In an era of multimodality cardiac imaging, echocardiography remains the gold standard for the evaluation of valvular and periprosthetic masses

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A 79-year-old patient presented to our institution with a 3-month history of dyspnoea. She had undergone resection of a left atrial malignant fibrous histiocytoma that was attached to the interatrial septum, with mitral valve repair 7 months earlier. A recent positron emission tomography scan demonstrated no evidence of recurrent tumour (Panel A, see Supplementary data online, Video S1). Cardiac magnetic resonance (CMR) showed no recurrent tumour, but displayed significant artefact surrounding the mitral annuloplasty ring (Panels B and C, see Supplementary data online, Video S2). Further evaluation with transthoracic echocardiography demonstrated a 2 cm heterogeneous mass attached to the anterior mitral leaflet (Panels D and E, see Supplementary data online, Video S3) with severe left ventricular inflow obstruction (mean gradient 23 mmHg) (Panel F) and mild—moderate mitral regurgitation. The right ventricle was enlarged and dysfunctional in the setting of moderate—severe tricuspid regurgitation and severe pulmonary hypertension (estimated pulmonary artery systolic pressure 106 mmHg). These findings were confirmed on transoesophageal echocardiography.

CMR is frequently reported as the gold standard for the evaluation of cardiac masses due to its superior spatial resolution and tissue characterization. However, the technique’s inferior temporal resolution and susceptibility to artefact from prosthetic structures can significantly impair visualization of masses. This case highlights the continued central role of echocardiography in the assessment of intracardiac masses. Its superior temporal resolution provides clear advantages in the assessment of valvular lesions. Furthermore, echocardiography is less susceptible to prosthetic artefact offering a unique advantage when imaging periprosthetic structures.

Hence, while multimodality imaging is important in the assessment of intracardiac tumours, echocardiography remains the diagnostic gold standard for valvular and periprosthetic masses.

LA: left atrium; LV: left ventricle; RA: right atrium; RV: right ventricle; arrowhead: artefact arising from the mitral annuloplasty ring; arrow: mass attached to the anterior mitral leaflet.

Supplementary data are available at European Heart Journal – Cardiovascular Imaging online.

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