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# Clinical and Laboratory Features of Small Left Atrial Myxomas

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Intracardiac myxoma is the most common benign tumor of the heart (1,2). Approximately 75% originate in the left atrium. In 1952, Goldberg et al (1) made the first clinical diagnosis of a left atrial myxoma using cardiac angiography. This technique remained the primary method of diagnosis until 1968, when Schattenberg (2) diagnosed a left atrial myxoma by M-mode echocardiography. Since then, two-dimensional echocardiography has been the method of choice for diagnosing intracardiac tumors (3).

Magnetic resonance imaging (MRI) is a newer technique that enables high-resolution tomography of the heart and shows promise for the detection and classification of intracardiac masses (4-8). We present two patients with very small left atrial myxomas and discuss the contribution of echocardiography and MRI in diagnosing these small intracardiac lesions.

## Case Reports

### Case 1

A 41-year-old white female was referred to us with a 2½-year history of intermittent chest discomfort atypical for angina, near syncope, and generalized fatigue. Physical examination revealed normal vital signs and normal first and second heart sounds without gallops or clicks. A faint grade I/VI systolic ejection murmur was detected at the lower left sternal border. The lungs were clear to auscultation, and no pedal edema was present. Chest roentgenogram and electrocardiogram were normal. A two-dimensional echocardiogram demonstrated a 2 cm mass attached to the interatrial septum (Fig 1). A filling defect in this region was also demonstrated by pulmonary angiography with levophase atrial filling. MRI confirmed the echocardiographic findings of a 2 x 2 cm mass in the left atrium just below the orifice of the right pulmonary veins (Fig 2). Coronary angiography demonstrated no obstructive coronary artery disease with vascularization of a mass lesion in the posterior left atrium.

Because the patient was symptomatic, she underwent surgical resection of the left atrial lesion. Gross and microscopic examination proved the mass to be a benign myxoma. The patient's recovery was uneventful, and she is now completely asymptomatic.

### Case 2

A 58-year-old white male was referred to us after a small left atrial mass was detected on a two-dimensional echocardiogram. The ultrasound test was ordered because a midsystolic click was detected during

a routine physical examination. The patient was asymptomatic. Physical examination was normal except for the midsystolic click heard best at the apex. Two-dimensional echocardiogram demonstrated a small polypoid mass in the left atrium attached to the interatrial septum (Fig 3) as well as mild prolapse of the mitral valve leaflets. MRI demonstrated a 1 cm polypoid mass arising from the interatrial septum (Fig 4).

## Discussion

Left atrial myxoma is often difficult to diagnose because it may mimic a variety of clinical conditions. Use of noninvasive imaging has facilitated early diagnosis of these tumors. Our first patient had multiple constitutional symptoms, some of which

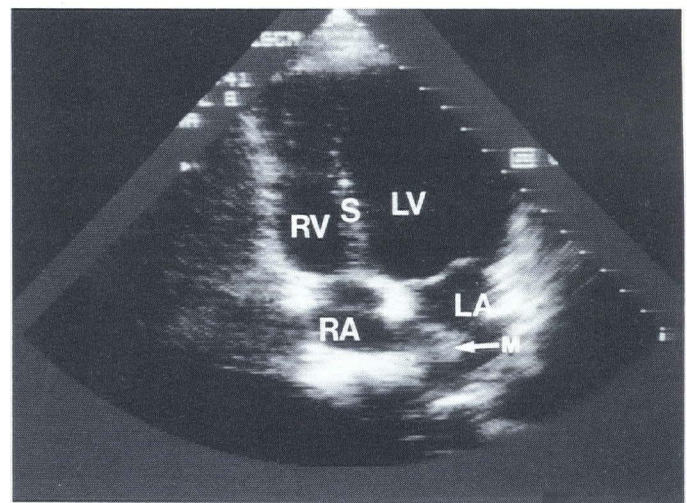


Fig 1 (Case 1)—Two-dimensional echocardiogram demonstrating the mass attached to the interatrial septum (arrow). (M = mass, LA = left atrium, LV = left ventricle, RA = right atrium, RV = right ventricle, S = intraventricular septum.)

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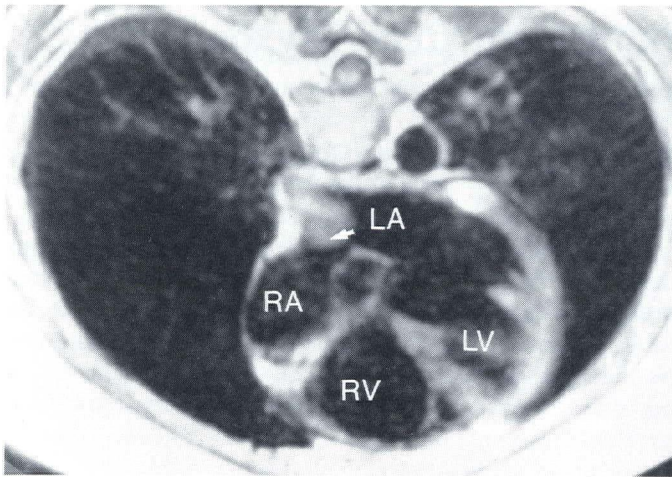


Fig 2 (Case 1)—Magnetic resonance imaging demonstrating the mass attached to the interatrial septum (arrow). (LA = left atrium, LV = left ventricle, RA = right atrium, RV = right ventricle.)

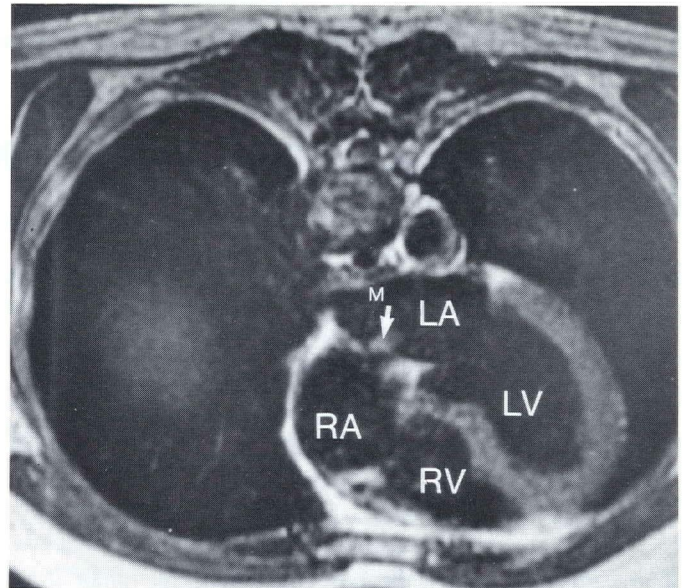


Fig 4 (Case 2)—Magnetic resonance imaging demonstrating the mass attached to the interatrial septum (arrow). (LA = left atrium, LV = left ventricle, RA = right atrium, RV = right ventricle.)

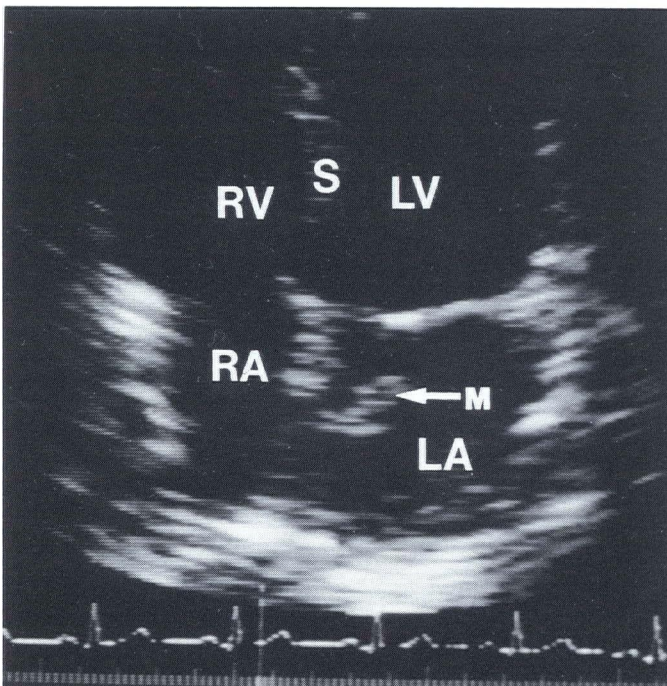


Fig 3 (Case 2)—Two-dimensional echocardiogram demonstrating the small pedunculated mass (arrow). (M = mass, LA = left atrium, LV = left ventricle, RA = right atrium, RV = right ventricle, S = interventricular septum.)

could have been caused by the tumor, whereas other symptoms, such as near syncope, were unexplained because of the non-obstructive nature of this tumor. These symptoms resolved after surgery. The second patient was completely asymptomatic, and the need for and timing of surgery in this case was difficult to ascertain. The natural history and embolic potential of a small 1 to 2 cm atrial myxoma is unknown. Previous reports dealt with patients with more advanced stages of disease where large-sized tumors obstructed the left ventricular inflow and produced embolic events (2). Two-dimensional echocardiography, presently the procedure of choice for diagnosing left atrial myxomas, has its limitations. The procedure is operator-dependent and becomes suboptimal technically in patients with hyperinflated lungs or narrow intercostal spaces because of interference by air or bone. However, echocardiography is widely available, relatively inexpensive, portable, harmless, and not time-consuming.

Transesophageal two-dimensional echocardiography has recently shown greater sensitivity than transthoracic echocardiography in diagnosing and delineating left atrial mass lesions (9). However, this test is somewhat invasive and not readily available.

In our patients, MRI delineated the tumor size, shape, extension to the adjacent structures, and, most importantly, attachment to the atrial septum. This latter feature helped differentiate the mass lesions from thrombus or artifactual echoes in the left atrium. MRI is not operator-dependent and provides good quality images despite bone and air interference. Unfortunately, the test is not widely available nor portable, is very expensive, cannot be performed in patients with pacemakers or some metallic

prostheses, and is less reliable in patients with frequent cardiac arrhythmias. Both two-dimensional echocardiography and MRI are useful and are complementary in diagnosing small left atrial myxomas.

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