

Left Atrial Mass: Thrombus? Myxoma? Or Both? Myxoma surrounded by thrombus

Mehmet Taşar^{1*} and Fatih Ada²

¹Dr.Sami Ulus Maternity, Child Health Education and Research Hospital, Cardiovascular Surgery Department, Ankara, Turkey.

²Cumhuriyet University School of Medicine, Cardiovascular Surgery Department, Sivas, Turkey.

*Correspondence:

Dr. Mehmet Taşar, Dr.Sami Ulus Maternity, Child Health Education and Research Hospital, Cardiovascular Surgery Department, Ankara, Turkey, Tel: +90 505 442 47 80.

Received: 29 November 2020; Accepted: 22 December 2020

Citation: Taşar M, Fatih Ada F. Left Atrial Mass: Thrombus? Myxoma? Or Both?. Cardiol Vasc Res. 2020; 4(5): 1-3.

ABSTRACT

Left atrial masses are generally myxomas or thrombus formations. When the operation of the mass is inevitable, preoperative radiological techniques are used for understanding the properties. When a mass in left atrium is seen, it thought to be solely myxoma or thrombus. In this case, we aimed to present a patient that underwent open cardiac surgery for a left atrial mass and it was a myxoma which was surrounded by thrombus formation.

Keywords

Cardiac tumors, Myxoma, Thrombus, Cardiac surgery.

Introduction

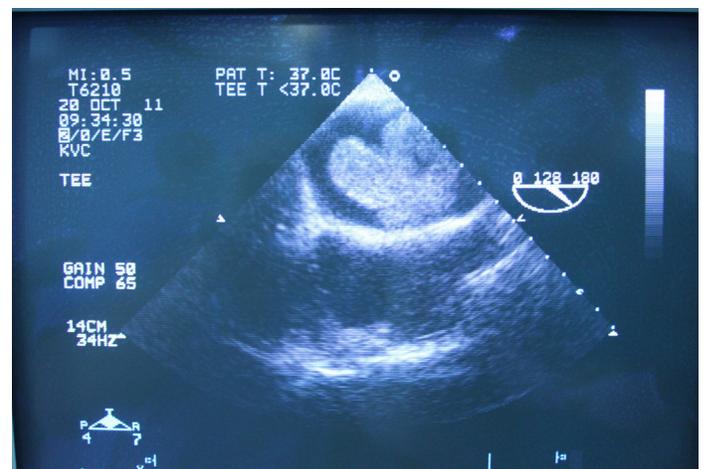
Myxomas are the most common form of benign cardiac neoplasms. Nearly half of the benign heart tumors are myxomas, and the majority of the rest are lipomas, papillary fibroelastomas and rhabdomyomas. About 75% of the cardiac myxomas are seen in the left atrium, 18% in the right atrium, 4% in the right ventricle and 4% in the left ventricle. Left atrial myxomas generally originate from interatrial septum near the fossa ovalis, some forms originate from the mitral annulus, mitral valve, aortic valve or inferior vena cava [1].

Myxomas are usually covered by intact endocardium and sometimes distinction from thrombus may be challenging [2]. Myxomas can be seen at any age although they mostly appear in adults. Myxomas in the left atrium tend to mimic mitral valvular heart disease. Surgical resection can be lifesaving. On this case, we present a myxoma in the left atrium that is surrounded by thrombus formation.

Case

Fifty years old male patient admitted to Cardiology Department with shortness of breath, especially with effort for the last 4 months. Transthoracic echocardiography (TTE) revealed a left atrial mass. He also had diabetes mellitus and chronic obstructive pulmonary disease. Heart rate was 80 beats/minute, sinus rhythm,

blood pressure was 125/75 mmHg and there was 3/6 early diastolic murmur. In our clinic, we observed an echogenic structure that was attached to the interatrial septum with a small peduncle, which could be identified as myxoma or thrombus in the left atrium, with a size of 5.9x4.2 cm; it was moving in and out of the left ventricle. Maximum mitral valve gradient was 23 mmHg, mean mitral gradient was 15 mmHg and pulmonary artery systolic pressure was 45 mmHg. Coronary angiography (CAG) was normal. Transesophageal echocardiography (TEE) revealed a mobile mass with a smooth surface attached to interatrial septum near fossa ovalis (Picture 1).

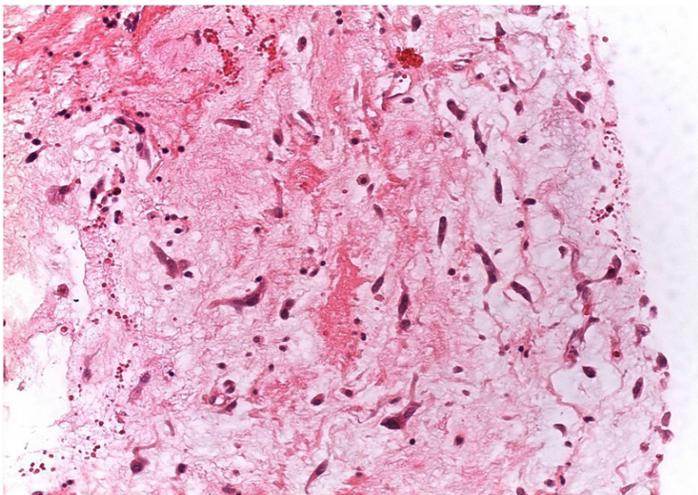


Picture 1: TEE image shows a 5.9x4.2 cm mass, with a smooth surface, attached to the fossa ovalis on the left atrium.

Patient informed consents were obtained. During the operation, we observed that the left atrium was entirely filled with newly-formed thrombus (Picture 2). After the thrombus was taken out, a myxoma with a peduncle on the lateral part of fossa ovalis was observed. Myxoma was totally excised. Patient was discharged following an uneventful post-operative period. While the pathology findings supported myxoma, immunohistochemistry analysis was performed to identify whether the mass was a myxoma or an organised thrombus. Immunohistochemical findings have confirmed myxoma specific cells with thrombus formation (Picture 3).



Picture 2: Myxoma with surrounding thrombus.



Picture 3: Immunohistochemical findings of myxoma specific cells with thrombus formation.

Discussion

In various autopsy series, primary cardiac tumors are seen 0,0017% and 0,19% [3]. Myxomas are the most common form of benign cardiac neoplasms in adults. In this case, left atrium had the appearance of thrombus formation completely. After the thrombus was cleared away, a myxoma with a peduncle on the lateral part of fossa ovalis was observed. In this case myxoma was on typical location in left atrium.

Myxomas appear most frequently in adults, but it can be seen at any age. The youngest patient reported by Pasaoglu et al. was one month old [4]. Although myxomas are histologically benign, fragmentation and embolization or valve obstruction may cause syncope episodes and even sudden death. Myxomas in the left atrium tend to mimic mitral valvular heart disease. Our patient had shortness of breath and systolic pulmonary artery pressure was 45 mm/Hg. This symptom and sign can be derived from mitral valve pseudoobstruction.

Calcifications, pulmonary congestion signs and cardiomegaly can be seen in chest X-Ray but cannot be any signs in early period. Cavitory growth signs, axis deviations, bundle branch block, atrial dilatation and atrial fibrillation can be seen in the electrocardiogram. In our case, there was no teleradiographic and electrocardiographic findings. This condition can be explained with early diagnosis of thrombus covered myxoma which was caught before cavitory growth and atrial dilatation.

Echocardiography has a high sensitivity in the diagnosis of myxoma. It also gives information about size, shape, mobility, and atrioventricular valve involvement of the mass. In our case, echocardiography showed left atrial mass however it did not discriminate the structure. Interestingly, the myxoma was covered by thrombus. Transesophageal echocardiography gives more information about tumor size, location, mobility, and adhesion than TTE [5]. With TEE, we localized the 5,9x4,2 cm mass with a smooth surface on the lateral of fossa ovalis, which was previously observed with TTE. Computed tomography (CT) can also be used to diagnose the myxoma but this is usually used for more information about malign cardiac tumors. Magnetic resonance imaging (MRI) can be used to determine characteristics for diagnosis of myxoma size, shape and surface. Unless, myxomas have an extra cardiac pathology (coronary artery disease, etc.) catheterization and coronary angiography are not used frequently [6]. Hereby, because of the age of our patient, preoperative cardiac selective coronary angiography was performed.

While the cardiac myxomas are usually benign tumors, surgical resection is the only acceptable and definitive treatment. For this reason, in order to prevent embolization caused by either thrombus or myxoma, intracardiac masses should be operated as soon as possible.

Conclusion

It is sometimes difficult to distinguish a left atrial myxoma from left atrial thrombus. When a left atrial mass is operated, pathology shows either it is thrombus or myxoma. In our case, the mass was myxoma with surrounded thrombus. When the surgery is inevitable, the differentiation of the pathology becomes unnecessary.

References

1. Meng Q, Lai H, Lima J, et al. Echocardiographic and pathologic characteristics of primary cardiac tumors: a study of 149 cases. *Int J Cardiol.* 2002; 84: 69-75.
2. Peters PJ, Reinhardt S. The echocardiographic evaluation of

-
- intracardiac masses: a review. *J Am Soc Echocardiogr.* 2006; 19: 230-240.
3. Patel J, Sheppard MN. Pathological study of primary cardiac and pericardial tumours in a specialist UK Centre: surgical and autopsy series. *Cardiovasc Pathol.* 2010; 19: 343-352.
 4. Pasaoglu I, Demircin M, Ozkutlu S, et al. Right atrial myxoma in an infant. *Jpn Heart J.* 1991; 32: 263-266.
 5. Hall RA, Anderson RP. Cardiac neoplasms. In: Edmund LH ed. *Cardiac Surgery in the adult.* New York: Mc Graw-Hill companies. 1997; 1345-1362.
 6. Ülgen MS, Karadede A, Çakır Ö, et al. Atipik LAMB sendromu özelliği gösteren sağ atriyal miksoma vakası. *HKK Cerrahi Bül.* 1999; 7: 19-22.