What happened to my liver lesion (Hepatic Sclerosed Hemangioma)? Let's not forget (radiological) history

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Question

A 68-year-old man with a medical history of hypertension, dyslipidemia, ischemic stroke, benign prostatic hyperplasia and hepatic steatosis underwent liver magnetic resonance imaging (MRI) in our Institution. Laboratory tests showed increased cholesterol levels and normal liver function.

Six months before, an abdominal ultrasound (US), in a context of hepatomegaly and hepatosteatosis, demonstrated a hypoechoic 2 cm lesion in liver segment VII, with regular margins. Contrast-enhanced US showed slight peripheral enhancement during the entire acquisition time. Due to its features not pathognomonic for a typical lesion, the patient underwent liver MRI performed with gadolinium-ethoxybenzyl-diethylenetriaminepentaacetic acid (Gd-EOB-DTPA), a hepatobiliary contrast agent. On MRI, the 2-cm lesion in liver segment VII showed heterogeneous signal intensity in both T1- and in T2-weighted images. In particular, strongly hyperintensity on heavily T2-weighted sequence typical of hemangioma (Fig. 1A), and diffuse and homogenous signal dropout on opposed-phase T1-weighted images (Fig. 1B) compared to in-phase T1-weighted images (Fig. 1C), pathognomonic for steatotic adenoma were absent. After administration of the contrast agent, a slight rim enhancement (Fig. 1D) and the EOB cloud sign on the hepatobiliary phase (Fig. 1E) were identified. Moreover, the lesion demonstrated hyperintensity in the diffusion-weighted image (Fig. 1F). Is it possible to reach diagnosis without previous imaging examinations?

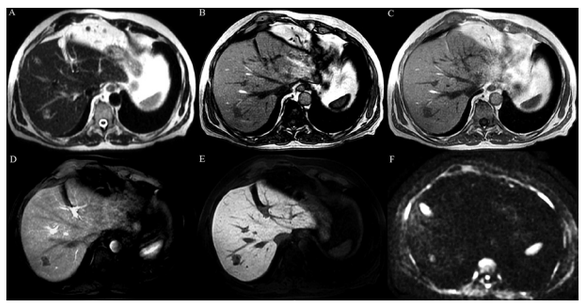

Fig. 1. — Magnetic resonance imaging shows a lesion in liver segment VII, without typical imaging findings for benign or malignant lesion on T2-weighted image (A), on opposed-phase (B) and in-phase (C) T1-weighted images, after administration of the contrast agent (D), on the hepatobiliary phase (E) and on diffusion weighted image (F).

Fig. 2. — Abdominal ultrasound, performed in 2002 (A), reveals a hypoechoic lesion in liver segment VII, not typical of a benign lesion. Magnetic resonance imaging demonstrates that the lesion had very strong signal intensity on T2-weighted image typical for hemangioma (B). Abdominal ultrasound confirms the stability of the hypoechoic lesion in liver segment VII after ten years of follow-up (C).

Answer

Based only on MRI features, the lesion could not be reliably characterised; in particular, it was not possible to perform a correct differential diagnosis among different lesions such as an intrahepatic cholangiocarcinoma or a colorectal liver metastasis. Therefore, in the absence of previous examinations, according to the current guidelines, a biopsy would be necessary to reach the diagnosis. On the other hand, fortunately, in 2002 during abdominal US for suspected cholelithiasis, a 3.9 cm hypoechoic lesion in liver segment VII, not typical of a benign lesion, was incidentally identified (Fig. 2A). A subsequent liver MRI demonstrated all the typical features of a hemangioma, such as very strong signal intensity on T2-weighted imaging (Fig. 2B), hypointensity on T1-weighted imaging, and peripheral and globular enhancement followed by central enhancement on delayed phases. During ten years of follow-up, the lesion remained substantially stable in dimension and morphology (Fig. 2C). Therefore, thanks to his previous examinations, our final diagnosis was sclerosed hemangioma, avoiding

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unnecessary biopsy or hepatic resection. Moreover, the possible event that caused the sclerosing process in the lesion occurred after 2012 and remained clinically silent. Finally, it is also important that the radiologist does not forget that: "A doctor is able to uncover many aspects of the disease involved by observation alone, but he will be much better informed by interrogation" and by re-evaluating previous imaging examinations.

Conflict of interest

The Authors disclose any potential conflict of interest including any financial activities.

Keywords : liver imaging, magnetic resonance imaging, benign liver lesion.