Liver Hemangioma

A 34-year-old man presented with an incidental liver lesion. CT (A) showed an indeterminate hypodense lesion in the right hepatic lobe. Subsequently, a Tc-99m red blood cell (RBC) SPECT/CT was performed (B and C) for further characterization. Focal radiotracer uptake localized to the lesion, which is most consistent with a liver hemangioma.

A liver hemangioma is a benign hypervascular lesion frequently encountered incidentally. It is important to accurately characterize a lesion as a hemangioma, distinguishing it from other more aggressive lesions, including malignancy.

Although CT and MR characterize the vast majority of liver hemangiomas, Tc-99m RBC scans can confirm lesions that are indeterminate on CT or MR due to atypical features. Although early blood pool imaging is variably performed clinically as it is nonspecific, a hemangioma classically demonstrates relative decreased radiotracer uptake compared to the liver. However, on delayed imaging at 1-2 hours, a hemangioma demonstrates relative increased uptake compared to the liver background. This pattern of uptake is thought to be related to the sluggish flow of blood through the larger vascular channels in the hemangioma.\(^1\)

The lesion size should be considered before performing this study. Only larger hemangiomas (> 3 cm) can be reliably evaluated by planar imaging. SPECT imaging is more useful with smaller lesions demonstrating a sensitivity of 91\% in evaluating hemangiomas > 1.3 cm, but sensitivity decreases when lesions are subcentimeter.\(^2\) Hybrid SPECT/CT can improve reader confidence with precise anatomic localization.

References