Paracardiac mass with possible cardiac infiltration: the incremental clinical value of multimodality non-invasive imaging

Bryan Wai*, Maurice Molan, and Piyush M. Srivastava

Cardiology Department, Austin Health, 145 Studley Road, Heidelberg, Melbourne, Victoria 3084, Australia

* Corresponding author. Tel: +61 394965527, Fax: +61 394964368, Email: bryan.wai@austin.org.au

An asymptomatic 24-year-old man was referred for further investigation with an incidental finding of a mass over the left heart border on an immigration chest X-ray (Panel A). Physical examination and laboratory results were normal. Transthoracic echocardiogram showed a cystic structure along the anterolateral left ventricular (LV) border with no pericardial effusion (Panel B). A CT scan showed a lobulated mass in the anterior and middle mediastinum. Cardiac infiltration could not be excluded (Panel C), resulting in an MRI being performed.

On cardiac MRI, flattening of the anterolateral LV wall with free movement of the LV myocardium against the lesion was noted (Panel G). Although heterogeneous in signal, the T1 sequences (Panel D) showed that the mass was isointense to myocardium but had increased signal intensity with STIR sequences (Panel E). Myocardial tagging with breaking of tag lines at end systole suggested that there was no infiltration of the myocardium (Panel F).

This information assisted the surgical team in pre-operative planning; at resection, the mass was found to be well circumscribed without myocardial involvement.

Pathological findings were of a cystic-encapsulated structure attached to the thymus gland, measuring 7 × 6.5 × 3 cm. Histological specimens showed an encapsulated tumour with lobulation of architecture, fibrous septation, and a biphasic composition of small lymphocytes and polygonal epithelial cells consistent with thymoma (Panels H and I). No invasion of mediastinal fat was identified.

This case serves to highlight the incremental clinical value of non-invasive imaging modalities in delineating cardiac involvement of paracardiac masses.