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Case Report

Large Left Atrial Myxoma Concomitant with Three-Vessel Coronary Artery Disease: A Rare Presentation of Heart Disease

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ABSTRACT

We describe a 67-year-old man with a primary diagnosis of left atrial myxoma. Preoperative coronary angiography revealed a significant three-vessel disease. The patient underwent surgery, comprising the complete resection of the left atrial mass concomitant with coronary artery bypass grafting. He had good recovery without any complications in the early and late follow-up. There was no residual tumor or recurrence. The histopathological examination of the mass confirmed the diagnosis of the left atrial myxoma. ***(Iranian Heart Journal 2015; 16(3): 54-56)***

Keywords: ■Myxoma ■Surgical procedure ■Coronary artery bypass

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Myxomas constitute the most common type of benign cardiac tumors insofar as they account for 30% of all cardiac tumors. Myxomas are intracavitary tumors and occur within any cardiac chamber, although the left atrium (LA) is the most common site of the mass. Nevertheless, there have been several reports of right atrial myxomas.[1,2] The usual diameter of a myxoma is about 5 to 6 cm. In macroscopic view, LA myxomas are polypoid and pedunculated.[3] The origin of atrial myxomas is the atrial septum, especially the fossa ovalis. Myxomas are usually benign, but there are rare cases where they metastasize to the brain and sternum.[4,5] The clinical presentation of cardiac myxomas is varied because their symptoms can be linked not only with hemodynamic changes resulting from the obstruction of the flow within the LA across the mitral valve but also with the embolization of the mass.[6] The obstruction of the blood flow by the tumor can lead to either syncope and transient hemodynamic compromise or valve destruction and valvular regurgitation due to multiple mass projection into the mitral valve. Systemic embolization caused by cardiac myxomas can happen in any organ and importantly up to 50% of embolization events can occur in the central nervous system with possible neurological deficit.[7,8]

The presence of coronary artery disease (CAD) concomitant with an atrial myxoma is not a common combination in the field of cardiac surgery. While a few authors believe that CAD is secondary to tumor embolization into the coronary arteries, most authors believe that CAD cannot be secondary to a myxoma. Transthoracic echocardiography

(TTE), supplemented with transesophageal echocardiography (TEE), is the most common diagnostic tool for the detection of cardiac myxomas and also other cardiac tumors.[8]

Case Presentation

The primary diagnosis of our patient, a 67-year-old man, was a cardiac myxoma on the basis that — apart from specific characteristics of cardiac myxomas — it was in the LA and had originated from the atrial septum and the fossa ovalis. The diagnosis was confirmed by TTE (Fig. 1). The preoperative work-up of the patient showed no symptoms of ischemic heart disease, but coronary angiography revealed three-vessel disease with significant stenosis, especially in the left anterior descending artery (LAD) and left circumflex artery (LCX) territories (Fig. 2).

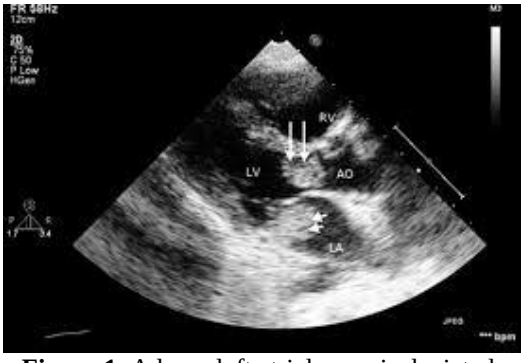

Figure 1. A large left atrial mass is depicted.

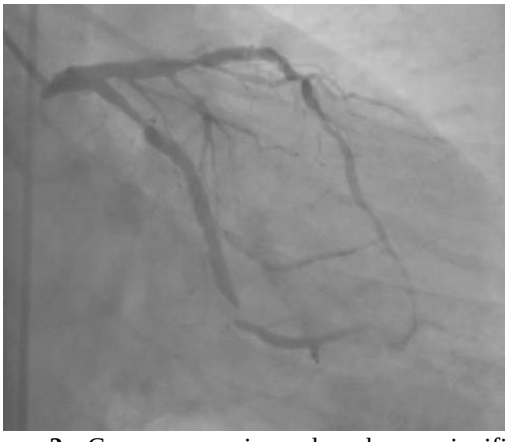

Figure 2. Coronary angiography shows significant stenosis in the left anterior descending and left circumflex coronary arteries.

After the confirmation of the diagnosis of a cardiac myxoma, the immediate surgical removal of the tumor is mandatory. Accordingly, the patient was prepared for surgery via median sternotomy. Heparinization and initiation of cardiopulmonary bypass were commenced after an appropriate activated clotting time (ACT) was achieved. Afterward, aortic cross-clamping was performed via the right atrium approach. Next, the atrial septum in the fossa ovalis region was opened and then a pedunculated LA gelatinous mass that was loosely attached to the fossa ovalis was removed completely. The LA was thereafter irrigated with saline to remove any debris or residue of the tumor. Usually, it is not possible to remove the tumor from the LA, and most surgeons tend to use oblique right atriotomy for the complete exposure and excision of the tumor. Surgeons should bear in mind the fact that the right ventricle across the tricuspid valve should be inspected for the possible presence of an additional mass. The important point is the complete excision of the origin of the tumor in the fossa ovalis and, if possible, the excision of the uninvolved tissue 5 mm beyond it. Subsequently, the defect in the atrial septum was repaired with direct suture. After closing the right atrium, a saphenous vein graft was anastomosed to the LAD and the obtuse marginal (OM), although the OM branch was diffusely diseased. Then, the proximal anastomosis of the vein to the aorta was done and after releasing the aortic cross-clamp, the patient was weaned off cardiopulmonary bypass uneventfully. At the end of the operation, intraoperative TEE was done to confirm that there was no residual tumor or residual atrial septal defect. The recovery course of the patient was event-free, and he was discharged from the hospital on the 6th postoperative day. At 1 and 6 months' follow-up, the patient was in good condition and echocardiography showed an excellent outcome with an acceptable ejection fraction index and no sign of residual tumor or recurrence.

DISCUSSION

The incidence of cardiac myxomas is estimated at about 0.5 per million people per year. Cardiac myxomas are the most common benign cardiac masses with a prevalence rate of between 30% and 50% of all cardiac masses in large series. The mean age of patients with cardiac myxomas is 56 years old and 70% of them are female. Nearly 86% of cardiac myxomas are in the LA and more than 90% are single. In the classic form, myxomas are present in females aged between 50 and 60 years and are located in the LA as a solitary 4 to 5 cm mass that attaches to the atrial septum.[9,10] The clinical presentation of cardiac myxomas can be cardiac and extra-cardiac manifestations. The cardiac symptoms are caused by the obstruction of the blood flow in the cardiac chambers, especially across the mitral valve: that is the reason why in some patients, cardiac myxomas mimic the presentation of mitral valve stenosis.[11] Concomitant cardiac myxoma and CAD is uncommon. In a study conducted by Sigimoto et al.,[12] from 21 patients with cardiac myxomas, 4 patients had concomitant CAD and underwent coronary artery bypass grafting and tumor removal. Moreover, cardiac myxomas can occur simultaneously with valvular heart disease — especially with the destruction of the mitral valve due to the multiple prolapse of the mass into the mitral valve, resulting in mitral regurgitation.

CONCLUSIONS

Unsuspected CAD may occur concomitantly with atrial myxomas. In all patients with cardiac myxomas older than 40 years old, preoperative coronary angiography is mandatory if the preoperative condition of the patient permits it.

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