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Ultrasound Diagnosis of a Left Atrial Myxoma in the Emergency Department

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A 61-year-old male with a 1-year history of bilateral lower extremity swelling and a chronic cough was referred to the emergency department (ED) for an abnormal echocardiogram. The patient also reported experiencing intermittent episodes of chest pressure. He stated that he was referred from his doctor after he received a cardiac echocardiography examination that showed possible mitral valve vegetations. On review of systems, he also admitted to intermittent chest palpitations.

On physical examination, his vital signs included a blood pressure of 127/75 mmHg, heart rate of 80 per minute and regular, respiratory rate of 18 per minute, pulse oximetry of 98% and temperature of 98.0°F. The rest of the physical examination was normal. An electrocardiogram demonstrated normal sinus rhythm and the chest radiograph was unremarkable. ED bedside ultrasound (EUS) showed evidence of a cardiac mass moving into the mitral valve (Video). Cardiology was consulted and formal echocardiography confirmed a left atrial myxoma measuring 4.4 cm x 3.2 cm that was attached to the mitral valve near the annulus. Severe mitral regurgitation was present and the left atrium was dilated in size. The patient was admitted to the cardiothoracic surgery service and subsequently underwent successful surgical removal of the myxoma.

DISCUSSION

Cardiac myxomas are the most common primary benign tumor of the heart, accounting for approximately half of all cardiac tumors. Myxomas usually occur sporadically; however, familial forms have been reported.¹ While they have been found to occur in all 4 chambers of the heart, approximately 75% arise in the left atrium and are typically 5-6 cm in size at the time of detection.² Myxomas are more common in women (3:1 sex ratio) and are usually found later in life.² Myxomas typically present with the following triad of symptoms.³⁻⁵ First, cardiac obstructive symptoms may include

chest pain, pulmonary edema, dyspnea on exertion, orthopnea and most ominously, syncope. Second, embolic phenomena may be found, such as visual disturbances, stroke and even myocardial infarction. Third, constitutional symptoms may be manifest with fever, arthralgias, myalgias, malaise and weight loss, often mimicking a vasculitis. The optimal diagnostic method of choice is cardiac echocardiography; however computed tomography and magnetic resonance imaging are other potential options.¹ Prompt surgical removal is necessary, since there is an elevated risk of sudden death in these patients.⁶ As demonstrated by this case, EUS may provide a rapid and relatively inexpensive initial means for the detection of cardiac myxomas. This use of EUS would be considered an advanced use and should generally be confirmed by another imaging study, like formal echocardiography, to determine optimal patient therapy.

Video. Bedside ultrasound showing evidence of a cardiac mass moving into the mitral valve.

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