

LEFT ATRIAL MYXOMA ASSOCIATED WITH CORONARY ARTERY DISEASE - UNCOMMON CHALLENGE

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REZUMAT

Mixomul atrial este cea mai întâlnită tumoră cardiacă primitivă și diagnosticul precoce este de multe ori dificil, tabloul clinic fiind de multe ori nespecific, prezentând cele mai diverse forme. Asocierea mixomului cardiac cu boala coronariană, deși rar raportată în literatura medicală, poate favoriza uneori diagnosticul precoce al tumorii, înainte de a se produce complicații grave precum embolia arterială sau moartea subită. Echografia cardiacă bidimensională și cea transesofagiană sunt investigațiile cele mai importante în detectarea mixoamelor, în timp ce angiocoronarografia este obligatorie la toți pacienții care prezintă factori de risc coronarian. Odată diagnosticat, mixomul prezintă o indicație operatorie de urgență. Prezentăm cazul unei paciente de 56 ani operată în serviciul nostru pentru mixom atrial stâng și boală coronariană. Operația a constat în excizia completă a tumorii și montarea unui by-pass aorto-coronarian cu vena safenă inversată pe artera coronară dreaptă. Evoluția a fost simplă, necomplicată. Procedura operatorie combinată poate fi efectuată în siguranță, cu atenție la unele detalii, fără a determina creșterea mortalității sau morbidității postoperatorii.

Cuvinte cheie: tumoră cardiacă, cardiopatie ischemică

ABSTRACT

Atrial myxomas are the most common primary heart tumors and the early diagnosis is rather difficult, since the clinical aspects are often non-specific, varying widely. The association of coronary artery disease to myxoma has not been frequently reported and may sometimes determine an early diagnosis of the tumor, before serious complications as systemic embolization or sudden death occur. Bi-dimensional and transesophageal cardiac echography are the most important tools in detecting the myxomas, while coronary angiography is mandatory for patients with risk factors for ischemic heart disease, whose clinical data raise that suspicion. Once the diagnosis has been made, the need for the operation is urgent. We present the case of a 56 year old female patient operated in our service for left atrial myxoma and coronary artery disease. The operation consisted in complete tumor removal and grafting the right coronary artery with a venous conduit. The evolution was simple, uneventful. The combined procedure may be safely performed with no increase in postoperative mortality or morbidity.

Key Words: cardiac tumor, coronary artery disease

BACKGROUND

Although atrial myxomas are the most common primary heart tumors, the association with other cardiac conditions is not frequently reported. In most cases, early diagnosis may prove to be difficult, since the symptoms are often non-specific. The presence of other cardiac diseases may reveal sometimes the tumor, based on accurate diagnosis, especially echocardiography. We present the case of a 56 year old female patient, with left atrial myxoma and coronary artery disease (CAD), operated in our service.

HISTORY

The patient had several factors for ischemic heart disease: 12 years history of hypertension, smoking (approximately 20 cigarettes daily for more than 30 years), high levels of cholesterol (346mg/dl at the admission) and obesity. Chest pain was typical for angina and appeared during exercise, but the threshold modified during the last months. Recently, the patient complained about palpitation and exercise dyspnea: she was found with atrial fibrillation.

FINDINGS

Clinical examination revealed 3rd degree obesity (height 160 cm, weight 90 kg) and arrhythmic cardiac sounds (the patient was in atrial fibrillation when admitted) but no cardiac murmurs. The blood pressure was normal and ECG indicated atrial fibrillation with

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no important ST segment or T wave changes. Chest X-ray showed a slight heart enlargement, based mostly on the left ventricle. 2-dimensional cardiac echography brought important diagnostic features, identifying a 36/43 mm diameter echodense mass within the left atrium, which protrudes through the mitral valve opening during diastole; the mass appeared attached to the interatrial septum and to the anterior wall of the left atrium. The left atrium diameter was around 60mm, while the mitral annulus presented small segments of calcifications; a mild mitral regurgitation was found (I/II degree) and the systolic pulmonary pressure was 45 mm Hg.

Transesophageal echography, the most sensitive method for diagnosing intracardiac masses, confirmed the presence of a 40/55 mm nonhomogenous mobile echodense mass, attached by a thin bridge to the interatrial septum. It also confirmed that the right atrium was mass-free and that no kinetics alteration occurred. Since the age of the patient as well as the clinical data required coronary angiography, this was performed and showed right dominance with a severe (80%) ostial stenosis of the right coronary artery RCA and a mild (40-50%) stenosis of the obtuse marginal – from Cx artery; the other coronary arteries were normal. (Fig. 1)

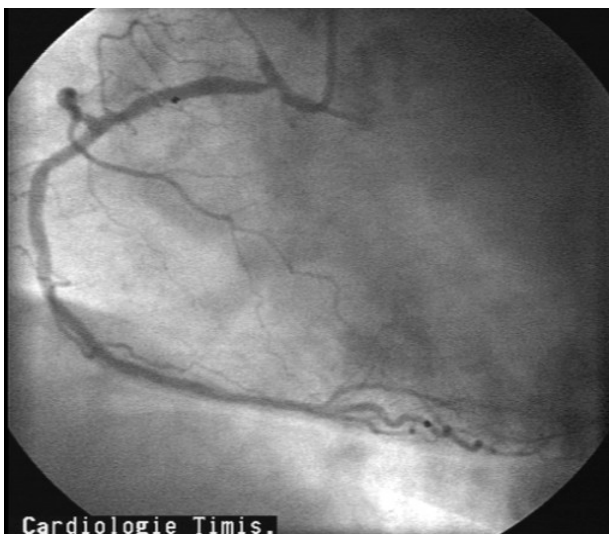


Figure 1. Sever ostial stenosis of RCA on LAO incidence

OPERATIONS

Once the suspicion of a left atrial myxoma was raised and the diagnosis of the CAD had been made, the indication for surgery was urgent. The patient was operated on standard cardio-pulmonary by-pass CPB, using bicaval cannulation and snaring for venous return. Of course, special care was accorded to the manipulation of the heart prior to aortic cross-clamping, in this way avoiding tumor fragmentation and systemic

embolization. Normothermic blood-crystalloid (4:1) cardioplegia, both antegrade and retrograde was used to arrest the heart. After the aorta was cross-clamped, the distal anastomosis of the venous graft (harvested at the start of the operation) on RCA, before “crux cordis”, was performed. Then the left atrium was widely opened and a 60/45 mm, egg-shaped, jelly-like tumor was found. (Figs. 2,3)

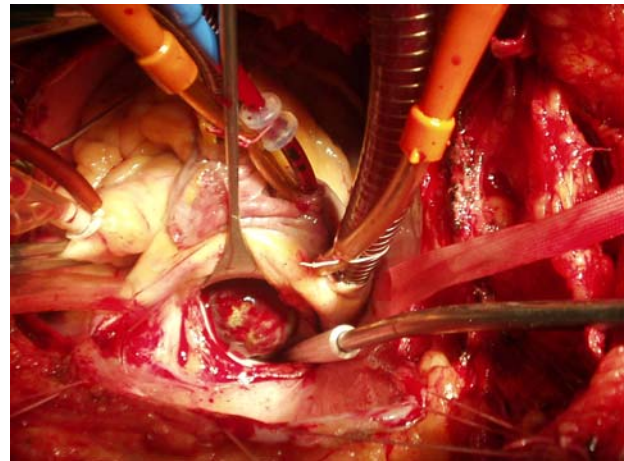


Figure 2. Intraoperative aspect of the tumor immediately after left atrium opening incision



Figure 3 The left atrial myxoma exposed after excision

The mass was attached to the interatrial septum, near the fossa ovalis margin, through a thin pedicle, a fibrous stalk. The mass was excised, then the left atrium was closed and the aorta declamped. The proximal anastomosis was performed using tangential clamping of the aorta. The patient was weaned off CPB. Aortic cross clamping time was 39 minutes, while CPB lasted for 70 minutes. Naturally, the tumor was sent to the histopathologic examination which revealed polygonal and stellate cells within a network that also included capillaries and a fibrinoid substance; this was interrupted by sites of intratumoral hemorrhage.

POSTOPERATIVE EVOLUTION

After the normal period of staying in ICU, the patient was transferred back to the station 24 hours after the operation. The postoperative course was uneventful, with a special mention that sinus rhythm was restored after the operation. Dyspnea, angina and palpitation completely disappeared. One month and 3 months follow-up checks showed the patient asymptomatic in a good health state.

DISCUSSIONS

The primary cardiac tumors are infrequent (prevalence 0.00017- 0.02% on different autopsy series).¹⁻⁵ About 75-80% of primary tumors are benign and about 50% of benign tumors are myxomas.^{1,4} Most cases are sporadic, but up to 10% are familial and their transmittance is autosomal dominant.⁵ 70-75% of sporadic myxomas occur in females and the mean age for sporadic cases is 56 (ranges between 3 and 83).^{1,6} 75-85% are found in the left atrium and less than 25% are located in the right atrium.⁴ Myxomas are usually attached to the border of fossa ovalis in the left atrium, but their attachment site may be the posterior atrial wall, the anterior atrial wall or the left atrial appendage; their mobility depends mainly on the extent of attachment.^{1,5} Symptoms are often non-specific and the early diagnosis is rather difficult. Usually, it is only when embolization of some fragments from the friable tumor occur or the mass has become so large that it produces mechanical mitral obstruction, mimicking mitral stenosis, that clinical suspicion of a cardiac myxoma is raised and the patient is directed on the right diagnostic and therapeutic path.^{3,5}

The association between atrial myxomas and CAD was not frequently reported, although the mean age for both cardiac conditions is similar. There are a few case reports indicating the possible association, but the larger series studies on cardiac myxomas hardly mention that. To determine the incidence of CAD associated to cardiac myxomas is practically impossible since the reports vary from 1.5% up to nearly 40% and the series are not as large for the results to be statistically significant.¹⁻⁶ However there are important clinical and operative features that need to be mentioned.

The presence of the coronary symptoms, especially angina, may persuade the patient to address to a physician and, this way, the probability of a routine cardiac echography is quite high, detecting the tumor while still asymptomatic. Though, there are probably cases in which the symptoms or signs due to the presence of the myxoma will prevail over the coronary syndrome, advocating as mandatory the coronary angiography

beyond the age limits stated in guidelines. Although, usually, the evolution of the two cardiac diseases is not interrelated, some authors reported cases in which the vascularization of the tumor, sometimes consistent, produced the effect of a "steal syndrome" on the coronary circulation and therefore angina and even myocardial infarction.

Some authors describe the advantages of the biatrial approach,^{1,5,7,8} but on most occasions the left atrial approach should be sufficient, once the cardiac echography has obtained reliable data regarding the right atrium or the other cardiac cavities. The manipulation of the heart prior to aortic cross-clamping should be very delicate, but once that is achieved and the heart arrested by cardioplegia, performing the distal anastomoses first is safe. There are authors who advocate the excision of the myxoma as the first step, followed by the distal anastomoses.^{9,10} Attention should be oriented to complete removal of the tumoral mass and a careful inspection of the left ventricle through the mitral valve. The site of the attachment should be resected with clear margin, even if that involves artificial creation of an atrial septal defect that needs to be closed by a pericardial patch.^{1,3,5,11}

Different studies reported similar postoperative results for the myxoma resection, with postoperative mortality ranging from 2% to 4%, while the recurrence rate was below 5% for the sporadic form of myxoma.^{1,2,4,7} The combined procedure of myxoma resection and CABG should not alter these data significantly and almost all data reported uneventful postoperative course. Follow-up is very important, especially for detection of recurrent myxomas and is easily done by clinical assessment and cardiac 2D echography. Recently some authors reported very good results for myxoma excision, even with simultaneous CABG, both performed on mini-invasive thoracic approach.^{8,12}

CONCLUSIONS

Cardiac myxomas are often difficult to be diagnosed and the association of CAD may alter sometimes the clinical presentation of these patients. Besides cardiac echography, coronary angiography must be performed when the clinical suspicion of CAD is raised. The combined procedure of myxoma excision and CABG may be safely performed, with good postoperative results.

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