

Thrombus in Right Side of Heart Mimicking Myxoma: An Autopsy Case Report

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Abstract

The difference between cardiac thrombus and myxoma is not always easy, and a correct diagnosis is important because of its distinct treatment strategy. Among all cardiac masses, cardiac thrombi were found to be the most common diagnosis and many times the cardiac thrombi mimics myxoma. Radiological modalities offers correct diagnosis, however, in the lack of that or in some instances, pathological examination is the only reliable method to diagnose cardiac masses accurately. We are presenting autopsy case reports of two cases of sudden death in which we found cardiac masses morphologically mimicking myxoma and on histopathological examination was found to be thrombi.

Key words: Cardiac masses, Myxoma, Thrombus

INTRODUCTION

Among the most common cardiac masses are the thrombus and myxoma. The difference between thrombus and myxoma is important because of different treatment modalities. In some instances, thrombi may have stalk and can be misdiagnosed as myxoma.¹ The presence of risk factors, location, and avascular character of cardiac masses make the thrombi most likely diagnosis.² In most instances, pathological examination is the only reliable method to diagnose cardiac masses accurately.¹⁻⁴

CASE REPORT

An autopsy was performed on 57-years-old male. The patient had a history of asthmatic attack. On examination, the patient had cardiomegaly. Unfortunately, none of the radiological findings were available. A heart measuring 18 cm × 15 cm × 6 cm and weighing 450 g. On cut section,

left ventricular wall measures 2 cm, inter-ventricular septum 3 cm, and right ventricular wall (RVW) 1 cm in thickness.

A pedunculated mass of size 4 cm × 3 cm × 2 cm was present on right atrium (Figure 1a and b). The peduncle was attached to wall of right auricle. Mass was well circumscribed, mobile and with a smooth contour. On cut section, it appeared homogeneous, milky white in color, and soft in consistency. On gross examination differential diagnosis made was myxoma / Organised thrombus.

On histopathological examination, section studied from mass showed the presence of inflammatory infiltrates predominantly neutrophils along with lymphocytes, macrophages, and plasma cells against fibrinous background (Figure 2). There was no evidence of myxoma cell or myxoid material even on extensive search. The final diagnosis of organizing thrombus was made. Sections from cardiac walls showed features of myocardial infarction, myocarditis, and myocardial hypertrophy. Sections from both the coronaries showed features of atherosclerosis.

Similarly, we received formalin fixed specimen of heart, of a 24-years-old female for histopathological examination. She had a history of chronic alcoholism.

Heart received was measuring 13 cm × 10 cm × 4 cm and weighing 130 g. On cut section, all the cardiac walls thickness

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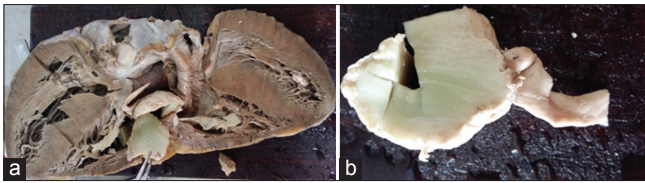


Figure 1: (a) Cut section of heart showing mass in right atria. (b) Cardiac mass with peduncle

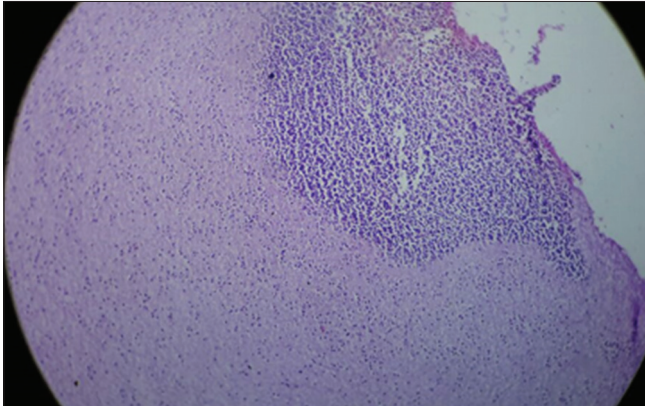


Figure 2: Microscopic picture of cardiac mass. (H and E, x10). Section shows presence of inflammatory infiltrate against fibrinous background

was within normal range. Left coronary artery (LCA) was found blocked while right coronary artery (RCA) was patent. There were two sessile, well-circumscribed masses found on the right chamber, one in right atrium measuring 3 cm × 2 cm × 1 cm and another measuring 1 cm × 1 cm × 1 cm present in right ventricle near apex (Figure 3). The tricuspid valve showed myxoid degeneration also.

On histopathological examination, RVW showed features of myocardial infarction. LCA was found to be critically blocked with thrombus with vessel wall showing features of atherosclerosis. RCA showed vessel wall thickening.

Multiple sections studied from masses showed the presence of inflammatory infiltrates predominantly neutrophils along with lymphocytes, macrophages, and plasma cells against fibrinous background (Figures 4a and b). There was no evidence of myxoma cell even on extensive search. The final diagnosis of organizing thrombus was made.

In both the above cases, we had no radiological findings or another relevant history like history of heart disease, hypertension, diabetes mellitus, and smoking except for history of chronic alcoholism in female patient.

DISCUSSION

Mural thrombi are common complications of the verity of valvular and myocardial disorders. Occasionally, they

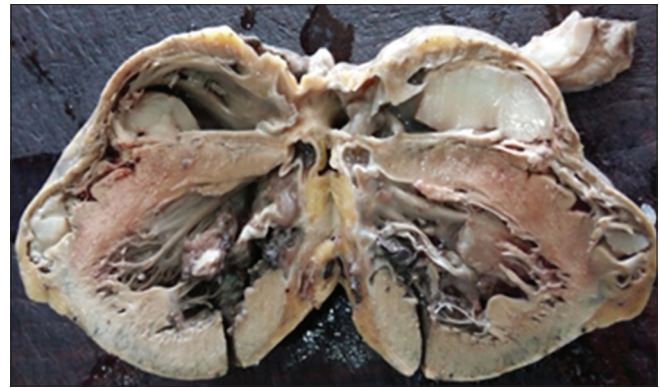


Figure 3: Cut section of heart showing cardiac masses on right chambers

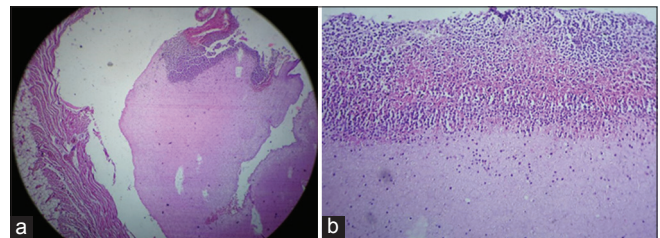


Figure 4 (a): Microscopic picture of cardiac mass (H and E, x4). (b) H and E, x10. Section shows presence of inflammatory infiltrate against fibrinous background

become enough to present mass effect or embolic episodes and can be confused with myxoma.⁵

We are reporting two cases of cardiac masses which were grossly suspected as myxoma/ organised thrombus and on histopathological examination, final diagnosis was made as organised thrombus. We had a lack of history of patient symptoms, treatment history, and history of risk factors as mentioned above. We were also lacking radiological findings of both the patients. There is paucity of literature on myxoma/ organised thrombus of heart on autopsy pathology. were also lacking.

Among all cardiac masses, cardiac thrombi were found to be the most common diagnosis⁶⁻⁹ and in some instances, the cardiac thrombi mimics myxoma.^{1,3,4}

Similarly, myxoma can simulate thrombus as thrombus may have stalk or neovascularization.^{1,4,7} The early diagnosis of above entities is warranted as both had different line of treatment and both have complications like thromboembolism. Our case report emphasis on the importance of pathological examination of cardiac mass specimen obtained by various means such as surgical resection for confirmatory diagnosis and for early commencement of proper treatment modality. Myxoma needs surgical removal of mass while if thrombus is the case, anticoagulation therapy is started which responds

well. Confirm diagnosis of cardiac mass before undergoing surgery can avoid unnecessary surgical intervention in the case of thrombus.

Our case was similar to a case report by Barbara *et al.* in which a left atrial appendage thrombus mimicking atrial myxoma was reported and confirms diagnosis was made histopathologically only.¹⁰

Cardiac thrombi appear more frequent than cardiac myxoma and are typically located in atrium and generally occur in patients with organic heart disease. In some cases, atrial thrombi may have stalk and can be diagnosed as myxoma which can lead to an unnecessary surgical resection.¹¹⁻¹⁴

Myxoma and thrombi can be differentiated using various radiological modalities, histopathological examination, and immunohistochemical staining in difficult cases with calretinin which is found in myxoma but not in thrombus.¹⁵ Sometime patient can be asymptomatic which may lead to grievous complication like our case.

CONCLUSION

A present case report illustrates the morphological diagnostic enigma of cardiac masses most commonly between thrombi and myxoma. Both of these entities are highly predisposed to embolization because of their fragile nature. This can lead to serious complications like systemic embolization and sudden cardiac death due to cardiac outflow obstruction. We emphasis on the unbeatable role of histopathological examination to arrive definitive diagnosis and so to reach early and correct

approach for the treatment modalities which can benefit patient survival.

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