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What's in a Mass?: Large Native Mitral Valve Mass

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PRESENTATION

After an elective cystectomy, a 77-year-old man developed postoperative atrial fibrillation, resulting in a surprising new finding and a challenging diagnosis. He had no cardiovascular symptoms or cardiac history. The preoperative electrocardiogram was normal. Transthoracic echocardiogram identified a mass on the mitral valve (**Figure 1A**), new 3+ aortic valve regurgitation, and 2+ mitral valve regurgitation. Left ventricular ejection fraction was 60%.

The patient's history included prostate cancer, chronic myelogenous leukemia, idiopathic thrombocytopenic purpura, and a subacute history of enterococcus bacteremia complicated by pelvic osteomyelitis and abscess. He was finishing a prolonged 6-month course of intravenous vancomycin at the time of admission.

ASSESSMENT

On examination, the patient was in no acute distress, vital signs included heart rate 65 beats/min, blood pressure 143/55 mm Hg, oxygen saturation 99% on room air, and normal temperature. The cardiac point of maximal impulse was nondisplaced, and there was a 3/6 blowing, early decrescendo diastolic murmur at the upper left sternal border, and a 3/6 holosystolic murmur at the apex. Carotid pulses were bounding. There was no S3. The remainder of the examination was unremarkable. Pertinent laboratory data were a white blood cell count of 22,600/mm^3, hemoglobin level of 7.9 g/dL, and platelet count of 68,000/mm^3, which were near his baseline. The remainder of laboratory data revealed no abnormalities. On the basis of the patient's history and transthoracic echocardiogram findings, a presumptive diagnosis of enterococcus endocarditis was made, and therapy with vancomycin was continued.

Transesophageal echocardiogram more clearly demonstrated the mitral valve mass, which measured 2.2 × 1.5 cm (**Figure 1B, C**). The leading diagnosis was aortic valve endocarditis with infiltration to the mitral valve causing a large anterior leaflet aneurysm. Cardiac computed tomography showed a sizable filling defect, highlighting the size of the mass (**Figure 2**). The patient remained afebrile and hemodynamically stable with no evidence of systemic emboli. A series of 11 blood cultures showed no growth.

Although the patient was clinically stable, the size of the mass raised concern for potential embolization and prompted surgical intervention that the patient underwent without complications. The aortic and mitral valves were replaced with bioprostheses. During the procedure, a polypoid, encapsulated mass (**Figure 3**) was confirmed on the anterior mitral leaflet that was consistent with prior measurements. There was no gross evidence of endocarditis on the mass or valves. The specimens were excised and sent for surgical pathology, culture, and polymerase chain reaction. Antibiotics were narrowed to ceftriaxone given the waning suspicion for endocarditis. The patient remained afebrile.

DIAGNOSIS

The differential diagnosis of intracardiac masses includes vegetation, aneurysm, thrombus, and benign and malignant tumors. In this patient, the history of *Enterococcus* bacteremia and the new valvular dysfunction initially suggested endocarditis with a mitral valve aneurysm. However, endocarditis was ruled out by the gross intraoperative findings, minimal focal inflammation of the aortic and mitral valves on surgical pathology, no growth on valvular

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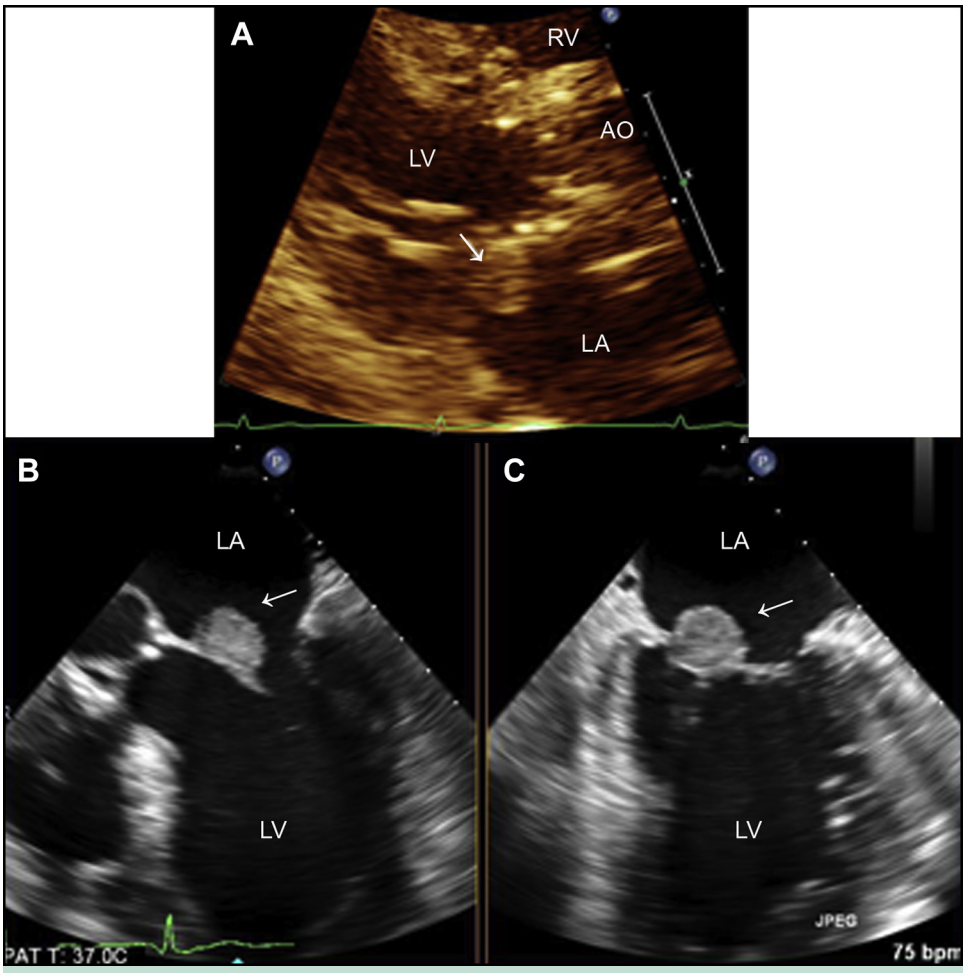

Figure 1 (**A**) Transthoracic echocardiogram, parasternal long-axis view, demonstrates suggestion of a mass (*arrow*) adjacent to the anterior leaflet of the mitral valve. (**B**) Transesophageal echocardiogram, midesophageal 2-chamber view in diastole and (**C**) systole, clearly shows the mitral valve mass. The mass is attached to the anterior mitral leaflet, measuring 2.2 × 1.5 cm. AO = aorta; LA = left atrium; LV = left ventricle; RV = right ventricle.

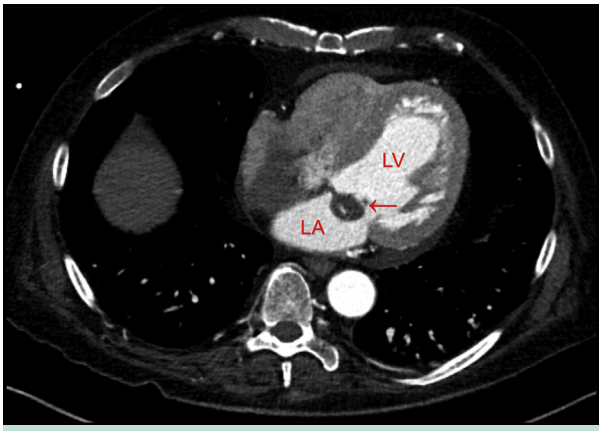

Figure 2 Cardiac computed tomography obtained for surgical planning before cardiothoracic surgery highlights the sizable mitral valve mass as demonstrated by the large filling defect (*arrow*).

cultures, and polymerase chain reaction without detection of bacteria. The pedunculated appearance of the mass aroused suspicion for cardiac malignancy or myxoma. Finally, surgical pathology revealed that the mitral valve mass was an intramural thrombus with dense acute inflammation (Figure 4).

Thrombus had not been considered because thromboses infrequently occur on native valves.[1] They more often involve prosthetic valves with an incidence of 1% to 3% per year.[2] Prior cases of native valve thrombi have been associated with hypercoaguable states, including prothrombin mutation,[1] antiphospholipid antibody syndrome,[3] and hypereosinophilic syndrome.[4] Our patient not only did not have these risk factors but rather was prone to bleeding because of idiopathic thrombocytopenic purpura.