Case Report

Cardiac Tumors

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Primary cardiac tumors are extremely rare. The frequency of cardiac tumor is approximately 0.02% corresponding to 200 tumors in one million autopsies.[1] The occurrence of metastatic cardiac tumors has been reported a 100-fold more commonly than primary lesions.[2] Clinical manifestations are usually determined by the location of the tumor in the heart, such as obstruction of the circulation being symptomatic of heart failure. The tumor may not only invade the myocardium but also the adjacent lung,[3] which can cause pulmonary symptoms.

We hereby present 4 cases of cardiac tumor encountered in our institution.

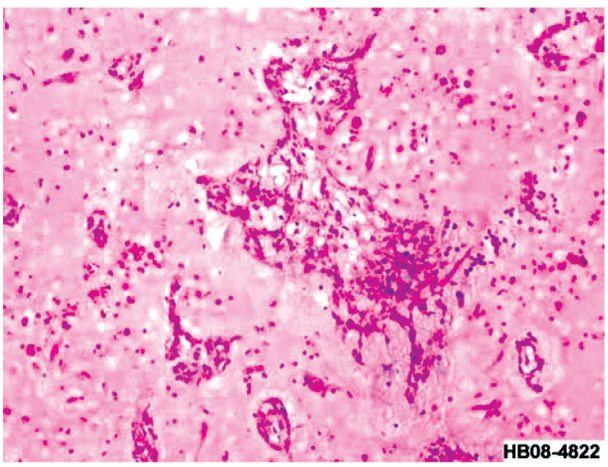
Case report: 1

A 33-year-old woman presented with clinical frequent embolization. The echocardiogram revealed a large floppy mass (7.3 x 2.2 cm) in the left atrium with stalk adhering to the interatrial septum. The left ventricular function with ejection fraction was about 64% and there was mild pericardial effusion. The functional class of the patient was New York Heart Association (NYHA) class I.

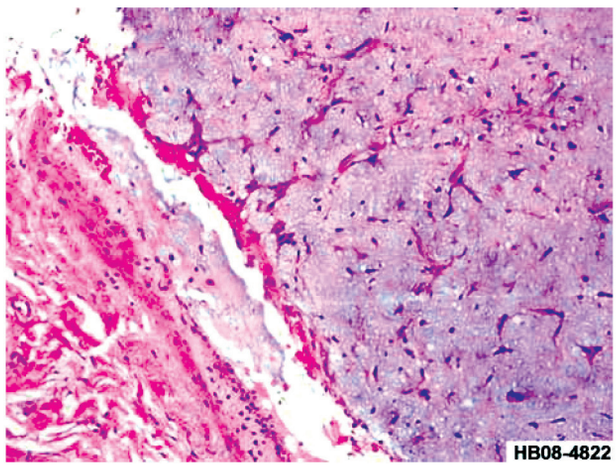
The patient underwent right thoracotomy: resection of left atrial myxoma, which included interatrial septum and closure defect at interatrial septum with Dacron patch.

The pathological diagnosis was myxoma.

Figure 1a: *Gross examination shows a gray tan mucoid lobulated mass, measuring 7x4x2 cm.*



1b



1c

Figure 1b-c: *Microscopic examination shows mass consisting of round, polygonal and stellate cells surrounded by abundant loose mucoid and myxoid stroma, mitoses, pleomorphism or necrosis are absent.*

Case Report: 2

An 84-year-old man presented with progressive dyspnea. The electrocardiography (ECG) showed atrial fibrillation (AF) rhythm.

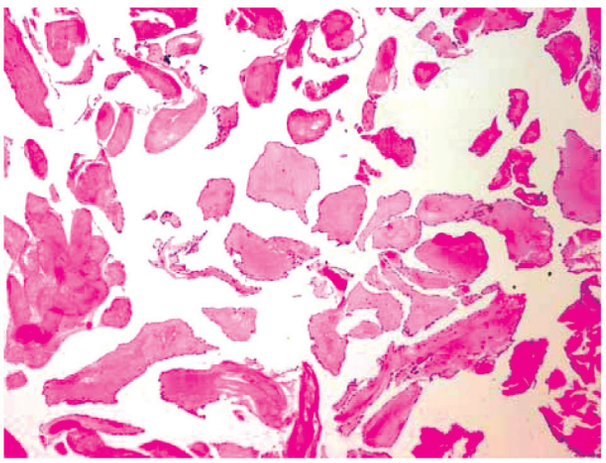
Echocardiogram revealed dilation of right atrium due to myxoma in the right atrium. The size was about 3 cm in diameter, there was fair left ventricular (LV) contractility and left ventricular ejection fraction (LVEF) was 60%. The preoperative coronary angiography revealed no abnormalities.

The patient underwent open cardiac surgery. The right atrium myxoma was removed from the anterior leaflet of tricuspid valve (TV). Radiofrequency ablation was applied to the left and right atrium.

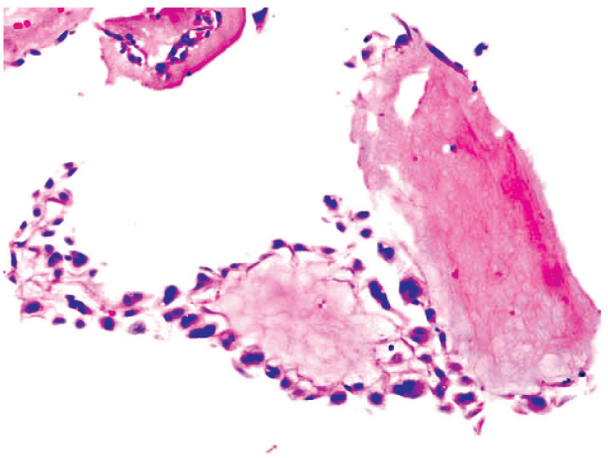
The pathological diagnosis was papillary fibroelastoma.

2a

Figure 2a: *Gross examination shows a sea-anemone-like light-tan soft mass, measuring 35x30x15 mm. Its base of attachment measured 10x8 mm.*



2c



2d

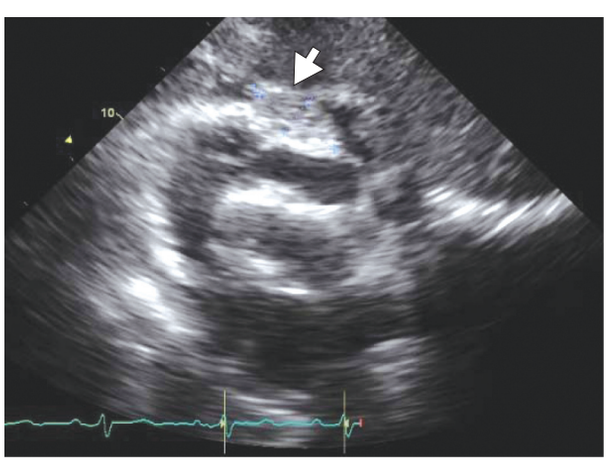
Figure 2c-d: *Microscopic examination shows long branching papillary fronds having avascular paucicellular cores of pink matrix and small round to elongated cells with eosinophilic cytoplasm, and covered with single layers of flat or plump probable endothelial cells. The base is composed of cardiac myofibers and a low cellularity of wavy slender spindle cells. No blood vessels or polygonal cells are present within the papillae.*

Case Report: 3

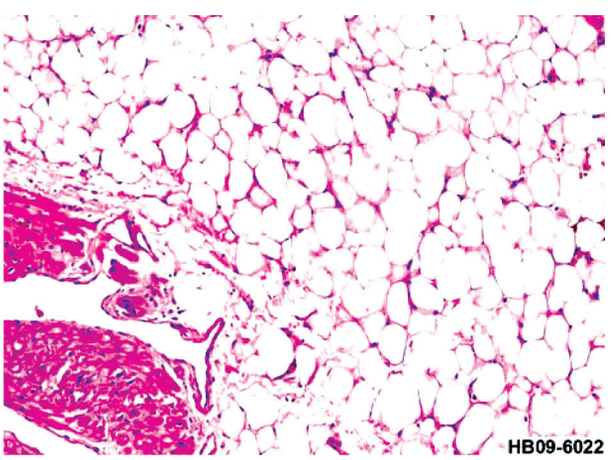
An 81-year-old woman presented with progressive dyspnea and low grade fever for 1 month, she had underlying dyslipidemia, diabetes, hypertension and was an ex-smoker. The echocardiogram (Figure 3a) revealed normal left ventricular contraction with the ejection fraction of about 73%; there was a mass-like structure of right aortic valve (AV) groove which was attached to the visceral pericardium. MRI concluded as mass like lesion of postero-superior wall of right atrium.

The patient underwent right lateral thoracotomy with the aid of cardiopulmonary bypass. The right atrium was opened. The intramural right atrial mass 1.5x0.5 cm was removed.

The pathological diagnosis was intramyocardial lipoma.



3a



3b

Figure 3a: *The echocardiogram reveals mass-liked structure of right aortic valve (AV) groove which is attached to vis-ceral pericardium.*

Figure 3b: *Microscopic examination shows presence of mass made of mature fat cells infiltrating in interstitium and between bundles of myocardial fibers.*

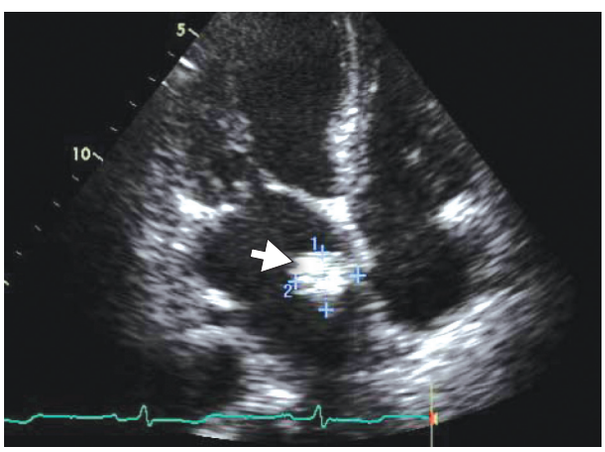
Case Report: 4

A 79-year-old woman presented with underlying history of dyslipidemia, diabetes and chronic atrial fibrillation. She was suffering from progressive dyspnea and was diagnosed as acute Non-ST Elevation Myocardial Infarction (NSTEMI) with congestive heart failure. The intra aortic balloon pump supported and inotropic medication was administered to maintain hemodynamic stability.

Echocardiogram (Figure 4a) revealed akinesia of apical inferior and anteroseptal LV wall with the left ventricular ejection about 41% and there was left atrial mass.

The coronary angiogram shows severe triple vessel disease. The patient thus underwent cardiopulmonary bypass, 6 coronary bypasses, and also excision of the left atrial mass 2.5 cm in diameter which had been attached to the inter-atrial septum, extending to posterior wall of left atrium.

The pathological diagnosis was calcified mesenchymal tumor (lipoma).



4a

Figure 4a: *The echocardiogram reveals left atrial mass.*

4b

Figure 4b: *Gross examination shows consists of an calcified mass measuring 3 x 3 x 2 cm.*

Discussion

Tumors of the heart remain one of the least investigated subjects in oncology, despite the improvement in both diagnostics and treatment for various cancers. Because primary cardiac tumors are quite rare, most clinicians will pay less attention.[4] The diagnoses were mostly incidentally, tumors being found due to investigations of clinical complications such as systemic embolization or the tumor invading the myocardium. The most common benign primary cardiac tumor is myxoma; about 75% of cardiac tumors are benign, with 50% of these being myxoma. Lipoma is the second most common benign cardiac tumor.[5] Sarcomas are the most common primary malignant cardiac tumors.[6] Most of these tumors occur in the left atrium of the heart.[1]

Conclusion

This report represents symptomatic cardiac tumor. Our reported 4 cases of cardiac tumors included myxoma, papillary fibroelastoma, intramyocardial lipoma and calcified mesenchymal tumor (Lipoma). Myxoma is the most common benign cardiac tumor. The result of surgery is dramatic. The total cure after surgery is high.[7]

References

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