A 37-year-old woman affected by anti-phospholipid antibody syndrome (APS), underwent routine transthoracic (TT) echocardiography for pregnancy planning. She had had deep vein thrombosis and pulmonary embolism about a decade earlier, when she was treated with 6-month oral anti-coagulation.

Transthoracic-echocardiography unexpectedly revealed a round-shaped, pedunculated, hyperechoic mass 11 × 16 mm in size fluctuating in the right ventricle (Panel A; Supplementary material online, Video S1), attached to its anterior wall. Notwithstanding the atypical mass morphology and position, the diagnostic hypothesis of a thrombus was strongly considered, due to the patient’s history. Proper oral anti-coagulation was indicated and continued for 6 months; however, subsequent TT-echocardiograms did not show any reduction in the mass size.

Ultrasound contrast medium (Sonovue) injected during low mechanical index TT-echocardiography (Panel B) demonstrated the absence of blood perfusion inside the mass (Supplementary material online, Video S2).

Cardiac magnetic resonance imaging (Panel C; Supplementary material online, Video S3) showed hypointensity of the mass in all sequences, suggesting reduced vascularization, which would have been compatible with a muscular mass.

Heart surgery revealed a grey-like mass attached to the anterior wall of the right ventricle, right under the posterior tricuspid leaflet. The histologic examination finally revealed a haematic thrombus with partial fibrocalcific organization (Panel D).

Intra-cardiac thrombosis is a very rare manifestation of APS; despite several solid elements in favour of thrombosis in the patient’s history, CMR suggested a neoplastic mass, a hypothesis strengthened by total unsuccessfulness of oral anti-coagulant therapy.

In this setting, non-invasive multi-modality imaging confounded the diagnostic workup. Nevertheless, it is remarkable how contrast-enhanced echocardiography allowed easy semi-quantitative assessment of perfusion of this mobile mass by means of flash-replenishment real-time imaging, an issue technically very challenging with CMR.

Supplementary material is available at European Heart Journal online.