Myocardial neuroendocrine tumour metastasis mimicking melanoma: multimodality imaging diagnosis


Bristol Heart Institute, Bristol Royal Infirmary, Upper Maudlin Street, Bristol BS2 8HW, UK
* Corresponding author. Tel.:+44 0117 9230000, E-mail: smlyen@doctors.org.uk

A 77-year-old woman was referred for transthoracic echocardiogram (TTE) following episodes of paroxysmal atrial flutter. TTE showed an echogenic mass within the apical interventricular septum (Panel A, arrow). There was mild mitral and tricuspid regurgitation, but the valve leaflets were normal. On contrast-enhanced thoracic computed tomography (CT), the mass showed heterogeneous enhancement (Panel B, arrow).

Cardiac magnetic resonance imaging (CMR) revealed that the mass was hyperintense on T1 (Panel C, arrow) and short tau inversion recovery (STIR) images (Panel D, arrow), with enhancement isointense to myocardium on late gadolinium images (Panel E, arrow). Due to the high T1 signal and patient’s age, melanoma metastasis was thought to be most likely. Although typically melanin exhibits T2 hypointensity, this can be variable depending on melanin content. However, no skin lesions were present on examination.

A staging abdominal CT demonstrated thickening of the terminal ileum, merging with a 20 mm spiculated mesenteric mass containing calcification (Panel F, white arrow). An Indium-111-labelled Octreotide single-photon emission CT scan (Panel G) showed radiopharmaceutical uptake within the thickened ileum, mesenteric mass (arrow), and the septal tumour (arrowhead).

Subsequent ultrasound-guided biopsy of the mesenteric mass confirmed the diagnosis of Grade-2 metastatic neuroendocrine tumour. The patient was commenced on somatostatin analogues. Follow-up CT at 1 year was stable with a decrease in the serum tumour marker Chromogranin A from 668 to 297 pmol/L. Our case was unusual in that the high T1 signal mimicked a melanoma metastasis, and the patient did not have evidence of carcinoid syndrome or hepatic metastases.