ISSN: 0976-3031

*Available Online at http://www.recentscientific.com*

**CODEN: IJRSFP (USA)**

*International Journal of Recent Scientific Research*
*Vol. 10, Issue, 07(D), pp. 33577-33579, July, 2019*

**International Journal of Recent Scientific Research**

**DOI: 10.24327/IJRSR**

**Research Article**

# OPERATING CARDIAC MYXOMAS: A SEVEN YEAR EXPERIENCE IN EASTERN INDIA

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**DOI: http://dx.doi.org/10.24327/ijrsr.2019.1007.3698**

**ARTICLE INFO**

***Article History:***
Received 6th April, 2019
Received in revised form 15th May, 2019
Accepted 12th June, 2019
Published online 28th July, 2019

***Key Words:***

Cardiac Surgery, Myxoma, Tumor, Heart

**ABSTRACT**

Primary cardiac tumors are quite uncommon and myxomas constitute the major proportion among these masses. A retrospective study was done at a high volume cardiac centre of eastern india over a period of seven years and details of all patients operated with cardiac myxomas were analysed. A total of 56 cases of cardiac myxomas were operated among the total 1761 cases. The study of distribution in terms of age, sex, site, presentation etc was done. Rare presentations were noted. Overall, myxoma surgeries constitute a very small percentage of total cardiac surgeries at a high volume centre. A complete surgical excision prolongs symptom free survival and is associated with a low recurrence rate and mortality.



## INTRODUCTION

The incidence of primary cardiac tumors vary widely depending on the series consulted (0.0017-0.19%), [1 2 3] and data can be biased depending on the type of population cohort analyzed. Myxomas are the most common benign tumour, accounting for 25% of primary cardiac neoplasms; they occur more commonly in women. Patients may be asymptomatic or have the triad of peripheral embolic phenomena, symptoms and signs of mitral valve obstruction and constitutional symptoms of fever, anaemia, raised ESR and sometimes finger clubbing mimicking infective endocarditis. Blood cultures, however, are sterile and splenomegaly does not occur. Familial myxomas constitute fewer than 10% of all myxomas, tend to present earlier (median age 20 years) and are more likely to have multiple myxomas at atypical locations and to develop recurrent tumours. Spotty skin pigmentation and endocrine abnormalities are associated with the autosomal dominant condition of Carney complex. Symptoms related to peripheral embolisation are frequent, prompting the need for early resection.[4]

## MATERIAL AND METHODS

A retrospective study was done over a period of seven years, from 1st November, 2011 to 31st October, 2018 at a single high volume cardiac centre of Eastern India. Data was collected from the operation records present. All patients who underwent surgical excision of cardiac myxomas were included in the study. Any other tumors operated were excluded from the study. Patients undergoing more than one surgical procedures were also included in the study. Patient data viz. demographic profile, type and site of myxoma and presentation were noted.

## RESULTS AND DISCUSSION

Over the study period of seven years, the total number of heart surgeries performed at the centre was 1761. Among these, a total 56 cases (3.18%) of cardiac myxomas were operated. Out of these, 33 were males and 23 were females (M: F $\simeq$ 1.4:1). The mean age of presentation was 41.2 $\pm$ 13.6. Among these 56 cases, 43 originated from the left atrium, 11 were from the right atrium and 2 were from the right ventricle. One case of right atrial myxoma presented with simultaneous embolus in the pulmonary artery[Fig 1]. All cases were operated using midline sternotomy and right atriotomy under cardiopulmonary bypass. The interatrial septum was the most common site of attachment, present in 35 cases (62.5%). Other less common sites were left atrial vestibule, posterior wall, roof of left atrium. There was one case of recurrence, which was a left atrial myxoma arising from posterior wall.[Fig 2] The patient underwent re-resection along with removal of the posterior wall and reconstruction using pericardial patch. There was also one case of a completely calcified myxoma[Fig 3].

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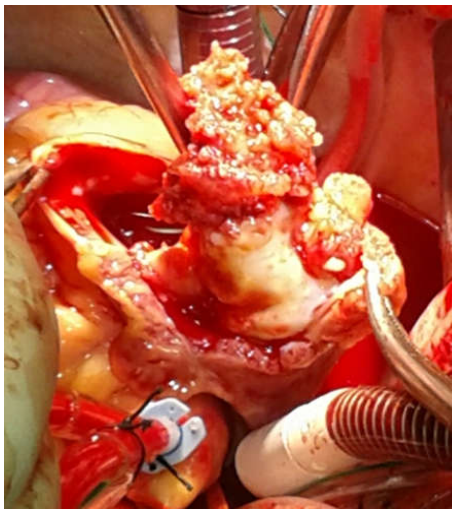

**Fig 1** Right atrial myxoma being removed. Embolic fragments were removed from branch pulmonary arteries after opening the pulmonary trunk

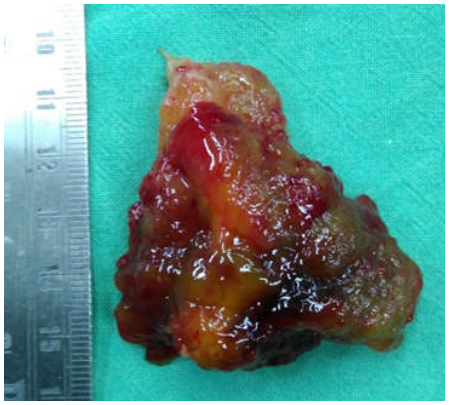

**Fig 2** A recurrent myxoma arising from posterior wall of left atrium

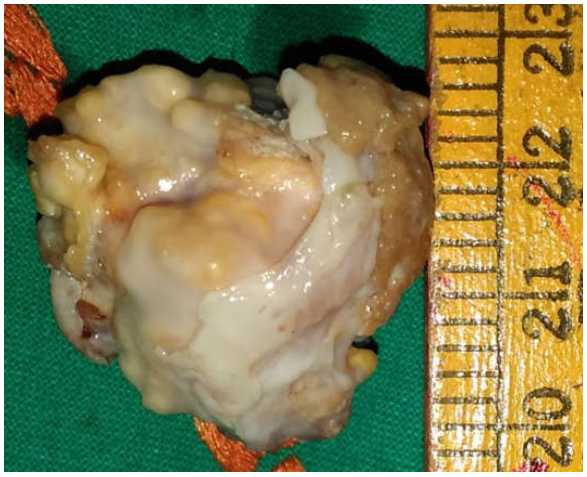

**Fig 3** A hard, completely calcified myxoma

Cardiac Myxomas (CM) constitute a very small share of the total volume of cardiac surgeries performed at a high volume centre. However, their importance cannot be understated. Patient presentation vary according to the site of attachment. Small CM are asymptomatic whereas giant myxomas cause complications by obstruction and embolism for which early diagnosis is warranted. It can be both sporadic and familial. The protein kinase A regulatory subunit 1α (PRKAR1A) gene has been suggested as a causative gene of familial cardiac myxoma[2]. It has been found that large size is associated with cardiac symptoms, polypoid type is associated with embolic symptoms, atypical location was associated with constitutional symptoms, and typical location was associated with post-operative arrhythmias.[5] The clinical outcome of patients who have a CM heavily depend on early detection and prompt, appropriate treatment. With improvements in echocardiographic, CT, and MRI imaging techniques, identification of all cardiac tumors will be done with a higher degree of certainty. There is no noninvasive technique that can identify whether the tumor is benign or malignant, and a pathologic sample is needed in all cases for that purpose. he only definitive treatment of cardiac myxoma is surgical removal. Generally, after median sternotomy, the myxoma is surgically excised using cardiopulmonary bypass and cardioplegic arrest. The tumor is removed by either right or left atriotomy or combined atriotomy, depending on the site and extent of the tumor. Atrial myxomas can also be approached via sternal sparing or minimal access approaches. Using a right limited thoracotomy and peripheral cannulation, patients are placed on cardiopulmonary bypass; cold fibrillatory arrest or cardioplegic arrest may then be used, the atria may be explored, and complete removal of the mass and reconstruction of any defects may be performed. This approach is limited in that only mitral and tricuspid valvulopathy can be corrected. The choice of technique also depends on associated conditions that need surgical intervention, such as valve repair or replacement, and coronary disease if present. Lifelong follow-up is needed because myxomas have some tendency to recur, at rates from 5% to 14%. The time to recurrence in different series varied from 0.5 to 6.5 years.[7][8] Improvement in surgical technique has led to minimally invasive approaches, but surgery still entails general anesthesia and a surgical incision and is a major stress for a patient. Continued refinement in surgical tools and approaches will lead to lower rates of morbidity and mortality.[6]

## CONCLUSION

Cardiac myxomas form a very small percentage of the cardiac cases. A complete surgical excision prolongs symptom free survival and is associated with a low recurrence rate and mortality. Early identification and diagnosis is necessary for a favourable outcome.

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**How to cite this article:**

Raja Lahiri and Subhankar Bhattacharya., 2019, Operating Cardiac Myxomas: A Seven Year Experience In Eastern India. *Int J Recent Sci Res.* 10(07), pp. 33577-33579. DOI: http://dx.doi.org/10.24327/ijrsr.2019.1007.3698

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