Right Ventricular Myxoma

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Abstract
We report a case of 30 year female who presented with complaints of intermittent chest pain and breathlessness for 8 months. Diagnosed to have right ventricular mass protruding into main pulmonary artery during each systole. The mass was completely excised. Histopathological examination showed myxoma.

Introduction
Myxoma is the most common benign tumor of heart. Left atrium is the commonest site which accounts for 75% followed by right atrium accounting to 10-15%. Right ventricle (RV) constitutes 2%. RV myxoma extending into main pulmonary artery is rare.

Case Report
30 year female came with complaints of intermittent left sided chest pain and breathlessness for 8 months with two episodes of syncope. No history suggestive of palpitation, orthopnoea, paroxysmal nocturnal dyspnoea, pedal edema. Past and personal history was not significant. Her menstrual history was normal. She had two children, both were full term normal delivery with no complications. Permanent sterilization done. On examination, General examination not contributory with no chest and congenital abnormality. Pulse-80/min, regular, BP-110/80mmhg. On auscultation S1 and S2 present with ejection systolic murmur grade 3/6 in pulmonary area.

Electrocardiogram showed Rate-80/min, Regular rhythm, Right axis deviation with normal PR and QRS complex. ST depression in Lead 3, aVF, V1, V2, V3 with right ventricular hypertrophy (Figure 1).

Her echocardiogram showed right ventricular outflow tract obstruction due to mass (Figure 2). Right atrium and ventricle was grossly dilated. Mobile mass was seen arising from right ventricular outflow tract which was 4x2.5 cm protruding into right ventricular outflow tract during systole. RVOT peak flow was 114 mmHg. No mass was seen in right atrium. TR was moderate with normal LV systolic function.

CT chest confirmed right ventricular mass (Figure 3). Right atrium and ventricle was dilated. There was evidence of soft tissue mass arising

Intra Operative Picture

Fig. 1: Rate-80/min, regular rhythm, right axis deviation with normal PR and QRS complex. ST depression in Lead 3, aVF, V1, V2, V3 with RVH

Fig. 2: Echocardiogram showing right atrium and ventricle grossly dilated. Mobile mass seen arising from right ventricular outflow tract which is 4 x 2.5 cm protruding into right ventricular outflow tract

Fig. 3: CT chest with contrast showing right atrium and ventricle dilated. Evidence of soft tissue mass arising from right ventricle and extending upto the pulmonary artery which shows minimal enhancement

Fig. 4: Lobulated soft tissue mass 3X3X4 cm arising from right ventricular side of interventricular septum extending into main pulmonary artery

Fig. 5: Tumor in toto

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Fig. 6: Cut tumour

Fig. 7: Histopathology from right ventricular mass shows a portion of myocardium and the attached polypoidal tumor with proliferation of polyhedral cells and stellate cells with abundant myxoid stroma. There are areas of haemorrhage and focal ulceration of endocardial lining with chronic inflammatory cell infiltration.

From right ventricle and extending up to the pulmonary artery which showed minimal enhancement on contrast.

She was operated and right atriotomy done. Lobulated soft tissue mass 3X3X4 cm arising from right ventricular side of interventricular septum extending into main pulmonary artery was visualized through tricuspid valve (Figure 4). After applying clamp over main pulmonary artery, tumor was removed in toto (Figure 5) and sent for histopathology (Figures 6 and 7).

Histopathology examination of right ventricular mass showed a portion of myocardium and the attached polypoidal tumor with proliferation of polyhedral cells and stellate cells with abundant myxoid stroma. There were areas of haemorrhage and focal ulceration of endocardial lining with chronic inflammatory cell infiltration. There was no evidence of malignancy. Features suggestive of myxoma of right ventricle with areas of haemorrhage and focal ulceration.

Discussion

Primary cardiac tumor are 72% benign and 28% malignant. Most common benign tumors are myxomas. 75 – 80% are seen in left atrium. 18% are seen in right atrium and 2% are seen in right ventricle and 2% are seen in left ventricle. Ventricular myxomas are commonly seen on the right ventricles free wall or ventricular septum, sometime infiltrating the ventricular myocardium. They sometimes extend into the outflow tract and cause partial obstruction. Symptoms are due to hemodynamic derangement and embolization.

Right sided cardiac tumor can present as congestive cardiac failure, breathlessness, syncope, fatigue, edema, jugular venous distension, ascites, night Sweats and pericardial effusion.

Complications include vena cava syndrome, pulmonary embolism and restrictive cardiomyopathy.

Differential diagnosis of right sided tumor are thrombus, myxoma, lipoma, non-myxomatous neoplasm.

Characteristic feature of myxoma include homogenous / central area of hyperlucency representing haemorrhage and necrosis. Calcification and echogenic foci may also be detected.

Reference