GE – Portuguese Journal of Gastroenterology

Images in Gastroenterology and Hepatology

GE Port J Gastroenterol 2025;32:384–386
DOI: 10.1159/000547318

Received: March 28, 2025
Accepted: June 30, 2025
Published online: July 8, 2025

Giant Hepatic Hemangioma: Diagnostic Challenges

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Keywords
Atypical presentation · Computed tomography · Diagnostic puncture · Hepatic hemangioma · Liver biopsy

Hemangioma hepático gigante: desafios diagnósticos

Palavras Chave
Apresentação atípica · Tomografia computadorizada · Punção diagnóstica · Hemangioma hepático · Biópsia hepática

A 52-year-old male patient presented with a 5-month history of abdominal distention and loss of appetite. He has no known cause of chronic liver disease. Abdominal ultrasound revealed a giant hypoechoic mass occupying the abdominal and pelvic space, the origin and nature of which could not be clarified (Fig. 1). Concentrations of all tumor markers, including alpha-fetoprotein (AFP), carbohydrate antigen 19-9, and carcinoembryonic antigen, were negative. The patient could not cooperate with magnetic resonance examination due to claustrophobia. CT showed a large mass occupying most of the abdominal space (size 51.2 cm × 36.7 cm × 41.2 cm); the mass was hypodense and poorly defined from normal liver parenchyma (Fig. 2a). After CT enhancement, several discontinuous nodular enhancements were displayed within the lesion in the arterial phase (Fig. 2b, arrowhead) and then progressively enhanced during the portal phase (Fig. 2c, arrowhead). In the delayed phase (7 min), the nodules slightly enlarged with reduced enhancement (Fig. 2d, arrowhead). The coronal and sagittal views showed the mass extending down to the pelvis with no clear boundary with normal liver tissue (Fig. 2e, f). A full view of the tumor was generated using CT hyper-realistic rendering technique (Fig. 3). Upon thorough evaluation of the clinical manifestations and imaging characteristics of the mass, it was determined to be a hepatic neoplastic lesion. However, the exact nature of the mass could not be conclusively established. The surgeon performed an ultrasound-guided diagnostic puncture biopsy with a 18-gauge needle. Two punctures were made to obtain a lesion tissue sample of approximately 20 mm in length. No complications occurred. The specimen obtained by puncture was pathologically diagnosed as hepatic hemangioma (HH): the hematoxylin and eosin staining of the liver biopsy showed the mass tissue was clearly demarcated from normal liver tissue (Fig. 4a, arrowhead, ×10). The biopsy identified highly dilated cavernous vessels, forming pseudo-papillary interconnected vascular channels with lobular distribution (Fig. 4b, arrowhead, ×10). The vessel wall was composed of fibrous matrix bands (Fig. 4c, arrowhead, ×20). Vessels were lined with a single layer of flattened endothelial cells with mild cell morphology (Fig. 4d, arrowhead, ×40). Considering the pathology results and the patient's symptoms, the clinician

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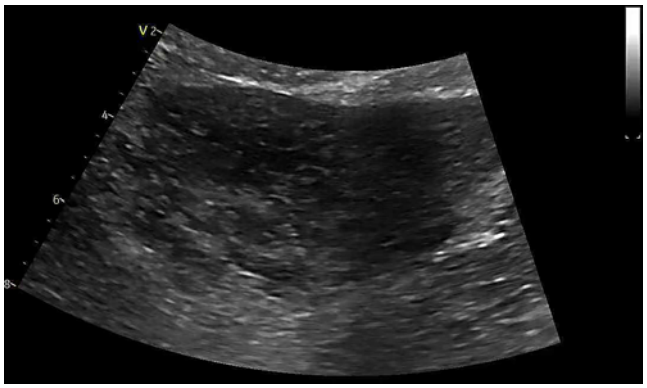

Fig. 1. Abdominal ultrasound image showed the giant hypoechoic mass.

and patient ultimately chose prolonged clinical and radiological follow-up. In the following years, the patient received routine dynamic CT follow-up every 6 months, and the size of the HH remained stable.

HH is the most common benign tumor of the liver, which is usually small and asymptomatic [1, 2]. However, giant HHs occupying almost the entire abdominal and pelvic cavities are rarely reported. Typical HH on a dynamic CT scan shows an initial intense peripheral nodular enhancement with a gradual central fill-in. The imaging features of this mass were not consistent with the typical characteristics of HH, making diagnosis and differential diagnosis challenging for radiologists. Atypical HH presents low signal intensity during the hepatobiliary phase after hepatobiliary

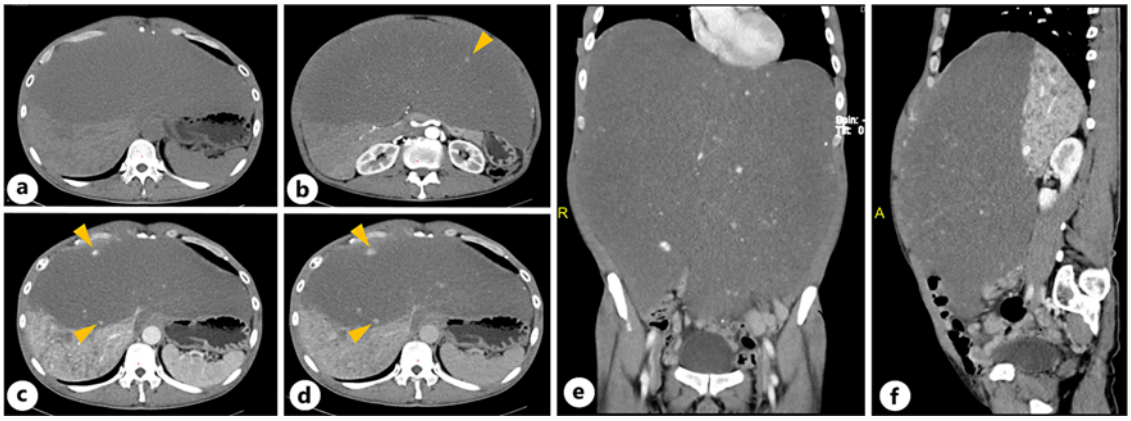

Fig. 2. Axial views of plain CT (**a**) and enhanced CT (**b–d**) showed the enhancement pattern of the mass. Coronal (**e**) and sagittal (**f**) views of the enhanced CT image showed the size of the mass.

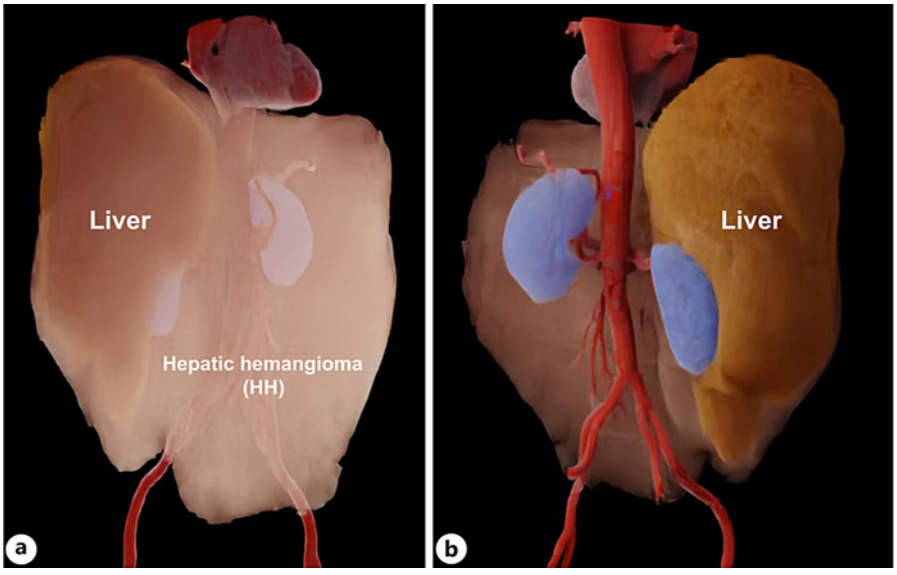

Fig. 3. a, **b** CT HRR showed the relationship of the mass and its surrounding organs. HRR, hyper-realistic rendering.

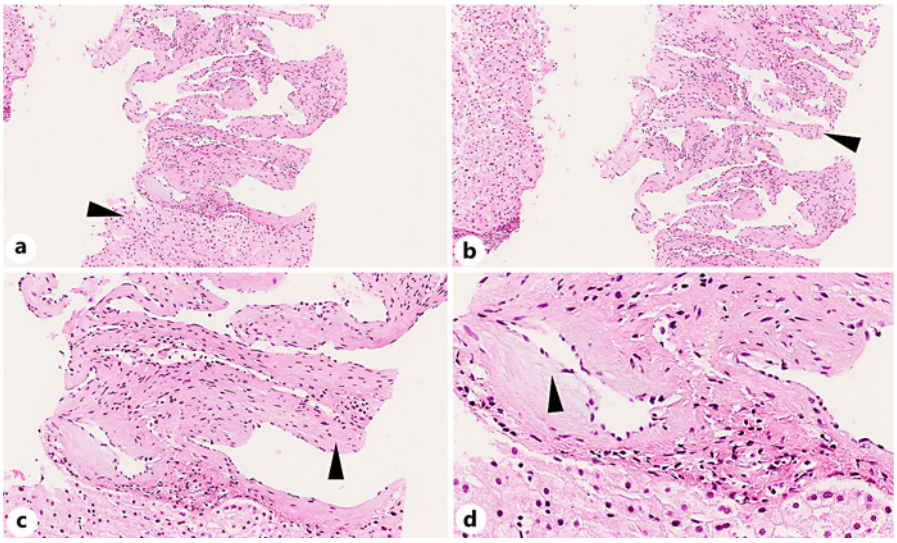

Fig. 4. a–d Histopathological findings of biopsy of hepatic mass.

contrast agent enhancement [3, 4]; however, its appearance of contrast-enhanced ultrasound varies a lot [3, 5]. For liver masses with complex and confusing imaging presentations, biopsy is crucial for physicians and patients to make better management decisions.

Statement of Ethics

This study was granted an exemption by the Ethics Committee of the Second Affiliated Hospital of Baotou Medical College. Written informed consent has been obtained from the patient for publication of the details of his medical condition and any accompanying images.

Conflict of Interest Statement

The authors have no conflicts of interest to declare.

Funding Sources

This study was not supported by any sponsor or funder.

Author Contributions

Ji Qingyu and Zhao Ying: conceptualization. Li Hongliang: software and visualization. Zhao Ying and Zhu Ruohan: data curation and writing – original draft preparation. Ji Qingyu: validation and writing – reviewing and editing.

Data Availability Statement

The data that support the findings of this study are available upon reasonable request from the corresponding author.

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