Journal of Cardiology Cases 15 (2017) 132–135

Contents lists available at ScienceDirect

Journal of Cardiology Cases

journal homepage: www.elsevier.com/locate/jccase

Case Report

Silent cardiac tumor with neurological manifestations

Júlio Gil (MD)*, Bruno Marmelo (MD), Luís Abreu (MD), Hugo Antunes (MD), Luís Ferreira dos Santos (MD), José Costa Cabral (MD)

Cardiology Department, Tondela-Viseu Hospital Centre, Viseu, Portugal

ARTICLE INFO

Article history:
Received 27 September 2016
Received in revised form 14 December 2016
Accepted 20 December 2016

Keywords:
Atrial myxoma
Stroke
Neurological manifestation
Cardiac magnetic resonance
Echocardiography

ABSTRACT

Atrial myxoma is rare and can be completely asymptomatic. However, an untreated myxoma may result in catastrophic events. Diagnosis is usually suggested by echocardiography, and other imaging modalities can add important information. Myxoma can be cured surgically, and histological analysis usually gives the definite diagnosis.

This article describes the case of a 61-year-old woman whose clinical presentation of an atrial myxoma was a stroke. Echocardiographic findings were highly suggestive of a cardiac myxoma. However, cardiac magnetic resonance showed unusual features for myxoma, since the mass was hyperintense in T1-weighted images and hypointense in T2-weighted sequences. Histology confirmed myxoma and the patient was surgically treated. This case enhances the importance of multimodality imaging in the differential diagnosis of cardiac masses.

<**Learning objective:** This case report describes a patient presenting with a stroke. Echocardiography demonstrated an atrial mass, suggestive of a cardiac myxoma. Cardiac magnetic resonance revealed a mass with unusual features for a myxoma, namely hyperintensity in FSE-T1 and hyposignal in FSE-T2. The authors make a brief summary of the neurological manifestations and imaging characteristics of the atrial myxoma. The importance of multimodality imaging in the diagnosis of cardiac tumors is also discussed.>

Introduction

Atrial myxomas are rare and an uncommon cause of stroke [1–3]. Although rare in nature, complications from untreated atrial myxoma may result in catastrophic events, including recurrent systemic embolism and obstructive valve disease [1]. Diagnosis is usually suggested by echocardiography; however other imaging modalities can add information to the differential diagnosis [4–10]. Definite diagnosis is only possible through histological analysis [7]. Atrial myxoma can potentially be cured surgically [1,3].

In this article, the authors report the clinical case of a 61-year-old woman whose first clinical presentation of atrial myxoma was a stroke. This case's relevance is enhanced by the unusual features of the tumor observed by cardiac magnetic resonance (CMR).

Case report

A 61-year-old woman was admitted to Emergency Room (ER) for complaints of vertigo and diminished strength in her left arm and leg. She had a history of gastritis and was medicated with a proton pump inhibitor. The physical examination showed hemodynamic stability and normal cardiac and pulmonary auscultation. Neurological examination confirmed left hemiparesis.

Various diagnostic examinations performed in the ER. Blood work were unremarkable. The 12-lead electrocardiogram showed sinus rhythm with unspecific repolarization abnormalities in the inferior leads. A head computerized tomography (CT) scan was performed revealing no visible acute events. She was admitted to the infirmary with the diagnosis of ischemic stroke.

During hospitalization, cranioencephalic magnetic resonance imaging revealed multiple foci of anisotropically restricted diffusion of water in the frontal, parietal, and occipital cortex and subcortical areas bilaterally due to recent ischemic lesions. The cerebellum was affected as well. Blood work revealed normal values regarding hemogram, renal and hepatic function, thyroid hormone, and electrophoresis of serum proteins. There was no

* Corresponding author at: Cardiology Department, Tondela-Viseu Hospital Centre, Av. Rei D. Duarte, Viseu 3500, Portugal, Fax: +351 232 420 591.
E-mail address: juliogilpereira@gmail.com (J. Gil).

http://dx.doi.org/10.1016/j.jccase.2016.12.005
1878-5409/

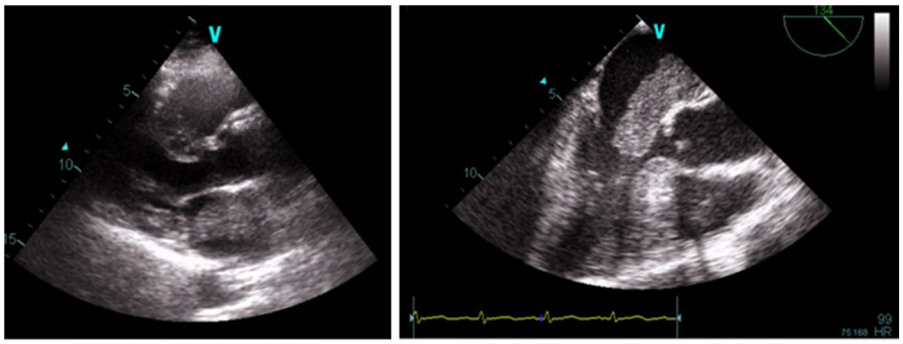

Fig. 1. Transthoracic and Transesophageal echocardiography.

evidence of thrombotic disorders, auto-immune disease, or abnormally high cardiovascular risk. There was no elevation of the erythrocyte sedimentation rate or C-reactive protein. A carotid echo-Doppler was performed, showing no relevant abnormalities. A transthoracic echocardiogram (TTE) was also performed, showing a left atrial mobile mass with $3.7 \times 2.4 \times 1.8$ cm, inserted in the *fossa ovalis*, prolapsing to the left ventricle during diastole, without significant transvalvular gradient (Fig. 1a), regardless of patient position. No other alteration was found on TTE. There was normal valve morphology and a preserved global systolic function (ejection fraction of 58%). It was determined that the stroke resulted most likely from a cardioembolic source. The patient began anticoagulation therapy.

A transesophageal echocardiogram (TEE) was performed to better characterize the atrial mass. It revealed a heterogeneous mass in the left atrium, spanning 40×20 mm. The mass was highly mobile, prolapsing to the left ventricle during diastole, without limitation of the left ventricular filling (Fig. 1b). Color Doppler showed signs of blood flow inside the mass, thus being suggestive of a tumor and discarding the possibility of a thrombus.

To further distinguish the tumor, a CMR was carried out. The CMR described a heterogeneous mass with irregular contours, adherent to the upper portion of the atrial septum in the *fossa ovalis*. It presented as a hyperintense mass in T1-weighted sequences, and revealed hyposignal in T2-weighted sequences, without change in signal with fat saturation pulse (Fig. 2a and b). In the perfusion study, there were perfused peripheral areas, sparing the central region. In the gadolinium enhancement sequences, there was important contrast perfusion, with a heterogeneous peripheral enhancement, while maintaining a hyposignal central zone (Fig. 2c). Evidence of a small circumferential pericardial effusion was also observed, with maximum diastolic thickness of 5 mm by the left ventricle.

Coronary angiography revealed no coronary artery disease and did not find neovascularization suggestive of cardiac tumor.

The patient was then referred to the cardiothoracic team for surgical removal of the mass. The procedure was successful. The

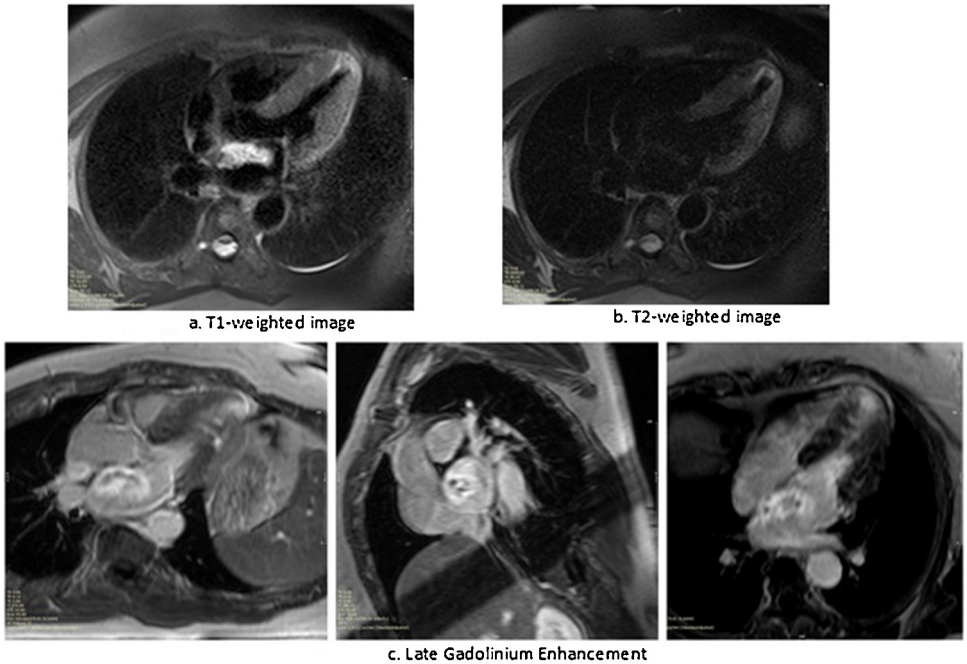

Fig. 2. Cardiac magnetic resonance.