**Clinical Case**

A 37-year-old woman who was previously healthy and had no history of interest consulted for chest pain and acute dyspnea. At admission, clinical and radiological signs of pulmonary congestion without cardiomegaly were appreciated. The electrocardiogram showed only sinus tachycardia. The clinical situation quickly stabilized with conventional treatment consisting of furosemide and morphine.

Transthoracic and transesophageal echocardiography (Figure 1) revealed two oval masses in the posterolateral and anterior wall of the left atrium that caused severe obstruction of atrial flow. The large posterior mass (7×3.5 cm) was of cystic appearance: it had a thick capsule-like outer wall and anechoic content except for the central region, where irregular echodense zones were visible. The retroaortic or anterior mass was 2×2 cm and of essentially solid appearance. There was a slight mural thickening that extended throughout the lateral region and atrial roof, and converged in the anterior and posterior nodular formations. No communication between the masses and atrial lumen was detected by color echo-Doppler. The drainage of the pulmonary veins was not obstructed, but blood flow through the left atrium was. The atrial lumen was reduced to a narrow medial conduit where a markedly turbulent flow was appreciated, with a mean intra-atrial gradient of 12 mm Hg calculated by Doppler.

Magnetic resonance imaging showed that the echocardiographic findings corresponded to a single process arising from the atrial wall. MRI confirmed the absence of any solution of continuity between the large mass on the posterior wall, the nodulation of the retroaortic region, and the laminar thickening of lateral

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**Key words:** Echocardiography. Magnetic resonance imaging.

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of mural hematoma and non-specific focal fibrosis of the atrial myocardium, with no neoplastic or myxoid tissue, vascular malformations, or findings of hydatidosis. In the study by magnetic resonance imaging made 2 weeks after the intervention, there was only a small residual hematoma in the posterolateral wall of the left atrium. The patient recovered without complications and remains asymptomatic without treatment.

**DISCUSSION**

The intramural hematomas reported in the medical literature have been related for the most part with trigger factors such as heart surgery,\(^1\) annular endocarditic abscesses,\(^2\) cardiac trauma,\(^3\) hemangioma of the atrial wall,\(^4\) or aortic dissection,\(^5\) with spontaneous cases being exceptional.\(^6,7\) Intramural hematomas are usually located in the left atrium\(^3,5-7\) or in relation with the interatrial septum,\(^2\) those of the right atrium being less frequent.\(^1,4\)

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Fig. 1. Images obtained by transesophageal echocardiography, four-chamber view, longitudinal plane 95° (upper image) and cross-sectional plane including the outflow tract of 0° (lower image). On the posterolateral wall of the left atrium, an oval mass of cystic appearance is visible, 7×3.5 cm in diameter (white asterisk). In the retroaortic area a second mass 2×2 cm, which is fundamentally solid (black asterisk), can be seen. LA indicates residual left atrial lumen; LV, left ventricle; AO, aorta; arrow, interatrial septum.

Fig. 2. Magnetic resonance imaging study. T1-weighted spin echo sequences. In the sagittal plane (upper image) and axial plane (lower image), a large oval mass is observed on the posterior wall of the left atrium (asterisk), with a hyperintense and homogeneous signal, extending laterally in the wall to the retroaortic region (cross). Arrow indicates residual left atrial lumen; AO, aorta.
In the echocardiographic differential diagnosis of masses of lobular or cystic appearance related with the atrial wall, a large variety of processes have been described: hydatidosis, cystic myxomas, pseudo- 
cysts of the right atrium in relation to ventriculoperi- 
roneal shunts, extrinsic compression by neoplasms like bronchogenic or pleuropapercardial cysts, simple 
hematocysts, atrial dissection, and intramural hemato- 
as.

In analogy with aortic pathology, the conceptual dif- 
ference between dissection and mural hematoma is es- 
blished by the presence or absence of a connection 
between the mural hematoma and vascular lumen. Left 
atrial dissection is generally characterized by a rela- 
tion with mitral valve replacement or endocarditis, a 
port of entry in the atrioventricular annulus, and the 
involution of either the atrial wall or interatrial sep- 
tum. The false chamber may or may not be connec- 
ted with the atrial lumen and form masses of lobular 
appearance that can compress the true lumen as intra- 
mural hematomas do.

To date, only three cases of spontaneous atrial intramural hematomas, including the present case, have 
been reported in the literature. The clinical manifesta- 
tions that have been reported include chest pain, dysnea, and palpitations (in one patient the case was 
documented by atrial fibrillation). Echocardiography 
studies (transesophageal in two cases) provided a 
diagnosis of atrial mass with a greater or lesser degree of 
luminal obstruction, but did not establish the cause 
of the process. The echocardiographic finding of mas- 
ses of lobular or cystic appearance raised the question 
of the differential diagnosis with hydatidosis in all ca-

cases. The mouth of the pulmonary veins was not affected 
in any of the three cases reported.

The availability and improvements in imaging tech-
niques, such as echocardiography, helical computed 
tomography, and magnetic resonance imaging, have 
increased knowledge of intra and paracardiac mas-
ses. In spite of the excellent anatomic resolution of 
each of these techniques, two or more of these tech-
niques may sometimes be required for the diagnosis of 
the etiology or extension of the cardiac masses becau-
se the techniques often provide complementary infor-
mation. In the case presented, the three-dimensional 
resolution and capacity for tissue characterization of 
magnetic resonance imaging studies were decisive in 
visualizing the spatial distribution and hemorrhagic 
nature of the lesions seen in the echocardiogram. Previ-
ously, magnetic resonance imaging had been used only 
in the diagnosis of the case reported by Delgado, in which it typified the lesion as a cystic mass with hematic content. In all three cases, the diag-

We conclude that atrial intramural hematomas should be included in the differential diagnosis of 
atrial masses. Intramural hematomas can have an 
echocardiographic appearance of pseudomasses, so-
metimes of cystic or lobular appearance. The capacity 
for anatomic and tissue characterization of magnetic 
resonance imaging should give it a determinant role in 
the diagnosis of this rare pathology.

REFERENCES