The many faces of cardiac lipoma—an egg in the heart!

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A 51-year-old man underwent staging computed tomography (CT) for a malignant renal tumour, revealing a right atrial mass (Figure 1, Panel A). Transoesophageal echocardiography also demonstrated the mass (Panel B) but neither imaging modality was able to characterize it further. Cardiac magnetic resonance (CMR) demonstrated an ovoid (28 × 18 × 19 mm), well-circumscribed, and mobile mass attached to the right lateral wall of the atrium below the superior vena cava, with several aspects typical for adipose tissue:

- High signal on steady-state free-precession (SSFP) sequences, with chemical shift artefact at the blood interface (Panel C, see Supplementary data online, Movies 1 and 2)
- Homogenous, extremely low T1 values (200–300 ms) on T1-mapping (Panel D); normal myocardium 962 ± 25 ms at 1.5 Tesla
- Loss of signal from the mass on a short-Tau inversion recovery (STIR) fat saturation sequence (Panel F), compared to a turbo spin echo (TSE) dark blood sequence acquired in the same transaxial image position (Panel E)

Perfusion imaging showed poor vascularity (see Supplementary data online, Movie S3), and there was no late gadolinium enhancement. The CMR diagnosis was intracardiac lipoma, but an unusual malignant tumour with high fat content could not be excluded.

Surgical excision was performed to avoid potentially fatal embolism and obtain a definitive diagnosis, excluding the small possibility of malignancy. The macroscopic appearance was an ovoid ‘egg’ of fat (Panel G) and histology showed encapsulated mature adipocytes with entrapped cardiomyocytes and no malignant cells (Panel H; haematoxylin and eosin stain; scale bar = 220 μm), confirming a benign right atrial lipoma.

Although CMR cannot definitively exclude malignancy, this case had strong features of a benign aetiology (single, well circumscribed mass; no invasion across tissue planes nor pericardial effusion and typical features of a lipoma, outlined above) that made the diagnosis almost certain with imaging alone.

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