Leiomyosarcoma in the right atrium and occluding the inferior vena cava

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The radiographic image (figure) shows a tumour the size and shape of an hen’s egg in the right atrium, outlined by contrast injection in the superior vena cava, that was found in a 50 year old woman who presented with fatigue, jaundice, oedema, and ascites. Venous distension was apparent, particularly in the lower half of the body. She was in sinus rhythm with a normal cardiac impulse and no murmurs. The liver was enlarged but not pulsatile. Ultrasound examination of the abdomen showed a tumour at the hilum of the liver with total obstruction of the inferior vena cava. Venography confirmed the obstruction with contrast draining to the right atrium via the azygos system.

A biopsy specimen of the right atrial tumour was taken via the right internal jugular vein using a Cordis biopette (7 French gauge). During biopsy the tumour felt much harder than normal cardiac tissue. Histological examination showed that the tumour was a leiomyosarcoma. It was thought to have invaded the right atrium rather than have originated there. Despite treatment the patient died within six months of presentation.

Masses in the right atrium may be thrombus (arising in situ or embolic), rarer types of emboli, massive vegetations (especially in fungal endocarditis), or tumours. The commonest variety of cardiac tumour is a benign myxoma. In this case, the ultrasound scan suggested that the mass was a malignant tumour invading the right atrium from the inferior vena cava. A histological diagnosis was considered necessary to confirm the diagnosis of malignancy (because some benign tumours, such as leiomyomatosis,\(^1\) can grow into the right atrium from the inferior vena cava) and to determine what treatment was appropriate. In this case the tumour was a relatively rare solid tumour, a leiomyosarcoma arising in the vena cava. There are about 20 reported cases.\(^2\) Other malignant tumours that can invade the atrium from the lumen of the vena cava include renal adenocarcinomas and hepatomas. Before surgical removal of a right atrial mass is attempted, it is advisable to visualise the vena cava by ultrasound or contrast radiography to exclude such invasion.