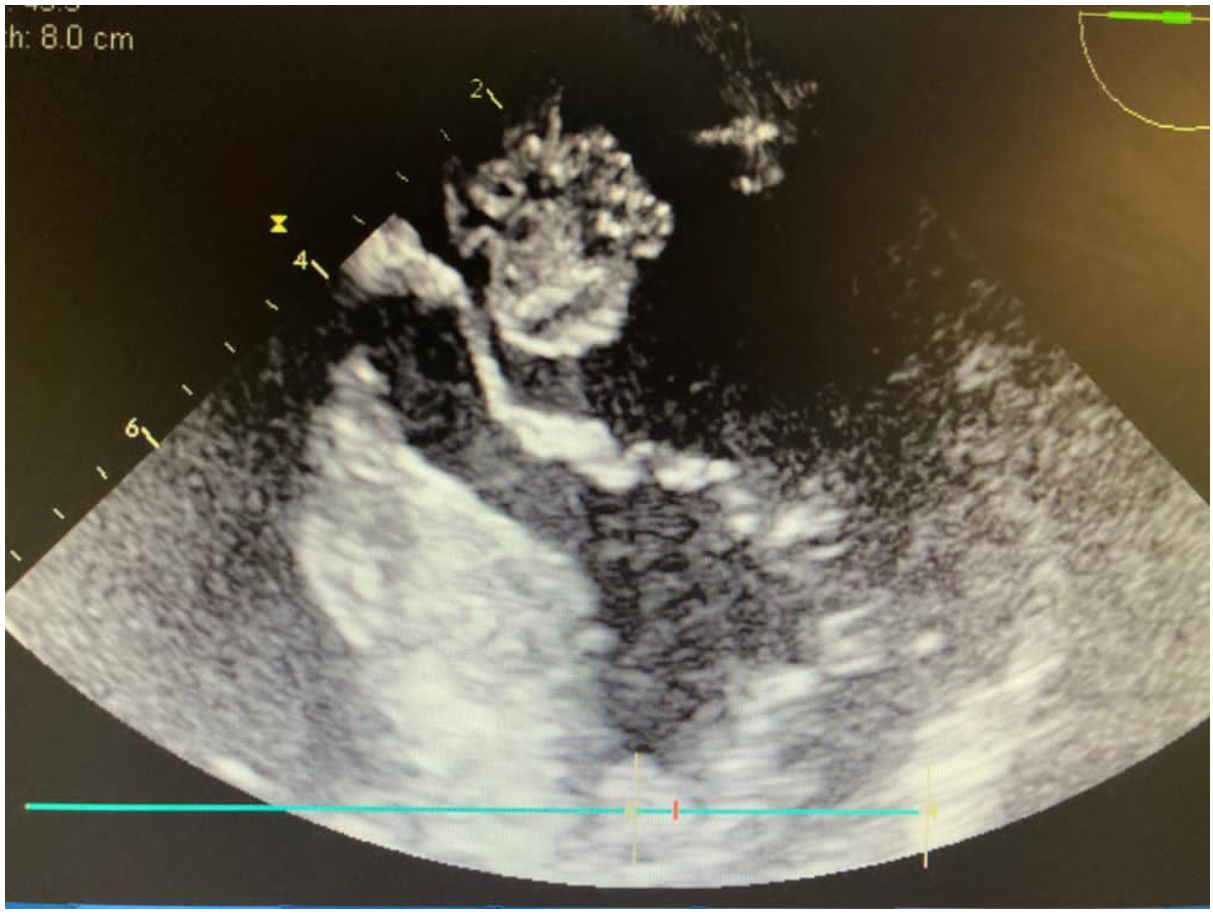


**Fig 2**

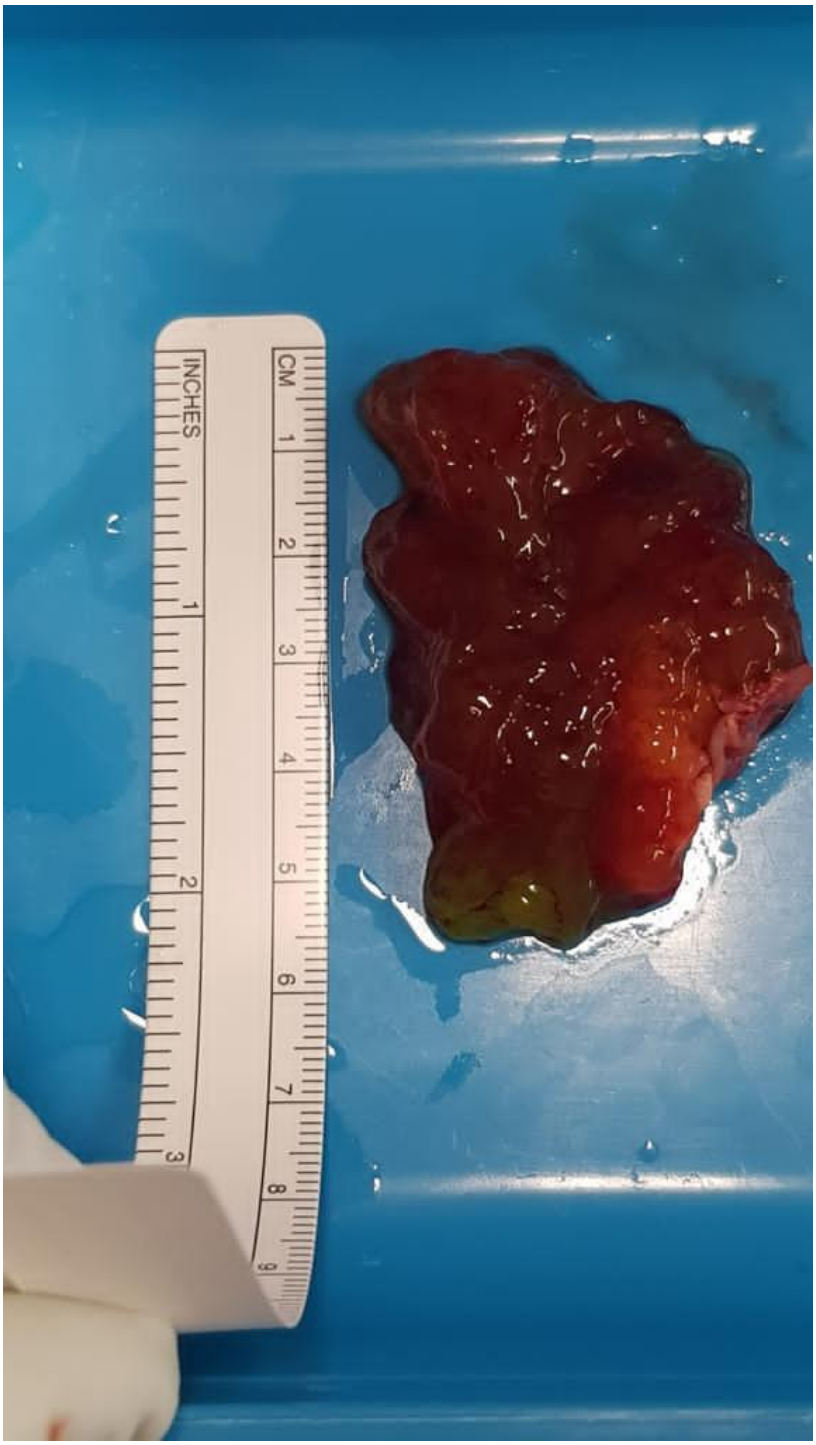


**Fig 3**