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A RETROSPECTIVE STUDY OF VARIABLE PRESENTATIONS OF BENIGN INTRA CARDIAC TUMOURS

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Abstract

Introduction: The incidence and prevalence of cardiac tumours remain one of the lowest amongst all tumours. The estimated prevalence of cardiac tumours is 0.001-0.03%, whereas metastatic involvement of the heart is far commoner, with an estimated prevalence between 2.3-18.3%.

Materials and methods: We retrospectively reviewed our experience with benign intracardiac tumours over a period of 1 year at a single center. There were 20 patients, all of whom were managed surgically. Here we discuss the clinical presentations, operative management, operative outcomes, and follow up of this select group of patients. Intracardiac tumours constitute a rare entity of cardiac disease. The presentations of this pathology can be extremely variable. Sometimes detection maybe incidental on routine evaluation and at times they may present with the aftermath of systemic embolization, or rarely causing mechanical obstruction impacting cardiac output and function. We focused on the variability of clinical presentations, operative methods, perioperative challenges, histopathological studies, operative outcomes and follow up data. The follow up period ranged from 7 months to 28 months (mean 16 months).

Results: A total of 20 patients were evaluated. About 70% of these tumours were LA myxomas (14 patients). 8 of these LA myxomas presented with vague constitutional symptoms of fatigue, low grade fever and episodes of palpitations. The rest 6-two presented with features of CHF, two with history of stroke and two with history of acute aortobifemoral occlusion. Of the 14 patients, 10 were in atrial fibrillation. All LA myxomas were left sided, except two particular cases where the large tumour invaded the IAS completely and partially bulged upon the right atrial cavity.

Conclusion: Benign cardiac tumours can have a wide array of clinical presentations. The histopathology of the tumour mass determines the outcomes in the immediate and long-term period. These tumours are usually operable with reasonably excellent surgical outcomes. Histopathologic study of the excised tumour mass is mandatory and helps determine the future treatment course.

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Key Words: cardiac tumours, systemic embolization, LA myxomas.

INTRODUCTION

The incidence and prevalence of cardiac tumours remain one of the lowest amongst all tumours. The estimated prevalence of cardiac tumours is 0.001-0.03%, whereas metastatic involvement of the heart is far commoner, with an estimated prevalence between 2.3-18.3%.[1]

Cardiac masses can be classified into either neoplastic or non-neoplastic masses. Neoplasms are abnormal tissue growths, which can be clinically characterized as either benign or malignant. These growths can also be further stratified by the site of their origin; primary masses arise directly from cardiac tissue, whereas secondary masses migrate to cardiac tissue from peripheral sites. Whilst primary cardiac tumours can either be benign or malignant, secondary masses are always malignant, occurring in the presence of disseminated malignancy. The latter is far commoner compared to primary cardiac neoplasms.[2]

Clinical presentation can vary from a commonly known triad of symptoms, including obstructive, embolic, or systemic symptoms, to asymptomatic presentations. Symptoms can include, but are not limited to, congestive symptoms, such as orthopnea, dyspnoea, and frank haemoptysis as a result of florid pulmonary oedema; an embolic phenomenon, which can lead to acute pulmonary embolisms, strokes, or other cerebrovascular events; and systemic symptoms, including fevers, arthralgia, and rigors.[3]

Diagnosis depends on a high index of suspicion and can almost always be made by echocardiography. Differentiation of cardiac tumours from valvular vegetation and atrial thrombus is important, and usually the echocardiographic appearance of a myxoma or a papillary fibroelastoma is quite distinctive. Benign tumours normally carry a good prognosis with normal life expectancy after resection. Patients who have had benign tumours resected are usually followed up with regular echocardiography and cardiology supervision.[4]

Malignant tumours such as sarcomas tend to have a poor outcome despite intervention, with a median survival from initial diagnosis of about 6 months. Occasional cases of survival due to complete resection do occur. Secondary malignancy affecting the heart has a grave outlook, although there is much that can be done to palliate the worst effects of the condition.[5]

MATERIALS AND METHODS

Study design: A retrospective study.

Study duration: Department of Cardiothoracic Surgery, King George Hospital, Andhra Medical College, Vishakhapatnam.

Study duration: January 2022 to December 2022.

Sample Size: 20 patients

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We retrospectively reviewed our experience with benign intracardiac tumours over a period of 1 year at a single center. There were 20 patients, all of whom were managed surgically. Here we discuss the clinical presentations, operative management, operative outcomes, and follow up of this select group of patients. Intracardiac tumours constitute a rare entity of cardiac disease. The presentations of this pathology can be extremely variable. Sometimes detection maybe incidental on routine evaluation and at times they may present with the aftermath of systemic embolization, or rarely causing mechanical obstruction impacting cardiac output and function. We focused on the variability of clinical presentations, operative methods, perioperative challenges, histopathological studies, operative outcomes and follow up data. The follow up period ranged from 7 months to 28 months (mean 16 months).

Statistical Analysis: Data collected was analyzed as mean ± S.D and % which ever applied. Statistical analysis was done by graph pad instat 3.0 software. The unpaired student T test for quantitative data and chi square test for qualitative data ($p < 0.05$ was considered as statistical significant).

RESULTS

A total of 20 patients were evaluated. About 70% of these tumours were LA myxomas (14 patients). 8 of these LA myxomas presented with vague constitutional symptoms of fatigue, low grade fever and episodes of palpitations. The rest 6-two presented with features of CHF, two with history of stroke and two with history of acute aortobifemoral occlusion. Of the 14 patients, 10 were in atrial fibrillation. All LA myxomas were left sided, except two particular cases where the large tumour invaded the IAS completely and partially bulged upon the right atrial cavity.

S.No	Gender	N (%)
1	Male	14 (70%)
2	Female	6 (30%)

Table 1: Gender distribution

S.No	Symptoms	N (%)
1	Constitutional symptoms	14 (70%)
2	CHF	2(10%)
3	Stroke	2(10%)
4	Vascular embolism	2(10%)

Table 2: Symptomatology

S.No	Rhythm	N (%)
1	Sinus	10 (50%)
2	Atrial fibrillation	10 (50%)
3	Others/VPCs	0 (0%)

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Table 3: Rhythm

S.No	LV function	N (%)
1	>50%	16 (80%)
2	30-50%	4 (20%)
3	<30%	0 (0%)

Table 4: LV function

S.No	Tumour profile	N (%)
1	LA Myxoma	14 (70%)
2	RA Myxoma	2 (10%)
3	RV hydatid cys	2 (10%)
4	RV fibroelastom	2 (10%)

Table 5: Tumour profile

S.No	Follow up	months
1	Mean Duration of follow up	16 months

Table 6: Mean Duration of follow up

Follow Up

All patients have been followed up on a regular basis. The duration of follow up ranged from 7 months to 28 months (mean 16 months). Follow up included symptomatology, clinical examination and echocardiographic follow up. One patient of LA myxoma who had moderate to severe Mitral regurgitation and a PA pressure of 52 (+ RA pressure) mm HG immediate post op showed regression in the degree of regurgitation over a period of 4 months. The PA pressures also diminished to 29 (+ RA pressure) mm HG on diuretics and after load reduction. All patients irrespective of the tumour location were kept on diuretics for the first 3 months with concomitant beta blockers and ARBs for after load reduction. All patients where the IAS and RV were patched were put on aspirin 150 mg once daily for 3 months. There has been no recurrence of tumour mass in any of the operated patients on follow up as yet. The patient with right ventricular hydatid cyst was kept on Tab Albendazole for 6 months with monitoring ofnliver functions serially. She underwent a concomitant laparoscopic removal of liver hydatid cyst and removal of her ectopic pregnancy with sparing of her ovaries and fallopian tube in the same hospitalization and was discharged successfully. After a period of convalescence of 1 year she subsequently had an uneventful pregnancy and delivered a healthy female child through normal delivery.

DISCUSSION

Primary cardiac tumours are rare lesions with an autopsy incidence of 0.0017–0.03% including both benign and malignant histologic types. The myxoma is the most frequent with an estimated incidence of 0.5% per million people per year.[6] Other benign tumours include papillary

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fibroelastomas, rhabdomyomas, fibromas, haemangiomas, lipomas and paragangliomas. Amongst Myxomas, the left atrial myxomas remain the commonest while the right atrial or sometimes even biatrial myxomas are a rarer entity. We exclusively used a right atrial trans septal approach even for left sided tumours.[7] The IAS was closed directly in some cases while an autologous pericardial patch was used for defect closure. The early operative outcomes are usually good with the biggest perioperative complication being stroke due to embolization. The risk of myxoma recurrence has been approximated to be 3% for sporadic tumours and 22% for familial myxomas.[8]

Amongst the right sided tumours, right ventricular hydatid cysts, Cardiac hydatidosis is rare (0.5–2%) in comparison with hydatidosis of the liver (65%) and lung (25%). The right ventricle location is even rarer, 10% versus 60% for the left ventricle, and can cause fatal complications such as anaphylactic shock, dissemination, and pulmonary embolism. Several isolated case reports about RV hydatidosis have been published.[9] The key in this surgery is to aspirate the potentially anaphylactic contents on the arrested heart and do an effective capitonnage. In our case, a small segment of the wall capsule attached to the IVS was left back. Fibroelastoma is another rare tumour usually attached to the valvular tissue-more of to the mitral and aortic valves. Tumours appeared round, oval, or irregular on echocardiography but were generally well-demarcated and homogenous in appearance. Most of them measure less than 20 mm. Tricuspid fibroelastomas are particularly rare and there are few isolated case reports discussing them.[10]

CONCLUSION

Benign cardiac tumours can have a wide array of clinical presentations. The histopathology of the tumour mass determines the outcomes in the immediate and long-term period. These tumours are usually operable with reasonably excellent surgical outcomes. Histopathologic study of the excised tumour mass is mandatory and helps determine the future treatment course.

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