CHIRURGIE CARDIAQUE / CARDIAC SURGERY

SURGERY OF CARDIAC MYXOMA IN SUB-SAHARAN PATIENTS

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Abstract

Objectives: Myxomas are the most common form of benign cardiac tumors. We present here a successful surgical treatment. The aim of this study was to present surgical cardiac cares of congolese patients abroad. **Methods and results:** Between 2011 and 2019, twelve patients were operated in our service for cardiac myxoma. There were 8 left atrium myxoma and 4 in right atrium. Mean age was 38 ± 4.5 years, and sex-ratio 0.7. In four cases, myxomas were findings at echocardiography, and the remain 8 patients had different symptoms: palpitations, syncopa, asthenia, angina. The diagnosis of myxoma has been well established by trans-thoracic echocardiography. Myxoma acess varies according to the site of implantation in our serie, no hospital mortality after surgery was noted **Conclusion:** Myxomas is considered to be rare, and remain an emergency with low operative risk, even in developing countries.

Keywords: Myxoma, cardiac surgery

Résumé:

Objectifs : Les myxomes représentent la principale tumeur bénigne cardiaque. Nous rapportons ici, la prise en charge chirurgicale des patients congolais à l'étranger par manque de plateau sur place. **Patients/méthodes** : Entre Juin 2011 et Décembre 2019, douze patients congolais (Brazzaville), ont été opérés à l'hôpital universitaire international Cheikh Zaid de Rabat, Maroc, pour un myxome cardiaque. **Résultats** : L'age moyen était de 38 ± 4.5 ans, avec un sex-ratio à 0.7. Le délai minimum entre le diagnostic et la prise en charge était de 2 ans. Tous ces patients étaient de bas niveau socio-économique. Sur les 12, 8 myxomes étaient localisés dans l'oreillette gauche. Huit patients étaient symptomatiques, chez les quatre autre, l'échocardiographie a été capital pour le diagnostic. La voie de Sondergaard a été principalement utilisée comme voie d'accés, avec dans quatre cas, des gestes complémentaires tels que : Plastie de

Devega, annuloplastie mitrale. Les suites opératoires ont été simples dans tous les cas.

Conclusion : Bien que, les myxomes représentent des tumeurs bénignes, leur localisation intracardiaque constitue un argument pour une prise en charge chirurgicale immédiate. Cela, permettrait d'éviter la survenue des complications.

Mots clés : Myxome, Chirurgie cardiaque

Introduction

Cardiac myxoma is one of the most encountered cardiac tumors. This tumor embryogically results of proliferation of cardiac stem-cells under endocarde lawer, especially in left atrial cavity. Most myxoma are located in the left atrium (75-80%), arising from interatrial septum at the border of the fossa ovalis. But, they can also originate by descending order of frequency from the right atrium, ventricles, vena cave, pulmonary trunk and aorta[1].In some cases, cardiac myxomas are associated with others lesions, such as; spotty skin pigmentation, endocrine overeactivity. Some authors, have called these complex association syndromes of Carney[2].Traditionally, surgical resection of atrial myxomas is accomplished via a sternotomy incision with the patient on cardiopulmonary bypass (CPB). Reports in recent literature indicate that robotic-assited resection of atrial myxomas is being performed, but this approach is still uncommon[3]. Among several complications, thromboembolic events remain a redoutable one, for potential pulmonary embolization, if right cavities location, coronary embolization, but especially cerebral with a risk of ischemic cerebrovascular event. Once a cardiac myxoma is diagnosed, surgical excision should be performed without delay, because of the risk of thromboembolic events[4].

In most developing countries, where facilities with surgical cardiovascular department are absent, patients with congenital or acquired cardiovascular diseases have poor prognosis. Myxomas, with the potential evolution to heart congestion, or thromboembolic events which may lead to death, and represent one of acquired heart diseases emergency. We report a series of congolese patients operated on Rabat, Morocco.

Patients/Methods

We carried out a retrospective study, from June 2011 to December 2019, at surgical cardiovascular department of the International Teaching Hospital Cheikh Zaid. All patients were from Republic of Congo, operated on cardiac myxoma during the study period have been included. Preoperative records were clinical data, trans thoracic echocardiography. Trans thoracic echocardiography revealed in all cases, the presence of interatrial mass (Picture 1). All patients beneficiated of classic biological exams for open heart surgery. In three cases, coronary angiogram has been requested before surgery, because patients were male, age more than 50 years, with existence of cardiovascular risk factors. All coronary angiogram was normal. Two female patients, have a history of benign chest tumor.

After providing written consent, patients have been operated under CPB, in normothermia, after performing median sternotomy. CPB was established between aortic, and two venous cannulas. Myocardial protection was antegrade cold blood cardioplegia in aortic root. In the case of isolate left atrial mass, Syndergaard incision has been the principal landmark for mass exploration. When, cardiac mass was located in right atrium cavity; right atriotomy incision has been selected. In near all case, the macroscopic feature was, a lobulated mass with an irregular surface and polypoid areas (Pictures 2, 3). Pathology revealed, an optical microscopic of myxoid stroma with stellate cells, without necrosis, mitotic activity, atypia or pleomorphism (Picture 4). Variables analyzed were: sociodemographic, clinical, echocardiographic, therapeutic data and evolution. Excel windows ten has been used for data treatment. Qualitative data were represented in percentages, and quantitative data in mean ± standard deviation.

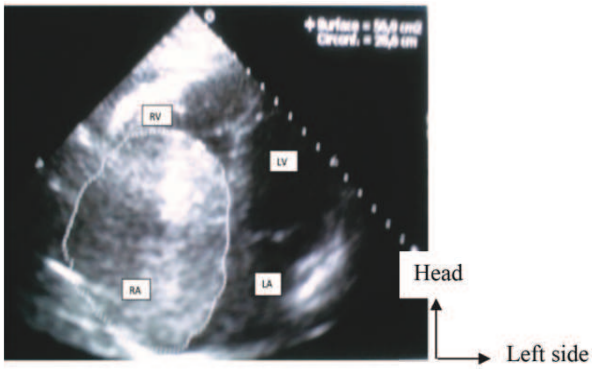

Image 1 : Four chambers view showing Right atrial myxoma

Image 2 : A lobulated mass with an irregular surface,polypoid areas

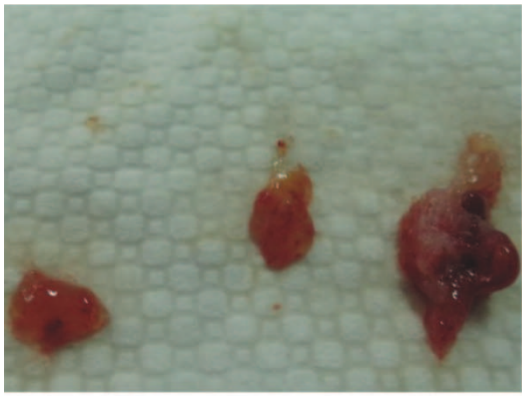

Image 3 : Sesile myxomas

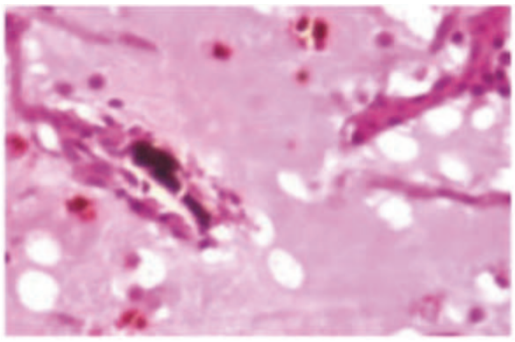

Image 4 : An optical microscopic view Of myxoid stroma with stellate cells without necrosis.

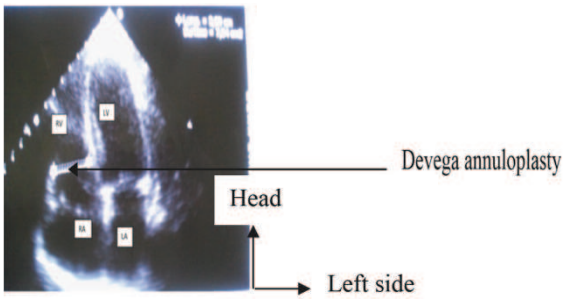

Image 5 : Postoperative view, after removing myxoma, with presence of Devega annuloplasty.

Results

I. Socio-demographic data

Twelve patients have been included. Mean age was 38± 4.5 years (extremes,32 to 58 years). The sex-ratio was 0.7.

II. Pre-operative data

Among twelve patients, eight (66.6%) were symptomatic. Asthenia was the principle symptom for consultation; table I summarized recorded clinical data.

Symptoms	No. of Patients	%
Asthenia	6	50
Angina	4	33
Syncopa	2	17
Palpitations	4	33
Fever	3	25

Table I: Preoperative symptoms

C-Reactive Protein were high in all patients, and ten patients were anemic. Two (%) patients had transient ischemic cerebral vascular accident one year before. Three patients had at physical exam, symptoms of mitral stenosis. At TTE, eight patients have myxoma located in left atrium and four in right atrium.

III. Surgical data

Mean time of CPB was 49 ± 2.5 min (range, 35-65 min), and the mean cross clamp time was 24 ± 1.5 min (range,20-34 min).

a) Cardiac access

Table II, summarized cardiac access to myxoma per-operatively.

Cardiac access	No. of Patients	%
Biatrial*	2	17
Left atriotomy**	8	66
Right atriotomy	2	17

Table II: Surgical approaches
*Guiraudon access
**Sondergaard access

b) Associated procedures

In other cases, associated techniques were used.

Associated gestures	No. of Patients	%
Devega annuloplasty	2	17
Mitral annuloplasty	1	8
Mitral valve replacement	1	8
None	8	67

Table III: Associated Procedures

c) Post-operative data

Mean of follow-up was 36 ± 2.5 months (range,28 to 60 months) Trans-thoracic echocardiography revealed no residual cavity tumor. There had mild mitral regurgitation in one patient, whom concomitantly has a mitral annuloplasty. There had no tricuspid regurgitation, in two patients with Devega annuloplasty, picture 5. There is no postoperative arrhythmias.

Discussion

Primary cardiac neoplasms are rare, and their indicence in autopsy reviews vary between 0.0017 and 0.19%, less than 5% of all cardiac tumors[5]. Among benign cardiac tumors, myxomas represent about 50%. Histologically, myxomas derived from mesenchymatous, pluripotents cells under endocarde. Majority of myxomas are located in left atrium in 75-80%, right atrium about 18%; and rarely in ventricles, vena cava, pulonary trunk and aorta[6,7]. Physical signs or symptoms, may be varied. More often, mean age of patients affected by myxomas is 50 years, with range 15 -80 years, and female predominance. Manifestation may be sporadic, or myxomas might result in association of others abnormalies such as; spotty skin pigmentation, endocrine overeactivity, which may define Carney's syndrome[2]. Genetic analysis are necessary to confirm Carney syndrome diagnosis. In our series, we have two patients with extracardiac abnormalies, these refer to clinical manifestations of this syndrome. We did not realize genetic analysis; because of high cost of these tests, and our patients have low socio-economic conditions. Clinical manifestations vary according to the site of implantation. If the tumor is located in right cavities; superior and inferior vena cava syndromes may be present. Pulmonary edema might complicate left cardiac cavities myxomas. Constitutional symptoms can consist of fever, weight loss, and malaise, with associated laboratory abnormalities of anemia, elevated c-reactive protein, and increase gamma globulin[8]. The constitutional symptoms have been correlated with increased levels of plasma IL-6[8]. Cardiac symptoms include dyspnea, palpitations, syncope, angina, and fatigue. Typical symptoms of mitral stenosis result from pulmonary hypertension. Once, the diagnosis has been confirmed, principal risks are represented by thromboembolic events, congestion symptoms, and potential evolution in certain cases to valvular stenosis. Thromboembolic events may be central ischemic cerebro-vascular, or peripheral ischemic complication in our conditions, with limited access to surgical treatment of cardiovascular diseases, most often, patients, at least have one of these complications. Our reality is that, time between diagnosis and surgical treatment may last at least two years. Because, patients are poor, and wait for aid by health public system. Trans-thoracic echocardiography (TTE) remains the gold standard for cardiac myxomas. Esophageal echocardiographic is more accurate than TEE[9]. To avoid these complications, surgical approach represents the cornerstone of therapeutic attitude. Usually, surgical excision is lead under CPB, in normothermia, and with myocardial

protection. About surgical approach for cardiac incision, there is no consensus among different surgical cardiac teams around the world. Some authors, advise that the choice of cardiac incision may be in correlation with myxoma site of implantation, or also existence of other cardiac abnormalities[10-12]. In our series, in every case of isolated left atrial myxoma, we prioritize left atriotomy Sondegaard access. If we need to evaluate right atrium either for myxoma excision, or tricuspid reparation, we opt for biatrial incision (Guiraudon access); and in the case that only the right atrium is concerned, we used simple right atriotomy. In most cases, surgical results are excellent[13.14]. Evene if, in the literature, some authors report cases of recurrence. However, currently it is thought that the major factor in recurrence is the genetic predisposition to multiple and recurrent tumors, and the removal of the septum is no longer thought to be absolutely mandatory[15]. The current risk of recurrence in sporadic myxoma cases is between 2% to 5%[16]. The mean follow-uo in our serie was short, but we do not identify any case of recurrence among our patients.

Conclusion

Cardiac myxomas are characterized by clinical polymorphism. Echocardiography remains the cornerstone for the diagnosis. It is a benign tumor. Thus, surgical treatment is mandatory to ameliore the patient prognosis, with less peri-operative morbidity and mortality. Our governement might change their policy, to promote local development of surgical cardiovascular facilities for helping populations with very low cost of cardiac surgery at low cost.

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