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Giant Pedunculated Hepatic Hemangioma: A Case Report

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Abstract **Case Report**

Hepatic hemangioma is the most common benign liver tumor, typically asymptomatic and with an excellent prognosis. However, the pedunculated form is uncommon and can present as an exophytic mass mimicking other abdominal pathology. Therefore, it can be a real diagnostic challenge in imaging. We present a rare case of a 44-year-old woman under follow-up in the dermatology department for systemic scleroderma, who underwent an abdominal CT as part of the evaluation of her condition, and was incidentally diagnosed with a pedunculated hepatic hemangioma confirmed on dynamic contrast-enhanced CT.

Key words: CT – Hemangioma – Giant – Pedunculated.

INTRODUCTION

Hepatic hemangiomas are the most frequently occurring benign liver tumors in adults, with a prevalence ranging from 7% to 20%, and are mostly seen in women [1].

They are typically solitary and often located in a subcapsular position, most commonly in the right lobe, particularly in the posterior segment. They are usually small in size, and those exceeding 4 cm are classified as giant hemangiomas [2]. In most cases, the lesion is asymptomatic and does not require treatment, with diagnosis being incidental through imaging techniques such as ultrasonography (US), computed tomography (CT), or magnetic resonance imaging (MRI) [3].

Pedunculated giant hemangiomas are uncommon and are often challenging to diagnose due to their exophytic growth [4]. In this article, we report the rare case of a 44-year-old woman with a history of scleroderma, who underwent an abdominal CT as part of her evaluation, without any abdominal symptoms. An incidental pedunculated hepatic hemangioma was detected and confirmed through dynamic contrast-enhanced CT.

OBSERVATION

A 44-year-old patient with a history of systemic scleroderma, being followed in the dermatology department and on long-term systemic corticosteroid therapy. The diagnosis was confirmed based on a skin sclerosis of the extremities, facial telangiectasias, and positive antinuclear antibodies. During her follow-up, she underwent an abdominal CT scan to conduct an evaluation of her disease, while being totally asymptomatic.

The physical examination revealed no significant abnormalities, and routine lab results were unremarkable.

The abdominal CT scan with contrast injection revealed a mass located in the left subphrenic space, involving the hepatic segment III. The mass was roughly oval-shaped, with lobulated contours, well-defined, measuring 11 x 5.3 x 12 cm. It appeared spontaneously heterogeneous, with a peripheral isodense component delineating a central hypodense area, considered to be a probable central hemorrhage. The enhancement was peripheral and discontinuous during the arterial phase, increasing in the portal phase, which recommended giant liver hemangioma. The mass caused displacement of surrounding organs in particular the fundus and greater curvature of the stomach, as well as the descending colon and some small bowel loops, without any obvious signs of infiltration. (FIGURE 1)

It has been associated with multiple well-defined hepatic and splenic nodular formations, which

are spontaneously isodense, with a peripheral enhancement during the arterial phase and increasing during the portal phase, consistent with multiple hepatic and splenic hemangiomas.

The therapeutic decision was to keep the patient under monitoring, with medical treatment for her pain. The course was uncomplicated, and follow-up CT scans over a two-year period showed a stable and unchanged appearance of the hemangioma.

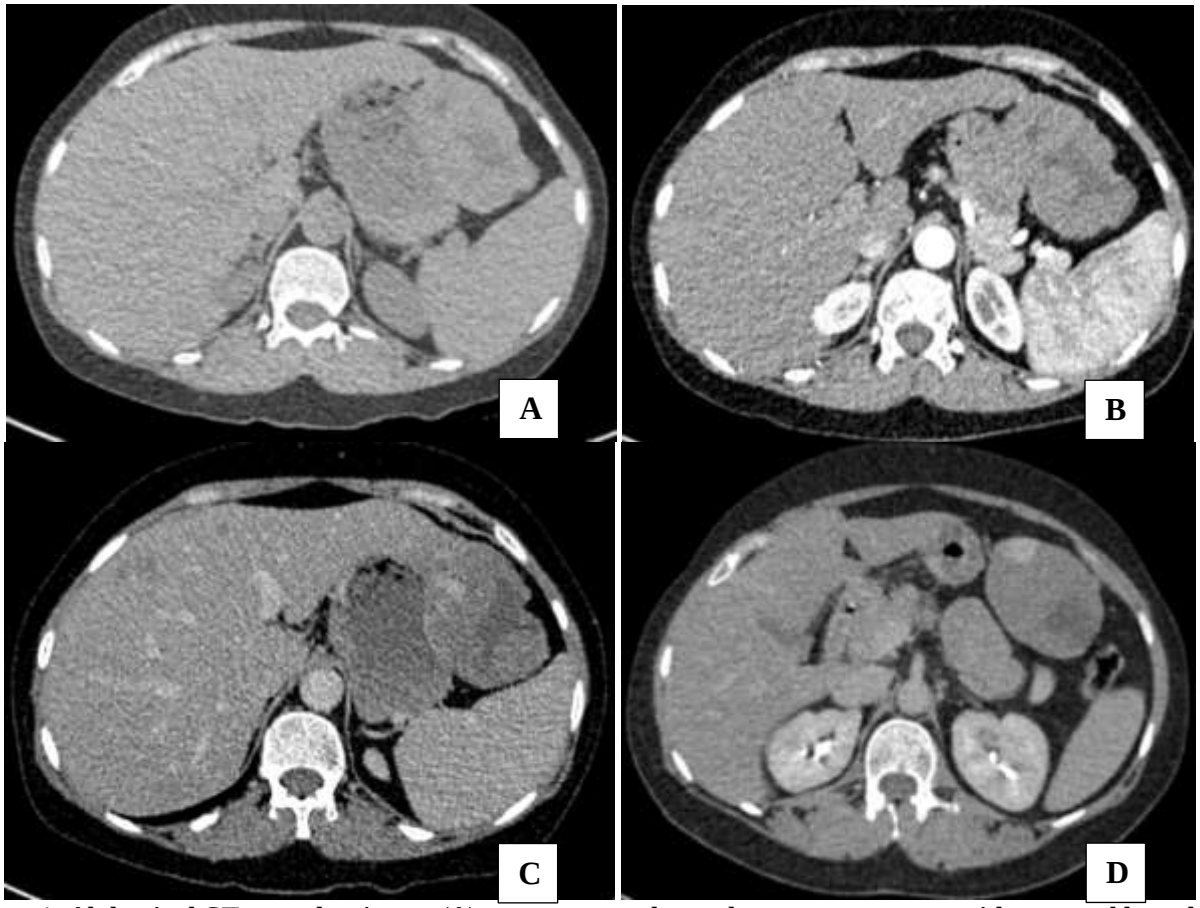

Figure 1: Abdominal CT-scan showing on (A) non-contrast phase a heterogeneous mass with a central hypodense component involving the hepatic segment III. On arterial phase (B), it presents a peripheral, discontinuous enhancement. (C) Portal phase reveals increased peripheral enhancement. (D) Delayed phase presents progressive contrast retention with persistent enhancement. All these features were suggestive of a giant liver hemangioma

DISCUSSION

Hepatic hemangioma is the most common benign liver tumor, and its diagnosis is generally straightforward when using a combination of imaging modalities [5]. They are more common in women due to the influence of female sex hormones on their growth [3]: estrogen receptors in hemangiomas promote their growth, especially with estrogen-containing medications like oral contraceptives (OCP) or during pregnancy, by stimulating endothelial cell proliferation and the formation of vascular structures [5-6].

They can occur at any age, but 60–80% are diagnosed in patients between 30 and 50 years old. In most cases (75%), the lesion is solitary and varies in size, with the right lobe being the most frequent location. Hemangiomas exceeding 4 cm in diameter are uncommon and are classified as giant hemangiomas, although the definition remains debated, with proposed size thresholds ranging from 4 to 10 cm in recent years [3]. Exophytic hepatic hemangiomas, particularly pedunculated forms, are even extremely rare [7].

From a clinical perspective, most hepatic hemangiomas are asymptomatic and detected incidentally [8], however, larger lesions can present with various symptoms, including abdominal mass, pain, hemorrhage, jaundice, nausea, and vomiting [2,9].

In imaging, a typical hemangioma appears as a homogeneous, hyperechoic mass with well-defined margins on ultrasonography, with early peripheral enhancement observed on dynamic contrast-enhanced CT, followed by centripetal contrast medium fill-in and persistent enhancement in the delayed phase images [2,7]. Magnetic resonance imaging (MRI) can also provide more specific diagnostic features, especially for small hemangiomas, including markedly high signal intensity on T2-weighted images [2,7,10]. However,

only 55-62% of hepatic hemangiomas exhibit typical characteristics on imaging modalities [2]. On the other hand, the diagnosis of a giant pedunculated hemangioma can be challenging, even with typical radiological features, as the thin pedicle may be difficult to detect on imaging, complicating the determination of the mass's origin. The primary imaging techniques used for diagnosis include ultrasonography (US), CT scan, and MRI, with MRI being the most sensitive and specific diagnostic method (>90%). Biopsy is not recommended due to the risk of hemorrhage [4].

The primary differential diagnosis includes hepatocellular carcinoma with extra-hepatic exophytic growth and gastro-intestinal exophytic tumors. The dynamic diffuse enhancement pattern during the hepatic arterial phase typically helps distinguish between these conditions.

Surgery in hemangiomas is particularly indicated in cases of progressive abdominal symptoms, spontaneous rupture, rapidly enlarging lesions, Kasabach-Merritt syndrome, and suspicion of malignancy, and is also consistently recommended for pedunculated hemangiomas due to their higher risk of torsion and rupture [11-12].

CONCLUSION

In conclusion, while hepatic hemangiomas are the most common benign liver tumors, the pedunculated form remains rare and can often be misdiagnosed. Accurate diagnosis relies on the identification of characteristic hemodynamic patterns on CT/MR imaging, which reveal a thin pedicle originating from the liver edge.

Conflicts of interest: Authors declare no conflict of interest.

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