Fibrous skeleton endocarditis causing septated aneurysm on the anterior mitral leaflet

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A 26-year-old male was diagnosed with active aortic valve endocarditis extending the fibrous skeleton, caused by *Streptococcus sanguinis*. A transthoracic echocardiography showed multiple, highly mobile vegetations on all three cusps of the aortic valve with mild-to-moderate aortic regurgitation and a 2.7 x 1.2 cm-sized septated aneurysm on the anterior mitral leaflet with moderate-to-severe mitral regurgitation (Panels A–C). On emergent surgery, a septated aneurysm invaded to the anterior mitral leaflet (Panel D). The aortic cusps were destroyed with numerous vegetations, but the infection was not spread into the aortic annulus or surrounding structures. The excised mitral mass was white to dark brown, with smooth and glistening appearance in atrial surface and septation in ventricular surface (Panels E and F). With the fibrous skeleton reconstruction using a bovine pericardium, both aortic and mitral valves were replaced with mechanical valves under support of extracorporeal circulation. Intravenous antibiotics with ceftriaxone and gentamicin were continued for approximately 4 more weeks postoperatively after which, the patient was discharged uneventfully.

Aneurysmal change of the anterior mitral leaflet is a well-known, but rare complication of aortic valve endocarditis. Once an aneurysm has developed, it is prone to rupture, resulting either in fatal embolic events or acute severe systolic mitral regurgitation. The extension of the infectious process is thought to be either due to the contiguous spread or due to the aortic regurgitant jet striking the subvalvular structures.

Panels A and B. Parasternal long-axis view of transthoracic echocardiography showing irregular, septated, round-shaped mass like an aneurysm (An) on the anterior mitral leaflet at end-systole. LV, left ventricle; LA, left atrium.

Panel C. Parasternal long-axis view of transthoracic echocardiography at end-diastole. LV, left ventricle; LA, left atrium; An, aneurysm on the anterior mitral leaflet; V, aortic valve vegetation.

Panel D. The intraoperative view of the mass attached to the anterior mitral valve.

Panel E. Atrial surface of the excised mass.

Panel F. Ventricular surface of the excised mass.