

Diagnosis and management of papillary fibroelastomas – a case series

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Introduction: Papillary fibroelastomas (PFEs) are benign primary cardiac tumors, typically found downstream of the valves¹. They currently account for 10% of all cardiac tumors, with the incidence rising as the spatial resolution of imaging modalities improves. The pathogenesis is unclear, though it is suggested that they originate as microthrombi at sites of endothelial damage². While definitive diagnosis requires pathological identification, echocardiography offers high sensitivity and specificity for their detection³.

Case series: The first patient is a 62-year-old woman with a history of atrial fibrillation and hypertrophic cardiomyopathy, previously treated with alcohol septal ablation. During routine follow-up, echocardiography revealed a subvalvular mass connected to the anterior mitral cusp, most likely a PFE (**Figure 1**). Computed tomography (CT) confirmed a similar finding (**Figure 2**). The patient was not compliant with the recommended surgery; therefore anticoagulant therapy was continued along with regular follow-up. Magnetic resonance imaging (MRI) performed one year later showed no change in the tumor's size (**Figure 3**).

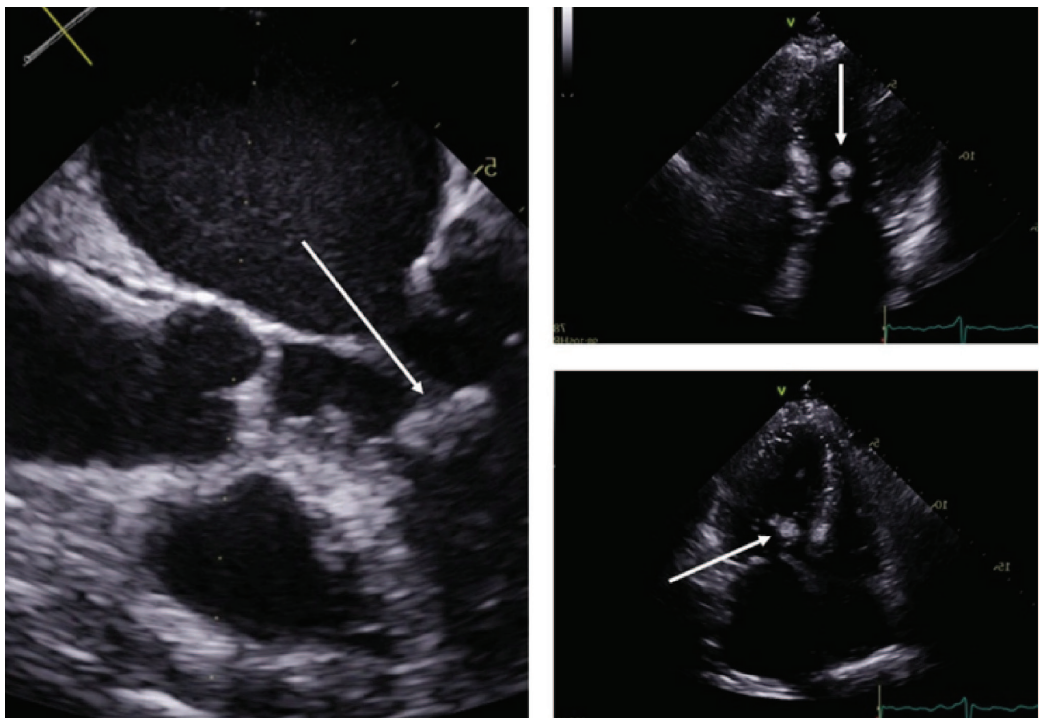


FIGURE 1. Transesophageal (left) and transthoracic echocardiogram (right) of the mitral valve papillary fibroelastoma (marked with white arrows).

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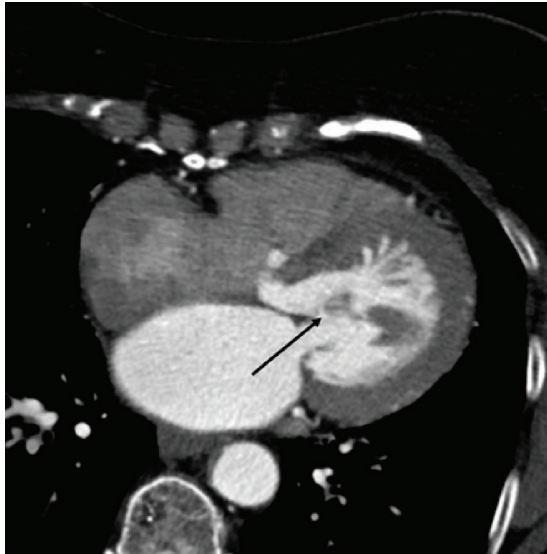


FIGURE 2. A CT image of a mitral valve papillary fibroelastoma (marked with a black arrow).

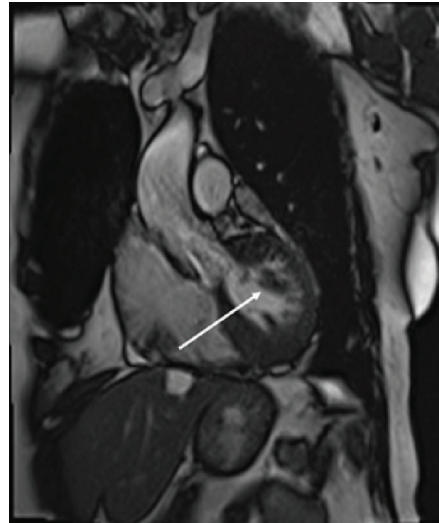


FIGURE 3. A cine-MRI image of a mitral valve papillary fibroelastoma (marked with a white arrow).

The second patient is a 70-year-old man who was referred to the cardiology department for further evaluation due to peripheral edema. Echocardiography revealed a mobile tumor on the tricuspid valve, most likely a PFE, along with moderate tricuspid regurgitation (Figure 4). The diagnosis was confirmed by CT and MRI (Figure 5), which also showed partial anomalous pulmonary venous connection with a significant left to right shunt. Given the significant clinical improvement with medications, conservative treatment was continued.

The third patient is a 75-year-old woman who was hospitalized following an ischemic stroke. Electrocardiogram showed atrial fibrillation, whereas echocardiography showed a PFE on the aortic valve (Figure 6). Warfarin was initiated, and the patient was referred for elective PFE excision. Unfortunately, a month later, the patient experienced another stroke, which had a fatal outcome.

Conclusion: While PFEs are often asymptomatic and found incidentally, they can also present with embolic manifestations like stroke, myocardial infarction, or sudden death². Surgical excision is recommended for larger left-sided PFEs in eligible patients due to the risk of embolization, or during cardiac surgery for another condition. Otherwise, antiplatelet agents may be considered³.

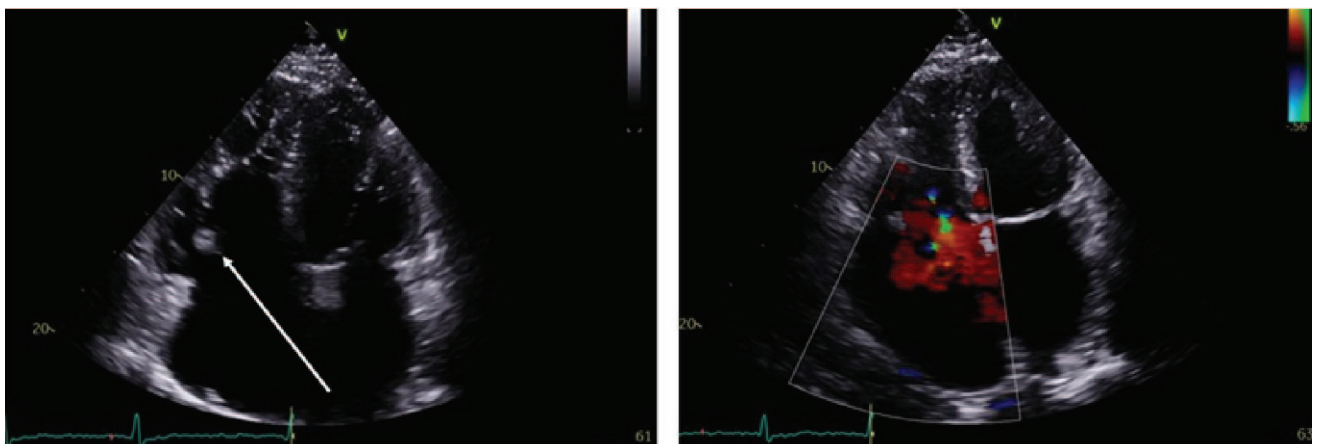


FIGURE 4. Tricuspid valve papillary fibroelastoma (marked with a white arrow) on transthoracic echocardiography (left). Transthoracic Color Doppler showing moderate tricuspid regurgitation (right).

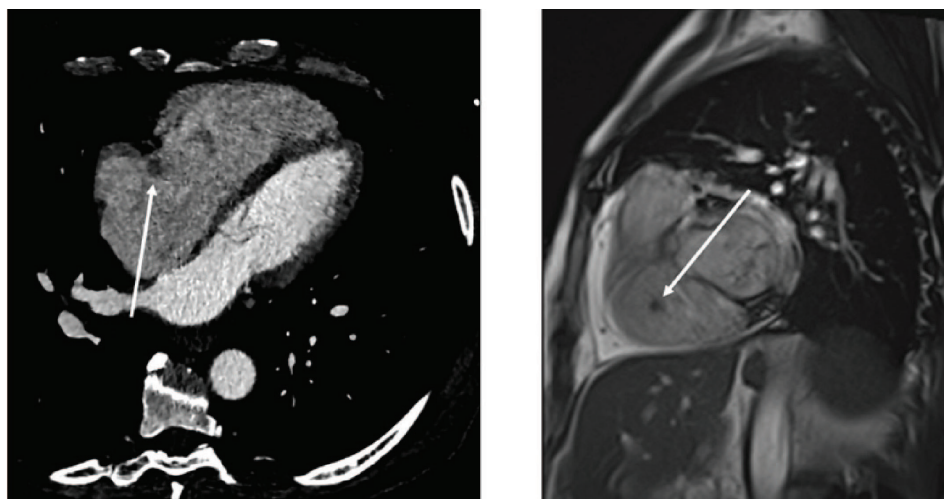


FIGURE 5. Tricuspid valve papillary fibroelastoma (marked with white arrows) on CT (left) and cine-MRI images (right).

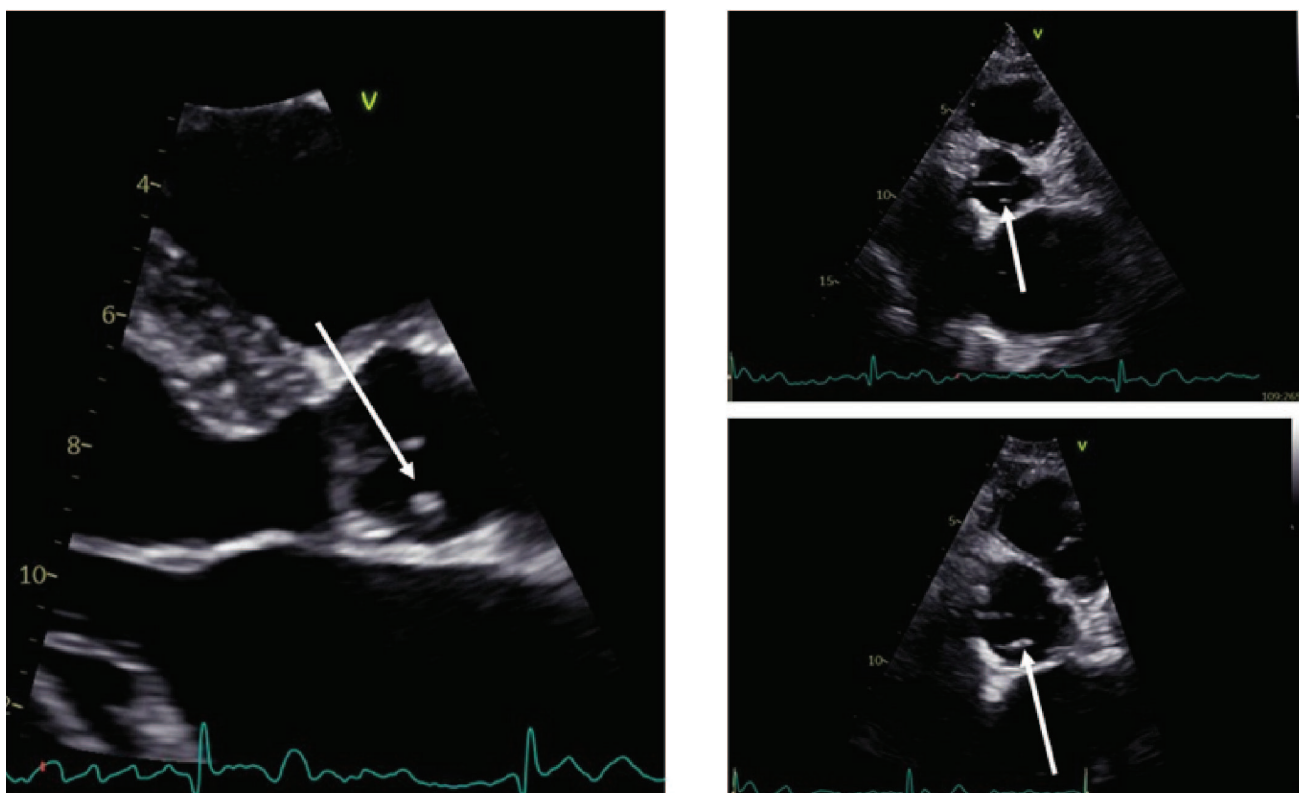


FIGURE 6. Aortic valve papillary fibroelastoma (marked with white arrows) on transthoracic echocardiography.

LITERATURE

1. Tyebally S, Chen D, Bhattacharyya S, Mughrabi A, Hussain Z, Manisty C, et al. Cardiac Tumors: JACC CardioOncology State-of-the-Art Review. *JACC CardioOncol*. 2020 Jun 16;2(2):293-311. <https://doi.org/10.1016/j.jacc.2020.05.009>
2. Gopaldas RR, Atiuri 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(2):160-3. **PubMed:** <https://pubmed.ncbi.nlm.nih.gov/19436815/>
3. Devanabanda AR, Lee LS. Papillary Fibroelastoma. 2023 Apr 26. In: StatPearls [Internet]. Treasure Island (FL): StatPearls Publishing; 2025 Jan-. **PubMed:** <https://pubmed.ncbi.nlm.nih.gov/31751019/>