Soft tissue neoplasm invading the heart with associated thrombus in a 74-year-old man

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A 74-year-old gentleman was referred to our institution for investigation of an intra-cardiac mass, as part of the tertiary referral service that this institution provides for trans-esophageal echocardiogram (TOE).

He presented initially to a general hospital 30 miles away with sub-costal pain. An ultrasound scan subsequently performed was unrevealing. A computed tomography (CT) thorax/abdomen was then performed. This revealed a constricting mass around the sigmoid colon, a lytic lesion within the T7 vertebra, and a mass in the left atrium. A colonoscopy was performed but no lesion was seen.

A trans-thoracic echo confirmed a mass in the left atrium, however, this investigation was suboptimal as the patient had a BMI over 35 and hyper-inflated thorax secondary to chronic obstructive airways disease. Thus he was referred to our institution for TOE.

The TOE was performed immediately upon arrival, and was tolerated well with no complications. It revealed a mass in the left atrium which was inhomogeneous with both solid and cystic components (Figures 1 and 2). There were spherical masses in the left atrium that were homogeneous and smooth contoured. There were frond like projections admixed with the mass. It did not exhibit the typical appearances of a myxoma and seemed to invade the posterior left atrial wall. It also seemed to invade the interatrial septum to the right heart. The LV function was mildly depressed, there was mild MR and an agitated saline study was negative. Our impression was that this mass was most likely a secondary malignancy with superimposed thrombosis coming from a primary or secondary lung/mediastinal malignancy.

The patient had difficulty in walking since admission, and a neurological examination of the lower limbs revealed increased tone, power 1/5 bilaterally, increased deep tendon reflexes, and decreased sensation to fine touch and pin-prick sensation consistent with a T6/7 spinal lesion.

A cardiac MRI to further image the extent of the mass, and a whole-spine MRI scan to determine the cause of the neurological signs were then performed. The cardiac MRI confirmed the presence of a mass lesion in the left atrium, and revealed that it originated from behind the heart, as a lesion that extended to the thoracic spine, impinging on the spinal chord (Figures 3 and 4). MRI spine demonstrated that the mass invaded T7 vertebra, destroying the normal architecture.

The patient was referred to the Radiation Oncology service for targeted radiotherapy to the T7 lesion, and was commenced on steroids immediately to reduce edema surrounding the lesion with the aim of reducing the neurological compromise.

The spinal lesion was also biopsied, however post radiotherapy there was no viable tissue, and biopsy proved futile.

The Oncology service was consulted, and informed the patient of his treatment options. The patient made an informed decision not to undergo curative therapy. We obtained the services of the Palliative Care team. Obtaining tissue for biopsy was therefore deemed inappropriate and unethical at this stage. The patient was transferred back to the hospital from which he was referred so that he would be closer to his family. He died one month later, and an autopsy was not performed.

Supplementary material
Supplementary material associated with this article can be found in the online version.
Figure 1  TOE showing left atrial mass (white arrowheads) with spherical thrombus attached (grey arrowhead).

Figure 2  TOE; more detailed image, projection at 90° to previous image, of the mass (white arrowheads) with attached circular thrombus (grey arrowhead).

Figure 3  Cardiac MRI; mass in left atrium (arrowhead).

Figure 4  Cardiac MRI; mass impinges on spinal cord (arrowhead).