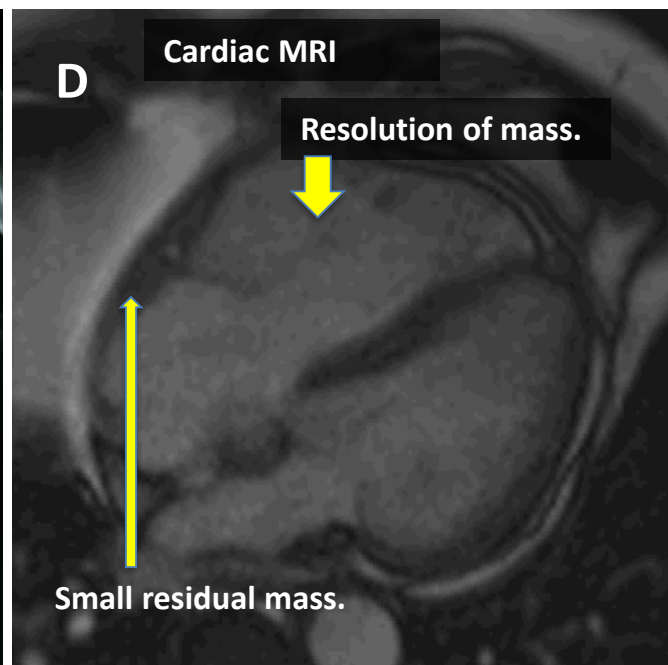
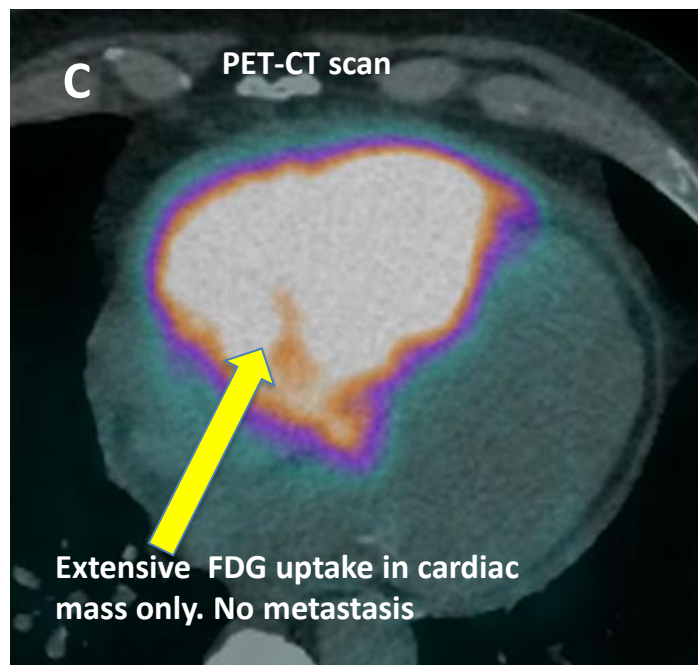
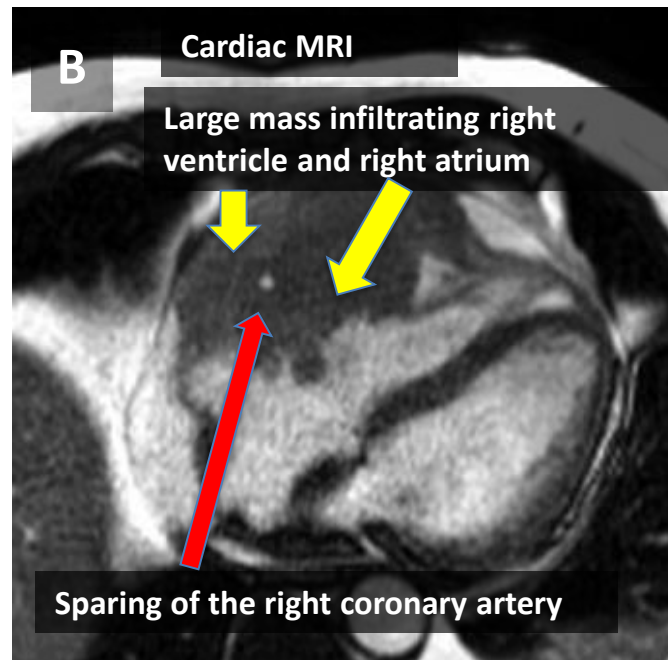
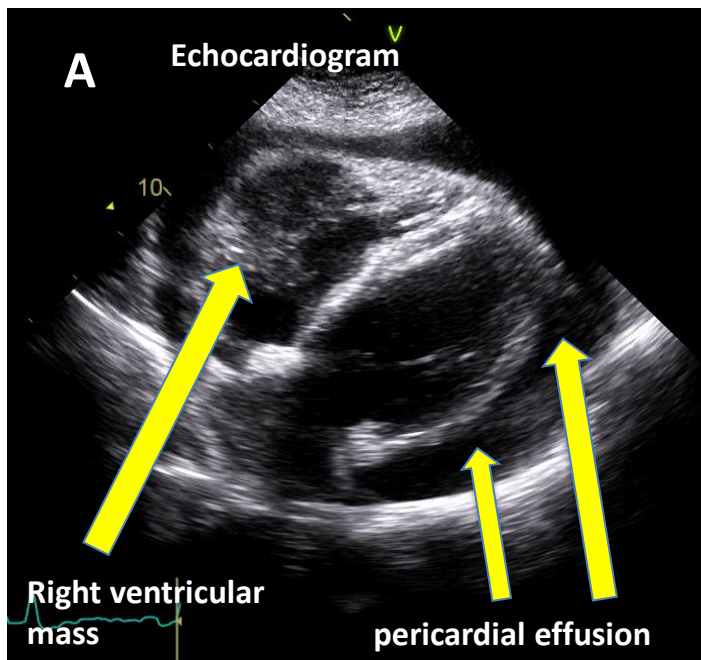
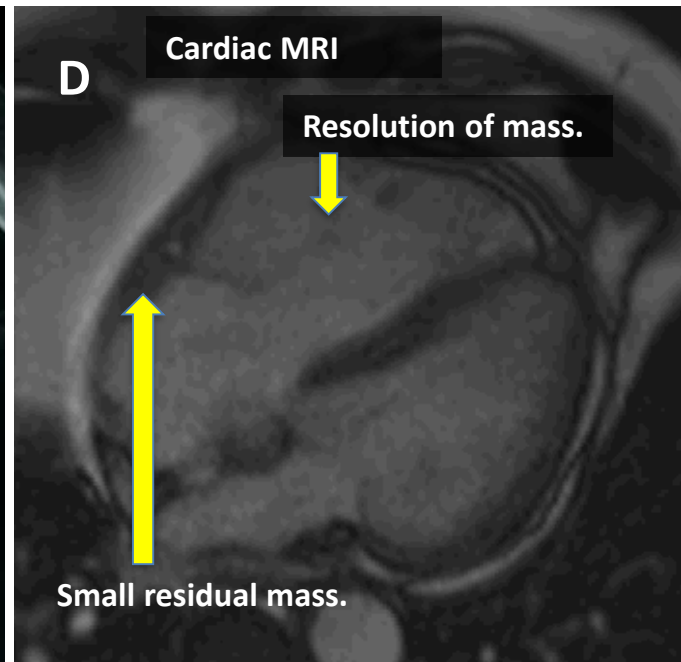
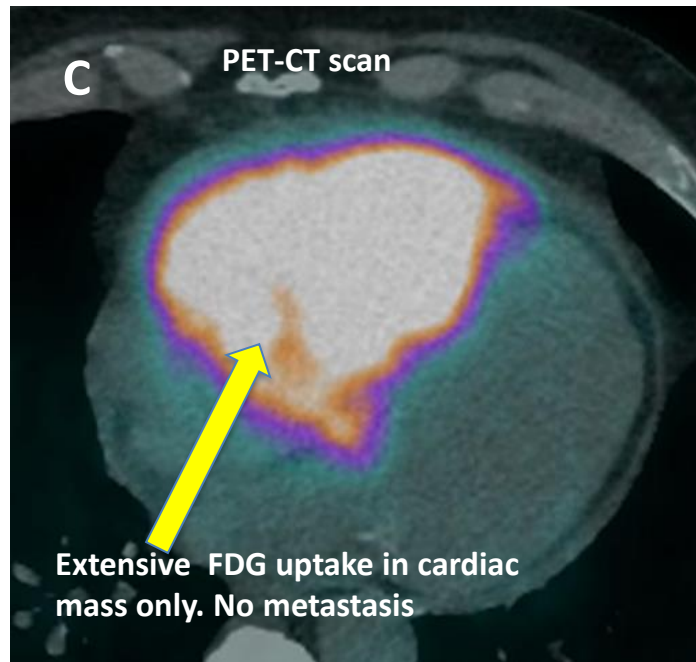
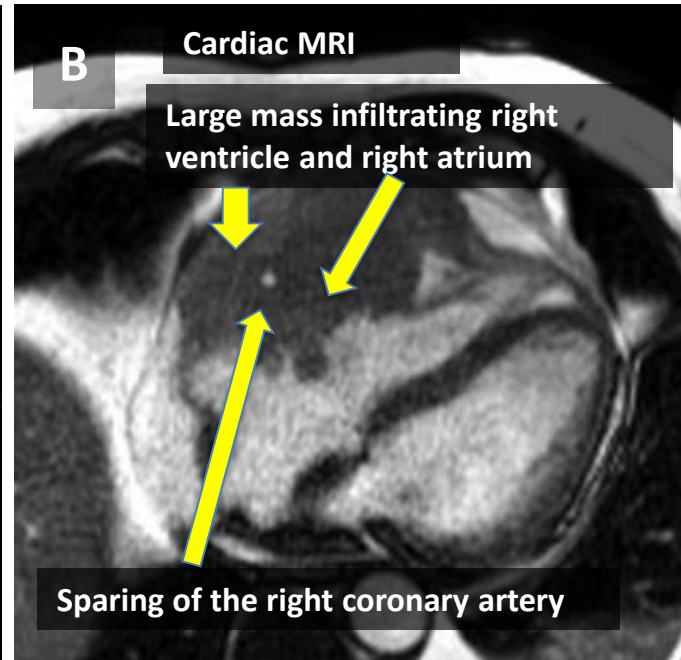
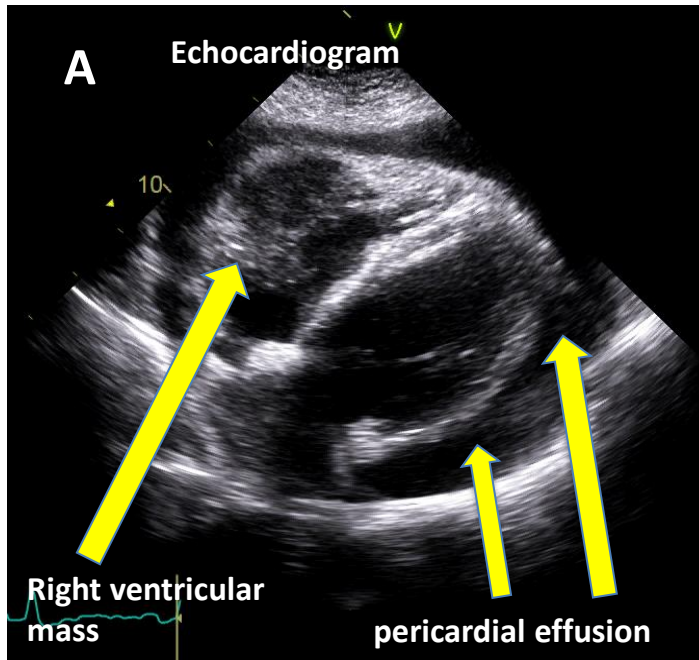


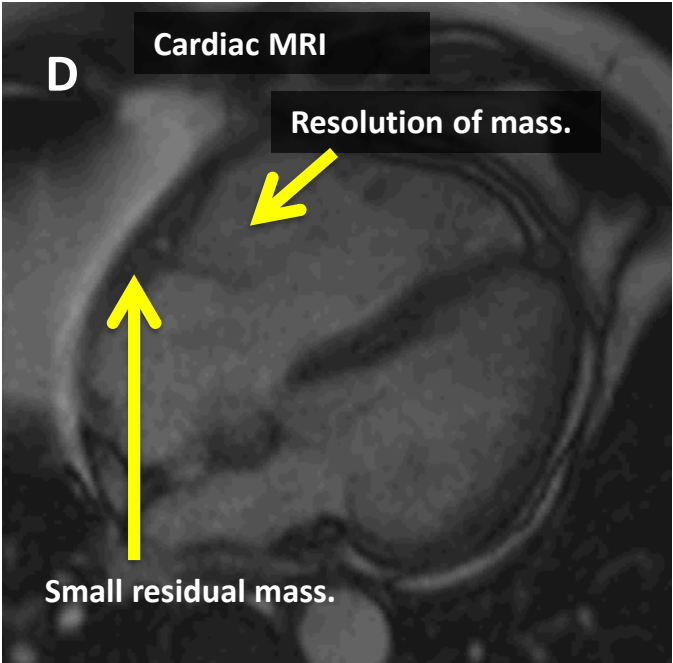
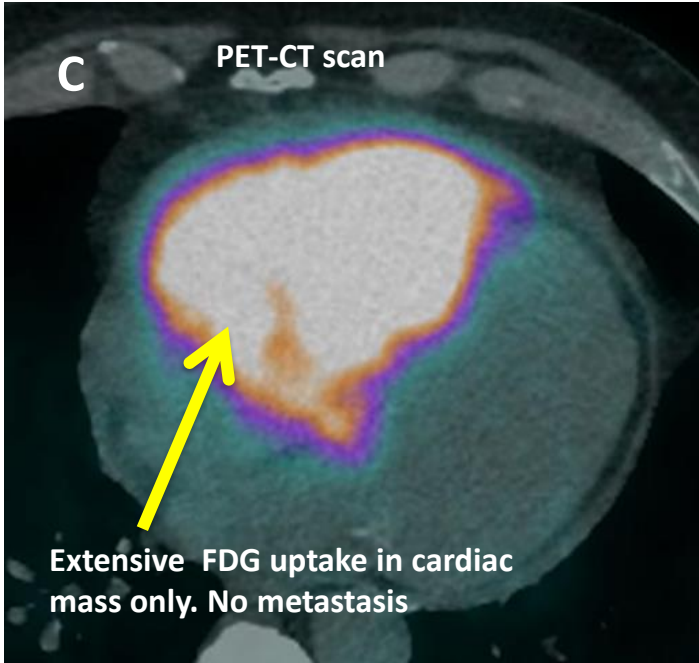
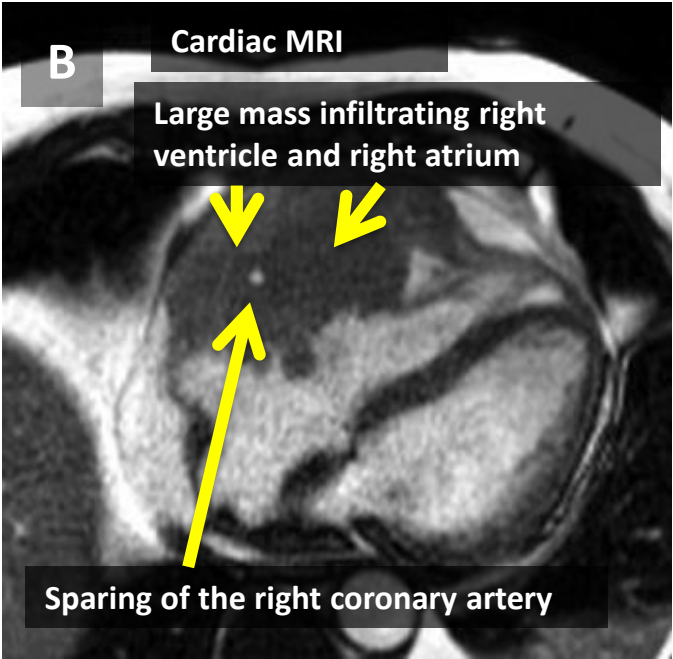
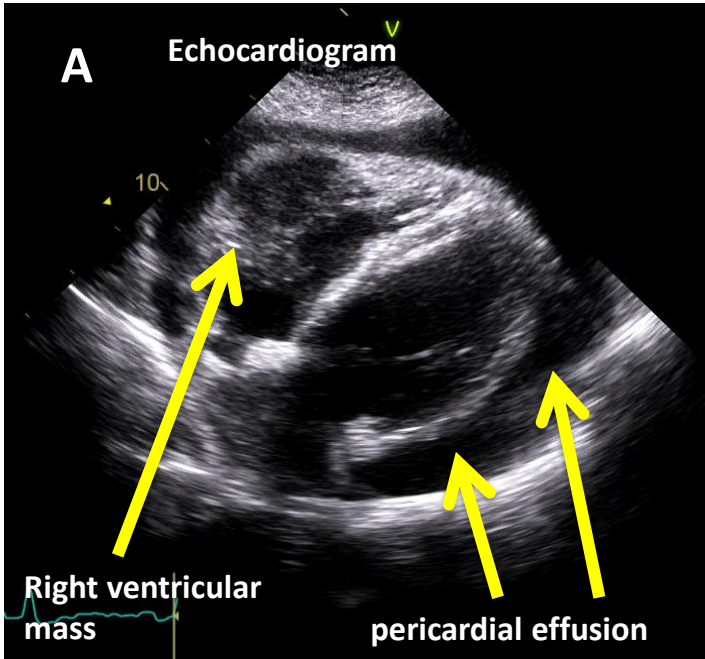
Original



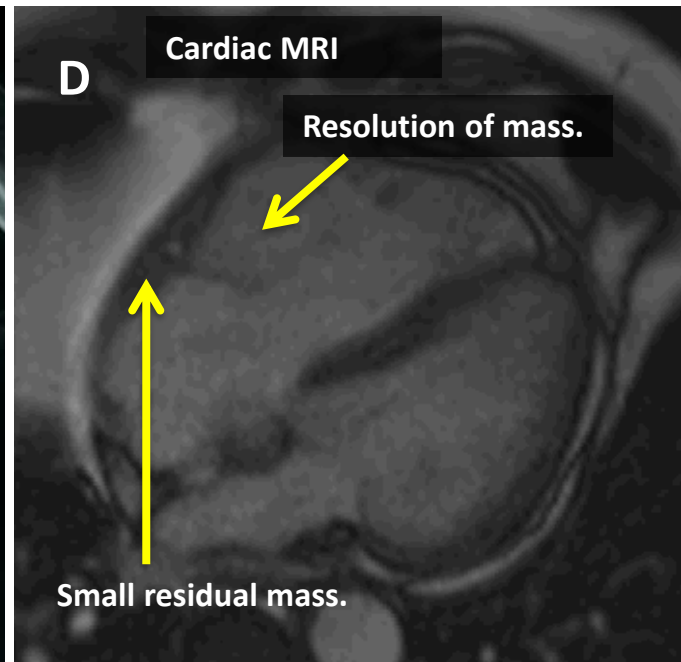
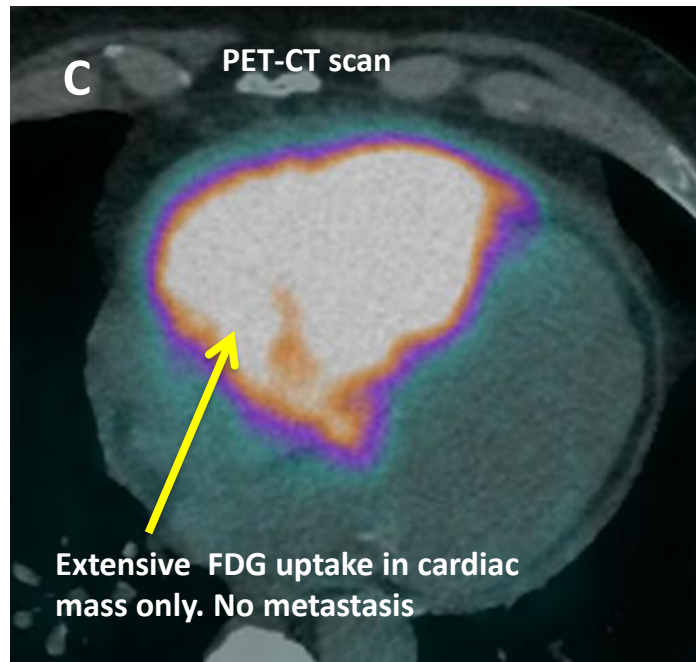
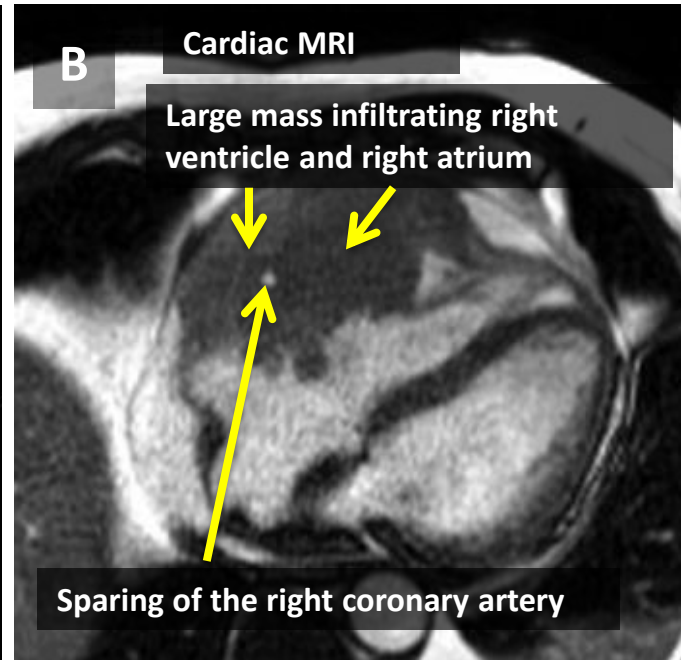
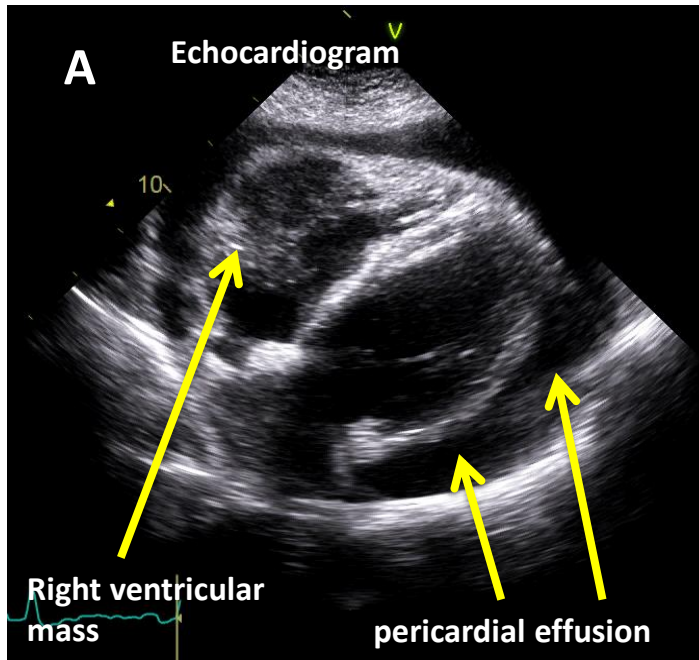
Option 1



Option 2



Option 3



Regression of aggressive cardiac lymphoma following R-CHOP chemotherapy treatment: Non-invasive imaging guiding diagnosis, management and assessing treatment effectiveness.

A 76 year-old previously well man presented with progressive breathlessness over 2 weeks with orthopnoea, peripheral oedema and jugular distension without weight loss, fever or night sweats. Bedside echocardiogram revealed a large pericardial effusion with signs of tamponade and a right ventricular mass (Panel A). Ultrasound and fluoroscopy guided emergency pericardiocentesis removed 1800mls of blood-stained fluid. Cardiovascular magnetic resonance (CMR) imaging confirmed a large (9.1cm x 6.5cm) mass (Panel B, Supplementary Video 1) infiltrating into the pericardium, and encroaching into the right atrium and ventricle but sparing the right coronary artery. Tissue characterisation showed no evidence lipoma and vascularity was confirmed by resting first-pass perfusion suggesting malignancy with cardiac lymphoma followed by angiosarcoma as main differential diagnosis. Pericardial effusion cytology and histology confirmed high grade B-cell lymphoma. Positron emission tomography showed extensive tracer uptake in the heart but no metastasis (Panel C). Chemotherapy regimen – Rituximab, Cyclophosphamide, Hydroxydaunomycin, Vincristine, Prednisolone (R-CHOP) was initiated with curative intent. Repeat CMR after 3 cycles of R-CHOP shows a marked reduction in size of mass (Panel D, Supplementary Video 2).

Primary cardiac malignancies are rarer than metastatic involvement (1.3% of all cardiac tumours, and 0.5% of all extra-nodal lymphomas). They can initially present with large pericardial effusion and haemodynamic instability. Cardiac lymphoma has favourable prognosis compared to other cardiac malignancies due to availability of potentially curative chemotherapy, although can be fatal unless diagnosed and treated in time. Non-invasive imaging was essential for guiding pericardiocentesis. CMR was crucial during diagnosis and assessing treatment effectiveness.