A 78-year-old woman presented with marked dyspnea, orthopnea, and paroxysmal nocturnal dyspnea. Eight years earlier, she had received a bioprosthetic mitral valve because of mixed mitral-valve disease. Physical examination showed an elevation in jugular venous pressure, an increased intensity of the first heart sound, a holodiastolic mitral rumble with presystolic accentuation, and hepatomegaly. Two-dimensional echocardiography (Panel A) showed dense calcification of the mitral valve (arrow). Doppler ultrasonography (Panel B) revealed a high mitral gradient (mean, 20 mm Hg) and a markedly decreased functional valve area (0.5 cm$^2$). An invasive hemodynamic study (Panel C) also showed a highly elevated mitral gradient, as indicated by the difference in the values for the pulmonary-capillary wedge pressure (PCWP) and the left ventricular diastolic pressure (LVDP). The stenotic mitral valve was replaced. Large calcific plaques (arrows in Panel D) were present on the ventricular side of the mitral leaflets of the excised valve and had caused commissural fusion. The patient had an uneventful recovery and was asymptomatic two years later. LV denotes left ventricle, LA left atrium, RA right atrium, and RV right ventricle.

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