

A mysterious case of chest pain, dyspnea, and palpitations in a healthy young female: Citalopram or robotic minithoracotomy?



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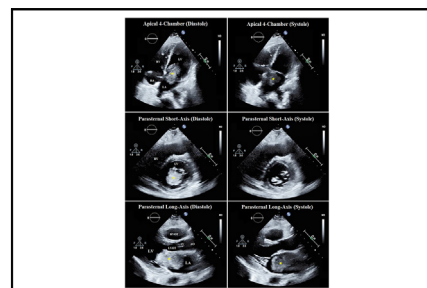
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TTE revealing a large 4.8-cm × 3.1-cm mass obstructing transmitral valve flow.

CENTRAL MESSAGE

Minithoracotomy with resection of massive myxomal tumor results in full resolution of symptoms in patient misdiagnosed with generalized anxiety disorder.

Video clip is available online.

Chest pain accounts for more than 7 million emergency department visits in the United States annually, making it the second most common complaint.¹ Due to vast etiologies of chest pain, many experience significant delay in proper workup and diagnosis. Anxiety disorder is often considered high on the differential for young and otherwise healthy female patients who present with chest pain and undergo an unremarkable cardiac ischemic workup. However, it is important for clinicians to consider and recognize other rare and overlooked disease processes as potential mimickers of anxiety disorder.

We present the case of a woman with recurrent episodes of chest pain, tachycardia, diaphoresis, and palpitations who was misdiagnosed with anxiety disorder and started on anxiolytic therapy. After multiple visits to the emergency department, she finally underwent transthoracic echocardiography that revealed a massive cardiac myxoma. Robotic minithoracotomy with tumor resection resulted in resolution of all her symptoms and she was able to successfully wean off her anxiolytic medication. Direct written consent

was obtained by the patient for the publication of this study data. Institutional review board approval was not required for this case study.

CASE PRESENTATION

A 56-year-old woman with a history of rheumatoid arthritis and gastroesophageal reflux disease presented to her local emergency department with complaints of faint dyspnea, palpitations, transient nonradiating chest tightness, and sensations of impending doom. Her symptoms were transient—lasting only seconds. Social, family, and surgical histories were unremarkable. Vital signs and physical exam were normal. Serum electrolytes, troponin T levels and electrocardiography were normal. She was diagnosed with “anxiety/gastroesophageal reflux disease” and instructed to see her primary care physician for further evaluation. During her encounter with her primary care physician, she was prescribed citalopram with planned follow-up in 6 weeks for reassessment.

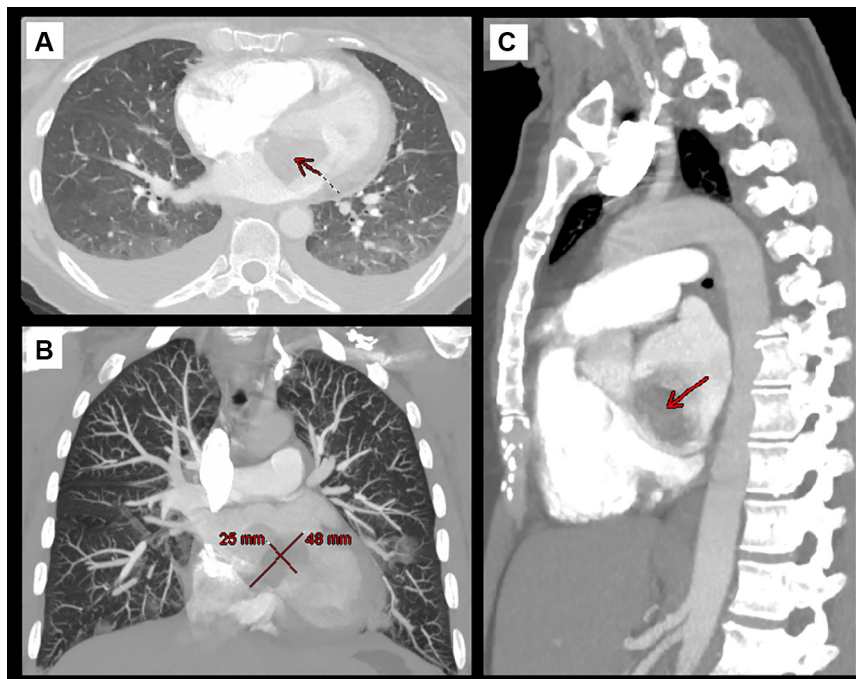


FIGURE 1. Computed tomography angiography of the chest without contrast revealing a large 4.8-cm mass (red arrow) in the left atria. No pulmonary embolism was seen. A, Transverse view. B, Coronal view. C, Sagittal view.

Despite initiating anxiolytic therapy, her symptoms gradually worsened, and the patient's frustration prompted her to lose follow-up with her primary care physician. Two months later, she presented again to her local emergency department, now with orthopnea, sinus tachycardia, and worsening dyspnea. Physical examination revealed a mid-diastolic murmur loudest on the left, which radiated to the axilla. Computed tomography angiography revealed no pulmonary embolism. However, a large 5-cm mass was seen in the left atria that was initially believed to be thrombus (Figure 1). The decision was made to transfer her to our facility for inpatient hospitalization and further management. Upon arrival, we obtained a transthoracic echocardiography that revealed a large 4.8-cm \times 3.1-cm pedunculated mobile mass attached to the interatrial septum that extended into the left ventricle during diastole, thus obstructing transmitral valve flow (Figure 2 and Videos 1-3). Serum interleukin 6 levels were twice the upper limit of normal at 3.9 pg/mL. She was then again transferred to a larger tertiary care facility where she successfully underwent robotic minithoracotomy with mass resection. Surgical pathology confirmed findings of cardiac myxoma. She tolerated the procedure well and had prompt resolution of her symptoms.

BRIEF OPERATIVE TECHNIQUE

Our patient was placed on cardiopulmonary bypass via the right common femoral artery and vein. A 6-cm right

lateral thoracotomy over the fourth intercostal space was performed. The pericardium was opened several centimeters anterior to the phrenic nerve. An antegrade cardioplegia was placed in the ascending aorta for venting. The ascending aorta was then crossclamped, and the heart was arrested with cold blood cardioplegia. A left atriotomy followed by a full-thickness excision of the mass along with its attached septum was performed. The septum was then repaired with 2 layers of running sutures, followed by repair of the atriotomy. Intraoperative transesophageal echocardiography confirmed complete removal of the mass with no septal defect. The patient was successfully weaned off bypass with no difficulty. Cryoneuroablation was performed in the intercostal spaces of the incision, above and below, for long-term pain control. A right pleural chest tube was placed, and hemostasis was achieved.

FOLLOW-UP AND OUTCOMES

Our patient is now 10 months status postmyxomal resection and doing well with total resolution of her symptoms. To date, she remains off all antidepressant/anxiolytic therapy.

DISCUSSION

Primary cardiac tumors are exceedingly rare, with an incidence rate $<0.3\%$, making them among the most overlooked differentials in clinical practice.² The vast majority

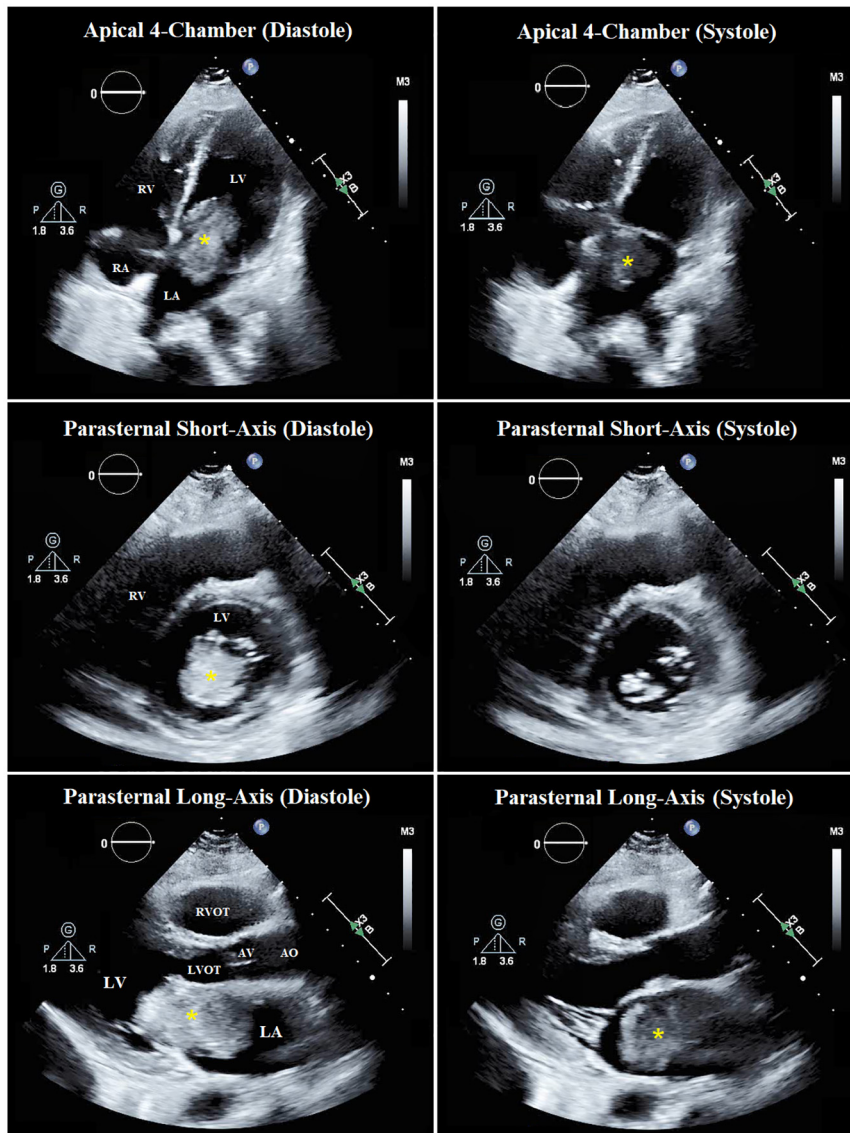


FIGURE 2. Transthoracic echocardiography revealing a large 4.8-cm × 3.1-cm pedunculated mobile mass attached to the interatrial septum that extends into the *left* ventricle during diastole, obstructing transmitral valve flow. *RV*, Right ventricle; *LV*, left ventricle; *RA*, right atrium; *LA*, left atrium; *RVOT*, right ventricular outflow tract; *AV*, aortic valve; *AO*, aorta; *LVOT*, left ventricular outflow tract. *Denotes the mass.

of these tumors are benign and myxomatous. Cardiac myxomas most commonly arise in the left atrium and are predominantly found in women during the third and sixth decades.³ Large left-sided myxomas may present with palpitations, syncope, dyspnea, and orthopnea.⁴ This phenomenon is due to the location and magnitude of the mass resulting in mitral valve pseudo-obstruction, as in our case. On physical exam, clinicians should assess for the classic tumor plop—a low-pitched early diastolic sound just after the second heart sound (S2).

Per protocols of emergency departments in the United States, workup for chest pain is often limited to

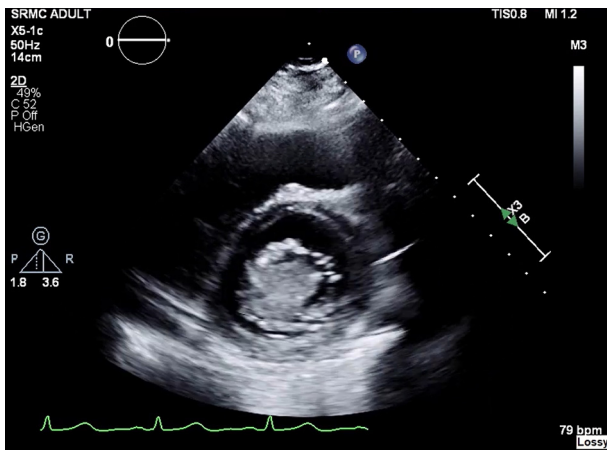
electrocardiography, assessment of electrolytes, and serum cardiac markers. If hemodynamic stability is maintained and the aforementioned ischemic workup is unremarkable, patients are discharged home and prompted to follow-up outpatient for further evaluation. This may be a systematic flaw because patients often fail to follow-up and simply return to the emergency department once symptoms reoccur, as our patient did. It also facilitates clinicians into overlooking other etiologies and making a diagnosis that may be incorrect (eg, acid reflux, Prinzmetal angina, anxiety/panic disorder, or Munchausen's). Appropriate and meticulous diagnostic workup is crucial before diagnosing an anxiety



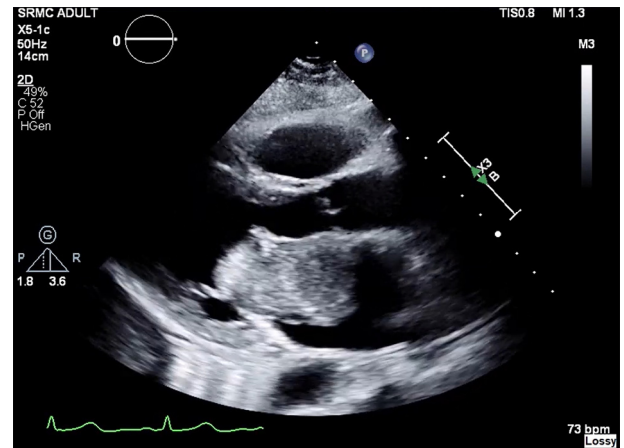
VIDEO 1. Transthoracic echocardiography in the apical 4-chamber view revealing a large 4.8-cm × 3.1-cm pedunculated mobile mass attached to the interatrial septum that extends into the left ventricle during diastole, thus obstructing transmitral valve flow. Video available at: [https://www.jtcvs.org/article/S2666-2507\(23\)00178-5/fulltext](https://www.jtcvs.org/article/S2666-2507(23)00178-5/fulltext).

disorder. Our patient’s presentation should have prompted further evaluation of her symptoms with bedside echocardiography.

Symptomatic patients should undergo definitive treatment with surgical resection to prevent sudden cardiac death.⁵ Surgical excision of these masses has been associated with excellent outcomes in operative mortality, tumor recurrence, and long-term survival.² The utilization of robotics to perform the resections has been associated with



VIDEO 2. Transthoracic echocardiography in the short-axis view revealing a large mass extending into the left ventricle during diastole and causing partial transmitral flow obstruction. Video available at: [https://www.jtcvs.org/article/S2666-2507\(23\)00178-5/fulltext](https://www.jtcvs.org/article/S2666-2507(23)00178-5/fulltext).



VIDEO 3. Transthoracic echocardiography in the long-axis view revealing the aforementioned findings. Video available at: [https://www.jtcvs.org/article/S2666-2507\(23\)00178-5/fulltext](https://www.jtcvs.org/article/S2666-2507(23)00178-5/fulltext).

improved outcomes, including but not limited to early return to work and earlier restoration of quality of life.⁶ Our patient underwent a successful robotic minithoracotomy with myxomal resection resulting in prompt resolution of her cardiac symptoms and anxiety. This case elucidates the importance of considering anxiety-mimickers such as myxomas in women presenting with nonspecific cardiac symptoms refractory to pharmacological therapy.

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