Pulmonary hepatic nodules

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DESCRIPTION

A young woman presented with three pulmonary nodules identified in the right lower lobe discovered on an outside CT scan of the abdomen which was performed to investigate right flank pain. The pain was ascribed to urinary tract infection and resolved over the next few days. These lesions were not present on a CT scan obtained 3 years before. A dedicated CT of the chest confirmed the lesions which were between 1.8 and 2.5 cm in size and located along the diaphragm (figure 1A). No

mediastinal lymphadenopathy or other lung lesions were identified. Initially a CT-guided biopsy of one of the lesions was planned; however, the radiologist raised the suspicion that these might represent liver parenchyma herniated through the diaphragm. Subsequently a sulfur colloid scan was performed (5.5 mCi technetium 99 IV) and planar as well as single-photon emission CT (SPECT)-CT images were obtained (figure 1 B-H). SPECT-CT images identified three soft tissue nodules on CT near the right lung base at the posterior right liver dome

Figure 1 Axial CT only (A) and fused (B) axial single-photon emission CT (SPECT)-CT images demonstrate a right lower lobe soft tissue nodule near the diaphragm. It demonstrates same density on CT and same sulfur colloid uptake as liver. Sagittal non-contrast (G) and fused (H) SPECT-CT images demonstrate more nodules and better appreciate the geographic relationship between lung nodules, diaphragm and liver. SPECT-only images (C, transverse; D, sagittal oblique; E, sagittal and F, coronal) demonstrate the sulfur colloid uptake by nodules along the right diaphragm (arrows).

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measuring 2.0, 2.5 and 3.5 cm which were associated with radionuclide activity. The CT density of these nodules was similar to liver tissue and sulfur colloid uptake behaviour was also similar to liver, confirming the diagnosis of herniated liver. The patient recalled a motor vehicle accident a few years ago which was likely the cause of herniation.

The patient was managed conservatively with yearly follow-up CT scans. She remained asymptomatic with no change in radiological appearance of the abnormality after 2 years.

Learning points

- ▶ This case is of particular interest for the following reasons:
- ▶ First, the nodules were not present 3 years prior to the outside scan thus misleading the clinicians into a suspicion for a neoplastic process.
- ▶ Second, sulfur colloid scan prevented an invasive and potentially harmful procedure (biopsy, surgery) in an especially difficult area (close to pleura, diaphragm and liver).
- ▶ Finally, the multiplicity of nodules presumes a predisposing diaphragmatic weakness (maybe congenital) that allowed the liver herniating at multiple locations, in the absence of a penetrating injury.

Competing interests None.

Patient consent Obtained.

Provenance and peer review Not commissioned; externally peer reviewed.

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