

MRI findings of a hepatic epithelioid hemangioendothelioma

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Abstract: Hepatic epithelioid hemangioendothelioma (EHE) is a rare, low-grade malignant vascular tumor. Hepatic EHE can manifest as diffuse nodular lesions with predilection of peripheral subcapsular growth, nodular confluence, together with "halo" sign and "capsular retraction" sign. These imaging features help to achieve the diagnosis.

Key Words: Epithelioid hemangioendothelioma; MRI



Submitted Jun 25, 2012. Accepted for publication Jul 31, 2012.

DOI: 10.3978/j.issn.2223-4292.2012.07.01

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A 24-year-old female initially presented with right upper quadrant pain for two weeks and was found to have multiple solid lesions in the liver by ultrasound. She was referred to our institution. Laboratory tests and physical examinations were unremarkable.

Abdominal MRI was performed at our institution. Multiple heterogeneous lesions were found in the liver. Most of the lesions were peripherally located. The lesions showed low signal intensity on T1-weighted images (*Figure 1A*) and high signal intensity on T2-weighted images with a more hyperintense central area (*Figure 1B*). On dynamic contrast-enhanced images, slight enhancement in the periphery of the lesions was seen with gradual enhancement in delayed phases, which presented as "halo" sign (*Figure 1C,D,E,F*). Retraction

of the liver capsule was caused by some lesions (*Figure 1G*). Furthermore, some nodules were coalescent (*Figure 1H*).

The patient underwent laparoscopic partial hepatectomy. Microscopic examination of the lesions showed proliferated fibrous tissue intermingled with epithelioid cells. The tumor cells had characteristic intracellular vascular lumina and stained positive for factor VIII, CD31, and CD34 (*Figure 1I, J*). The pathologic diagnosis of hepatic EHE was made.

Acknowledgements

Disclosure: The authors declare no conflict of interest.

Cite this article as: Lv P, Lin J. MRI findings of a hepatic epithelioid hemangioendothelioma. *Quant Imaging Med Surg* 2012;2(3):237-238. DOI: 10.3978/j.issn.2223-4292.2012.07.01

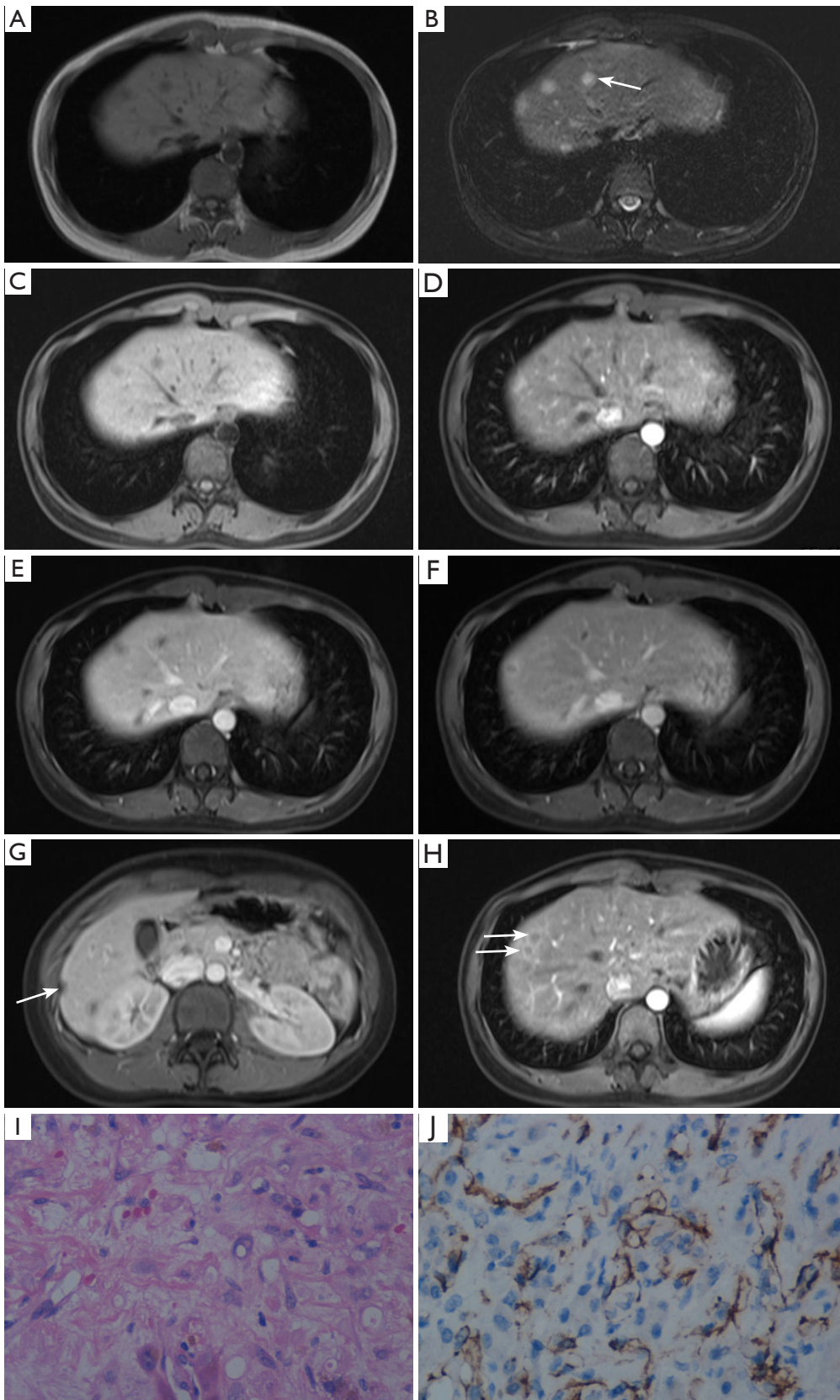


Figure 1 A. T1-weighted image and B. T2-weighted image performed at the same level show multiple nodules which are located peripherally in the liver. They are hypointense on T1-weighted images and hyperintense on T2-weighted images. Some lesions (arrow) on T2-weighted image show target-like appearance with which the central region of nodule showing higher intensity; C. Pre-contrast and D-F dynamic postcontrast T1-weighted fat-saturated images at the same level show slight peripheral enhancement on arterial phase images with stronger enhancement in the later phases, presenting as the halo sign; G. Postcontrast image at a lower level, retraction of the liver capsule (arrow) caused by a subcapsular nodule is found; H. At the hepatic dome, two lesions (arrows) grow coalescently; I. Photomicrograph (HE, original magnification $\times 400$) shows epithelioid cells and proliferated fibrous tissue, some tumor cells forming intracellular vascular lumina; J. Endothelial marker (CD31) is positive for the tumor cells.