

What does a floating mass in a young patient's heart do?

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A previously healthy 57-year-old male patient presented to our emergency department for palpitations, dry cough, and non-exertional chest pain. He denied lipothymia or syncope. Blood pressure was 160/90 mmHg, heart rate 76 beats/min, body temperature 36.4°C, respiratory rate was 14 breaths/min, and oxygen saturation 96% on room air. Physical examination revealed symmetrical air entry without wheezing or crackles, and a classical diastolic "tumor plop", not accompanied by another significant murmur at cardiac auscultation. Laboratory tests were all in the normal range, including troponin T (9.1 ng/mL, normal value <14) and C-reactive protein (2.2 mg/dL, normal value <6). An electrocardiogram showed a sinus rhythm and normal ventricular repolarization. Point-of-care ultrasound (POCUS) revealed a floating mass within the left atrium and a normal lung pattern without pleural effusion.

Question

Given the patient's history and POCUS results, what is the most likely diagnosis?

1. Endocarditis
2. Atrial myxoma
3. Cardiac lymphoma
4. Atrial thrombus

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Availability of data and materials: all data underlying the findings are fully available upon reasonable request to the corresponding author.

Ethics approval and consent to participate: as this was a descriptive case report and data was collected without patient identifiers, ethics approval was not required under our hospital's Institutional Review Board guidelines.

Informed consent: the patient provided consent for access to medical records at the time of admission.

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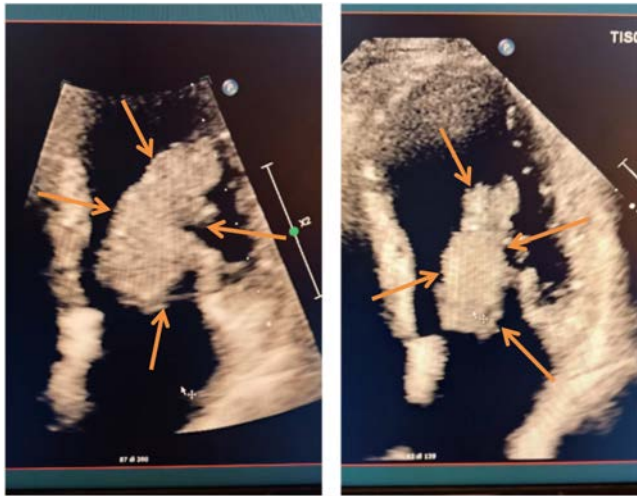


Figure 1. Atrial myxoma in apical four-chamber view on transthoracic echocardiography.

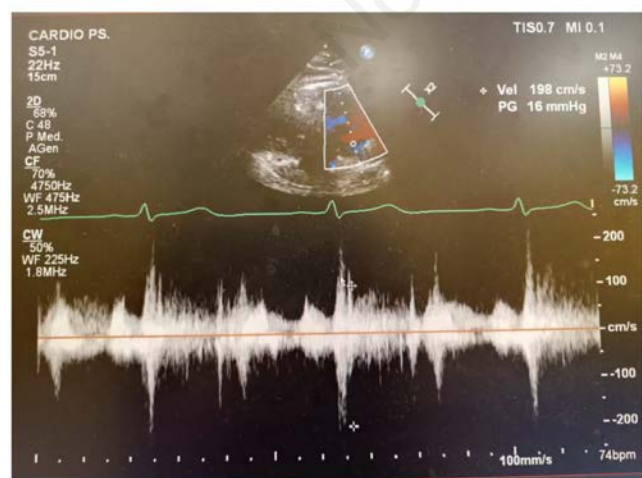


Figure 2. Atrial myxoma in apical four-chamber view on transthoracic echocardiography (upper panel) Color Doppler on mitral valve (lower panel).

Answer

An urgent transthoracic echocardiogram was performed and confirmed the primary diagnosis: a floating mass with a maximum diameter of 20×48 mm within the left atrium, originating from the base of the inter-atrial septum (IAS) and involving the hinge point of the anterior mitral flap. In the diastolic phase, the mass engaged the mitral valvular plane and prolapsed across the mitral valve orifice, resulting in a moderate functional stenosis (Gmed 6 mmHg) and a moderate-to-severe mitral valve insufficiency, a slight pericardial effusion, and a normal ejection fraction (67%) (Figure 1 and 2). A diagnosis of atrial myxoma was made and the patient was hospitalized in the Cardiovascular Surgery Unit. A chest X-ray and coronary angiography were performed and the results were normal. The patient was then scheduled for surgery. The operation was performed through a left atriotomy. The tumor appeared as a pale pink, grape-like, semi-transparent mass. Histological analysis confirmed that the lesion was consistent with atrial myxoma, extending to the implant base on the IAS, between the outlet of the left auricle and the mitral annulus. The clinical post-operative period was uneventful, and the patient was dismissed on the 4th postoperative day. Cardiac myxoma may cause cardiac obstructive symptoms, systemic embolism, and cerebral infarcts.^{1,2} Timely diagnosis and treatment are essential for the prevention of life-threatening complications.³ Transthoracic echocardiography is a readily available, portable, low-cost imaging modality, which gives the first clue as to the etiology of a cardiac mass.^{4,5} Transesophageal imaging, however, has been shown to be superior to study for more detailed evaluation and characterization of cardiac masses.⁵⁻⁷ Characteristics of a mass such as location, mobility, attachment, and appearance can help determine whether a mass is benign or malignant.⁸ Cardiac myxoma needs surgical excision often on an emergency basis. Data published over the past decades show excellent overall outcomes in operative mortality, short- and long-term survival, and tumor recurrence.³

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