

## Case Report

# Atrial myxoma invading right ventricular cavity and pulmonary artery

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## ABSTRACT

Study report a 42-years-old female came with complaints of dyspnoea on exertion, and recurrent cough for past one year. She gives history of significant weight loss for the past 6 months. Trans thoracic echocardiogram showed large pedunculated myxoma measuring 28\*18 mm attached to posterior wall of right atrium extending into right ventricle and outflow tract. Computed tomography pulmonary angiogram showed acute bilateral pulmonary thromboembolism with left upper lobe infarct. She underwent complete removal of the tumour along with patch of atrial wall with pulmonary embolectomy using Fogarty balloon catheter through median sternotomy. Her postoperative course was uneventful. This case is reported for its rarity of presentation of right atrial myxoma with pulmonary embolism.

**Keywords:** Atrium, Embolism, Myxoma, Tricuspid valve, Tumour

## INTRODUCTION

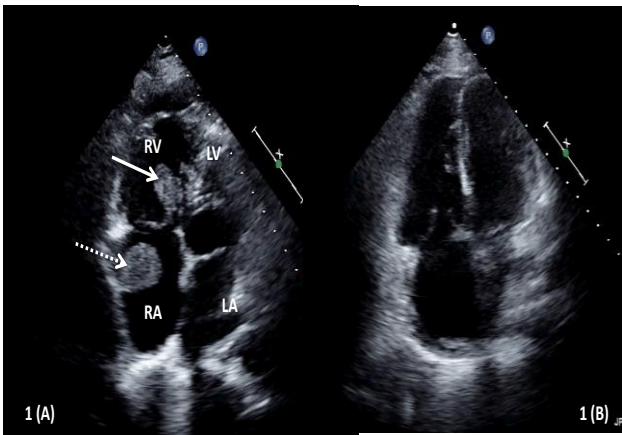
Most common primary cardiac tumours are Atrial Myxoma. They occur mostly in third to sixth decade of life more in females.<sup>1</sup> Approximately 75% arise from left atrium and 15 to 20% arise from right atrium, rest of them arise from ventricles and cardiac valves.<sup>2</sup> Surgical resection is the mainstay of treatment where the tumour is resected en bloc and the results are good with a minimal risk of morbidity and mortality.<sup>3</sup>

## CASE REPORT

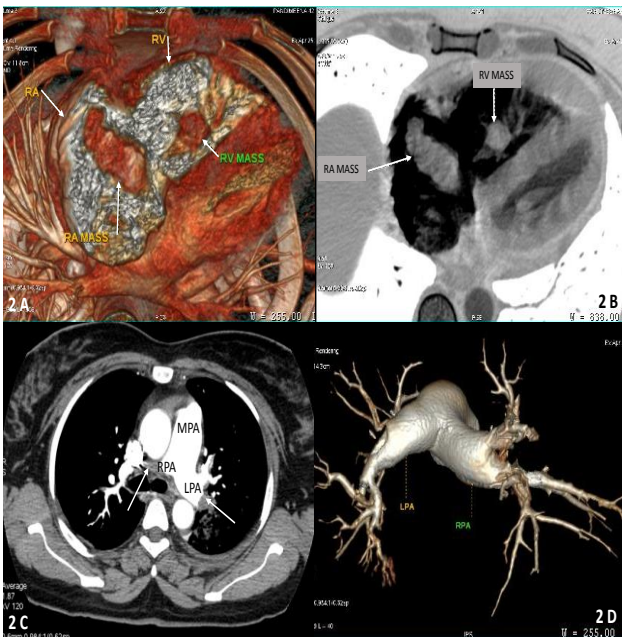
A 42-years-old female came with complaints of dyspnoea on exertion, NYHA class II in nature for past one year. She gave history of significant weight loss for the past 6 months. History of recurrent cough was also present. No history of chest pain, palpitations or syncopal attacks. She was not a known case of diabetes mellitus, hypertension,

or coronary artery disease. General physical examination and cardiovascular system examination was unremarkable. During diagnostic work up electrocardiogram showed sinus rhythm. Trans thoracic echocardiogram (Figure 1) showed large pedunculated myxoma measuring 28x18 mm attached to posterior wall of right atrium extending into right ventricle and outflow tract. Computed tomography pulmonary angiogram (Figure 2) showed acute bilateral pulmonary thromboembolism with left upper lobe infarct. After multidisciplinary team meeting, she was taken up for surgery. Surgical approach was through a median sternotomy and aorto-bicaval cannulation. Exceptional care was taken regarding manipulation of the right atrium to avoid fresh embolism. Right atrium was opened, mass attached to the posterolateral wall of right atrium was excised along with a patch off atrial wall (Figure 3a). Another mass was found to be attached to anterior tricuspid leaflet extending into right ventricle, which was

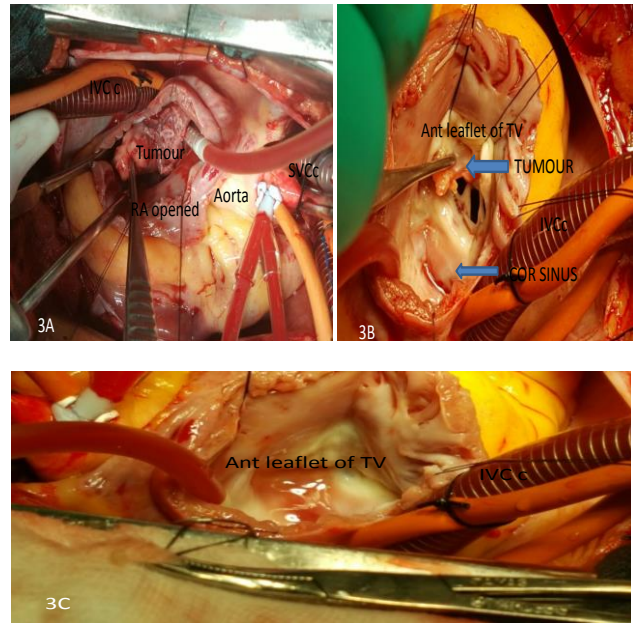
also excised (Figure 3b). Main pulmonary artery was opened and clots in the left pulmonary artery was removed. Embolectomy was done using Fogarty balloon catheter. Anteroseptal commissuroplasty of the tricuspid valve was done. Perioperative transesophageal echocardiogram confirmed normal function of the tricuspid valve, reduced pulmonary vascular pressure and the absence of residual mass. Patient had a smooth postoperative recovery. Histopathological features (Figure 4) were compatible with that of myxoma of right atrium and right ventricle with tumour emboli in the pulmonary artery. At the three months follow up she was asymptomatic.



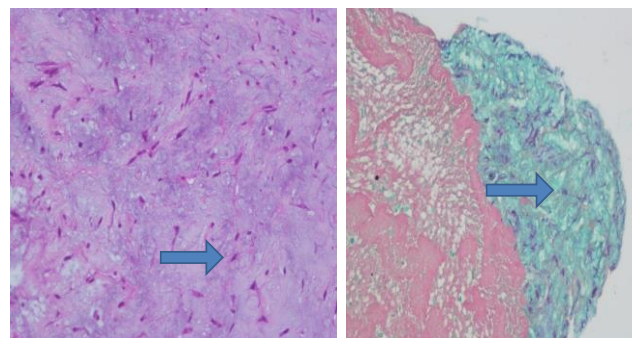
**Figure 1: (A) Preoperative transthoracic echocardiogram of myxoma in both right atrium (dotted arrow) and right ventricle (straight arrow); (B) Postoperative transthoracic echocardiogram of tumour completely removed.**



**Figure 2: Preoperative CT scan; (A and B) showing myxomas both in RA and RV; (C and D) Arrows showing tumour mass extending into RPA and LPA.**



**Figure 3: Intraoperative pictures; (A) Tumour after opening the right atrium; (B) After retracting anterior leaflet of Tricuspid valve by silk sutures, tumour seen attached to the ventricular surface of ant leaflet; (C) Tricuspid valve is seen after removing the tumour completely (SVCc: superior vena cava canula, IVCC:inferior vena cava canula).**



**Figure 4: Histopathology (A) H and E 200X; (B) Alcian blue stain 200X: Showing Stellate cells(arrow) in myxomatous stroma which are pathognomic of myxoma.**

## DISCUSSION

Myxomas arise from pleuripotent mesenchymal cells of the endocardium.<sup>4</sup> Clinical presentation of myxomas are varied depending upon the size, mobility and location of tumour. They can display signs and symptoms mimicking cardiac obstruction (mitral or tricuspid depending on the location of tumour). Constitutional symptoms like fever, malaise, rash and weight loss (present in our patient), can be explained by tumour embolization or complement activation from circulating antibody tumour antigen complex.<sup>5</sup> To the other end of spectrum myxomas can be completely asymptomatic to be picked up by routine

screening echocardiography performed for other indications. Systemic embolization is more common from myxomas of left atrium (compared with right), occurring in 30 to 50% of cases, most commonly to brain. Our patient had a rare presentation of right atrial myxoma with pulmonary embolism.<sup>6</sup> Diagnosis of myxoma can be made easily from trans thoracic echocardiography including the location and characteristics of tumour. In some rare instances of diagnostic uncertainty or to detect the complications of myxoma such as pulmonary embolism computerized tomography may be needed.

Regardless of the clinical presentation, even if the tumour is asymptomatic, surgical resection is advocated to prevent emboli, valvar dysfunction or constitutional symptoms. Intra cardiac mass is excised after establishing cardiopulmonary bypass through bicaval cannulation and cardioplegic arrest. If patient had pulmonary embolism as in our patient then complete removal of atrial, ventricular, valvar and pulmonary tumour is utmost essential. Canale LS et al, reported a case with right atrial myxoma with massive pulmonary embolism treated with pulmonary embolectomy under intermittent total circulatory arrest, whereas we managed to do embolectomy using Fogarty catheter without going on circulatory arrest.<sup>5</sup> Recurrence of atrial myxomas are infrequent unless if it is familial, regular echocardiographic follow up is recommended and when they recur they must be resected.

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