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### RESEARCH ARTICLE

#### RIGHT ATRIUM PAPILLARY FIBROELASTOMA WITH CARDIAC ARRHYTHMIA AND VENTRICULAR STANDSTILL

Tariq Sana, Elmezayen Ahmed Magdy and Abdelbar Abdelrahman

#### Manuscript Info

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#### Abstract

We encountered a striking case involving a 74-years-old female patient. Upon investigations, she was found to have atrial fibrillation and right atrial mass with mitral and tricuspid valve dysfunction. Later, Loop recorder showed ventricular stand still. Arrhythmias and ventricular standstill were possibly because of proximity of the mass to AV node. To provide the highest standard of care for our patient, we meticulously researched the most recent literature to inform our evaluation and management of the tumour. Histopathology after surgical excision of the mass, confirmed the diagnosis.

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#### Introduction:-

Papillary fibroelastoma (PFE) is a benign primary cardiac tumor that usually originates from heart valves or the lining of the heart with the aortic valve being most involved, followed by the mitral valve. These are rarely seen in right atrium<sup>[1, 2]</sup>. It is mostly asymptomatic but common presentation includes transient ischaemic attack (TIA), stroke or dyspnoea. The sensitivity and specificity of transthoracic echocardiogram (TTE) for the detection of PFE greater than 2 mm are 88.9% and 87.8%, respectively. However, Transoesophageal echocardiogram, cardiac magnetic resonance imaging (MRI) and computed tomography (CT) scan are better diagnostic modalities as compared to TTE. The management of PFE can vary depending on factors such as the size and location of the tumor, as well as the patient's overall health. Surgery is often the preferred option, as it can provide complete removal of the tumor and prevent potential complications such as embolism<sup>[3]</sup>.

#### Case presentation

We describe a female in her 70s who presented with sudden onset blackouts, transient vision loss, palpitation and shortness of breath. She was investigated for transient ischaemic attack with carotid doppler and MRI brain. Carotid doppler showed less than 30 % stenosis in the right and left internal carotid artery. MRI brain showed no significant acute abnormality. Due to palpitations, TTE was done which showed right atrial mass with the moderate mitral regurgitation, left atrial dilatation and tricuspid valve regurgitation with normal left ventricular systolic function (LVSF). **Figure 1**

The mass was smaller in size therefore, the plan was to remain under surveillance. Echocardiogram after 18 months showed echogenic structure in the right atrium, visually appears to have changed in size since the last scan measuring 1.83cm x 1.88cm with a circumference of 7.22cm. Whereas in previous echo, size was 1.4 x 1.5 cm. As her symptoms were not being explained by right sided mass, therefore, trans-oesophageal echocardiogram (TOE) was done to exclude any other masses on left side or intracardiac shunt. Trans-oesophageal echocardiogram showed moderate to severe mitral regurgitation secondary to bileaflet prolapse and moderate to severe tricuspid regurgitation with annular dilatation. Right atrium mass 1.7 x 1.7 cm attached to

tricuspid valve annulus at septal-posterior leaflet commissure. In view of recurrent symptoms and increase in mass size surgical excision was suggested along with mitral and tricuspid valve repair. During hospital stay, loop recorder showed complete heart block with a 9 second episode of Ventricular standstill therefore, cardiologist suggested permanent pacemaker (PPM) implantation.

The patient underwent mass resection with underline endocardium, mitral and tricuspid valve repair, and exclusion of left atrial appendage. Intra-op findings showed smooth mass attached to the base of septal leaflet. Then mass sample was sent for histopathology which was consistent with PFE. After surgery, dual chamber pacemaker was implanted. Post-op echo showed normal LVSF. Mitral and tricuspid valves repair noted with no significant regurgitation. Following the successful excision of the PFE, the patient demonstrated a remarkable recovery and was discharged in a stable condition. 6 weeks postoperatively, she had a follow-up evaluation, during which she presented as asymptomatic, thereby highlighting the effectiveness of the chosen management approach. **Figure 2**

### **Discussion:-**

We present a unique instance of a fibroelastoma located within the right atrium. Fibroelastomas are primarily composed of avascular collagen and elastin fibers, and their precise etiology remains unclear. These tumors are typically small in size and asymptomatic, often detected incidentally during imaging studies or surgical interventions for other cardiac conditions. Although fibroelastomas are generally considered benign, they can lead to serious implications due to their potential to embolize, causing symptoms and complications<sup>[4]</sup>.

In our presented case, she was found to have a right atrial fibroelastoma during echocardiographic assessment for unrelated cardiac symptoms. Interestingly, fibroelastomas tend to have a predilection for valvular and subvalvular regions, and this case further highlights the diagnostic challenge of identifying such tumors in the atrial chambers.

The clinical significance of fibroelastomas lies in their propensity to embolize. This poses a significant risk for thromboembolic events, which can lead to a lot of complications depending on the site of embolization. Our patient's symptoms emphasize the importance of thorough clinical evaluation, including neuroimaging, in patients with atrial tumors, even if they are asymptomatic<sup>[5,6]</sup>.

In conclusion, our case report underscores the rarity of fibroelastomas within the right atrium and highlights the importance of meticulous diagnostic evaluation in cases of cardiac tumors. The decision-making process for management requires a careful balance between the potential for embolization and the risks associated with surgical intervention. Further research and the accumulation of cases are warranted to better understand the natural history, optimal management strategies, and long-term outcomes associated with atrial fibroelastomas.

### **Acknowledgements:-**

None to declare.

### **Figure legends:**

**Figure 1:** Transthoracic echocardiography showing mass attached to the right atrium.

**Figure 2:** Right atrium mass after removal.

### **References:-**

1. 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.
2. Lodhi AM, Nguyen T, Bianco C, Movahed A. Coumadin ridge: an incidental finding of a left atrial pseudotumor on transthoracic echocardiography. *World J Clin Cases.* 2015;3:831-4.
3. Seto T, Takano T, Otsu Y, Terasaki T, Wada Y, Fukui D, et al. Cardiac papillary fibroelastoma: report of three cases. *Ann Thorac Cardiovasc Surg.* 2014;20:893-6.
4. Lestuzzi C. Primary tumors of the heart. *Curr Opin Cardiol.* 2016;31:593-8.
5. Gopaldas RR, Atluri PV, Blaustein AS, Bakaeen FG, Huh J, Chu D. Papillary fibroelastoma of the aortic valve: operative approaches upon incidental discovery. *Tex Heart Inst J.* 2009;36:160-3.
6. Cook AG, Viswanath O, D'Mello J. Papillary Fibroelastoma Found With Transesophageal Echocardiography After a Normal Transthoracic Echocardiography. *Semin Cardiothorac Vasc Anesth.* 2017;21:217-20.