Journal Homepage: -www.journalijar.com

INTERNATIONAL JOURNAL OF ADVANCED RESEARCH (IJAR)

Article DOI:10.21474/IJAR01/12193
DOI URL: http://dx.doi.org/10.21474/IJAR01/12193

*RESEARCH ARTICLE*

# CARDIAC MYXOMA: THE PARADOX BETWEEN ITS BENIGNITY AND ITSDRAMATIC COMPLICATIONS: 5 CASE REPORTS AND LITERATURE REVIEW

**Yousra Oussou, Nour El Houda Snoussi, Kawtar Manouri, Youssra Serroukh and Mohamed Cherti**
Department of Cardiology B, Ibn Sina Hospital Center, Rabat, Morocco.

## *Manuscript Info*

***Manuscript History***
Received: 20 October 2020
Final Accepted: 24 November 2020
Published: December 2020

***Key words:***
Myxoma, Embolization, Brain Stroke, Embolicinfarction

## *Abstract*

Cardiac myxoma are the most common benign primary cardiac tumors that can lead to many complications as described in literature. It is a benign tumor but her complications are dramatic because of her localization and his risk of embolization in other organs which put the vital prognosis at risk. We report 5 cases with different clinical symptoms. We illustrate through these cases the embolic and obstructive complications of cardiac myxoma and we insist on the interest of an urgent surgical treatment.



## Introduction:

Primary cardiac neoplasms are rare and occur with an estimated incidence of 0.001% to 0.19%, representing less than 5% of all heart tumors [1]. Myxoma is the most prevalent primary heart tumor and are the most common benign tumors of the heart [2].75% of myxomas develop in the left atrium [3].Symptoms leading to the discovery of myxoma depending on its location and the site of embolization. Sometimes an incidental discovery of a cardiac myxoma may occur in an asymptomatic patient.TTE (transthoracic echocardiography remains the key examination of the positive diagnosis of the primary mass.Thus other paraclinical examinations can be carried out to show the embolic or obstructive accidant of the myxoma.Although his begninity from a histological point of view, its localization can put the patient's vital prognosis at risk.Its insidious symptomatology often makes it difficult to diagnose up to the stage of complications.

## Material and Methods:

We report 5 patients admitted in cardiology B at CHU Ibn Sina, for different clinical symptoms revealing two serious kinds of complications of a myxoma.

**Case report 1:**

54-year-old, chronic smoking patient, hospitalized for infarcted chest pain. The Examination was with out particularities. The ECG showed an enlarged anterior extension. The patient was transferred urgently to the catheterization room.Coronary angiography revealed an occlusion of the IVA for which he underwent angioplasty with placement of an active stent **(Figure1).**TTE showed hypokinesia of the middle and apical segment of the septal wall and a good left ventricular ejection fraction ,with the presence of a left atrial mass attached to the septum by a neck.The patient was referred to surgery for ablation.Histological examination confirmed the diagnosis of cardiac myxoma.

**Corresponding Author: Yousra Oussou**
Address**:** Department of cardiology B,Ibn Sina Hospital Center, Rabat. Morocco.

**Case report 2:**
24-year-old patient who had presented two episodes of syncope. On examination Heart sounds were regular, with diastolic rolling in the mitral focus on auscultation varying according to the patient's position.The pulmonary examination and the rest of the somatic examination were unremarkable.The electrocardiogram was OK. The chest X-ray showed a normal-sized heart shape and good parenchymal transparency. The transthoracic echocardiogram revealed a huge cardiac tumor in the left atrium, growing into the left ventricle through the mitral valve.

The patient was operated on urgently under extracardiac circulation (ECC).The procedure consisted of resection of the entire implantation base and extraction of the left atrial mass. The diagnosis of myxoma was confirmed after histological study of the operative part.

**Cases report 3,4, and 5:**
we report the case of three patients including two women and one men, with an age varying between 40 and 50 years, without cardiovascular risk factors, two patients were admitted for right hemiplegia and one patient with left hemiplegia with aphasia, The ECG was unremarkable for the three patients. the TTE showed a mass of the left atrium for the three patients, with an implantation base at the level of the interatrial septum. cerebral CT was done for the three patients, showing a left sylvian ischemic stroke for two patients, and a right sylvian ischemic stroke for the third patient. They were therefore referred urgently for surgery where a complete resection of the mass was made under CEC after a right atriotomy and septotomy with simple operative consequences.

The three operative documents were sent for anatomopathological examination, thus confirming the diagnosis of myxoma.

## Discussion:

Primary heart tumors represent less than 0.2% of all neoplasias, 75% of these tumors are benign and half of these tumors are myxomas [4].

Myxomas affect both men and women with a predominantly female character, which is the case for our patients with a tendency to affect young patients.

In fact, the average age described in the other series is around 40 years [4], which agrees with the average age of our patients.

The clinical signs revealing the myxoma as well as the time of manifestation of the symptoms compared to the date of the positive diagnosis of the myxoma are very varied according to the location of the myxoma, and to complications induced by the mass. In fact, this period varies in the other series between one year and 18 months [4]. The major symptom described in the literature is dyspnea which occurs in 75% of cases, chest pain in 15% [5].

In addition, the myxoma can be revealed by its embolic signs. These embolic complications are wellknown and occurin 45 to 60% of myxomas and they can involve different organs. In fact, arterial embolisms from myxoma concern the coronary arteries in 10% of cases [5] which was the case for one of our patients. Retinal emboli by myxoma have also been reported in the series of Arne [6], and Jampol [7] with a higher percentage of involvement of the left eye than the right eye due to the situation of the carotid artery primitive compared to the archaorta.

Myxoma emboli at the level of the cerebral arterial network constitutes 50% of cases [8], as is the case for three of our patients. In addition, other locations of embolism have been described with lesser percentage such as embolisms in the limbs, viscera such as the kidneys [9], the liver, the spleen, distal embolisms involving the extremities of the fingers, thus giving skin lesions of different appearance. There are also reported cases in the literature of paradoxical pulmonary embolism of myxomas in the left atrium crossing a patent foramen ovale [10].

General clinical signs may also be the cause of the discovery of a myxoma. An accidental discovery of myxoma can occurin 5 to 7% of cases [8].

The pathognomonic physical sign of myxoma described in the other series is a diastolic rolling, which changes according to the position of the patient, which is the case for one of our patients. Signs of left or right heart failure were revealed in 20% of patients [4].None of our cases showed signs of heart failure.

TTE is the key examination in the positive diagnosis of myxoma, with a sensitivity of 93% and a specificity of 97% [11]. It makes it possible to confirm the presence of the mass, specify its location, define its implantation base in most cases, and visualize the limits of the mass and its morphological characteristics. Indeed, Cardiac myxoma susually develop in the atria. About 75% of myxomas arise in the left atrium. This is the case for all of our patients. Right atrial myxomas are rare as myxomas are estimated to occur in the right atrium in only 15-20% of the cases [3]. compared to very regular ones [12]. We note the visualization of calcified masses proving the age of the myxoma. In addition, the size of the myxoma is proportional to the obstructive risk but not proportional to the embolicrisk [13].

Transoesophagian echocardiography (TOE) can be done in some cases to clarify the base of myxoma implantation or to look for associated abnormalities of valves and other heart structures. In our series, we performed TOE for three of our patients in whom the base of implantation was not evident on TTE.

MRI and cardiac CT are very rarely of interest in myxomas, to define a basis for implantation with TTE if there is a contra indication to TOE, or when it comes to myxomas of small sizes (infra centimeters) or during a diagnostic ambiguity (suspicion of a thrombus…) [14]. None of our patients had an MRI or cardiac CT scan.

Surgery remains the radical treatment for myxoma, and should be considered once the positive diagnosisis made. It aims to remove the mechanical obstacle in order to avoid the locking of the myxoma in the valve opening, prevent embolization to other organs, and also prevent relapse by the total and complete exertion of the myxoma [15 ].

The classic approach is first a sternotomy, then the surgery is done under CEC.The route of exposure is generally a right atriotomy with a septotomy for left atrium myxomas, a right atriotomy for right atrium myxomas, then a complete resection of the implantation base is performed while avoiding invasion. myxoma. Then a check for the tightness of the mitral and tricuspid valves and for the possible presence of other cavitary myxomas is mandatory before closure [16]. For our patients they all underwent a complete myxoma exercise via a right atriotomy with septotomy.

The postoperative course is generally the recurrence rate and 2 to 3% in different series [17]. Mortality is very rare, not exceeding 4% in all the series described [18]. The evolution has been favorable for all of our patients. Mortality is zero, no recurrence in the medium term has been reported.

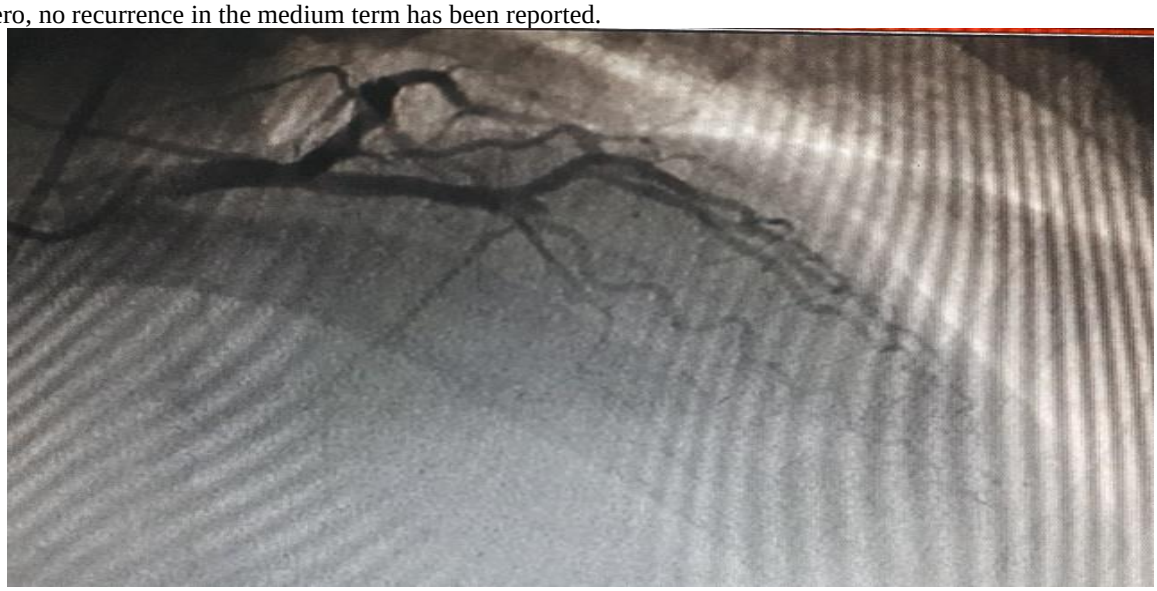

**Figure 1:** Coronaryangiography showing an occlusion of the IVA.

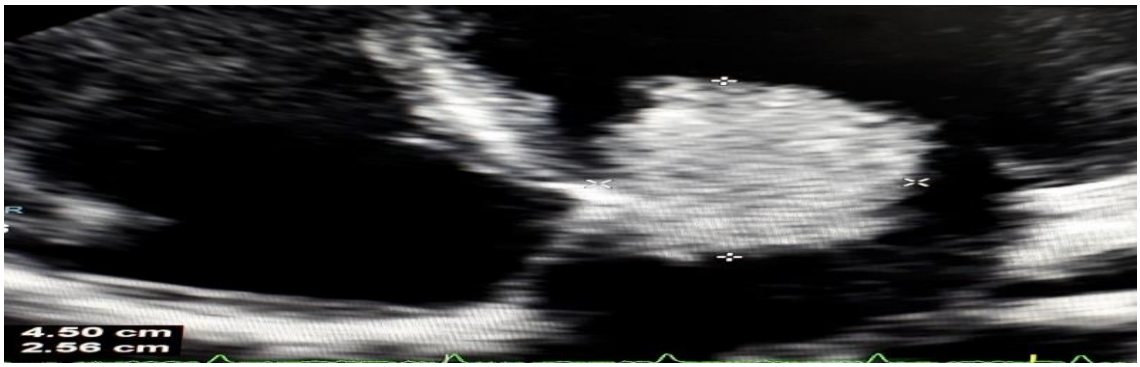


**Figure 2:**TTE image showing a huge mass on the interatrial septum.

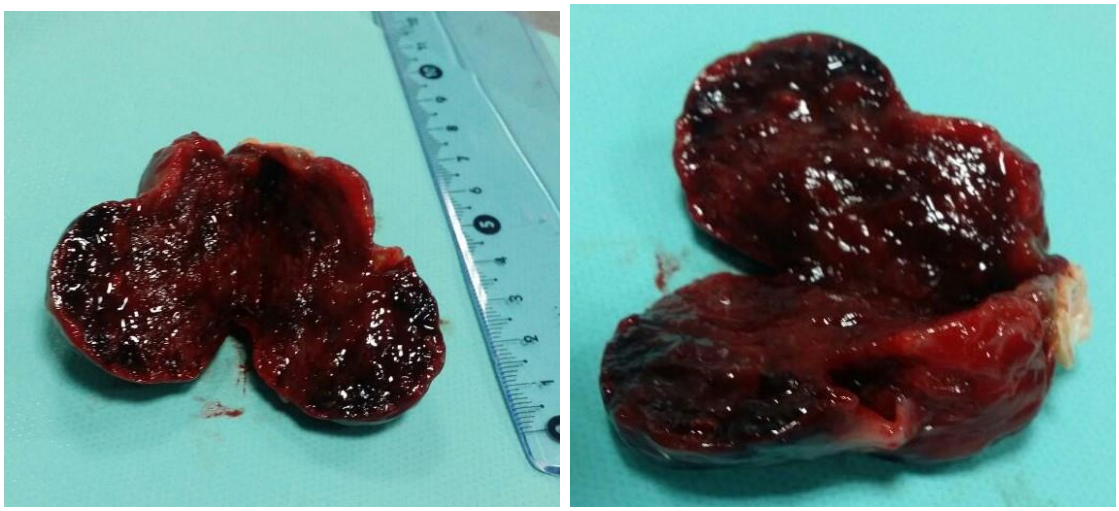

**Figure 3:** Photos showing the operative part of the myxoma after resection.

## Conclusion:

The left atrial localization of a myxomais the most frequent. Being a benign mass, it can induce a dramatic symptomatology and put atrisk the patient's vital prognosis, by complications related to both obstruction and embolization. This makes the diagnostic urgently needed for urgent surgical management.

**Conflict of Interest:**

The authors declare no competing interest.

## References:

1. Azevedo O, Almeida J, Nolasco T, Medeiros R, Casanova J, Bartosch C, Almeida J, Pinho P. Massive right atrial myxomapresenting as syncope and exertionaldyspnea: case report. CardiovascUltrasound. 2010;8:23. doi: 10.1186/1476-7120-8-23. [PMC free article] [PubMed] [CrossRef] [Google Scholar].
2. Arruda MV, Braile DM, Joaquim MR, Soares MJ, Alves RH. Resection of leftventricularmyxomaafterembolic stroke [in English and Portuguese] Rev Bras CirCardiovasc. 2008;23:578–580. doi: 10.1590/S0102-76382008000400022. [PubMed] [CrossRef] [Google Scholar]
3. Vale Mde P, Freire Sobrinho A, Sales MV, Teixeira MM, Cabral KC. Giantmyxoma in the left atrium: case report [in English and Portuguese] Rev Bras CirCardiovasc. 2008;23:276–278. doi: 10.1590/S0102-76382008000200020. [PubMed] [CrossRef] [Google Scholar]
4. Reynen K. Cardiacmyxomas. N Engl J Med. 1995 Dec 14;333(24):1610–7.
5. Shavit L, Appelbaum L, Grenader T. Atrial myxomapresentingwith total occlusion of the abdominal aorta and multiple peripheralembolism. European Journal of InternalMedicine. 2007 Jan;18(1):74-5. PubMed | Google Scholar
6. Arn J, Maillard P, Massip M, embolies retiniennes et myxomes de l'oreillette

7. gauche. Bull. Soc. Opht. France, 1986, 86, 8-9
8. Jampol L.H., Wong A.S., Albert D.M., Atrial myxoma and cerebralretinalartery occlusion. Am. J. Ophtalmol., 1973, 75, 242-248
9. Silverman J, Olwin J, Graettinger J. Cardiacmyxomaswithsystemicembolization. Circulation. 1962 Jul;26:99-103. PubMed | Google Scholar
10. Dewilde J., Mignon F., Meyrier A., Bienvenu M.P., Rachoin R., Cabrol C., Acar J.,
11. Myxome de l'oreillete gauche et insuffisance renale avancée, Ann.Med interne, 1983, 134, 549-554
12. Powers J.C., Falkoff M., Heinle R.A., Nanda N.C., Ong L., Weiner R.S., Barold S.S., Familial cardiacmyxoma : Emphasis on unusualclinical manifestations. J. Thorac. Cardiovasc. Surg. 1979, 77, 782
13. Braun S, Schrotter H, Reynen K, Schwencke C, Strasser RH. Myocardialinfarction as complication of left atrial myxoma. Int J Cardiol. 2005;101(1):115-21. PubMed |Google Scholar
14. Jong-Won H, Woong-Chul K, Namsik C, Byung-Chul C, SeJoong R, Jin-Wook K, et al. Echokardiographic and morphologiccharacteristics of left atrial myxoma and their relation to systemicembolism. Am JCardiol. 1999;83:1579- 82. PubMed | Google Scholar
15. Jong-Won H, Woong-Chul K, Namsik C, Byung-Chul C, SeJoong R, Jin-Wook K, et al. Echokardiographic and morphologiccharacteristics of left atrial myxoma and their relation to systemicembolism. Am JCardiol. 1999;83:1579- 82. PubMed | Google Scholar.
16. Guntheroth WG, Fujioka MC, Reichenbach DD. Spontaneousresolution of obstructive valvulartumors in infants. Am Heart J. 2002 May;143(5):868–72.
17. F A Crawford, Jr, J H Selby, Jr, D Watson, and J Joransen., Unusual aspects of atrial myxoma. Ann Surg. 1978 Aug; 188(2): 240 24
18. Oliveira R, Branco L, Galrinho A, Abreu A, Abreu J, Fiarresga A, Mamede A, Ramos R, Leal A, Pinto E, Fragata J, Ferreira R. Cardiacmyxoma: a 13-year experience in echocardiographicdiagnosis [in English and Portuguese] Rev Port Cardiol. 2010;29:1087–1100.
19. Guhathakurta S, Riordan JP. Surgicaltreatment of right atrial myxoma. Tex HeartInst J. 2000;27:61–63.