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Lipomatous Interatrial Septum Detected During Cardioversion Evaluation for Atrial Fibrillation

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Abstract

Primary cardiac tumors are rare, with an estimated prevalence in autopsy series ranging from 0,001 to 0,28%. Benign tumors are the most common type, with lipoma being the second most frequent among these, following myxoma. Lipoma can pose a differential diagnostic problem with lipomatous hypertrophy of the interatrial septum (IAS). This entity is rare and often asymptomatic, requiring no surgical treatment unless it causes obstruction of surrounding anatomical structures. In practice, cardiac CT and MRI are frequently used to confirm echocardiographic suspicions, both transthoracic and transesophageal. We present the case of a 72-year-old patient referred for management of recent atrial fibrillation, with heart rate control proving difficult despite maximum dose medical treatment. We opted for electrical cardioversion to improve the patient's hemodynamic state in the short term and to prevent progression to atrial cardiomyopathy in the medium and long term. In the transesophageal echocardiogram (TEE), the patient exhibited significant thickening of the interatrial septum, measuring 22 mm, without compression of the superior vena cava, and with the fossa ovalis remaining intact. Through this case, we discuss the diagnostic and therapeutic approaches to lipomatous hypertrophy of the IAS.

Keywords : lipomatous hypertrophy of the IAS, asymptomatic lipoma, significant thickening of the IAS, transesophageal echocardiography, cardiac CT, cardiac MRI.

Introduction

Cardiac tumors are rare and predominantly benign, including lipomas, fibroelastomas, and myxomas (1). They can be located in the heart valves, within cardiac chambers, or attached to the septum (1). Regarding lipomas, there are true lipomas and lipomatous hypertrophy of the interatrial septum. In practice, distinguishing between these entities can be challenging, even with the sensitivity of transesophageal echocardiography (2, 3, 4). Cardiac CT and MRI are often used to confirm the diagnosis (5, 6, 7). These two conditions are usually asymptomatic but can be potentially fatal, particularly when they affect nearby structures. This can lead to various clinical presentations: acute pulmonary edema, cardiogenic shock, supraventricular or ventricular arrhythmias, conduction disturbances, or even sudden cardiac death (2-4). Surgical excision is the treatment of choice in these cases. However, the management approach for asymptomatic cases remains a subject of debate (8).

Observation

We report the case of Mr. N, a 72-year-old obese man with a history of hypertension, chronic obstructive pulmonary disease (COPD), and sleep apnea, who was referred to cardiology for the management of

recent-onset atrial fibrillation resistant to medical treatment. We opted for a rhythm control strategy through electrical cardioversion, for which the patient underwent a transesophageal echocardiogram (TEE) since he had been on anticoagulant therapy for less than three weeks. In addition to left ventricular hypertrophy and moderate dilation of the left atrium, we observed significant infiltration of the interatrial septum (IAS) with a thickness of 22 mm, without obstruction of the superior and inferior vena cava and without involvement of the fossa ovalis (Figure 1). The laboratory tests (CBC, TSH, serum potassium, renal, hepatic, and lipid profiles) showed no abnormalities. The patient successfully underwent electrical cardioversion and was prescribed a combination of amiodarone and bisoprolol to maintain sinus rhythm. We further investigated with a cardiac MRI to analyze the IAS.

Discussion

Cardiac lipomas are subendocardial in half of cases, subepicardial in 25% of cases, and intramyocardial in the remaining 25%. Subendocardial lipomas typically originate from the interatrial septum, while subepicardial lipomas tend to be larger and can affect cardiac function or impinge on the coronary network (1, 5, 8). Symptoms vary depending on the location of the mass. Myocardial lipomas can lead to arrhythmias (6, 7, 8). Subendocardial lipomas do not usually cause peripheral embolisms. Lipomatous hypertrophy of the interatrial septum is an accumulation of fat in the interatrial septum, sparing the fossa ovalis (3). It is more common (2) and occurs in elderly and obese individuals (2, 6, 8). It is often asymptomatic, though some authors have reported P-wave abnormalities and supraventricular tachycardias (6, 7, 8). Pathologically, lipomatous hypertrophy of the IAS is characterized by infiltration of myocardial fibers with mature adipocytes and fetal cells (9, 10, 11). These fetal cells are considered a histological marker for this entity by some authors (7-11, 12). The presence of a capsule has also been described, distinguishing it from true cardiac lipomas (6-8). The diagnosis of lipomatous hypertrophy of the IAS is typically made with transesophageal echocardiography (TEE), showing septal thickening greater than 15 mm with a bilobed or dumbbell appearance (13). CT or MRI can confirm its fatty nature (13). Treatment is generally symptomatic, focusing on managing arrhythmias. Surgical excision is indicated in cases with complications, such as obstruction of adjacent structures (6-8).

Conclusion

Lipomatous hypertrophy of the interatrial septum (IAS) is a benign entity, often asymptomatic. It is more commonly found in elderly and obese individuals. For patients at risk of developing atrial fibrillation, screening for supraventricular excitability disorders with a Holter electrocardiogram may be considered. This allows for early intervention to prevent thromboembolic complications.

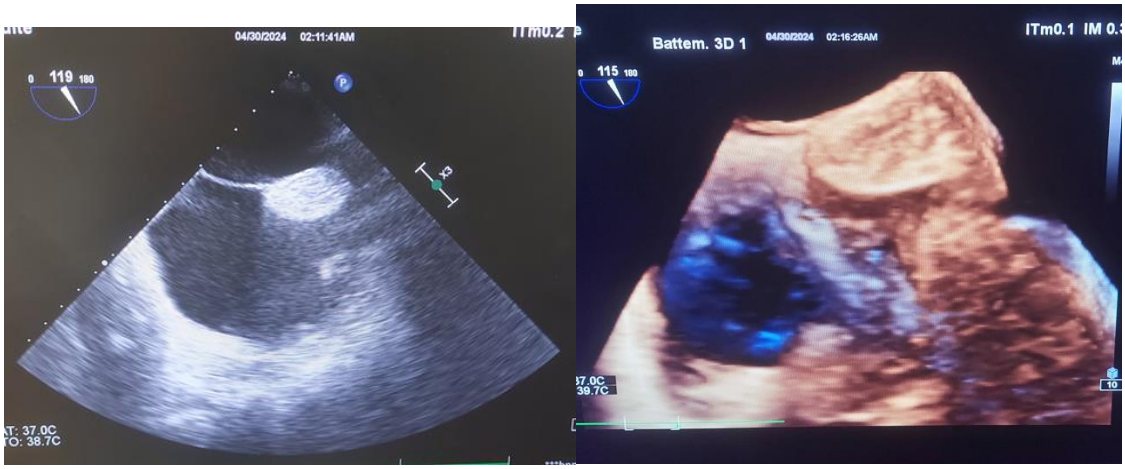

Figure 1 : Hypertrophie du SIA en ETO 2D (à gauche) et ETO 3D (à droite).

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