VOLUME-9, ISSUE-2, FEBRUARY-2020 • PRINT ISSN No. 2277 - 8160 • DOI : 10.36106/gjra

Original Research Paper

Cardiology

A SERIES OF CARDIAC MYXOMA IN OUR EXPERIENCE

Dr N Kavitha — M.S; Mch Assistant Professordept Of Cardiothoracic Surgery Tirunelveli Medical College, Tirunelveli

Dr C Elavarasan* — M.S; Mch Assistant Professor Dept Of Cardiothoracic Surgery Madras Medical College, Chennai *Corresponding Author

ABSTRACT

BACKGROUND AND OBJECTIVES- Cardiac myxoma are the most common primary cardiac tumour. Mostly it is a benign tumour and occasionally it can have malignant potential.

MATERIALS AND METHODS – A retrospective study on cardiac myxoma surgeries done in our hospital was done between August 2014 and July 2016. A total of 8 patients underwent surgery for myxoma. All were diagnosed as having cardiac myxoma by echocardiography and all underwent complete excision of the tumour..

RESULTS-Cardiac myxoma is a rare disease and it most commonly occurs in the 3rd to 6th decade , in the females, sporadically. Out of 8 patients operated, six were females and two were males. The mean age of the patients was 50.5years.The location of tumour was left atrium in 7 cases and right ventricle in one case. One patient expired in postoperative period. None of the 7 patients had recurrence till 6months of follow up.

CONCLUSION – Simple transthoracic Echocardiography is sufficient for making the diagnosis. Complete excision of the tumour reduces the recurrence rate. There is no need for urgent intervention and elective sugery has good results.

KEYWORDS : Cardiac Myxoma, Cardiac Tumour, Left Atrial Myxoma

1.1- INTRODUCTION:

Cardiac myxoma is the most common primary cardiac tumour. It is a benign tumour. Occasionally it may have malignant potential causing extensive local invasion or rarely even metastasis to distant organs .It commonly occurs as sporadic in women age between 3rd and 6th decade. In sporadic type , it occurs as single in 94% and in left atrium in 75% .In familial type which accounts for 5% of cases, multiple (23%) is common and is common in young men and left atrium site is less common (only 62%).

1.2- MATERIALS AND METHODS :

The medical records of the patients who underwent surgery for cardiac myxoma in our hospital during the period of August 2014 to July 2016 were retrospectively studied. During this period 8 patients were operated. Out of 8 patients, 6 were females and 2 were males. The age of the patient was between 40 and 67 years, with mean of 50.5 years and median 50 years. The gender and age distribution are depicted in Figures, fig.No.1 and fig.No.2 respectively. They presented with various symptoms of dyspnea , syncope , congestive cardiac failure, cerebro -vascular accident, etc. One patient presented with acute pulmonary edema and one another patient with psychiatric illness. The percentage of various symptoms is represented in the table no.1 below.

FIG.NO.1: GENDER DISTRIBUTION

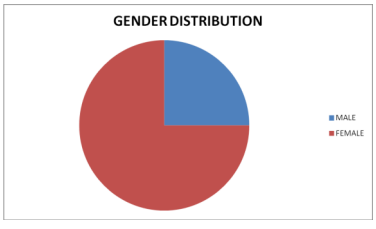

FIG.NO.2: AGE DISTRIBUTION:

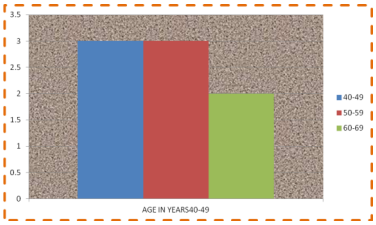

TABLE NO.1: PERCENTAGE OF VARIOUS SYMPTOMS-

S.NO.	Symptoms	No.of Cases	Perc Entage
1.	Dyspnoea	4	50%
2.	Orthopnoea	2	25%
3.	Chest Pain	1	12.5%
4.	Pedal Edema	1	12.5%
5.	Abdominal Distension	1	12.5%
6.	Syncope	3	37.5%
7.	Weakness Of Limbs	1	12.5%
8.	Psychiatric Behaviour	1	12.5%

The mean duration of onset of symptoms to hospital admission was 3 months. Clinical findings were pedal edema, mid diastolic murmur in mitral area, loud s1 in left atrial mass, systolic murmur in pulmonary area in right ventricular outflow tract mass, crackles in respiratory system, ascitis, left hemiparesis. Chest x-ray of one patient had bilateral pleural effusion , right more than left. Some showed mild cardiomegaly , increased pulmonary blood flow and others were normal. Elecrocardiogram findings were atrial fibrilla tion in one, left ventricular hypertrophy in one another with t wave inversion. Others had normal sinus rhythm with normal axis and low voltage complex. Echocardiography findings in all confirmed the diagnosis of cardiac tumour. The size of the mass varied from 2cm to 6.9 cm, with average size of 4.7 x 3.2 cm. Site of location of the mass was in left atrium in 7 patients and in right ventricle outflow tract in one patient, which is shown in fig.no.3. In three of the cases mass was entering in and out mitral valve. Two patients underwent cardiac catheterization. Both had normal coronaries and one showed tumour blush. Ultrasound abdomen of one patient showed mild hepatosplenomegaly with freefluid in abdomen. High resolution CT chest was done for one patient which showed well defined mass of size 4.6 x 3.8 cm in left atrium arising from inter atrial septum near fossa ovalis.

Surgery was done for all 8 patients electively after a median period of 22 $\pm$ 3 days of admission by median sternotomy with cardiopulmonary bypass. CPB was established by aortic and bi-caval cannulation. Myocardial protection was given by antegrade root cardioplegia. The approach was through left atrium (LA)in one , right atrium(RA) and inter atrial septum (IAS) in 2, biatrial approach in 4 other cases of left atrial mass. For right ventricle mass , the approach was through right atrium and tricuspid valve. The different approaches are

shown in table no. 2. The size of the masses ranged from 4x 3cm to10x3cm . All left atrial mass were invariably attached to inter atrial septum. In all cases, the mass was excised completely with a part of inter atrial septum. The defect in inter atrial septum was closed directly in only one and all others were closed with pericardial patch. Cardiopulmonary bypass time range was between 70 to 125 minutes and that of cross clamp time was 30 and 94 minutes .

TABLE NO.2: VARIOUS METHODS OF SURGICAL APPRO ACHES:

METHODS	NO.
APPROACH	
LEFT ATRIAL	1
RIGHT ATRIAL	3
BI-ATRIAL	4
IAS CLOSURE	
DIRECT CLOSURE	1
PERICARDIAL PATCH CLOSURE	7

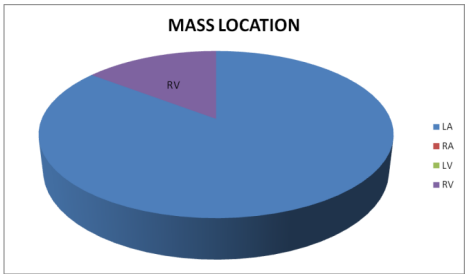

FIG.NO.3: VARIOUS LOCATIONS OF MASS

Routine histopathological examination was done in all patients. All 7 patients were followed for an average period of 6 months.

1.3-RESULTS :

One patient had status epilepticus in first post operative day and developed cardiac tamponade on third post operative day, for which re-exploration was done and the patient expired of low cardiac output syndrome/ acute kidney injury/status epilepticus/cerebro vascular accident. All other 7 patients were discharged between 9th and 13th post operative days. Post operative complications were acute kidney injury (AKI) in two and seizures in two which includes the patient who expired. Post operative echocardiograph showed no residual mass in all 8 patient , with mild global hypokinesia in two and pericardial effusion in two.

2.1- DISCUSSION:

Myxoma are the most common primary cardiac tumour and usually benign. Presents in both genders in all age groups. But, most common in women between 3rd and 6th decade. [1]In this study females were more affected, with male: female ratio of 1:3. The mean age of presentation was 50.5 years and median of 50 years. Myxoma generally occurs sporadically and only in 5-7% occurs as familial .[1,2]In this series no familial incidence could be made out. The symptoms are due to obstruction to blood flow in cardiac chambers and leading to congestive cardiac failure or due to embolic episodes or constitutional symptoms.[3,5] In this study dyspnoea, pedal edema , abdominal distension, and syncope were due to haemodynamic dearrangements by causing obstruction and one presented with embolic manifestation with left hemiparesis. The mean duration of onset of symptoms to hospital admission was 3 months. Natural history of myxoma is if failure symptoms has occurred , death occurs in 1-2 years. [4]

Electrocardiographyfindings (ECG) are not specifi , we had only one patient with atrial fibrillation. Chest x-ray findings were mild cardiomegaly , increased pulmonary vascularity and pleural effusion in one, none is specific for myxoma. [5,8] All were diagnosed by echocardiography(ECHO). Cardiac catheterization was done in two patients and HRCT chest in one. Cardiac catheterization should be done for coronary evaluation. In selective cases , right heart study can be done in LA tumour cases.

In sporadic cases, single (94%) mass is common. In literature LA accounts for 75% of cases and RA 15-20% and ventricle 5-10%. [1,6,7]In our study, the commonest site was left atrium attached to inter atrial mass. Only one patient had mass in RVOT. Surgical removal is indicated whenever diagnosis is made[9] Historically, it was considered as an urgent procedure, particularly if the patient had a history of embolism or syncope, because it had been noted that 8-10% of patients died of embolic complications while awaiting operation. However, more recent experience suggests that elective operations as opposed to urgent has resulted in no greater mortality or morbidity. [10,12]In this study all were operated with a median period of 22 + 3 days after admission by using cardiopulmonary bypass with average CPB time of 90 minutes and cross clamp time of 44 minutes. There should be minimal handling before cross clamping aorta. LA vent was not used[1,7] Tumour morphology is, it arises from endocardium, has smooth surface of size between 1 to15 cm. Most commonly pedunculated of about 5cm, weighing about 70 grams.[1,5,12] In our study, out of 8, 5 masses were pedunculated and 3 were sessile. The approach was through LA in one, RA and transseptal in 2, RA and trans tricuspid valve in 1 (RVOT mass), biatrial approach in 4 other cases. Right ventricle mass is approached through RA itself. Direct ventricular approach is done only if atrial approach is inadequate. [8]The average size of the masses intra-operatively was 5.8 x 4.1 cm, which is more or less corresponded to the sizes given by echocardiography. The comparison of sizes of the tumour between echo and intra operative findings is given in table no.3. All left atrial mass were invariably attached to inter atrial septum. In all cases, the mass was excised completely with a part of inter atrial septum. Direct closure of IAS was done in 1 case and all other were closed with pericardial patch. Early deaths are < 5%, due to old age, advanced disability, co-existing cardiac or degenerative disease or ventricle site.[11'13] In this study, post operative mortality was 1 due to low cardiac output syndrome with CVA with status epilepticus with AKI .Post operative complications were AKI, Seizures.

TABLE NO.3: COMPARISON OF SIZES OF THE TUMOUR BETWEEN ECHO AND INTRA OPERATIVE FINDING

S.NO.	SIZE OF THE MASS (in cm)	
	BY ECHO	INTRA OPERATIVE FINDING
1.	5.4x4.9	6.0x5.0
2.	5.8x3.6	6.0x4.0
3.	3.0x2.5	5.0x4.0
4.	2.7x2.3	4.0x3.0
5.	3.6x2.6	4.0x3.0
6.	4.9x2.0	4.0x5.0
7.	6.9x5.7	8.0x6.0
8.	6.0x2.5	10.x3.0

Histologically it is composed of cells of primitive capillaries and foci of extra medullary hematopoiesis with in a myxoid matrix of acid mucopolysaccharide. Stroma contains reticulocyte, elastin, smooth muscle, collagen. Periphery contains monolayer of endothelium, clustering in crevices simulating primitive capillaries. Stalk contains artery, vein, lymphocyte, plasma cells.10% have foci of calcium and metaplastic bone. Nucleus are polygonal, without mitosis. Tumour biology - there is no sufficient information to determine the cell of origin. It has "vasoformative" tendency. Some shows malignant potential like extensive local invasion, metastasis to distant organs.[1,10,11] In this series, all the tumours

were confirmed as myxoma by histopathology. The histological features were common in almost all the case like myxoid stroma consists of spindle shaped, stellate shaped cells or polyhedral cells with congested vessels without malignant potential.

Recurrence occurs in 1-3 % of sporadic cases and 30-75% in familial type. Recurrence are due to tumour implantation, incomplete removal or from new foci.[8,9,11] In our study with average of six months follow up, none had recurrence.

2.2- CONCLUSION:

Myxoma is the most common primary and benign tumour of the heart. Females of age 50years are most commonly affected. Simple Transthoracic ECHO, being non-invasive,not expensive and practical technique, plays a crucial in the diagnosis and assessment of myxoma and is sufficient. There is no need for other investigations , except in special situations. The diagnosis per se is an indication for surgery. Bi-atrial approach is mostly needed for LA tumour . Complete excision of the tumour is always mandated to reduce the recurrence rate. There is no need for urgent intervention and elective surgery has good results.

REFERENCES:

1. Sabastine MS, Collucci WS, Schoen FS. Primary tumors of the heart. In: Braunwald E, Zipes DP, Libby P, et al. The heart disease. Philadelphia, Saunders Co., 2004: 1741-1755.
2. Burke A, Virmani R. More on cardiac myxomas. N Engl J Med. 1996;335(19):1462-63. DOI:10.1056/NEJM199611073351912; PMID:8927083
3. Newman HA, Cordell AR, Prichard RW. Intracardiac myxomas. Literature review and report of six cases, one successfully treated. Am Surg. 1966;32(4):219-30. PMID:5326200.
4. Suvarna SK, Royds JA. The nature of the cardiac myxoma. Int J Cardiol. 1996;57(3):211-6. DOI:10.1016/S0167-5273(96)02827-6.
5. Durgut K, Gormus N, Ozulku M, Ozergin U, Ozpinar C. Clinical features and surgical treatment of cardiac myxoma: report of 18 cases. Asian Cardiovasc Thorac Ann 2002;10(2):111-114.[Medline]
6. Angleu G, Carrion D, Gimenez L, Camacho G, Ortega T. Diagnosis by echocardiography of a case of myxoma in left ventricle. An Esp Pediatr. 1996;45(4):415-6.
7. Bahnson HT, Newman EV. Diagnosis and surgical removal of intracavitary myxoma of the right atrium. Bull Johns Hopkins Hosp. 1953;93(3):150-63. PMID:13094264.
8. Gawdzinski MP, Sypula S. The long term results of treatment of heart myxomas with special attention to very rare myxoma of the right ventricle. J Thorac Cardiovasc Surg. 1996;37(6 Suppl 1):121-9.
9. Jelic J, Milicic D, Alfirevic I, Anic D, Baudoin Z, Bulat C, et al. Cardiac myxoma: diagnostic approach, surgical treatment and follow-up. A twenty years experience. J Thorac Cardiovasc Surg. 1996;37(6 Suppl 1):113-7.
10. Bjessmo S, Ivert T. Cardiac myxoma: 40 years' experience in 63 patients. Ann Thorac Surg 1997;63(3):697-700. [Medline] [CrossRef]
11. Dein JR, Frist WH, Stinson EB, Miller DC, Baldwin JC, Oyer PE, et al. Primary cardiac neoplasms. Early and late results of surgical treatment in 42 patients. J Thorac Cardiovasc Surg. 1987;93(4):502-11. PMID:3560997.
12. Reynen K. Cardiac myxomas. N Engl J Med 1995;333(24):1610-1617. [Medline] [CrossRef]
13. Senning A. Developments in cardiac surgery in Stockholm during the mid and late 1950s. J Thorac Cardiovasc Surg. 1989;98(5 Pt 2):825-32. PMID:2682018.