

Intracardiac pseudotumor: Caseous calcification of the mitral annulus on multimodality imaging

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Caseous calcification of the mitral annulus (CCMA) is a rare and benign condition [1]. However, occasionally CCMA may lead to serious complications [1–3]. The <1% prevalence of CCMA has been reported in imaging studies [1, 2]. Due to its rarity, the condition may cause diagnostic difficulties.

A 71-year-old female was referred for an episode of atrial fibrillation (AF). A transthoracic echocardiogram (TTE) was obtained (Figure 1A–C). A spherical, echo-dense tumor-like mass (30 × 23 mm) at the posterior mitral an-

nulus was incidentally diagnosed. The left atrium was enlarged (42 mm in LAX projection). Left ventricular ejection fraction (LVEF) was 60%, and no wall motion abnormalities were seen. Cardiac magnetic resonance imaging (MRI) showed CCMA (Figure 1D–F). Coronary artery disease was excluded by coronary angiography. The Heart Team recommended conservative treatment.

After 3 months, the patient was admitted to the hospital for frequent AF episodes. TTE and transesophageal echocardiogram (TEE)

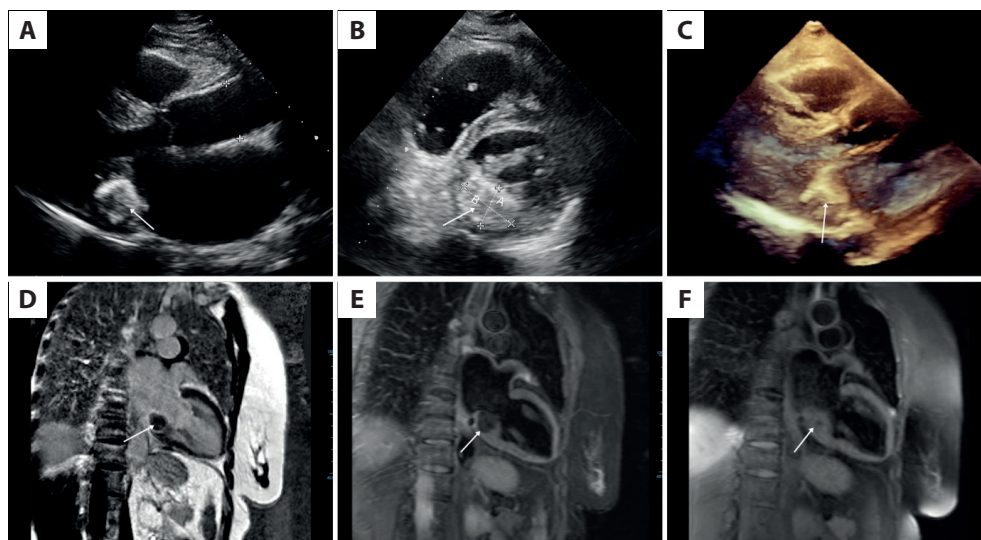


Figure 1. Tumor-like mass at the posterior mitral annulus (arrows on all panels). **A.** TTE, long-axis view; **B.** TTE, short-axis view (**A.** 23 mm; **B.** 30 mm). **C.** TTE, live 3D view. **D.** MRI, delayed enhancement sequences showing a non-enhanced central core surrounded by a hyper-enhanced rim (fibrous cap). **E.** MRI, T2-weighted STIR long-axis sequence with lack of signal. **F.** T1-weighted two-chamber, long-axis sequence before contrast administration

Abbreviations: MRI, magnetic resonance imaging; STIR, short tau inversion recovery; TEE, transesophageal echocardiogram; TTE, transthoracic echocardiogram

showed deterioration of mitral regurgitation with vena contracta (VC) of 6 mm along with moderate tricuspid regurgitation, echocardiographic features of pulmonary hypertension (tricuspid regurgitation gradient [TRG], 52 mm Hg), enlarged left atrium (49 mm in LAX projection), and small patent foramen ovale. Catheter ablation using the CARTO system was successfully performed.

After the next 4 months, no AF episode was recorded. However, the patient reported fatigue. On TTE, increased pressure in the right ventricle was still seen (TRG, 42 mm Hg), together with moderate tricuspid regurgitation and moderate mitral regurgitation. Features of left ventricular diastolic dysfunction were noticed on echocardiography examination. The pharmacotherapy was supplemented with angiotensin receptor-neprilysin inhibitors and beta blockers with good results.

The next hospitalization was 8 months later for ST-segment elevation myocardial infarction of the inferior wall. Coronary angiography showed ulcerated plaque of the right coronary artery with stenosis >50%. A drug-eluting stent was implanted. On TTE, LVEF was 55%, tricuspid regurgitation gradient was slightly reduced compared to the previous examination (TRG, 40 mm Hg), and other findings were comparable.

Currently, the patient is under comprehensive post-infarction care. Two months after diagnosis of acute coronary syndrome, atrial fibrillation recurred, and it is managed with the rate-control strategy. Exercise tolerance is good. There are no echocardiographic signs of deterioration of cardiac function.

CCMA is usually an incidental finding. Some patients might develop dyspnea, palpitations, or neurological symptoms due to thrombotic complications [1, 3, 4]. Atrioventricular block or mitral dysfunction may also be associated with CCMA [1, 3, 4]. Atrial fibrillation seems

to be a natural consequence of mitral valve dysfunction. Rupture of unstable atherosclerotic plaque, though this is debatable, could have a common pathophysiological substrate with CCMA. A multi-modality imaging approach is usually mandatory for proper diagnosis. Management is often conservative, however, in the case of severe mitral dysfunction or severe complications, a surgical approach may be indicated [5]. Patients with CCMA always should be under comprehensive care with regular follow-ups.

Article information

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