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Papillary fibroelastoma of the anterior leaflet of the mitral valve mimicking vegetation



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ABSTRACT

INTRODUCTION: The papillary fibroelastoma (PFE) is a rare and benign primary cardiac tumor, and the mostly frequently found tumor occurring in cardiac valves.

CASE PRESENTATION: We describe a 52 year old female presenting a history of 2 weeks of fever due to wound infection after breast's surgery. A preoperative echocardiography demonstrated a mass >1 cm² originating from the anterior leaflet of the mitral valve mimicking vegetation. The patient underwent successful surgical removal of the PFE. The histologic evaluation demonstrated a PFE.

DISCUSSION: With the introduction of echocardiography, the diagnosis of these tumors in living patients has been reported sporadically. PFE have been found most often on valve leaflets, chordae tendineae, and both ventricles. The differential diagnosis of PFE includes other cardiac tumors, thrombus, vegetation, and Lambl's excrescences.

CONCLUSION: To summarize, we report a PFE of the anterior leaflet of the mitral valve. The diagnosis was confirmed by histopathological examination after surgical removal. Finally, careful echocardiographic analyses during evaluation of valvular masses are strongly recommended for differential diagnosis.

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1. Introduction

The papillary fibroelastoma is a rare and benign primary cardiac tumor, and the mostly frequently found tumor occurring in cardiac valves. The papillary fibroelastoma was firstly described by Yater in 1931 [1]. With the introduction of echocardiography, the diagnosis of these tumors in living patients has been reported sporadically. The papillary fibroelastoma has been found most often on valve leaflets, chordae tendineae, and both ventricles. We describe an interesting case of the papillary fibroelastoma originating from the anterior leaflet of the mitral valve mimicking vegetation.

2. Case report

A 52-year-old woman was readmitted to a regional hospital due to wound infection after a previous mastectomy due to breast cancer. She received antibiotics for 2 weeks to treat a suspicious vegetation apparent on TTE (Fig. 1A). Because the size of the cardiac mass had not changed, the patient was referred to our hospital for further evaluation.

On physical examination, her blood pressure, pulse and respiration rates were within normal values. The body temperature

was 37.5 °C. The laboratory findings revealed 15,700/mm³ leucytosis, platelet count, 3251,000/mm³ and erythrocyte sedimentation rate, 53 mm/hr. Results of urinalysis, blood chemistry, and electrolyte tests were within normal ranges. The TEE revealed a mass of >1.0 cm² in size, mobile, attached to anterior mitral leaflet on the atrial aspect, and round with a homogeneously speckled surface (Fig. 1B). There was moderate to severe mitral regurgitation. Non Janeway lesion, Osler nodes, and conjunctival hemorrhage were detected in physical examination.

The cardiac mass was removed by surgery in order to reduce the risk of embolism as well as to rule out the infective endocarditis. Under standard cardiopulmonary bypass, the left atrium was opened and the mass was identified (Fig. 1C). The mass was removed using a shave excision technique. However, there was significant mitral regurgitation after mass excision and following excision of the mitral leaflets and chordae, a mechanical valve was implanted with preservation of the subvalvular apparatus of the mitral valve.

Macroscopically the excised lesion was composed of a soft beige tissue with micropapillary projections and lobulated surface of 1.2 × 0.8 cm, entirely processed (Fig. 1D). The mass appeared yellowish, with polypoid and fibrotic characteristics. After the surgical excision, the mass was fixed in formalin, paraffin embedded, sectioned at 3 μm thick, and stained conventionally with hematoxylin and eosin. The histology examination revealed a papillary lesion composed of numerous papillary fronds with an acellular fibro-

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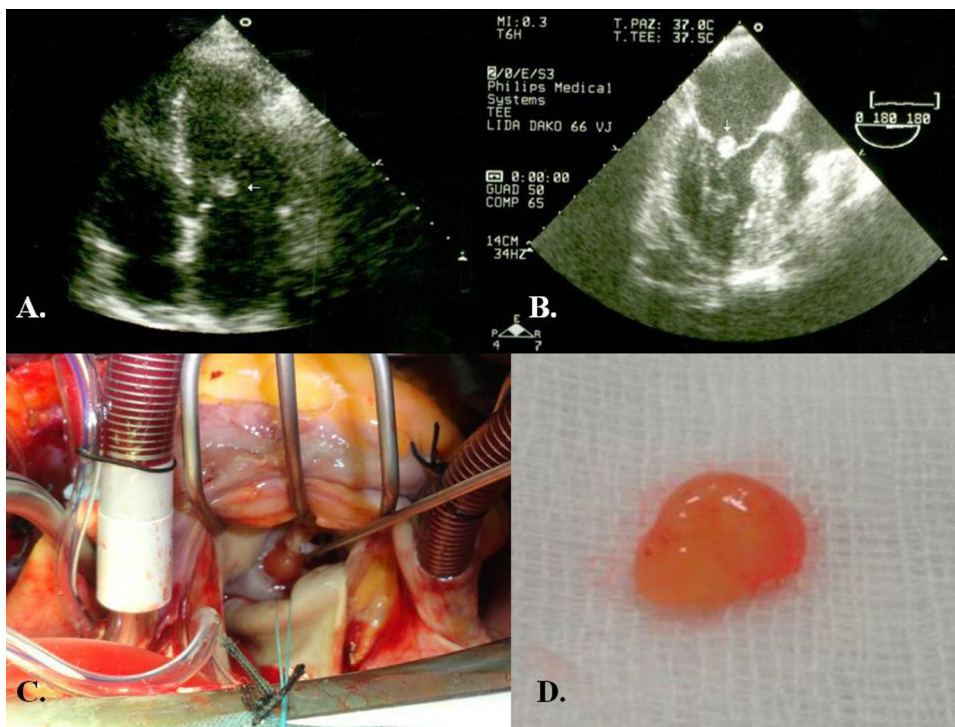


Fig. 1. Transthoracic echocardiography shows a mobile and spherical mass of 1.0 cm in size attached to anterior mitral leaflet. Parasternal long axis view (A) and an apical four-chamber view (B). Gross specimen of excised mass reveals a friable mass with frond-like surface.

hyaline stroma (Fig. 2A and B). Those projections are covered by endothelial cells (Fig. 2C). In the excised margin in close contact with the non pathologic endocardial tissue the lesion has an infiltrative like appearance but the excisional margin itself was free of neoplasia. A higher magnification demonstrates a myxoid papillary

structure lined by endothelial cells which express endothelial cell markers (Fig. 2D). The postoperative course was uneventful and the patient was discharged in a satisfactory condition on the seventh day.

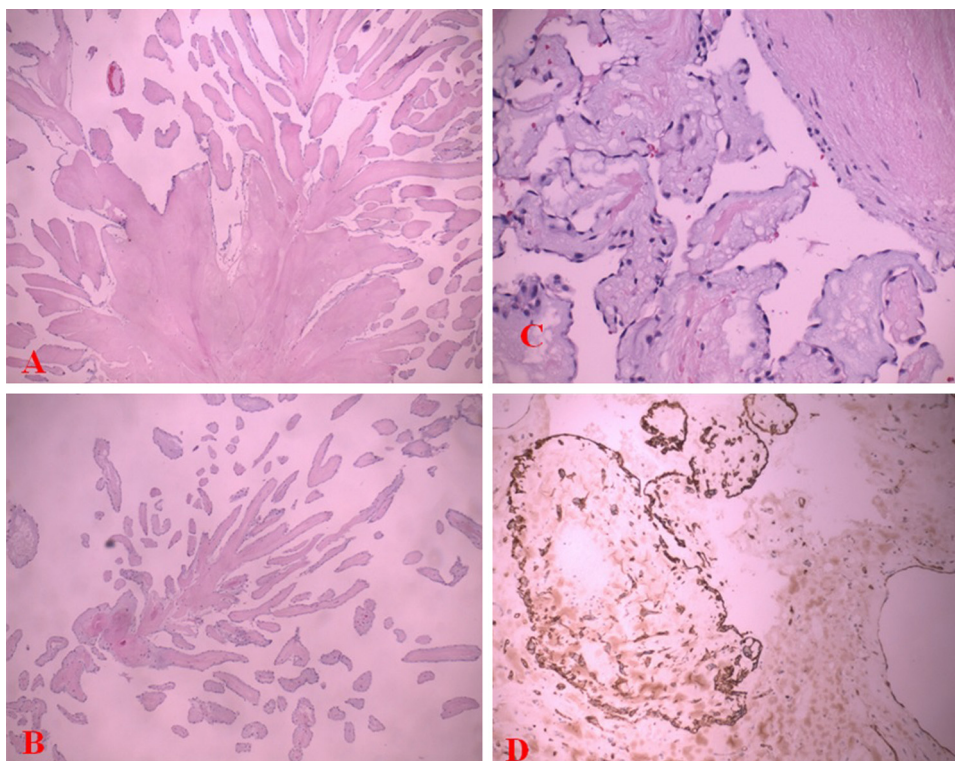


Fig. 2. Papillary fibroelastoma. Low magnification demonstrates a papillary configuration of paucicellular fronds (A, B H-E 10X). A higher magnification demonstrates a myxoid papillary structure lined by endothelial cells which express endothelial cell markers (C H-E 40X, D, CD 34 20X)

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