

# Left atrial myxoma prolapsing through the foramen ovale

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## KEYWORD

Myxoma

Very few cases have been reported of left atrial myxoma prolapsing through foramen ovale into the right atrium. This is the case of a 32-year-old woman with exertional dyspnoea and with an echocardiogram that showed a large myxoma protruding in both atriums.

## Case report

We present the case of a 32-year-old woman who was referred to our echo-lab for evaluation. She had a previous medical history of Graves-Basedow's disease and she complained of a several month course of progressive exertional breathlessness accompanied by asthenia, weight loss, discomfort in the right hypochondrium, and oedema in her legs.

The clinical examination revealed a blood pressure of 105/70 mmHg, heart rate of 80 bpm, a raised jugular venous pressure, and an audible first and second heart sound with a rumbling mid-diastolic murmur heard loudest at the lower left sternal border. Her chest auscultation was normal. She presented a 1.5 cm congestive hepatomegaly and mild bilateral pedal oedema.

The ECG showed sinus rhythm with no remarkable findings and the chest X-ray showed enlargement of the left atrium. The laboratory analysis demonstrated mild hypochromic anaemic with hypergammaglobulinaemia and increased erythrocyte sedimentation rate (ESR).

An echocardiogram was then performed and displayed a large mobile mass in the left atrial cavity attached to the interatrial septum which extended into the right atrium through a patent foramen ovale, producing a left-to-right shunt. In addition, the mass prolapsed into both ventricles during diastole.

The transoesophageal echocardiogram confirmed the presence of a mobile unhomogeneous mass measuring 75 × 50 mm in the left atrium and extending in the right atrium with a size of 50 × 50 mm. The mobile mass, with hypo-echoic foci, caused severe mitral and tricuspid valve obstruction as well as mitral and tricuspid regurgitation.

The cardiac magnetic resonance supported these findings (*Figures 1 and 2* and Supplementary data online, *video 1*).

In the light of these findings, the patient was referred to cardiac surgery. A jelly-like corpus was observed, attached to the interatrial septum by a stalk and slipping through the foramen ovale into right atrium. The mass was then surgically removed with an excision of the entire region of the fossa ovalis. The septum was subsequently reconstructed with a bovine pericardial patch.

The specimen was sent to the Pathology Department for further study. A smooth surface with foci of haemorrhage was found during the macroscopic inspection (*Figure 3*). The histological examination showed clustered multinucleated cells with ovoid nucleus and eosinophilic cytoplasm (myxoma cells) and neurovascular structures in a myxoid background matrix.

The postoperative course of the patient was uneventful. Clinical and echocardiographic follow-up was unremarkable during a period of 9 months, with no evidence of tumour recurrence.

## Discussion

The majority (80%) of all primary cardiac tumours are benign, with the myxomas accounting for 30–50% of the total. In 90% of the cases, these tumours are single and usually located in the left atrium. They normally arise from the atrial septum, often from the region of the limbus of the fossa ovalis. Myxomas that extend into the right atrium through the foramen ovale are uncommon. The most frequent finding in the tumours affecting both atriums (75%) is the attachment to two stalks on opposite sides of the same area of the septum.<sup>1</sup>

The clinical course depends on the size and chamber in which the tumour is located and includes a wide range of symptoms resulting from intracardiac obstruction, systemic

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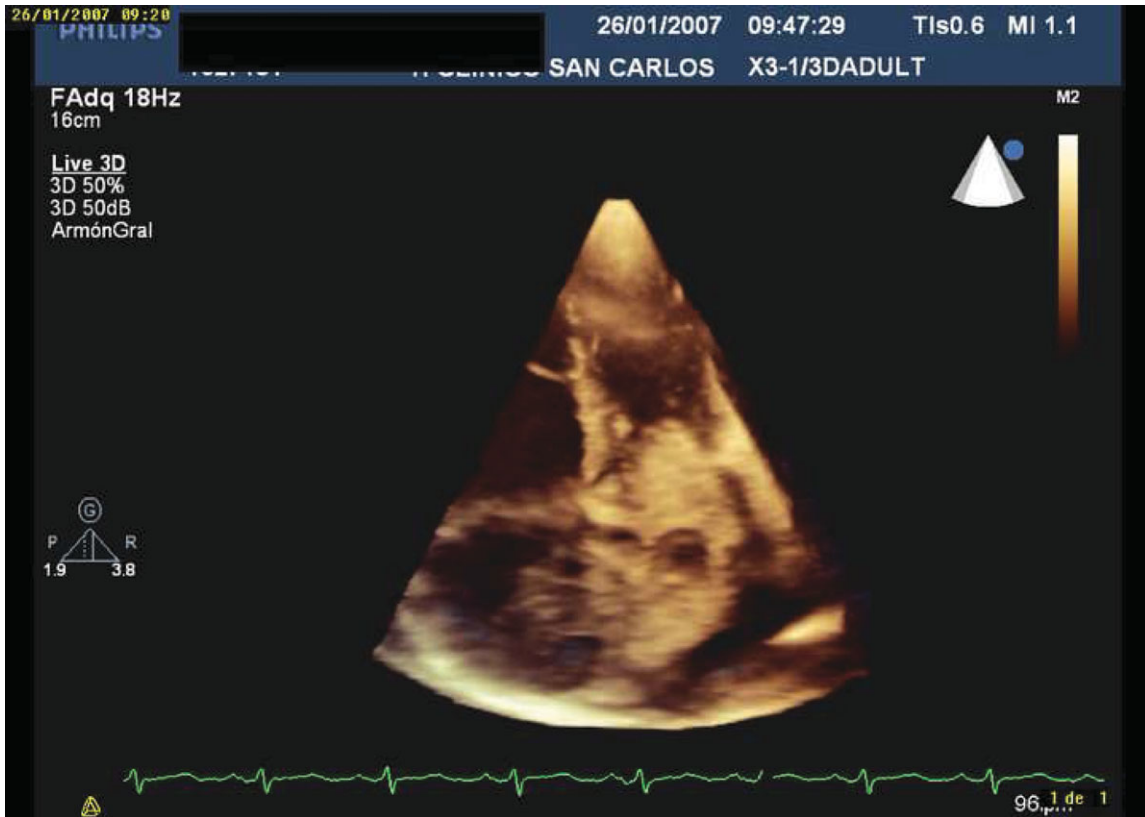


Figure 1 Two-dimensional echocardiographic, parasternal long-axis view showing the mass with a central anechoic cavity prolapsing into the left ventricle in diastole.

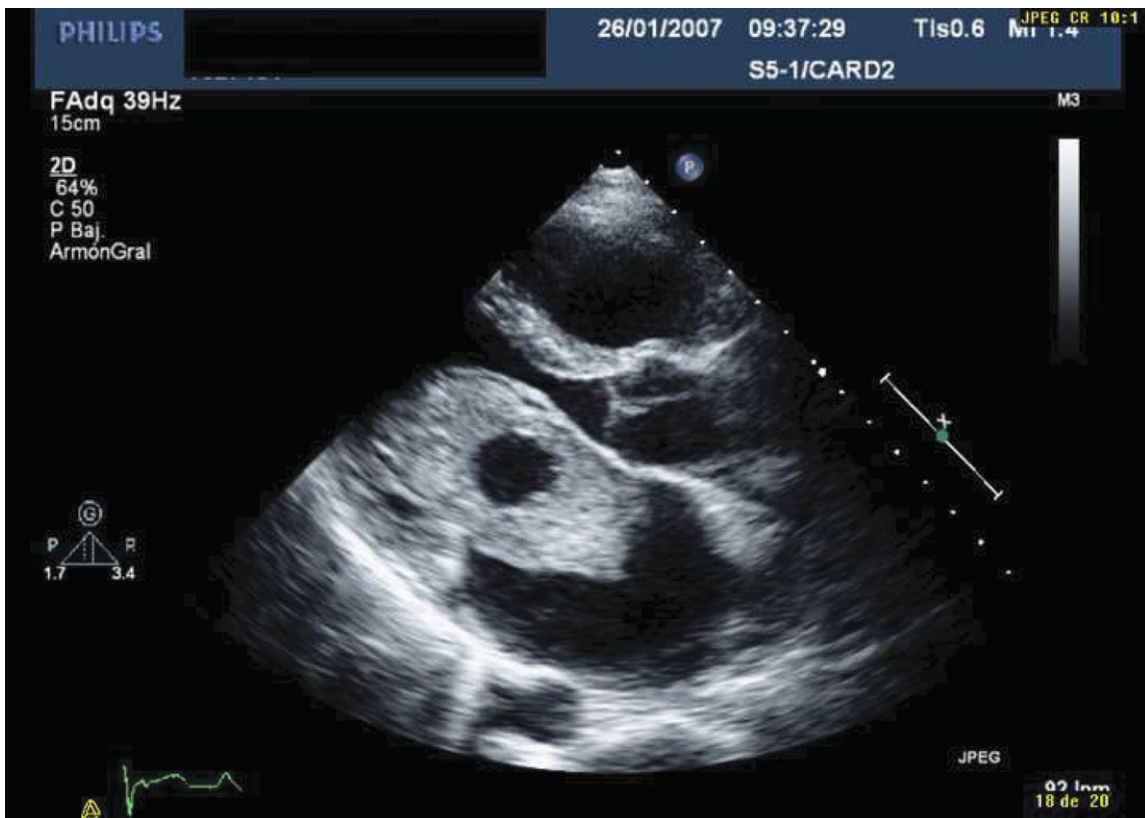
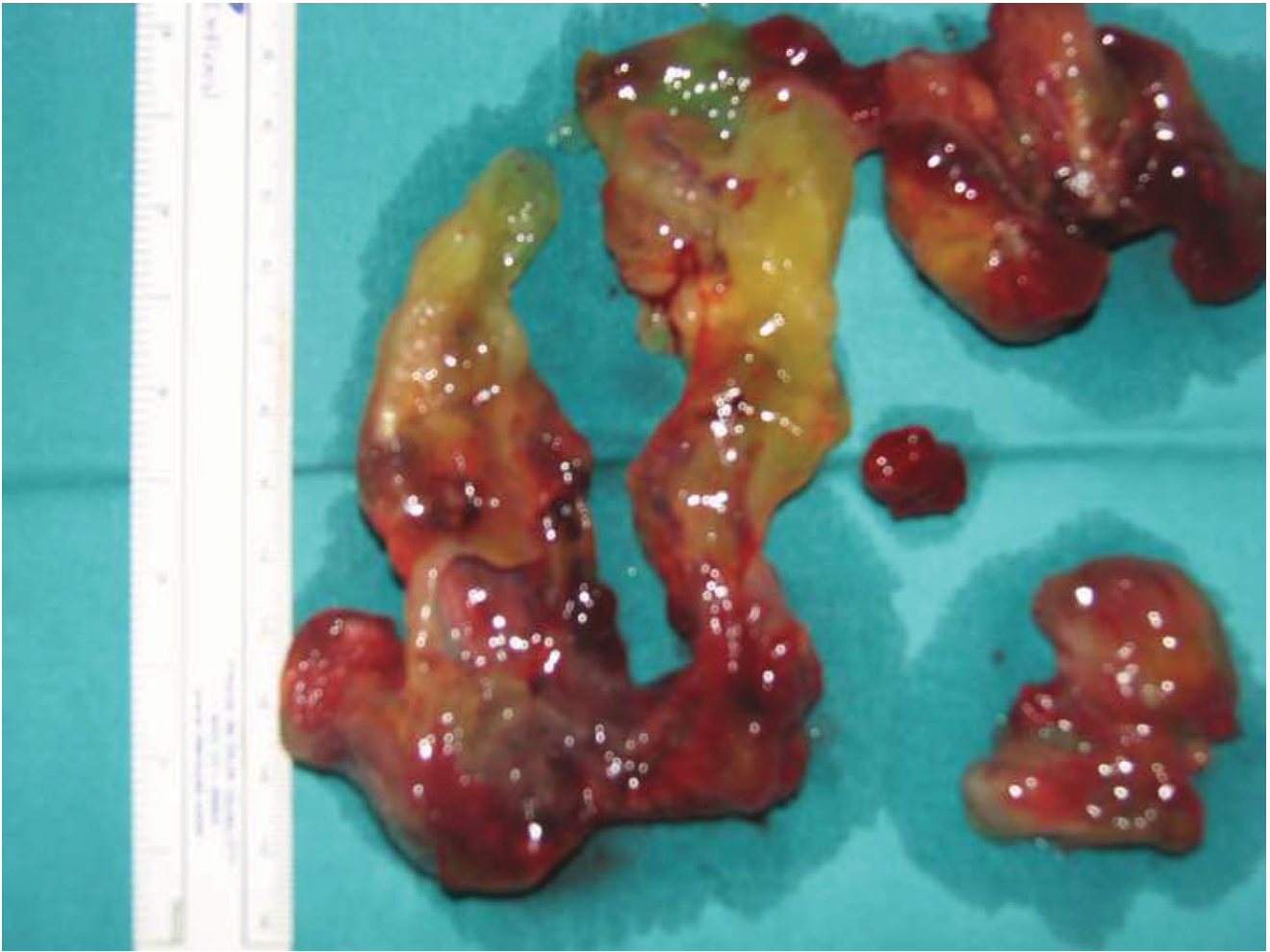


Figure 2 Apical four-chamber three-dimensional image showing the myxoma with an internal anechoic cavity attached to the interatrial septum and prolapsing into the right atrium.



**Figure 3** Macroscopic aspect of the removed mass. The tumour has a smooth and jelly surface with evident foci of haemorrhage.

embolization, and constitutional syndrome (partially due to the increased level of interleukin-6).<sup>2</sup>

Transthoracic echocardiography is the most important diagnostic tool for cardiac tumours; however, transoesophageal echocardiography provides precise information regarding its location, attachments, relation with other anatomical structures, and the presence of satellite tumours.<sup>3</sup> Finally, the differential diagnosis of an atrial myxoma includes metastatic tumours, thrombus, sarcoma, and rhabdomyoma.<sup>4</sup>

### Supplementary data

Supplementary data are available at European Journal of Echocardiography online.

**Conflict of interest:** none declared.

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