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Case Report

Left Atrial Myxoma With Atypical Echocardiographic Features

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ABSTRACT

Accurate diagnoses of cardiac masses constitute a challenge to the cardiologist. Echocardiography plays an essential role, but differentiating between benign and malignant masses that may mimic the features of each other may not be easy by echocardiography. Myxomas are primary benign tumors of the heart with typical echocardiographic features that are generally found in certain locations in the heart. Nonetheless, they are occasionally found in atypical locations in the heart chambers and echocardiographic features mimicking malignant tumors. Myxomas may present with obstructive, embolic, and constitutional symptoms, or they might be found incidentally based on the tumor size and location. Herein, we describe a 78-year-old man with a cardiac mass with echocardiographic features inconsistent with a benign tumor, although further evaluation confirmed it as a myxoma. Benign or malignant cardiac masses could mimic the typical imaging features of each other, and the diagnosis should be based on pathologic findings. ***(Iranian Heart Journal 2022; 23(1): 233-236)***

KEYWORDS: Cardiac mass, Myxoma, Echocardiography, Imaging

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Cardiac masses are classified as those with primary or metastatic origin. The majority of primary tumors are benign, and the most prevalent type is myxoma, which is more prevalent in middle-aged individuals. [1,7] The management of an incidentally found asymptomatic cardiac mass is challenging, although imaging characteristics could be helpful. Nonetheless, a definite diagnosis is established via pathology, which needs surgical resection. [1–3]

Commonly, myxomas arise from the left atrium at the site of the fossa ovalis, and symptoms are related to compressive effects on the adjacent structures in the left atrium or volumetric complications for the filling of the chamber. [1,4] Other serious complications include embolic events, which are more prevalent in cases with a larger tumor, an

enlarged left atrium, and an irregular tumor surface. [5] Interestingly, older adult patients present with nonspecific symptoms and signs as described below. [8]

Case Report

A 78-year-old man with a history of uncontrolled hypertension despite the regular consumption of multiple hypertensive drugs was referred to our echo lab for the evaluation of evidence of hypertensive end-organ damage. The patient's physical examination was unremarkable, except for a blood pressure of 160/90 mm Hg. Electrocardiography exhibited evidence of left ventricular hypertrophy, and lab tests were within the normal range. Transthoracic echocardiography revealed a hypermobile, echogenic, nodular, and cluster-like mass (1.9×1.7 cm in size) attached to the posterolateral wall of the left atrium and a small circumferential pericardial effusion (Fig. 1). For further evaluation, transesophageal echocardiography was performed, and it confirmed the presence of a solitary sessile mass attached to the posterolateral wall of the left atrium. Additionally, there were no attachments to the interatrial septum (Fig. 2 & Movie 1).

Assessment for a possible metastatic source of the mass, as well as malignancy workup, was done. Renal sonographic and abdominal and thoracic computed tomographic examinations showed no abnormalities. All tumor markers were negative. Cardiac surgery for the resection and pathologic diagnosis of the mass was, therefore, planned. A preoperative coronary artery angiography showed normal coronary arteries.

Pathology findings showed spindle- and stellate-shaped cells in a myxoid stroma, consistent with cardiac myxoma. The postoperative period was uneventful, and the patient was discharged home in good condition.

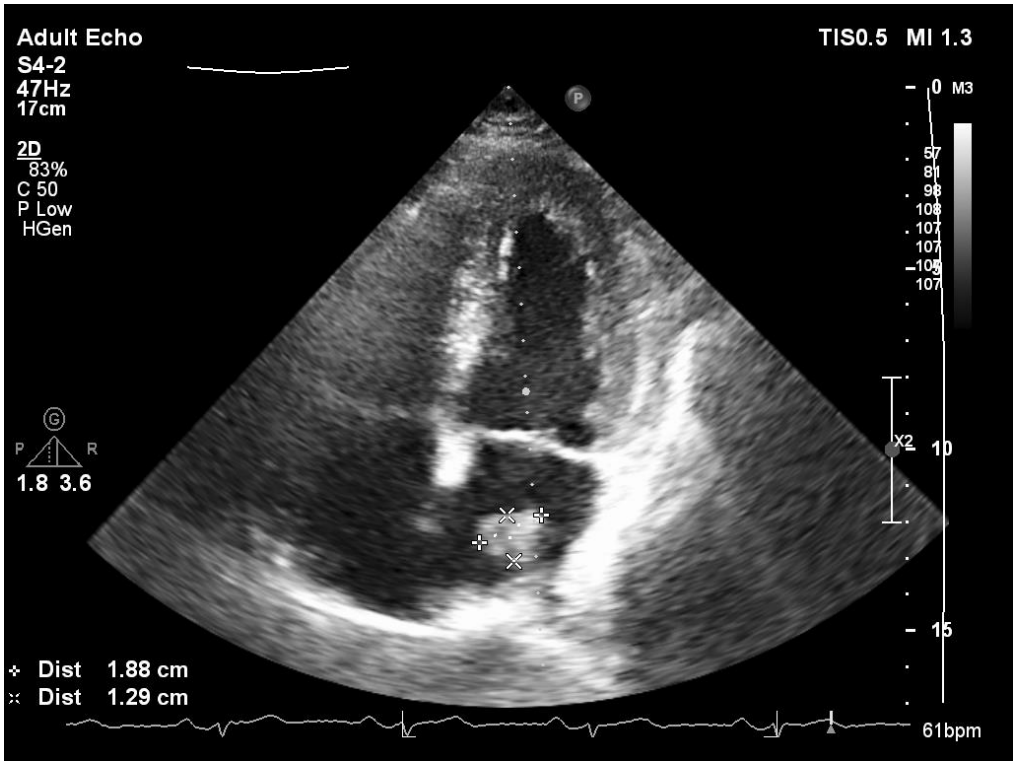

Figure 1. The transthoracic 4-chamber view depicts a large LA mass (the arrow).

LA, Left atrium; RA, Right atrium; LV, Left ventricle

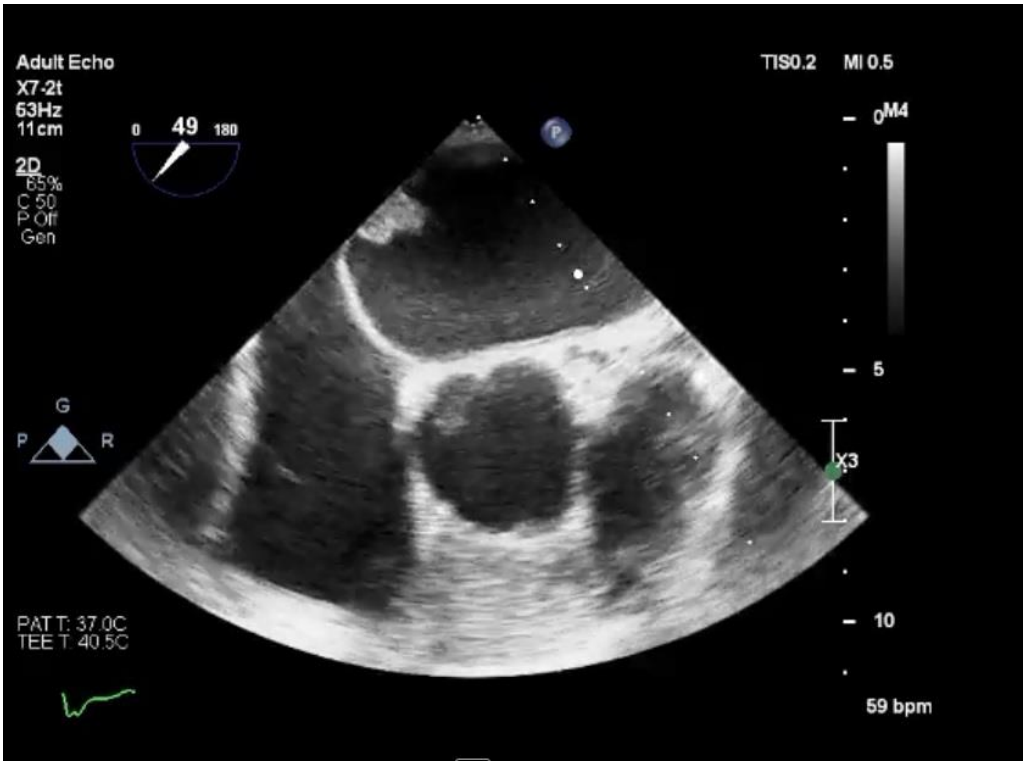

Figure 2. The transesophageal short-axis view (45°) shows a cluster-like mass protruding from the posterior lateral LA wall (the arrow).

AO, Aorta; LA, Left atrium; RA, Right atrium

DISCUSSION

Myxomas are the most common primary tumors of the heart. [1,2,4] The majority of such cases arise in the left atrium, but they can be found in the right atrium or the ventricular cavities. [10] Myxomas may be asymptomatic, or they might present with clinical features related to embolization, obstruction, or constitutional symptoms. [4] Anemia, elevated serum C-reactive protein levels, and elevated erythrocyte sedimentation rates are seen in many patients. Our patient had only poor controlled hypertension in his past history and was entirely asymptomatic. The condition could be due to the atypical location of the mass, which was far from the mitral valve. Most patients are in the age range of 40 to 60 years, and there is female sex predominance. [2,3] Myxomas could be sporadic or familial. If they are part of the Carney complex myxomas, myxomas are found at an earlier age and in atypical locations. Typically, myxomas are large, circular, pedunculated masses with smooth surfaces. [10] Transthoracic echocardiography is the cornerstone of the diagnostic approach to cardiac masses and provides substantial information about the relationship of the mass to the cardiac chambers, valves, and complications. [4,5] Transesophageal echocardiography with higher resolution and more proximity to the heart, especially the left atrium, helps obtain additional detailed information. [6,7] As myxomas tend to recur, lifelong follow-ups are recommended.

Cardiac masses, whether benign or malignant, could mimic each other in echocardiographic appearance, which makes the correct diagnosis challenging and necessitates surgical resection for a precise approach. [1,2] Joung-Taek Kim et al [10]

suggested that a single mass, the septal origin of the tumor, the sparing of the adjacent structures such as the pulmonary veins, and attachments with narrow stalks to the left atrial wall were consistent with a benign form of cardiac tumors. The existence of pericardial effusion in many studies is a marker of pericardial involvement and a malignant mass. [4,10] In our case, the mass was far from the interatrial septum and the mitral valve in the posterolateral wall of the left atrium with the presence of pericardial effusion, which was inconsistent with a benign cardiac tumor. Still, histology proved it to be a typical myxoma.

When a cardiac tumor is diagnosed, for the prevention of tumor complications (especially tumor embolization), which could have catastrophic consequences, and for the differentiation of malignant from benign tumors (given that imaging features might be misleading), surgical resection is generally planned. [1,7,10] For old adult patients with comorbidities and increased surgical and postoperative risks, conservative management has been reported. Nevertheless, a thorough evaluation with other modalities such as magnetic resonance imaging is needed to avoid the misdiagnosis of malignant tumors as much as possible. [8,9]

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