CASE REPORT

A Tricuspid Valve Mass Attached to Papillary Muscle

Feridoun Sabzi[1], Fahimeh Ghasemi[1], Atefeh Asadmobini[1]

ABSTRACT

BACKGROUND: Cardiac myxoma is the most common benign heart tumor which can arise in any of the cardiac chambers, valves or related great veins. Diagnosis of a myxoma arising from the tricuspid valve apparatus is exceptional. We present a rare case of myxoma in a tricuspid valve attached to papillary muscle.

CASE DETAILS: A 45-year-old man was referred to our center for the evaluation dyspnea and chest pain. During work-up by transthoracic echocardiography (TTE), a mass was found on the corda tendinea of the anterior papillary muscle of the tricuspid valve. Coronary angiography revealed normal coronary artery. During open heart surgery, an oval and non-pedunculated mass was detected on tricuspid corda tendinea and resected. Pathological examination revealed the presence of a myxoma.

CONCLUSION: This experience illustrates a rare case of myxoma which originated from tricuspid corda tendinea, diagnosed by echocardiography, suggesting fibroelastoma. However, the mass was not clear enough but dyspnea and sign and symptom of probably embolization to lung urged us to treat it surgically. No complications attributable to the mass developed in the postoperative course. In the first year of follow-up, non-recurrence of the mass was detected on TEE, and the patient was asymptomatic.

KEYWORDS: Myxoma, Papillary muscle, Tricuspid valve

DOI: http://dx.doi.org/10.4314/ejhs.v26i3.13

INTRODUCTION

Cardiac myxoma is the most common benign heart tumor which can arise in any of the cardiac chambers, valves or related great veins. Diagnosis of a myxoma arising from the tricuspid valve apparatus is exceptional. In contrast to the cardiac chamber, tricuspid valve myxoma involvement is exceedingly rare. Most of this myxoma presents with constitutional sign and symptom as well as hemodynamic disturbances by the tricuspid valve obstruction or pulmonary emboli but minority of them were found incidentally on routine echocardiography (1). The myxoma arising from tricuspid valve apparatus has a potential to cause life-threatening embolic events. Surgical excision of the tumor is recommended for all patients with or without sign or symptom (2).

CASE REPORT

A 45-year-old man was referred to the Imam Ali Hospital of the Kermanshah University of Medical Science in the west of Iran in February 2015 for evaluation and management of cardiac mass that was found on a transthoracic echocardiogram (TTE) and his dyspnea. He was not a drug abuser. Before three years in a routine exam, the echocardiogram revealed no tricuspid regurgitation, and no mass was noted on the tricuspid valve. There was no transvalvular blood flow abnormality. Chest X-ray, physical examination and electrocardiogram were within the normal range. Laboratory data, including work-up for infective endocarditis and autoimmune disease were unremarkable. The ejection fraction was normal and no tricuspid

[1]Cardiovascular Research Center, Kermanshah University of Medical Sciences, Kermanshah, Iran
Corresponding Author: Atefeh Asadmobini, Email: a.asadmobini@gmail.com

regurgitation was noted. The TTE showed a 1.5 × 1 cm mass attached to the corda tendinea of the anterior leaflet of the tricuspid valve (Fig. 1). We consideredsurgical removal of this mass (Figure 2). Under cardiopulmonary bypass and bicaval cannulation, the right atrium was opened and a tumoral lesion that attaches to the corda tendinea was resected and the corda tendinea repaired. In pathological exam of tumor, myxoid stroma with typical spindle cell was observed (Fig. 3). The patient was followed-up with medical treatment, including anticoagulation with heparin for two weeks. The patient was also followed-up at three month intervals for one year after discharge from the hospital. There were no symptoms, complications or recurrence of the tumor.

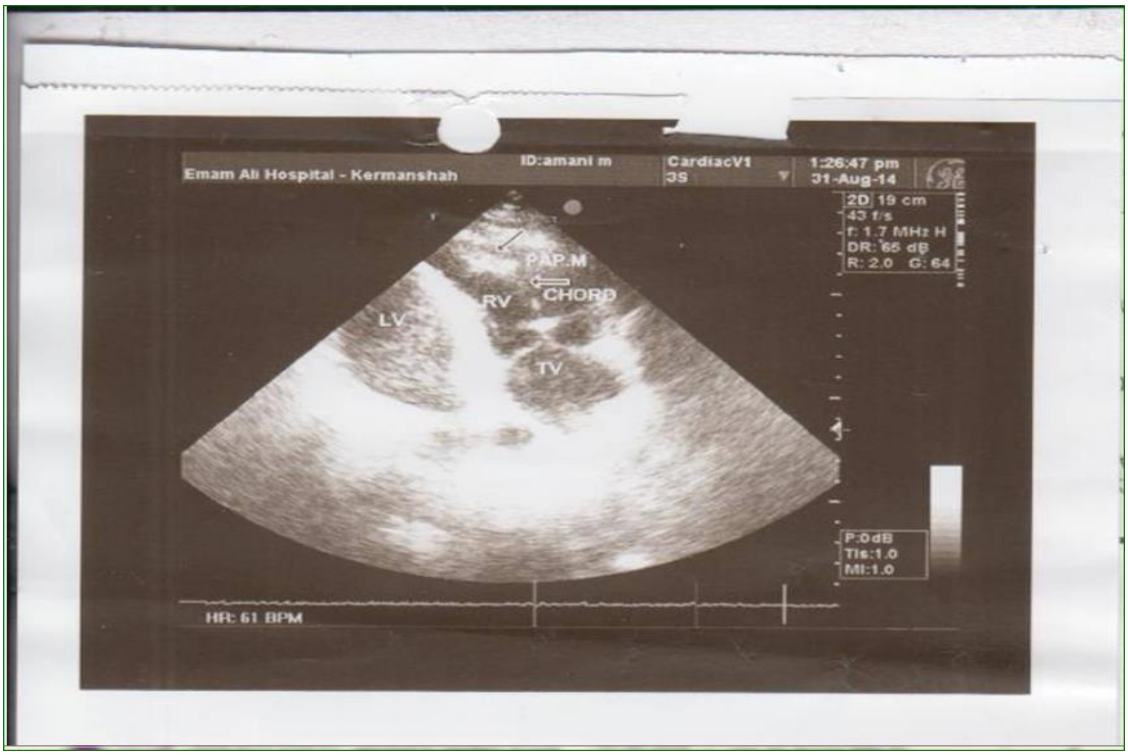
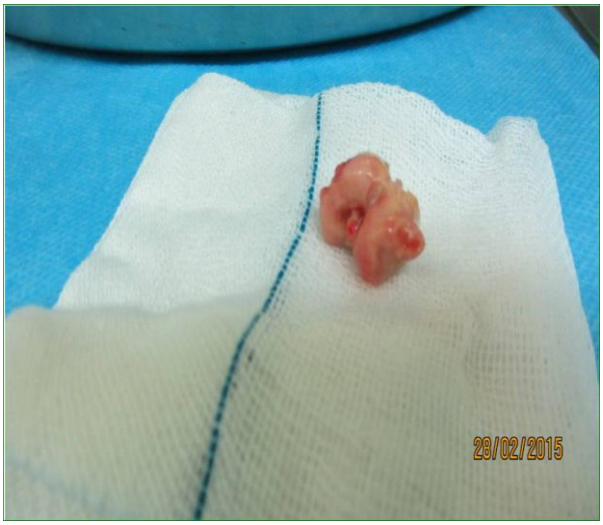
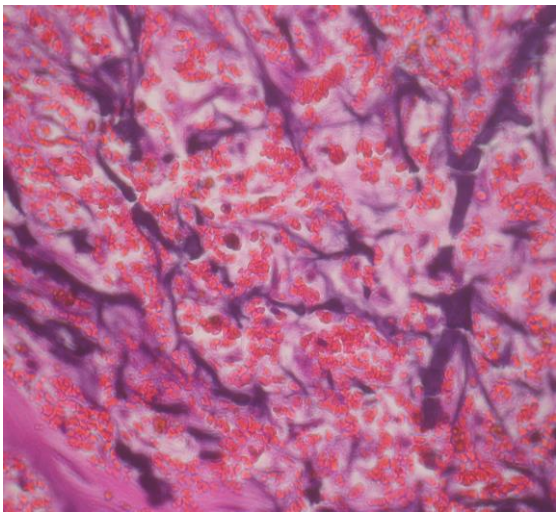


Figure 1: *Modified four-chamber apical view showing an oval mass having refractive appearance with echolucent areas on corda tendinea of the papillary muscle of tricuspid valve*



Figures 2*: Gross view of tumor from tricuspid corda*



Figures 3*: Microscopic finding of myxoid stroma with typical spindle cells*

DISCUSSION

The myxoma is the most common primary tumor of the heart and most frequently involves the interatrial septum and the left atrium (3). It always has a sign and symptom of the mitral valve disease or presents with thromboembolic events (4). Myxoma originates from the right atrium in 18% of cases (5), and its the signs and symptoms of are variable (6). The primary origin of myxoma from the cardiac valve apparatus is rare, and tumor arising from the corda tendinea is an exceedingly rare phenomenon. This myxoma must be differentiated from other cardiac mass-like lesions such as thrombosis, protuberant pectinate muscle around the tricuspid annulus, rare case of lipoma, sarcoma, schwannoma, paraganglioma, fibroelastoma, Libman-Sacks vegetations, Loeffler's syndrome, neurofibroma (7) and Lamble's nodules (8). In this patient, the case was unlikely to be a thrombus because of absence of predisposing factors and the location and features of the mass (9). Loeffler's vegetations were differentiated from myxoma by their small, rounded and sessile contours. As opposed to myxoma, Loeffler masses are exclusively seen on the mitral, aortic valves and rarely seen on the tricuspid valve. In the majority of patients, involvement of the cardiac valves with any mass may be associated with stenosis or regurgitation (10). However, the small size of the tumor in our case, with absence of obstructive symptom, led to dyspnea by breaking off a small piece of the tumor or overlying thrombosis and emboli to the pulmonary system.

According to previous studies, the clinical symptoms and signs of the tricuspid valve myxoma are dyspnea, pulmonary embolism, cyanotic episodes, congestive heart failure and arrhythmias(11-13). However, in this patient, the mass was not clear but dyspnea and sign and symptom of probably embolization to lung urged us to treat it surgically.

This patient illustrates a rare case of myxoma which originated from the tricuspid corda, diagnosed by echocardiography, suggesting fibroelastoma. However, in pathology, it was a myxoma. There is some controversy about the appropriate method of surgery in tricuspid valve myxoma. In small masses, despite resection of the tumor, valve apparatus was repairable and resected corda tendinea may be reconstructed with such synthetic corda. In some cases, some portion of the tricuspid valve needs to resected and extended with fresh pericardial patch. In huge, the tricuspid valve myxoma with destruction of valve, complete resection and valve replacement with a biologic valve is an appropriate choice.

Our cases present a rare case of myxoma in the tricuspid valve attached to the papillary muscle that pathological examination confirmed this diagnose. He was treated surgically by resection of small myxoma in the corda tendinea. His postoperative findings indicate improvement in clinical symptom of embolization to lung and dyspnea after surgery.

REFERENCES

1. Hall R, Cooley D, McAllister Jr H, Frazier O, O'Rourke A. Neoplastic heart disease. The heart, arteries and veins 7th ed New York: McGraw-Hill, 1990:1382-403.
2. Sabatine M, Colucci W, Schoen F. Primary tumors of the heart. Braunwald's heart disease Philadelphia: Elsevier Saunders, 2005:1741.
3. Courdier G, Kieny R, Eisenmann B, et al. Echocardiography of an operated case of a

myxoma of the tricuspid valve. *Arch Mal Coeur Vaiss*, 1981;74(6):747-54.
4. Nina V, Silva N, Gaspar S, et al. Atypical size and location of a right atrial myxoma: a case report. *J Med Case Rep*, 2012; 23:26.
5. Diaz A, Di Salvo C, Lawrence D, Hayward M. Left atrial and right ventricular myxoma: an uncommon presentation of a rare tumour. *Interact Cardiovasc Thorac Surg*, 2011;12:622-3.
6. Oliveira R, Branco L, Galrinho A, et al. Cardiac myxoma: a 13-year experience in echocardiographic diagnosis. Rev Port Cardiol 2010; 29:1087-100.
7. Parsons AM, Detterbeck FC. Multifocal right atrial myxoma and pulmonary embolism. *Ann Thorac Sur*, 2003;75:1323-4.
8. Schaff HV, Mullany CJ. Surgery for cardiac myxomas. *Semin Thorac Cardiovasc Surg.* 2000;12(2):77-88.
9. Almdahl S, Myrmel T, Gjestvang F. Surgical treatment of a tricuspid valve myxoma. *Tidsskr Nor Laegeforen*, 1996;116:2175.
10. Pierre-Justin G, Pierard LA. Management of mobile right heart thrombi: a prospective series. *Tidsskr Nor Laegeforen*, 2005;99:381.
11. Ngaage DL, Mullany CJ, Daly RC, et al. Surgical treatment of cardiac papillary fibroelastoma: a single center experience with eighty-eight patients. *Ann Thorac Surg*, 2005;80:1712-8.
12. Anastacio MM, Moon MR, Damiano RJ, Pasque MK, Maniar HS, Lawton JS. Surgical experience with cardiac papillary fibroelastoma over a 15-year period. Ann Thorac Surg 2012; 94:537-41.
13. Gowda RM, Khan IA, Nair CK, Mehta NJ, Vasavada BC, Sacchi TJ. Cardiac papillary fibroelastoma: a comprehensive analysis of 725 cases. *Am Heart J*, 2003;146:404-10.