Epicardial and Mediastinal Fat Mimicking Pericardial Effusion

Clinical History
A 48-year-old obese woman with a body mass index (BMI) of 31, a history of systemic lupus erythematosus (SLE), and a history of hypothyroidism presented with several months of progressive exertional dyspnea. Three transthoracic echocardiograms (TTE) reports over the past decade, the last obtained three years ago, had noted the presence of a small chronic pericardial effusion (PE). A repeat TTE (Figure 1) was performed and the possibility of excess epicardial and mediastinal fat rather than a PE was raised. Cardiac MRI (Figures 2 and 3) was performed to confirm the presence of excess fat.

Findings
MR confirmed the presence of fat in the epicardial space and mediastinum, as noted by the presence of a diffuse thick band of T1 and T2 hyperintense signal around the heart which lost signal on the fat-saturated images. No mass effect on the cardiac chambers or great vessels was identified.

Discussion
Diffuse, excess epicardial and mediastinal fat may be idiopathic or secondary to obesity, Cushing disease or exogenous steroid use. In this case, excess epicardial and mediastinal fat was likely related to patient obesity and a history of hypothyroidism. Excess epicardial and mediastinal fat can mimic pericardial effusion and/or pericardial masses. In addition, excess fat can also have mass effect with or without hemodynamic significance.

Reports of pericardial fat in the literature have predominantly pertained to pericardial lipomas rather than unencapsulated, diffuse fat. On echocardiography, intracardiac lipomas are generally hyperechoic while subepicardial lipomas usually appear relatively hypoechoic and may be misinterpreted as pericardial fluid. Both CT and MRI are useful in localizing and characterizing epicardial fat, mediastinal fat, and lipomatous tumors.

REFERENCES