

Echocardiographic and Macroscopic Images Aortic Cusp Laceration

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A 70-year-old man was admitted to our department for non-ST-segment elevation myocardial infarction. His risk factors were hypertension, diabetes, dyslipidemia, and smoking. On admission, physical examination and enzymatic markers of myocardial injury were normal. The ECG revealed T-wave inversion in leads VI–V6. Transthoracic echocardiography showed mild left ventricular hypertrophy. Cardiac catheterization revealed severe triple coronary artery disease. Three days after coronary angiography, the patient had dyspnea at rest, and, on physical examination, tachycardia and a diastolic murmur were present. A second transthoracic echocardiography revealed the presence of a filamentous image on the aortic valve and severe asymmetrical aortic regurgitation (Figure 1). Transesophageal echocardiography confirmed the presence of the filamentous arising from the right aortic cusp and severe aortic regurgitation (Figures 2 and 3). All Duke criteria were negative. This image could be in differential diagnosis with an endocarditis infection, a giant Lambl excrescence, or a papillary fibroelastoma.

Surgery performed 4 days later showed multiple tiny fenestrations of the left and noncoronary cusps of the aortic valve (Figure 4) and a laceration of the right coronary cusp (Figures 4 and 5), with the free margin prolapsing into left

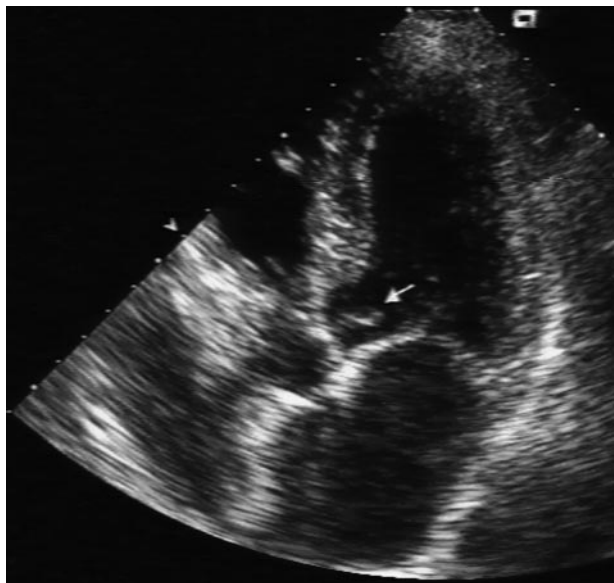


Figure 1. Apical modified 4-chamber view shows a mobile and filamentous mass in the left ventricular outflow tract (arrow).



Figure 2. Transesophageal echocardiography revealed an isoechoic and filamentous structure arising from the right aortic cusp.

ventricular outflow tract. Valve repair failed because of shrinking of the right coronary cusp; therefore it was decided to replace the aortic valve with a biological prosthesis valve, and triple coronary artery bypass grafting was also performed. The postoperative course was uneventful. The most probable explanation is that a fenestration was also present in the right coronary cusp, and during coronary angiography, the catheter was entrapped in the fenestration and lacerated the cusp.

Aortic cusp fenestrations are uncommon; they could be congenital or age related, and usually they are more frequent in male patients. Even if they have no pathological significance, myxomatous degeneration of the aortic valve can produce a spontaneous rupture of cusp fenestrations resulting in a severe aortic insufficiency that requires surgical treatment.

Disclosures

None.

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Figure 3. Severe regurgitation in the color 2D transesophageal view.

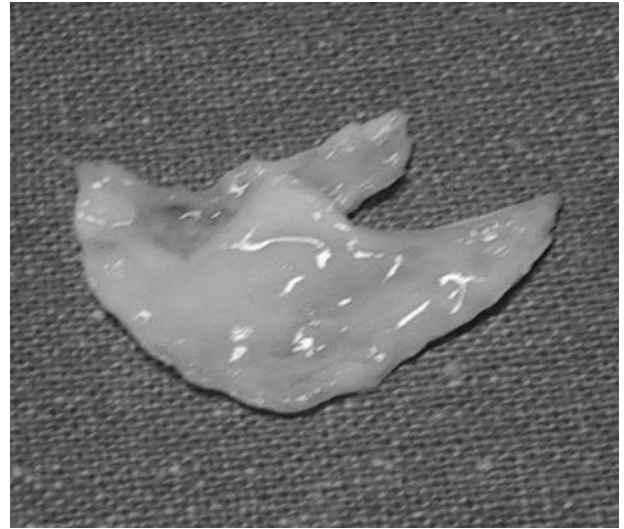


Figure 5. Anatomic finding particular: laceration of right coronary cusp (L).



Figure 4. Macroscopic image demonstrates tiny fenestrations of the left and noncoronary cusps of the aortic valve and a laceration of the right cusp. LC indicates left cusp; NCC, noncoronary cusp; RC, right cusp.

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