

Cardiac Myxoma

Single Center Experience

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Abstract:

Background: cardiac myxoma is the most frequent primary cardiac tumour comprising 30 to 50%, they are benign tumours. They are most often reported in women in the third to sixth decade of life.

Objectives: is to evaluate the incidence of surgery of cardiac myxomas and their presentation and outcome in IbnAl-Nafees Teaching hospital over 10 years.

Patient and Methods: This is a retrospective study that was conducted in Ibn Al-Nafees Hospital from January 2005 to December 2014 on patients with cardiac myxoma. Twenty-five patients diagnosed pre-operatively as having cardiac myxoma, they were admitted to the hospital and underwent clinical evaluation, investigation, and surgical treatment.

Result: Cardiac myxomas constituted 1% of the total cardiac operations at our institute, the twenty-five patients who were studied were operated upon, the mean age of patients was 49 years and male-female ratio was 1:3. Occurrence of myxoma was more common in the left atrium 88% followed by right atrium 8% while only 1 patient had myxoma in right ventricle. One recurrence was noticed after surgery, only one early death observed in this study.

Conclusion: Early surgical intervention with complete resection of the tumour is essential for the cure of the disease and to prevent tumour recurrence with subsequent reoperation that expose the patient to more serious complications, Echocardiography is the ideal diagnostic tool and it is needed in the long term follow-up of the patients.

Keywords: Myxoma, cardiac tumours, echocardiography.

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Introduction:

The most frequent primary cardiac tumour is myxoma comprising 30 to 50 % , they are benign tumour. Although myxoma have been reported in both genders and all age groups, they are most often reported in women in the third to sixth decades of life(1) . Myxoma usually occur sporadically but at least 7% occurs as a part of an autosomal dominant syndrome (with skin hyperpigmentation and endocrine hyperactivity) referred to us the Carney Complex (2). It is a rare disease affecting approximately 1 in 15000 of population (3). About 75% of cardiac myxoma developed in left atrium, almost always from the atrial septum near the fossa ovalis, other myxomas developed in right atrium and rarely in right and left ventricles. The first successfully removed left atrial myxoma using cardiopulmonary bypass was reported by Crafoord in 1954 (5) and has been established as the only acceptable mode of treatment of this tumour(6). The addition of cardiac echocardiography allowed easier ante mortem diagnosis and thus resulted in an increase in number of tumour resection (7).

Myxoma are ovoid globular, lobulated, or polypoid, pedunculated or sessile, they are friable, so increasing the risk of systemic embolization. Clinically, the symptoms are either signs of intracardiac obstruction with congestive

heart failure, syncopal attacks, and sudden death, or signs of systemic embolization to the brain, kidney, and external extremities. Systemic constitutional symptoms may include myalgia, arthralgia, fever, fatigue, weight loss, and anemia. Myxoma can recur in about 1-5% so that annual surveillance echocardiography is required to detect any intracardiac tumour recurrence (8). Myxoma may cause damage to mitral valve necessitating mitral valve repair or replacement (9). Occasionally myxomas are infected, in this circumstances there is a great danger of systemic embolization (10). The diagnosis depend on laboratory tests, chest x-rays, echocardiography with a high sensitivity and specificity (90% - 95%) respectively. Transeosophageal echocardiography (TEE) is superior to transthoracic echocardiography in giving better visualization and identification of small tumours. CT scan and MRI and can help the diagnosis, cardiac catheterization is used in patients when non-invasive evaluation is inadequate, also used to exclude coexisting coronary artery disease in patients over 40 years of age.

Ibn Al-Nafees Teaching Hospital –

Patient and Method

This is a retrospective study that conducted at Ibn Al-Nafees Teaching Hospital, department of cardiac surgery from January 2005 to December 2014 on patients with cardiac myxoma. The

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informations about patients in this study were retrieved from patient's hospital record.

This study performed to evaluate the clinical presentation, surgical approaches, surgical findings used, complications, early mortality, and recurrence of these tumours. Formula used to divide the patients according to their age, sex, clinical presentation, surgical approach, operative findings, postoperative morbidity and mortality, and follow up. Twenty-five patients were diagnosed preoperatively as having cardiac myxoma. They were admitted to the hospital and underwent clinical evaluation and investigation. Preoperative diagnosis was established in all patients by echocardiography. Transthoracic echocardiography used as main tool in all the patients, and transeosophageal echocardiography used to confirm the diagnosis. Coronary angiography was carried out in patient with history of ischemic heart disease or those older than 40 years. Surgery was undertaken in all patients soon after the diagnosis of cardiac myxoma, The standard surgical approach was through a median sternotomy, cardiopulmonary bypass (CPB), with aortic and bicaval cannulation, cold antegrade cardioplegic solution used to achieve myocardial protection. Surgical approaches used to resect cardiac myxoma were left atrial, biatrial, or right atrial transeptal, right atrial, and right ventricular approach used just in 2 patients both of them had a right ventricular myxoma. The surgically interatrial defect was repaired directly or with synthetic Dacron patch. The objective of resection was complete tumour resection except in some tumours which were big sized so excised in fragments. All the tumour specimens were sent for histopathological examination to prove the tumour is cardiac myxoma.

Results:

Cardiac myxoma constituted about 1% of the total cardiac operations at our institution. Twenty-five patients with cardiac myxoma were identified. Patient age ranged from (20 - 73) with mean age of 49 years. Nineteen (76%) were female and six (24%) were male with female-male ratio was 3:1 as shown in figure 1.

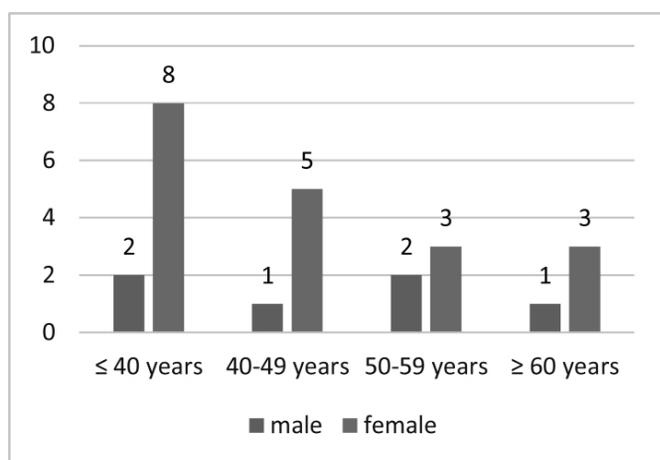
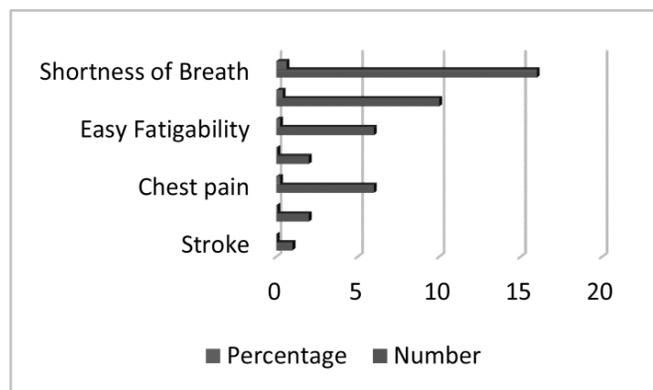


Figure (1): Age and gender distribution.

The duration of symptoms ranged from 1 week to 24 months. Symptoms were variable and the main symptoms was shortness of breath presented in 20 patients as shown in figure 2.



Twenty patients had left atrial myxoma as shown in table 1.

Table (1): Frequency and percentage of tumour site.

		No	%
Site of tumour	Lt. Atrium	20	80
	Rt. Atrium	3	12
	Rt. Ventricle	2	8

From the 25 cardiac myxoma, 18 arose from the interatrial septum, 2 arose from the posterior wall of cardiac chamber, and 1 from the lateral wall of the chamber, the tumour ranged in size from 2x3 cm to 15x6 cm, the type of tumour were pedunculated in 20 patients (80%) and sessile in 5 patients (20%).

Transthoracic echocardiography had been used in all patients (100%), while transeosophageal echocardiography had been used in 6 (24%). Coronary angiography used in patients over 40 years of age as shown in Table 2.

Table (2): Number and percentage of investigations done for the patients

Investigation	No.	Percentage
Transthoracic echocardiography (TTE)	25	100%
Transeosophageal echocardiography (TEE)	6	24%
Chest computed tomography scan (Chest CT-scan)	8	32%
Coronary angiography	15	60%

The most surgical approach used was left atrial approach in 15 patients (60%) as shown in table 3.

Table (3): Frequency and percentage of surgical approach used to resect the tumour.

		No.	Percentage
Surgical approach	Lt. atrium	15	60%
	Rt. Atrium	5	20%
	Biatrial	3	12%
	Rt. Ventricle	2	8%

Discussion:

The most frequent primary cardiac neoplasm is myxoma comprising 30-50% (1). Although myxoma exhibited rapid growth, if the tumour is resected completely the recurrence rate is very low (4). In our study, the surgery of myxoma constitute 1% of whole cardiac operations, during this given period and this seems to be comparable with other study in which cardiac myxoma surgery constitute 0.4% of the total cardiac operations over a six years period (6), mean age of patients in this study years is 49 years is found comparable with some studies (4,11) while in other it is younger due to younger age range (6). Although most of cases of myxoma are sporadic, rare familial occurrence has been described (12). In our patients all were sporadic myxoma. In our study, the most common presentation was shortness of breath and palpitation. This seems to be comparable with other studies (4). In our patients, syncopal attacks had lesser percentage than those in other studies (13). High percentage of myxoma in this study develops in the left atrium and the other myxoma arose from right atrium and right ventricle and this seems to be comparable with other studies (4). Biatrial surgical approach used in our patients with left atrial myxoma and this surgical approach used less frequently in comparison with other studies (4, 11). In our study, left atrial approach was used more frequently than other study. In our study, right atrial approach (Transeptal approach) suggested by Chitwood used in three patients which gives good access, minimum handling, and allows inspection of all cardiac chambers (6). Recurrence occurred in 1 patient (4%) and this is comparable with the recurrence rate of sporadic cases 1-3% (6). The range of duration between the first and second surgery in our patient was 3-4 years. There was one early death (the patient had right ventricular myxoma and he died due to post operative R.V failure) and this seems to be slightly higher than other studies (4, 11) may be due to less number of patients.

Conclusions:

The surgical intervention with complete resection of tumour is essential for the cure of the disease with very low recurrence rate. Cardiac myxoma can be excised with a low mortality rate and the prognosis for patients after surgical resection is excellent. Cardiac myxoma should be included in a differential diagnosis of heart valve diseases, especially mitral valve

diseases, also should be considered in the differential diagnosis of fainting, syncope, bacterial endocarditic, cardiac arrhythmia, and pulmonary embolism. Echocardiography is very useful in the post-operative evaluation and long term follow-up of the patients.

References:

- 1- F.Charles Brunicardi, Dana K.Anderson, Timothy R. Billiar et al.: *Cardiac neoplasm in Schwartz's Principles of surgery, ninth edition, 2010, p1256-1259.*
- 2- John Liddicoat A. Marc Gillinov: *Tumours of the Heart in Sabiston and Spencer edited by Frank w.Selke 2005, p 165-172.*
- 3- Rayhaneh G. Zahedi, BS, and David S. Wald: *Carney Complex: Ann Thorac Surg 2006; 82:320-322.*
- 4- Song-Hyeon Yu, Sang-Hyum Lim et al.: *Clinical Experiences of Cardiac Myxoma: Yonsei Medical Journal 2006; Vol.47, No.3, pp.367-371.*
- 5- Denis A. Berdajs and Enrico Ferrari: *Surgical treatment for heart myxomas: Multi Manual of Cardio-Thoracic Surgery; 2012; p.1-5.*
- 6- Muhammad Aamir Khan, Asif Ali Khan, and Muhammad Waseem: *SURGICAL EXPERIENCE WITH CARDIAC MYXOMAS: J Ayub Med Coll Abbottabad 2008; p. 76-79.*
- 7- Kaiser, Larry R.; Kron, Irving L.; Spray, Thomas L.: *Cardiac tumours in Mastery of Cardiothoracic Surgery, 2nd Edition, 2007, p.616-617.*
- 8- CRAIG T. BASSON: *Clinical and genetic aspects of cardiac myxomas: Cardiology Rounds; March 2002; Volume 6, Issue 3.*
- 9- MARITES HILL, CECILE CHERRY, MARTIN MALONEY, and PAULA MIDYETTE: *Surgical Resection of Atrial Myxomas: Association of perioperative Registered Nurses 2010; Vol. 92; p.393-409.*
- 10- Hecser L et al.: *Right Ventricular Cardiac Myxoma. Histopathology diagnosis in forensic autopsy case: Romanian Journal of Legal Medicine; 2011; p.79-82.*
- 11- Louis-Mathieu Stevens, Harry Lapierre, Michel Pellerin: *Atrial versus biatrial approaches for cardiac myxomas: Interactive Cardiovascular and Thoracic Surgery 2 June (2003) 521-525.*
- 12- Michel G. Farah; *Familial cardiac myxoma: Chest 1994; 105: 65-68.*