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Pedunculated Hepatic Hemangioma Masquerading as a Peritoneal Tumor. A Case Report

Mostafa El Hajjam^{1ADEF}, Alexis Lacout^{2AEF}, Mohamed Karji-Al Marzouqi^{1BEF},
Pascal Lacombe^{1ABCE}, Pierre Yves Marcy^{3ADEF}

¹ Department of Radiology, Centre Hospitalier Universitaire Ambroise Paré, Boulogne-Billancourt, France

² Department of Radiology, Centre d'Imagerie Médicale, Aurillac, France

³ Department of Interventional Radiology, Polyclinique Les Fleurs, Ollioules, France

Author's address: Alexis Lacout, Centre d'Imagerie Médicale, 47, Boulevard du Pont Rouge, 15000 Aurillac, France,
e-mail: lacout.alexis@wanadoo.fr

Summary

Background:

Although being classically located inside the liver parenchyma, hemangiomas may occasionally develop outside the extra-hepatic capsule, thus appearing as a pedunculated mass.

Case Report:

We report the case of a 66-year-old anal cancer female patient presenting with an asymptomatic sub-hepatic mass. Incidental diagnosis of a pedunculated hepatic hemangioma was strongly suggested by the typical imaging features on computed tomography (CT) and magnetic resonance (MR) examinations, and was confirmed by histopathological examination.

Conclusions:

Exophytic pedunculated growth is a rare and atypical feature of hepatic hemangioma. Thin contrast-enhanced sections and multiplanar CT and MR scan reformations helped to the final diagnosis of hemangioma, showing its origin from the liver edge. Surgical resection is mandatory to prevent threatening mass pedicle torsion.

MeSH Keywords:

Hemangioma, Cavernous, Central Nervous System • Liver Neoplasms • Magnetic Resonance Imaging

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Background

Hemangiomas are the most common benign hepatic tumors in adults, namely in female patients with an overall incidence of 7–20% [1]. This well-defined blood-filled benign liver neoplasm is made of mono-stratified endothelial cells surrounded by a network of fibrous stromal tissue. Tumor size may vary from a few millimetres to more than 20 cm in diameter [2]. Most of hemangiomas are asymptomatic and discovered as incidental findings during radiological abdominal imaging. Typical hemangiomas share common characteristic imaging features including progressive nodular enhancement from the periphery to the centre of the lesion and gradual marked hyperintensity on MR T2-weighted sequences. Although being classically located inside the liver parenchyma, hemangiomas may occasionally develop outside the extra-hepatic capsule, thus appearing as a pedunculated mass.

Case Report

A 66-year-old female patient was recently diagnosed with anal cancer. A peri-hepatic mass was incidentally detected at CT scan examination, and suspected to be an infrahepatic peritoneal metastasis. CT and MR imaging revealed a 6-cm well-defined mass, located under and behind the gallbladder, protruding from the liver. This mass displayed progressive peripheral- and globular- pattern enhancement characteristic of hemangioma (Figure 1). Coronal and sagittal reformations showed a thin pedicle originating from the IVb liver segment (Figures 2, 3). Surgical removal of the mass was further performed to prevent ischemic complication related to volvulus along the pedicle. Pathological analysis provided a definitive diagnosis of pedunculated benign hepatic hemangioma (Figure 4).



Figure 1. CT scan, axial plane, venous phase. Peripheral nodular enhancement pattern of the sub-hepatic mass (arrow).



Figure 2. CT scan, coronal plane, venous phase: well defined pedicle bound to the mass and originating from segment IVb of the liver edge (arrow).

Discussion

Hemangioma is the most common benign liver neoplasm. The majority of the cases are incidentally diagnosed on CT/MR examinations. Exophytic growth and pedunculated feature of hemangiomas are extremely rare.

The majority of hemangiomas are asymptomatic but larger neoplasms may produce various compressive symptoms and even more hemorrhage and spontaneous rupture. To date, only twenty cases of such atypical types have been reported in the literature [3-5]. Typical hemangiomas display early nodule-like peripheral enhancement on dynamic contrast CT/MR, secondary contrast medium fill-in to the lesion centre, and high signal on MR T2-weighted images, persistent enhancement on delayed CT/ MR-images. Pedunculated hemangiomas are extremely rare and may become symptomatic as a result of either mass effect on neighboring structures, torsion of the pedicle leading to infarction and related acute pain, or even a more spontaneous rupture [3,6,7]. Therefore, surgical resection is usually considered



Figure 3. MR imaging, sagittal plane, gadolinium-enhanced T1-weighted image. Well- defined pedicle of the mass originating from segment IVb of the liver (arrow).



Figure 4. Macroscopic view of the tumor after surgery, showing the hemangioma and its pedicle (arrow).

[4,5,8]. Among imaging means, ultrasound is often difficult, due to the uncommon location, echostructure, and variable morphology of the mass lesion [3]. However, both contrast-enhanced CT and MR imaging means provide accurate thin sections, high contrast resolution, typical hemodynamic pattern assessment (hemangioma) [9,10], and multiplanar reformations (pedicle imaging) [4,11]. Hepatocellular carcinoma may also show extra-hepatic exophytic growth and should be differentiated from benign hemangioma. Hepatocellular carcinoma may show some specific imaging features such as a prominent feeding artery, dynamic

diffuse enhancement pattern during hepatic arterial phase, and fatty components [12].

The diagnosis of pedunculated hemangioma undergoing torsion may be challenging owing to ischemia and subsequent necrosis. In these cases, the typical nodular enhancement of the lesion may be lacking. Hyperintensity in T2-weighted images may be lower than in typical hemangiomas [5]. Percutaneous biopsy may be life-threatening due to the risk of massive intraperitoneal bleeding and rupture. Laparoscopic examination seems the most appropriate diagnosis and therapeutic option.

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Conclusions

Although hepatic hemangiomas are the most frequent benign liver tumour, the pedunculated form is rare and may be misdiagnosed as a peritoneal mass. Both CT/MR hemodynamic patterns and oblique sections will lead to the final diagnosis of exophytic pedunculated hemangioma, with a thin pedicle originating from the liver edge. Surgical resection is mandatory to prevent torsion and even spontaneous intraperitoneal rupture.

Conflict of interest

The authors declare that they have no conflict of interest.