

ESSENTIAL IMAGE / *Abdominal imaging*

Hepatic epithelioid angiomyolipoma mimicking hepatocellular carcinoma



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A 36-year-old woman was referred to us for abdominal ultrasound monitoring of viral hepatitis B infection. Ultrasound examination revealed a solid, hypoechogenic nodule in the segment VI of the liver, with mild posterior acoustic enhancement (Fig. 1). No findings consistent with steatosis or cirrhosis were observed. Further magnetic resonance imaging (MRI) examination confirmed solid nodule of 15 mm in diameter in segment VI. T1-weighted MR images showed no signal drop between in-phase and out-of-phase T1-weighted sequences. The nodule was mildly hyperintense relative to the surrounding liver parenchyma on T2-weighted images. T1-weighted images after intravenous administration of gadolinium-based contrast agent showed hyperenhancement during the arterial phase and a washout during portal and three-minute delayed phases. The nodule was classified LI-RADS IV with high suspicion for hepatocellular carcinoma. A percutaneous biopsy was performed and histopathological examination of tissue samples revealed a typical hepatic angiomyolipoma (HAML) of epithelioid type without fat component and no signs of malignancy. A complementary immunohistochemistry analysis excluded hepatocellular carcinoma.

HAML has variable imaging appearances due to various proportion of tissue components and may easily be misdiagnosed as hepatocellular carcinoma, especially when the lesion is lipid-poor [1]. Histopathological analysis with immunohistochemical positivity for human melanoma black 45 (HMB-45) and smooth muscle actin (SMA) are consistent with HAML. The presence of both HMB-45 and SMA is typical for epithelioid type of HAML, a particular type that can mimic hepatocellular carcinoma or hepatocellular adenoma at histopathological examination. The diagnosis of HAML is often a challenge because imaging alone cannot allow differentiating between hepatocellular carcinoma and HAML in many instances. Therefore, when a liver lesion displaying hyperenhancement during the arterial phase and wash-out during portal or delayed phase is found in a patient without

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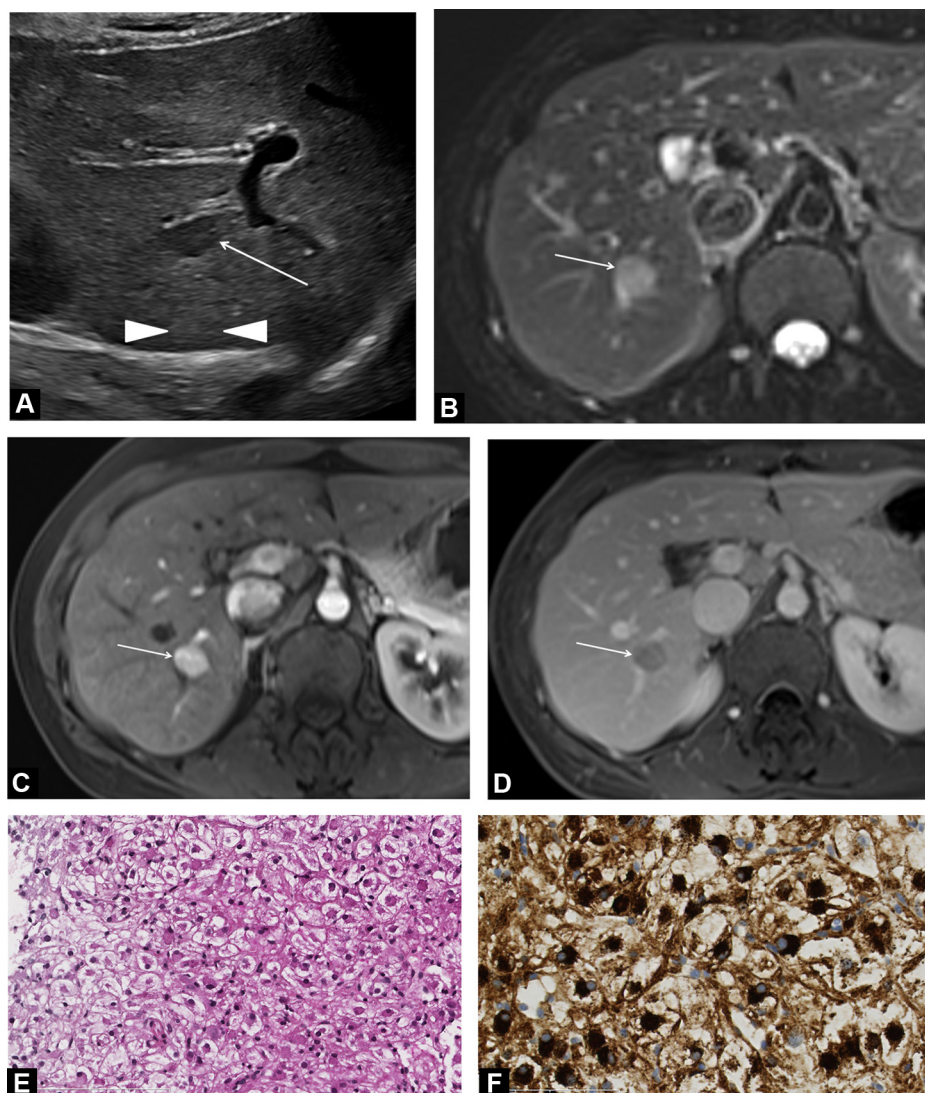


Figure 1. 36-year-old woman with hepatic epithelioid angiomyolipoma: A. Ultrasound image of the liver shows solid, hypoechoic nodule (arrow) in the segment VI of the liver with mild posterior acoustic enhancement (arrowheads). B. Fat suppressed T2-weighted (BLADE; TR/TE = 2540/121 msec) MR image in the axial plane shows mildly hyperintense liver nodule (arrow) relative to the surrounding hepatic parenchyma. C. Fat-suppressed three-dimensional volumetric interpolated breath-hold gradient-echo (3D VIBE; TR/TE/ α = 6.8/4.8 msec/ 10°) MR image in the axial plane obtained during the arterial phase after intravenous administration of a gadolinium chelate (gadoterate meglumine, Dotarem[®], Guerbet) shows intense homogeneous enhancement of the liver nodule (arrow). D. During the delayed phase (3 min after intravenous administration of a gadolinium chelate) the nodule shows wash-out and possible encapsulation. E. Photograph shows tissue sample after hematoxylin eosin stain. Cellular proliferation is made exclusively of epithelioid cells without adipose component and no malignancy. F. Photograph shows tissue sample containing epithelioid cells. Immunohistochemical staining for human melanoma black 45 (HMB-45) shows diffuse positive staining in tumor cells.

cirrhotic liver, percutaneous biopsy for further histopathological examination with specific markers for HAML (HMB-45 and SMA) is highly recommended to avoid confusion with hepatocellular carcinoma [2].

Informed consent and patient details

The authors declare that this report does not contain any personal information that could lead to the identification of the patient.

Author contributions

All authors attest that they meet the current International Committee of Medical Journal Editors (ICMJE) criteria for Authorship.

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Disclosure of interest

The authors declare that they have no competing interest.

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