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Giant Right Atrial Myxoma in the Eighth Decade of Life

Sambhunath Das*, Kalpana Irpachi, Shivani Aggarwal**, Palleti Rajashekar*****

Authors affiliation

*Additional Professor **Senior Resident, Department of Cardiac Anesthesia, ***Assistant Professor, Department of Cardiothoracic surgery, AIIMS, New Delhi.

Reprints requests

Sambhunath Das, Additional Professor, Department of Cardiac anaesthesia, 7th Floor, Cardio thoracic sciences Centre, All India Institute of Medical Sciences, Ansari Nagar, New Delhi- 110029, India.

E-mail: sambhunathds833@gmail.com

Abstract

Right atrial (RA) myxoma is a benign cardiac tumour commonly found in middle age group with female preponderance.The gradual enlargement of RA myxoma impairs the RA and right ventricle (RV) inflow. We report a giant RA myxoma in an elderly woman in her 8th decade of life, presented with rare complication of pulmonary embolism leading to hemoptysis. The perioperative management of these patients emphasized careful positioning during induction and maintenance to prevent hemodynamic compromise. Drugs causing venodilatation should be used with caution. The cardiac surgeon and anaesthesiologist should anticipate the possibility of emergent CPB and make arrangements before induction of anaesthesia. Intraoperative transesophageal echocardiography monitoring is recommended to aid in recognizing and avoiding tumour embolization.

Keywords: Right Atrial Myxoma; Geriatric Age; Atrial Fibrillation; Hemoptysis; Pulmonary Artery Hypertension.

Introduction

Right atrial (RA) myxomais a benign cardiac tumour commonly found in middle age group with female preponderance [1,2].The gradual enlargement of RA myxoma impairs the RA and right ventricle (RV) inflow [1]. It may also destroy the tricuspid valve. We report a case of giant RA myxoma planned for surgical removal in the eighth decade.

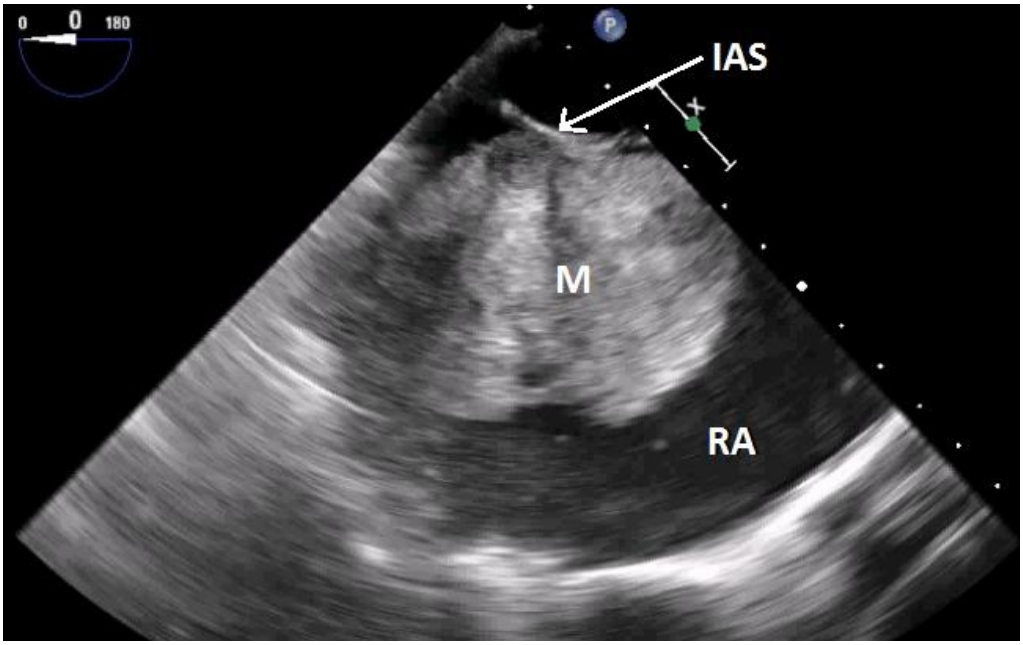
Case history

A 72year old female weighing 58kg presented with complaints of dyspnea on exertion, dry cough and hemoptysis since six months. Dyspnea on exertion was gradually progressive from NYHA II to III. There was no significant past history related to the present signs and symptoms. Chest X-rayshowed cardiomegaly with no other significant findings. ECG showedsigns of atrial fibrillation with heart rate of 50/min. Transthoracic echocardiography (TTE)detected large RA myxoma measuring 7x8 cm attached to the interatrial septum with mild tricuspid regurgitation, severe pulmonary arterial hypertension and normal biventricular function. Contrast enhanced CTdetected a RA mass attached to the interatrial septum measuring 7.7x 10 cm in size. It was a well-defined, lobulated, heterogeneous and hypo attenuating lesion. There was no extension into RV or across the interatrial septum. RA and RV both were dilated with disproportionate enlargement of RA compared to RV. There was mild pericardial effusion. A calcified lesion was seen in the right descending pulmonary artery suggestive of a calcified embolus. Laboratory investigations were within normal limits. The patient was planned for RA myxoma excision with tricuspid valve repair.

On the day of surgery, the patient was premedicated with injection morphine 6mg and promethazine 20mg Intramascular. In the operation theatre, pulse oximeter, ECG and NIBP were applied to the patient. Under local anaesthesia, a peripheral line and arterial line were secured. Anaesthesia was induced with intravenous injection fentanyl 120 mcg, midazolam 1mg and etomidate 12mg. Orotracheal intubation was facilitated with intravenous injection rocuronium

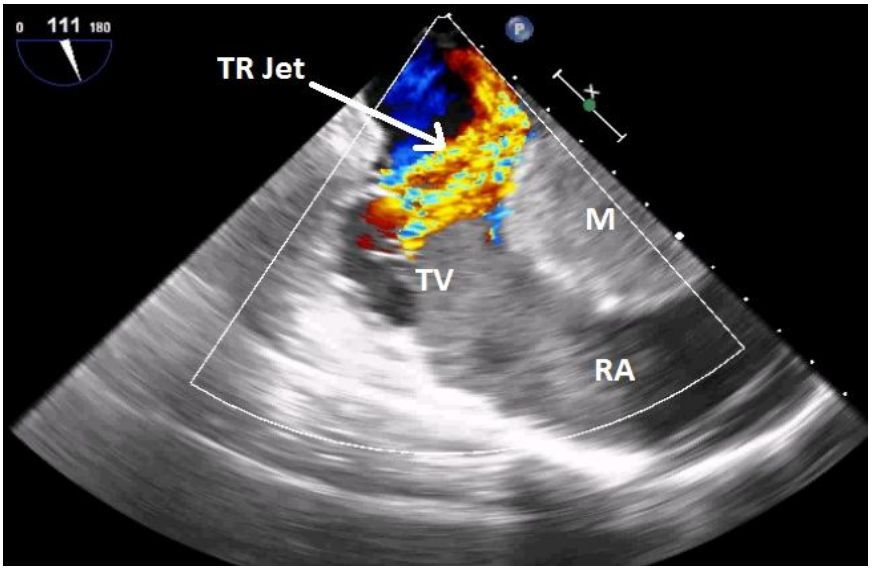
60mg. A triple lumen central venous catheter was inserted from the femoral venous route. Transesophageal echocardiography (TEE) probe was insertedand it revealed a myxomatous mass in RA arising from interatrial septum with moderate tricuspid regurgitation and no other valvular anomaly (Figure 1 and 2). The mass was projecting into inferior venacava (Figure 3). A median sternotomy and vertical pericardiectomy were performed. Cardiopulmonary bypass (CPB) was established when ACT > 480 sec after heparinization with 230 mg heparin. After cross clamping of the aorta, RA was opened and a large 8x10 cm pedunculated mass was seen arising from interatrial septum. The tumour was resected with wide excision from the attachment site (Figure 4),atrial septal defect was closed with Dacron patch and tricuspid valve suture annuloplasty done by modified Devega's technique. The patient was weaned off from the cardiopulmonary bypass and later shifted to ICU after completion of the surgery. Postoperative period was uneventful and patient was discharged after eight days of surgery. The histopathological examination

Fig. 1: Transesophageal echocardiography (TEE) Midesophageal four chamber view showing RA myxoma arising from the interatrial septum.



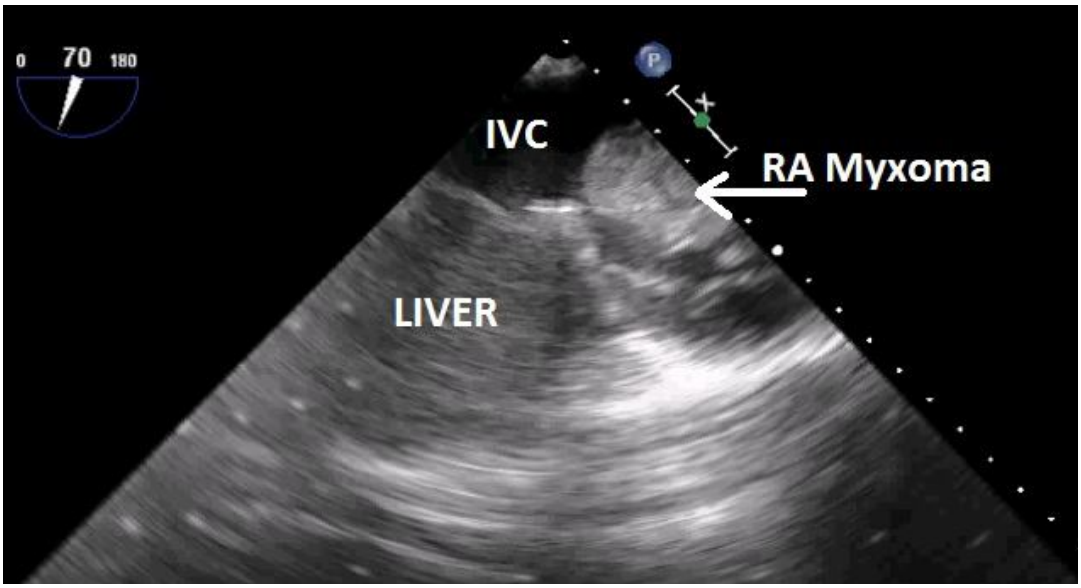
Abbreviations: RA = right atrium, IAS = interatrial septum, M = myxoma

Fig. 2: TEEmid esophageal modified bicaval view showing tricuspid regurgitation



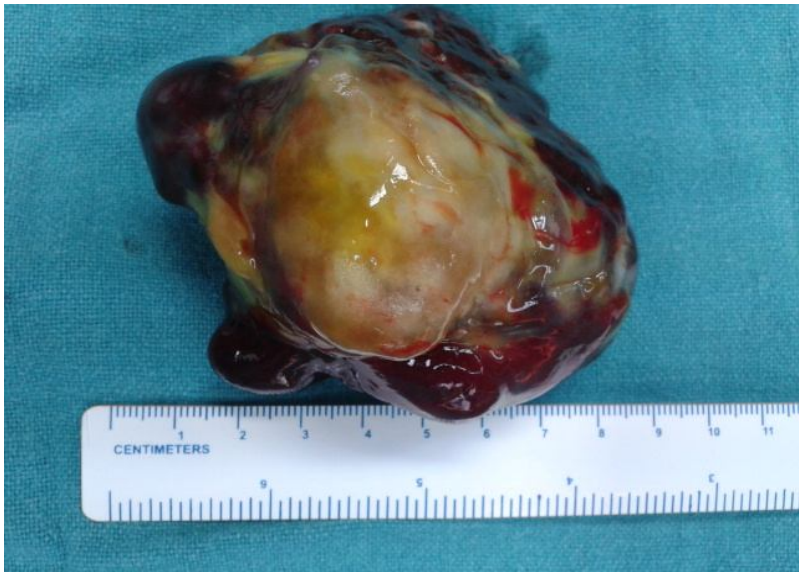
Abbreviations: RA = right atrium, TR = tricuspid regurgitation, TV = tricuspid valve

Fig. 3: TEE lower esophageal hepatic/ IVC view showing RA myxoma protruding into the IVC.



Abbreviations: IVC = inferior venecava

Fig. 4: Picture showing the excised RA myxoma



of the tumour confirmed the diagnosis of myxoma.

Discussion

Cardiac atrial myxoma is the commonest intra-cardiac tumour in adults and 75% arise in the left atrium and 15-20% in right atrium [1]. In 1845, left atrial myxoma was first described [1]. The diagnosis of intracardiac tumors were made at that time only from post-mortem examination.In 1955, the first successful excision of a left atrial myxoma was reported.Women predominate to men in incidence as seen in our case [2]. Familial myxomas have been reported, although it usually occurs sporadically. Transthoracic and transesophageal echocardiography (TEE) has more than 90% sensitivity for diagnosis of cardiac myxoma [3]. In our case we were able to evaluate the location, size, shape, and mobility of myxoma as well as its embolization further into pulmonary arteries. In our case, role of TEE was essentially important to know the site of attachment, size of tumor, damage to tricuspid valve and site of embolization, such as patent foramen ovale.Ridge CA et al with the help of contrast reported accurate differentiation between thrombus,which typically does not demonstrate enhancement while contrast enhancement seen with myxoma [4].

Myxomas bigger than 70grams weight produce symptoms[1]. Classic triad of myxomainclude obstructive symptoms, constitutional symptoms and embolic symptoms.Cardiac myxomas are associated with Carney complex seen in 7% of cases [5]. Carney complex are autosomal dominant conditions comprisingmyxomas of the heart, endocrine over activity and hyperpigmentation of the skin. Our patient presented with obstructive and embolic symptoms. The embolus which was migrated into the right descending pulmonary artery showed some calcification that suggests the chronicity of the disease.

Slowly growing right-sided tumors present with an abdominal distension due to ascites which is seen in our patient. Right-sided tumors embolization results in pulmonary embolism and infarction. A right atrial tumor may cause a diastolic rumble or holosystolic murmur due to tricuspid regurgitation as seen in our case for which she underwent tricuspid valve repair. Elderly patients often present with non-specific symptoms that are often overlooked in the absence of a supporting cardiac history which makes an early diagnosis challenging [6]. Our case report discusses an unusual presentation of right atrial myxoma in an elderly patient in her 8th decade of life.

López-Marco et al reported a calcified right atrial mass, attached by a stalk to the rim of the coronary sinus [7]. Right atrial myxoma can be completely resected from the beating heart with the superior and inferior venae cavae snared [8].Xiao ZH et al reported the case of a large right atrial myxoma with progressive dyspnoea and signs of right heart failure secondary to a large right atrial myxoma [9]. Dike B et al reported a case in which right atrial myxoma prolapsing through the tricuspid valve into the right ventricle [10]. Although there is literature reporting cardiac myxoma arising from superior vena cava lead to tricuspid stenosis and right heart failure [9]. Sometimes right atrial myxoma can obstruct the tricuspid valve, causing symptoms of right heart insufficiency, peripheral edema, hepatic congestion and syncopes, [11] the same situation had happened in our patient for which she underwent surgery.

Concerns upon induction of anaesthesia include decrease in systemic vascular resistance in the presence of a fixed cardiac output secondary to the mass obstructing right ventricular filling. Vasodilatation can cause atrium to collapse and exacerbate mechanical obstruction of the tricuspid valve by the myxoma. Displacement of the myxoma during chest compression limits the ventricular filling, leading to low cardiac output, possible right to left shunt or embolization, hypoxemia and potential for pulmonary emboli. The symptoms can be exacerbated in upright position like reverse trendelenberg position due to the obstruction to RV inflow. Our patient did not show any hemodynamic fluctuations as mentioned above. We inserted the central venous catheter from the femoral route. Right and left internal jugular venous catheterisationis avoided to avoid embolizationfrom tumor and precipitation of acute pulmonary hypertension. Pulmonary artery catheters are contraindicated for fear of tumour embolization.

In summary, we report a giant RA myxoma in an elderly woman in her 8th decade of life. The patient presented with a rare complication of pulmonary embolism. It mandates early surgery for myxoma in order to reduce the obstructive and embolic complications. The perioperative management of these patients emphasizedcareful positioning during induction and maintenance to prevent hemodynamic compromise. Drugs causing venodilation may produce marked reduction in preload, and hence should be used with caution.The cardiac surgeon and anaesthesiologist should anticipate the possibility of emergent CPB and make arrangements before induction of anaesthesia. Intraoperative transesophageal echocardiography monitoring is recommended to aid in recognizing and avoiding tumour embolization.

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