

CLINICAL VIGNETTE

A rare case of mitral stenosis: caseous calcification of the mitral annulus

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A 62-year-old woman complaining of chest pain, and dyspnoea (New York Health Association class II) for two years was referred to hospital for further diagnostic evaluation and treatment. A left atrial myxoma was suspected. Echocardiography showed a nodulated, hyperechoic structure measuring 4.6×2.7 cm, without any acoustic shadow. Moderate mitral regurgitation and severe mitral stenosis with a mean pressure gradient of 26 mmHg were diagnosed. Computed tomography (CT) showed a demarcated calcification sized $44 \times 24 \times 43$ mm in the mitral annulus, placed laterally from the “free wall” of the left ventricle. On a CT with contrast enhancement, the left atrium was visibly modelled from the left side by this lesion (Fig. 1A, B). Small lymph nodes in the mediastinum on the right side and anterior to the aorta, up to 18 mm in diameter, were visualised, which were probably “post-inflammation mines.” Coronary angiography did not reveal any abnormalities. Cardiac magnetic resonance imaging demonstrated an oval pathological mass of $44 \times 25 \times 24$ mm (Fig. 1C), localised in the mitral ring. In steady-state free precession, the lesion was homogeneous and hyperintense, but in T1 and T2 sequences it was hypointense without saturation in the fat-saturation sequence. Post-contrast enhancement was observed around the pathological structure. The mass caused a decrease in the opening area of the mitral valve and acceleration of the blood flow. The patient was referred for surgical treatment because she showed symptoms of mitral stenosis. A white mass was evacuated, consisting of “toothpaste-like” white material and a thick calcium mass (Fig. 1D, [Suppl. Video 1 — see journal website](#)). The thickened anterior leaflet was cut out and a 25-mm On-X mechanical valve (CryoLife Inc., Kennesaw, GA, USA) was placed with a singular stitch. Caseous calcification of the mitral annulus (CCMA) is usually an incidental finding, most often observed in elderly patients, predominantly women. This condition may be difficult to diagnose. The lesion is typically located in the posterior part of the mitral annulus. Autopsy studies suggest that it occurs in 8% of the population [1], but in patients undergoing echocardiography the prevalence is $< 0.07\%$ [2]. Usually, CCMA is clinically insignificant. It can be confused with a cardiac tumour, thrombus, abscess, hydatid cyst, or vegetations in infective endocarditis [1, 3, 4]. It is not always treated, because surgery is necessary only if severe valvular dysfunction occurs [3]. In patients with CCMA, the risk of embolism or stroke should be assessed, because these conditions may be an indication for surgery [1, 5]. Asymptomatic lesions do not require any treatment. Echocardiography and CT seem to be the methods of choice in the diagnostic process.

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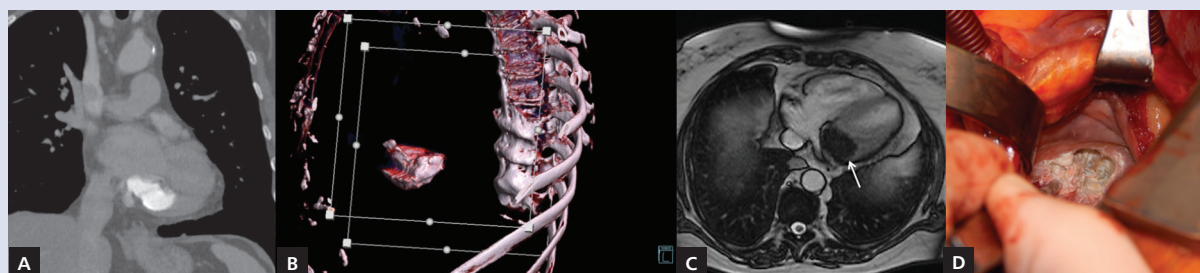


Figure 1. A. Computed tomography showing a demarcated calcification in the mitral annulus; B. Computed tomography reconstruction of the lesion; C. Cardiac magnetic resonance imaging demonstrating an oval pathological mass in the mitral ring (arrow); D. Intraoperative photo of the lesion showing a white mass consisting of toothpaste-like white material and a thick calcium mass

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