Caseous calcification of the mitral valve complicated by embolization, mitral regurgitation, and pericardial constriction

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A 64-year-old man presented with amnesia and was found to have multiple cerebral lesions on magnetic resonance imaging (MRI) (Panel A). Thoracic computed tomography excluded malignancy, but found pericardial calcification (Panel B, red arrows) and mitral annular calcification (Panel B, white arrows). Transthoracic and transoesophageal echocardiography revealed sub-valvular apparatus calcification below the posterior mitral valve leaflet (PMVL) with mild mitral regurgitation (see Supplementary data online, Movies S1 and S2) and no other potential source of embolism.

Cardiovascular MRI showed a mass in the region of the PMVL communicating with the pericardial space (Panels C–H, white arrows; see Supplementary data online, Movie S3). The mass was hyperintense on T1 and T2 weighting with a hypointense nodule, suggesting a fluid-filled lesion and calcified core (Panel E, white arrow). The adjacent pericardium was calcified and significantly thickened (Panels E and F, red arrows). Early and late gadolinium-enhancement imaging demonstrated a hyperenhancing fibrous cap surrounding a non-enhancing (avascular) core (Panel G). Caseous calcification of the mitral valve with pericardial involvement was diagnosed. Six months later, the mass had regressed and much of the caseous material had disappeared (Panels D, F, and H, white arrows). Pericardial calcification remained unchanged (Panel F, red arrows), but there was now a septal bounce and clinical signs of pericardial constriction (see Supplementary data online, Movies S4 and S5). Significant mitral regurgitation due to PMVL tethering was now seen on cine imaging (Panel D, yellow arrow; see Supplementary data online, Movie S6).

Caseous calcification is usually benign, but valvular dysfunction and embolization of necrotic material have been described. In addition, this case reports extensive pericardial involvement—most likely a result of necrotic material rupturing into the pericardial space. Supplementary data are available at European Heart Journal - Cardiovascular Imaging online.

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