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Case Report

Surgery for a Myxoma of the Right Atrium: A Case Report

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Abstract

Myxomas are the most common benign heart tumors. Right atrial localization is rare and can lead to several complications. We report the clinical case of a 48-year-old patient with a large right atrial mass revealing the presence of a right atrial myxoma. Surgery is the standard treatment and should be done with some care to avoid embolization and to prevent the risk of recurrence.

Keywords: *Right Atrial Myxoma; Cardiac Tumors; Surgery*

Introduction

Cardiac myxomas are benign tumors, rare but represent 50% of all benign cardiac tumors [1]. However, they remain the most common intracardiac tumour. In 75 to 80% of cases, they are localized in the left auricle, right auricular localization is rare. They are characterized both by a clinical polymorphism which can be confusing for the clinician, and by a total and definitive surgical curability at the cost of a few well codified precautions. The advent of echocardiography has changed the diagnostic approach. Despite its benign histological nature, its intracardiac location is life-threatening. The risk of long-term recurrence requires wide resection, careful exploration of the four cavities and regular echocardiographic follow-up. We report the case of a 48-year-old patient who presented to the emergency department with a clinical picture of a big right intra-atrial mass revealing a right atrial myxoma.

Observation

A 48-year-old patient with hypertension and hyperthyroidism presented to the emergency room with sudden onset of dyspnoea. The clinical examination was unremarkable. Cardiac and pulmonary examination was normal. The electrocardiogram showed no electrical abnormalities. The chest X-ray was normal. Echocardiography revealed the presence of a large homogeneous mass measuring 62/44 mm, from the right atrium appended to the intra-atrial septum prolapsing through the tricuspid valve in diastole (Figure 1 and 2) with mild tricuspid regurgitation, a PAPS estimated at 30 mmHg and an undilated right ventricle. Chest CT was not performed. Chest MRI showed the presence of a mass in the right atrium pedunculated and attached to the intra-auricular septum with contrast enhancement.

The patient underwent surgery after median sternotomy under extracorporeal circulation established between the ascending aorta and the vena cava. The right atrium was opened and the tumor and its basal insertion were carefully resected to avoid pulmonary embolism (Figure 3). Histological examination of the surgical specimen confirms the myxomatous nature of the tumour. The postoperative course was uneventful and the patient remained asymptomatic for one year of follow-up without tumor recurrence.

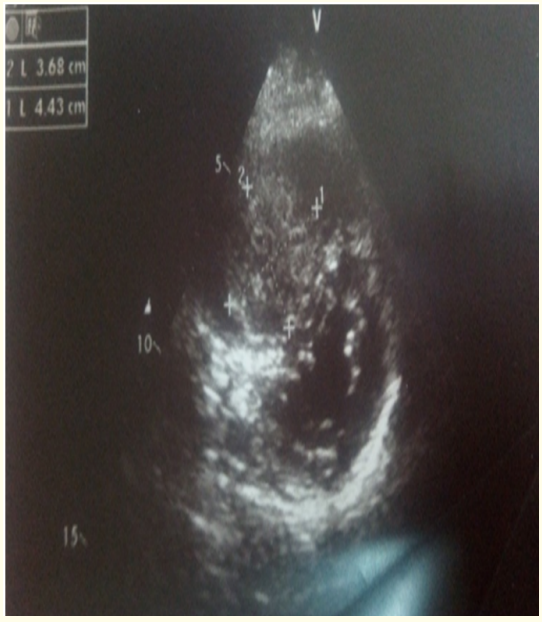

Figure 1: *Echocardiographic image of a right atrial myxoma.*

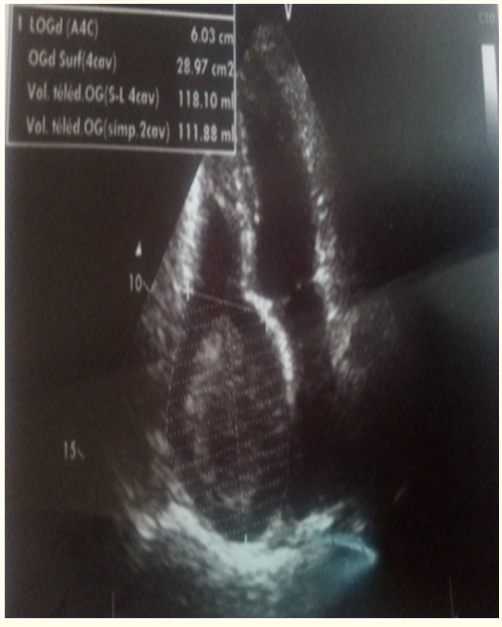

Figure 2: *Echocardiographic image of a myxoma completely occupying the right atrium.*

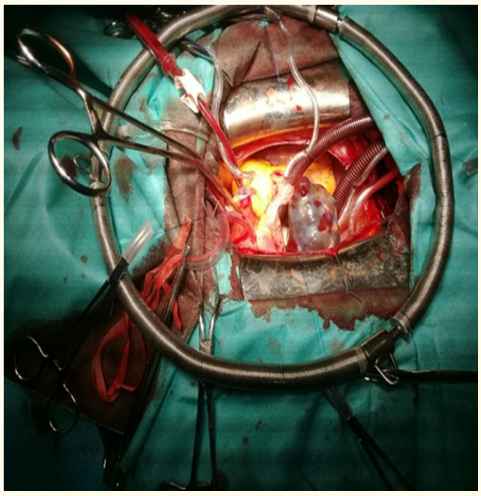

Figure 3: *Echocardiographic image of a myxoma completely occupying the right atrium.*

Discussions

Myxoma accounts for 50% of all heart tumors. It can appear at any age, but frequently between the ages of 30 and 60 [2]. Most of the time it occurs in the left atrium, but in rare cases it can occur in the right atrium or in the ventricles [3]. A female predominance has been reported in some studies [2,4]. Embolism is a complication that can occur in 30 to 40% of patients with myxoma [5]. Left heart myxomas could be responsible for cerebral infarction, coronary syndrome or occlusion of peripheral or visceral arteries, while right heart myxomas can lead to pulmonary embolism which could be a life-threatening complication.

Right atrial myxomas can have different clinical presentations which are mostly non-specific. Symptoms depend on the type and size of the tumour. For patients with dyspnea, chest CT or MRI should be routinely performed to exclude pulmonary embolism. And conversely, myxomas of the right atrium should be considered as a possible etiology of pulmonary embolism.

The most predictive factor for embolism in myxoma is the morphology of the mass. The most common type is the "round-shaped" myxoma which is less embolic than the papillary or villous types, which are more fragile and could embolize easily. The mechanism of embolization could be the fragmentation of the tumor or the detachment of a thrombus attached to the mass. Additionally, polypoid types could easily prolapse through the mitral or tricuspid valve and may cause destruction of the annulus or valve leaflets. In addition, myxomas are vascular tumors that can be neovascularized by a branch of a coronary artery and a case of hemorrhage has already been reported [6].

Transthoracic echocardiography is the first-line technique for tumor diagnosis. It can assess the topography, size, attachment and mobility of the tumor [9]. Transesophageal echocardiography (TEE) has better sensitivity and specificity with better resolution of the atria and intra-atrial septum. ETO is also more accurate in detecting small masses.

Cardiac magnetic resonance can also be useful for tissue characterization of the mass and can differentiate tumors from a thrombus.

Surgery is the conventional treatment for cardiac myxomas [10]. It should be planned as soon as possible after diagnosis, in order to avoid embolic and obstructive complications. In the event of associated pulmonary embolism, a pulmonary embolectomy is necessary in the event of significant tumoral embolism in order to prevent chronic pulmonary hypertension and right ventricular dysfunction. For myxomas of the right atrium, the surgery is done under extracorporeal circulation. Tumor resection should be performed in a single block without fragmentation whenever possible to avoid embolization. Electrocautery of the tumor base and surrounding area should be performed to reduce the risk of recurrence [7].

Surgery is associated with an early postoperative mortality of 2.2% and there is a 23 - 33% risk of postoperative atrial fibrillation [8,10].

For some authors, follow-up with biannual echocardiography is recommended to detect recurrent tumours, especially in young patients. However, according to Vroomen., *et al*. no recurrence of myxoma was detected with a mean follow-up of 72 months in a series of 82 patients [11].

Conclusion

Myxomas of the right atrium represent a rare localization of myxomas. Pulmonary embolism is the main complication and can sometimes be indicative of the presence of the mass. This is why, in all cases of pulmonary embolism, the right heart must be carefully explored by transthoracic echocardiography and if necessary by transesophageal echocardiography for more precision.

Conflict of Interest

The author declares that there are no financial interests or conflicts of interest.

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