Hepatic angiomyolipoma: a case report
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Section: Abdominal imaging
Area of Interest: Abdomen
Procedure: Diagnostic procedure
Imaging Technique: CT
Special Focus: Tissue characterisation
Case Type: Clinical Cases
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Patient: 55 years, female

Clinical History:

55-year-old women with no previous medical history presented with a hepatic colic (five months ago). Physical examination showed no abnormalities, in particular no clinical signs for tuberous sclerosis. Liver function tests were normal.
An US examination was carried out (but no images). Therefore, CT Angiography was indicated to characterize the tumour.

Imaging Findings:

Liver ultrasound revealed a highly echogenic and heterogeneous lesions in the segment V and VI of the liver. Non-enhanced CT (Reconstruction thickness: 2 mm), showed heterogeneous low-density liver lesions on the segments V and VI, with lobulated contours and well-defined, containing a large fatty component. (Fig. 1)
Dynamic Contrast-enhanced CT, showed highly and total enhanced lesion (non-fatty component) in the arterial phase (Fig. 2), with a wash-out in the late venous phase (Fig. 3)

Kidney was normal
The patient underwent ultrasound-guided tumour biopsy, and the anatomical pathology provided a clear diagnosis of a hepatic angiomyolipoma.

Discussion:

Hepatic angiomyolipoma is a rare benign mesenchymal tumour that is frequently found in the kidney and rarely in the liver, characterized by the presence in variable proportion of blood vessels, smooth muscle, and adipose cells. It has a predilection for women and a wide age range. Contrary to the renal angiomyolipoma, association with the tuberous sclerosis (Bourneville disease) is rare. It is generally asymptomatic and most cases were detected as incidental finding of liver tumour [1-2].
The radiological features of hepatic angiomyolipoma depend on the relative proportions of adipose cells [3]. Ultrasound and CT are the major preoperative diagnostic tools. Ultrasound shows a single mass, well-defined, separating a normal hepatic parenchyma [2, 4], of variable size (0.3 to 36 cm), echoic and heterogeneous, and a posterior reinforcement is sometimes noted when fibrous tissue is present. Doppler shows an arterial and venous vascularization marked in the centre and weak in the periphery of the tumour. Ultrasound contrast agents show a weak enhancing in arterial and venous phase [4, 5, 6]. In CT, the tumour density depends on the relative proportions of these components. In the majority of the cases where the proportions of adipose cell component is dominant, CT
shows a low-density lesion, which makes it possible to reach a diagnosis by showing tumoural densities lower than -20 UH. However, other tumours, in particular adenoma and hepatocellular carcinoma can contain adipose components [7], and a density higher than -20 UH does not exclude the diagnosis. After injection we noted an early enhancement following a fast washing.

MRI shows a high signal intensity in T1 and T2 and also shows low signal on the sequences of fat saturation. The sequences of chemical shift make it possible to confirm the intracellular adipose component. If the fatty component is absent on CT or MRI, a biopsy is necessary [5, 8, 9]. The small quantity of adipose cells can make the diagnosis difficult even with pathological examination of total operative specimens; however, the diagnosis can be confirmed by immunohistochemistry (HMB45 marker is strongly expressed in smooth muscle cells ) [5, 6, 8, 10].

Hepatic angiomyolipoma requires a follow-up after its diagnosis because an increase in volume is possible. A spontaneous rupture with bleeding and haemoperitoneum was reported, but no case of degeneration was found in the literature [5-6].

**Differential Diagnosis List:** Hepatic angiomyolipoma, Hepatocellular carcinoma, Adenoma, Metastatic liposarcoma, Focal nodular hyperplasia, Primary liposarcoma

**Final Diagnosis:** Hepatic angiomyolipoma

**References:**


**Figure 1**

*Description*: Non-enhanced axial CT: heterogeneous low-density liver lesions on the segments V and VI, with lobulated contours and well-defined, containing a large fatty component. *Origin*: Mattiche H, Departement of radiology, university hospital Avicenne, Rabat, Morocco.
Description: Dynamic contrast-enhanced CT, showed highly and total enhanced lesion (non-fatty component) in the arterial phase. Origin: Mattiche H, Departement of radiology, university hospital Avicenne, Rabat, Morocco
**Description:** Dynamic contrast-enhanced CT: Wash-out of non-fatty component in the late venous phase. **Origin:** Mattiche H, Departement of radiology, university hospital Avicenne, Rabat, Morocco