CASE REPORT

Three-dimensional echocardiography of a tricuspid valve papillary fibroelastoma

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Papillary fibroelastomas (PFE) on tricuspid valve (TV) are rare, accounting for fewer than 11% of all PFE. Most often they are asymptomatic, and detect on mitral valve. We report a case of a typical chest pain found to be due to papillary fibroelastoma of the tricuspid valve.

Keywords: Three dimensional echocardiography, Tricuspid valve, Papillary fibroelastoma

Introduction

Papillary fibroelastomas (PFEs) on the tricuspid valve (TV) are rare, accounting for fewer than 11% of all PFEs [1]. Most often they are asymptomatic, and are detected on the mitral valve. We report a case of atypical chest pain found to be due to PFE of the TV.

Case Report

A 64-year-old woman was referred for investigation of atypical chest pain with a history of hypertension. She denied constitutional (fever, arthralgia, weight loss, and fatigue) symptoms. Her medical history was noncontributory, and physical examination was unremarkable. Electrocardiography showed normal sinus rhythm with occasional *premature ventricular contraction*. Routinely performed two-dimensional (2D) echocardiography and real-time 3D transesophageal echocardiography (3D TEE; ACUSON SC2000, Ultrasound System, Siemens Medical Solutions, USA, Inc.) revealed a normal sized left ventricle with good systolic function, mild to moderate tricuspid regurgitation with good apposition of leaflets, normal TV leaflets and annulus, and no pulmonary hypertension. 3D TEE transgastric short-axis view 71° clearly demonstrated a nonmobile solitary round mass, 9 × 6 mm, attached to the atrial side of the septal leaflet of the TV without prolapsing into the right ventricle (Figs. 1 and 2). 3D TEE imaging provided TV geometry and effect of mass on TV structure and function. The differential diagnosis was myxoma, fibroelastoma, and less likely endocarditis.

Preoperative coronary angiography revealed no coronary artery disease. The patient underwent surgery. A single 5 × 5 × 3-mm soft mass with a

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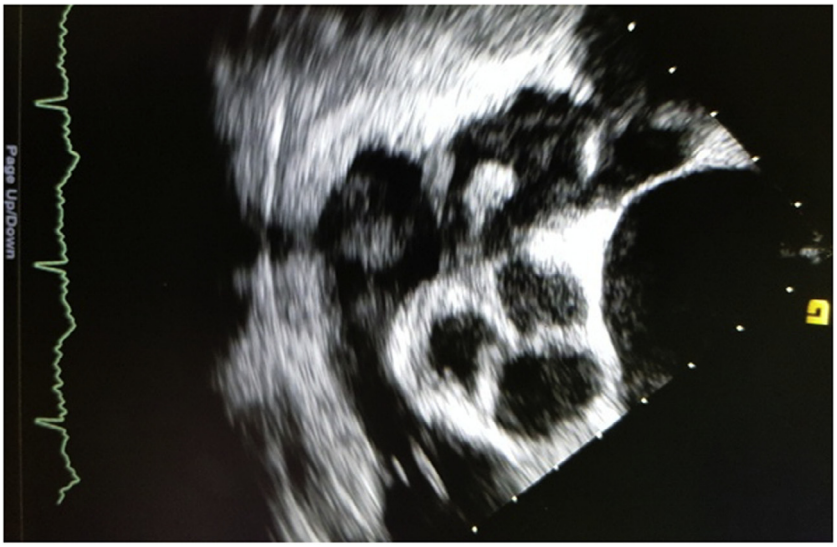

Figure 1. Two-dimensional transesophageal echocardiography of papillary fibroelastoma.

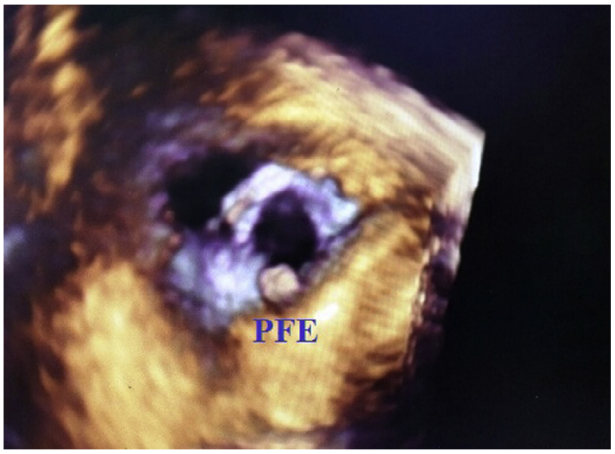

Figure 2. Three-dimensional transesophageal echocardiography reconstruction of the tricuspid valve from the short axis: the mass attached to the septal leaflet. PFE = papillary fibroelastoma.

white surface was noted, attached to the atrial aspect of the septal leaflet of the TV. The mass was removed without damage to the TV. The patient had an uneventful postoperative recovery.

Six-months' postsurgery, transthoracic echocardiography revealed mild tricuspid regurgitation, normal functioning of the valve, and no evidence of residual tumor. Interestingly, the patient did not complain of chest pain after surgical removal of the mass, and as reported in previous studies [2] chest discomfort is one of the presentations of TV PFE.

A pathologic study showed that the specimen consisted of one fragment of white, myxoid tissue. Microscopically, polypoid projections lined by one layer of endothelial and spindle cells were noted. The features were typical of a PFE.

Discussion

PFEs are the most common tumors of the heart valves, accounting for approximately 8% of primary benign cardiac tumors and are usually slow growing which manifest after several years [3].

The etiology of PFE is unknown and no risk factors for the development of PFE have been reported. It is more common in elderly male patients and usually on the left side of the heart.

Most often, right sided tumors are asymptomatic. Embolization of a tumor fragment, sudden death, heart failure, intermittent outflow tract obstruction, syncope, and blindness are the most common symptoms [4].

At present, conventional transthoracic echocardiography and TEE are the fundamental diagnostic techniques; however, this case demonstrates that 3D TEE allows for better definition of the tumor outline, location, consistency, mobility, and attachment of the tumor which could provide guidance for surgical removal. No randomized trial data are available on the efficacy of long-term oral anticoagulation. Symptomatic patients with mobile tumors should receive surgical intervention; however, asymptomatic patients with nonmobile PFE could be followed-up closely with periodic clinical evaluation. Recurrence after surgical excision is yet unknown; however, careful follow-up is warranted [5].

References

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