



Case Report

Volume 10 Issue 2 - April 2018
DOI: 10.19080/CTOIJ.2018.10.555785

Canc Therapy & Oncol Int J

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Case Report: Two cases of Typical Hepatic Hemangioma



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Submission: February 14, 2018; Published: April 19, 2018

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Abstract

Hemangioma is the most common focal solid benign tumor of the liver which usually diagnosed incidentally same as these cases. Majority of the patients are asymptomatic. Main radiology challenge is to differentiate from other focal solid hepatic neoplasm [1] particularly in cases of atypical hemangioma and hemangioma in fatty liver or other diseased liver.

Keywords: US; CT; MRI (dynamic post-contrast); Hyper echoic; Hypo echoic; Low density; High signal; Low signal; Peripheral nodular; Centripetal enhancement

Abbreviations: US: Ultrasound; CT: Computed Tomography; MRI: Magnetic Resonance Imaging; KUB: Kidney, Ureter and Urinary bladder; CSF: Cerebrospinal Fluid

Clinical History

Both cases are young female with history of renal/ureteric colic. First one for US and second one for un-enhanced CT KUB. After initial imaging findings patient referred for MRI to further characterize the lesion.

Imaging Findings

US

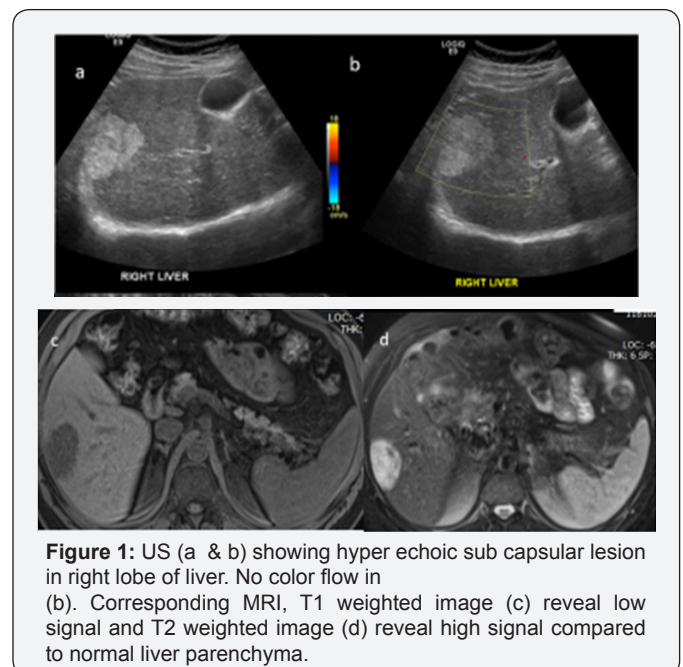
First case referred for US and incidentally diagnosed focal sub capsular hyper echoic liver lesion.

CT

The second case referred for non-contrast CT KUB which demonstrates multiple low density liver lesions, more in right lobe.

MRI with and without Contrast

In both cases MRI shows lesion as low signal in T1 weighted sequences, high signal in T2 weighted sequences with dynamic post-contrast images reveals early peripheral nodular enhancement with gradual centripetal filling and complete enhancement with retained contrast in delayed post-contrast images representing typical imaging features of hepatic hemangioma (Figures 1-4).



Discussion

Hepatic haemangiomas, also known as hepatic venous malformations, are benign non-neoplastic solid hyper vascular liver lesions. It commonly diagnosed incidentally in asymptomatic cases of about 20%. Hemangiomas are often

solitary, but multiple lesions may be present in both the right and left lobe of the liver in up to 40 percent of patients [2]. The size of hepatic hemangioma varies from a few millimeters to over 20cm. The majority are small (<5cm). Those larger than 5cm have been referred to as giant hemangiomas.

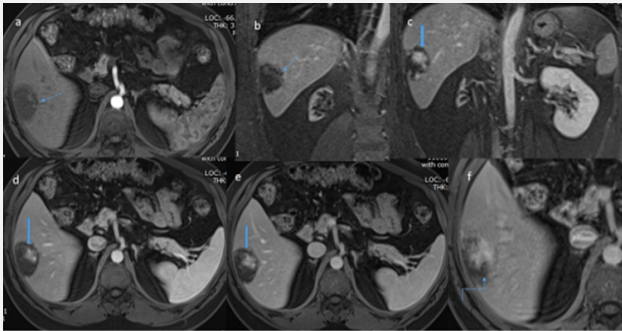


Figure 2: Dynamic post-contrast image demonstrates centripetal enhancement. Peripheral nodular enhancement in early arterial phase in image a & b (shown by thin arrow). Increase peripheral nodular enhancement in late porto venous phase in image c, d & e (shown by thick arrow). Delayed post-contrast image showing further filling with retained contrast in image f (shown by curved arrow).

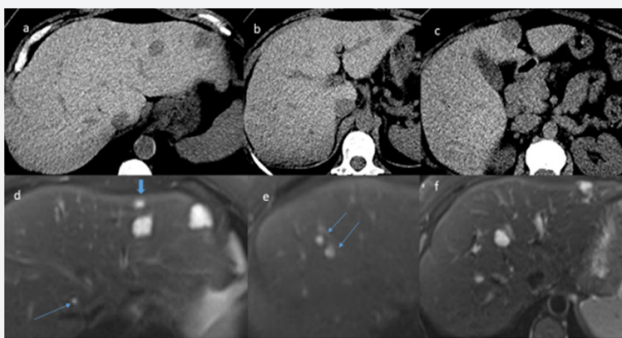


Figure 3: Non contrast CT showing multiple low density lesions (a,b & c). Corresponding MRI with T2 fat sat axial images reveals re-demonstration of multiple liver lesions showing high signal. Other smaller lesions are also seen which are not seen by non-contrast CT (shown by arrow in image d & e).

Although they can be diagnosed at any age, 60 to 80 percent of cases are diagnosed in patients who are between the ages of 30 and 50 years. Small hemangiomas are seen more frequently with helical CT, whereas they are easily overlooked on conventional CT because they become as dense to liver on late-phase images [2].

They are frequently diagnosed as an incidental finding on imaging, and most patients are asymptomatic. From a radiologic perspective, it is important to differentiate haemangiomas from hepatic neoplasms.

The characteristic imaging findings for typical hemangioma are as follows [1]:

- a. On US it is usually well-defined hyper echoic.

- b. On unenhanced CT, seen as low density similar to that of vessels; on dynamic contrast-enhanced CT the lesion demonstrates peripheral globular enhancement and a centripetal fill-in pattern with the attenuation of enhancing areas similar to that of the aorta and blood pool.

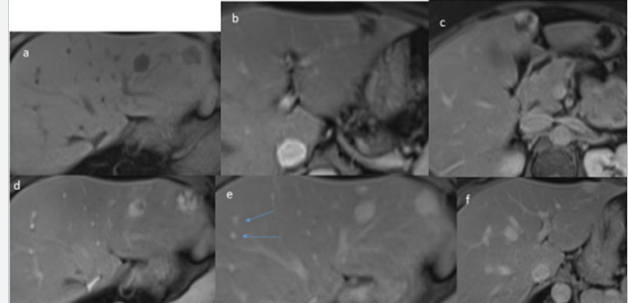


Figure 4: Dynamic post-contrast MRI Axial images. T1 fat sat (a) the lesions demonstrate low signal. Porto-venous phase (b & c) reveal nodular peripheral enhancement which shows more filling in late porto-venous phase and complete filling in late post contrast phase confirming imaging features of typical hepatic hemangioma. Two tiny lesions also show complete enhancement seen in image e corresponding to T2 fat sat image e.

On MR imaging, the hemangioma shows high signal on T2- and heavily T2-weighted sequence and low signal in T1 weighted sequence which is comparable to signal of CSF in T1 and T2 weighted sequences. Dynamic post-contrast sequences reveal enhancing pattern same as CT with peripheral globular enhancement and a centripetal fill-in pattern with the attenuation of enhancing areas identical to that of the aorta and blood pool. Heavily T2 weighted images help to detect even tiny focal hemangioma which can be overlooked in CT easily same as in our second case [3,4].

Hepatic haemangiomas are much more common in females, with a F:M of up to 5:1. Hepatic haemangiomas are thought to be congenital in origin, benign solid tumor and are almost always of the cavernous subtype. Blood supply is predominantly hepatic arterial, similar to other liver tumors. A peripheral location within the liver is most common [3].

SPECT

⁹⁹Tc RBC labelled SPECT can be sensitive for larger lesions and typically demonstrate decreased activity on initial dynamic images followed by increased activity on delayed, blood pool images.

Differential Diagnosis

Typical hepatic hemangioma has characteristic imaging features with relatively no differential diagnosis.

References

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DOI: [10.19080/CTOIJ.2018.10.555785](https://doi.org/10.19080/CTOIJ.2018.10.555785)

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