

View Box Case - 3

I. Masroor, R. Hashmi (Department of Radiology, Aga Khan University Hospital, Karachi.)

A 40-year-old female presented with complaints of epigastric pain and early satiety. Clinical examination and biochemical workup was unremarkable. Ultrasound examination showed a hyper echoic lesion in right lobe of liver with well-defined margins. Computed tomography scan showed a 6.5cmx5.5cm mass in the right lobe of liver. Mass had low attenuation on non-contrast CT (Figure 1).

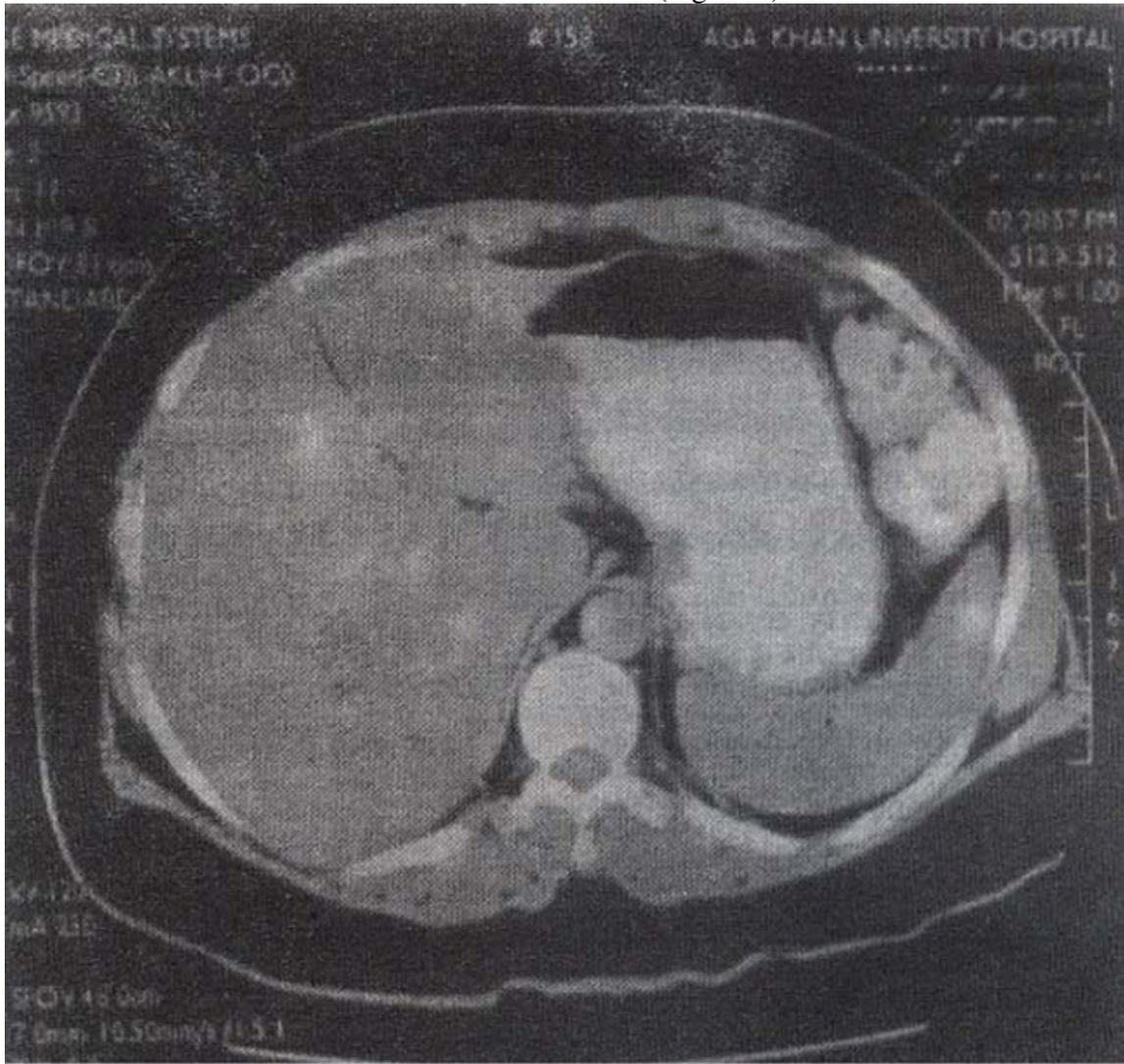


Figure 1. Non-contrast CT scan axial image.

On arterial phase images showed peripheral nodular enhancement which formed an incomplete rim around the mass (Figure 2).

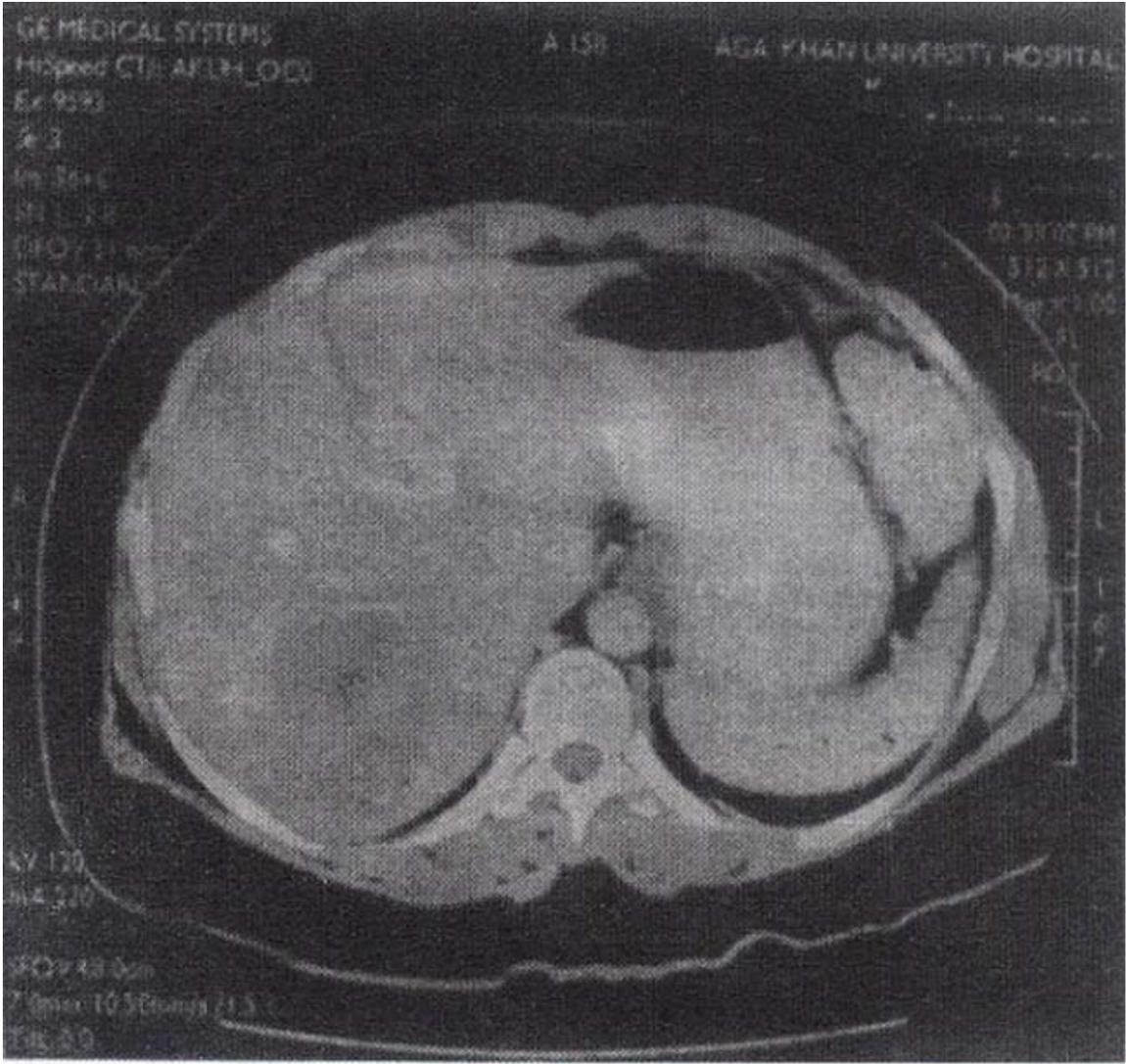


Figure 2. Arterial phase CT scan.

Delayed images obtained after 10 to 25 minutes demonstrated progressive centripetal enhancement (Figure 3).

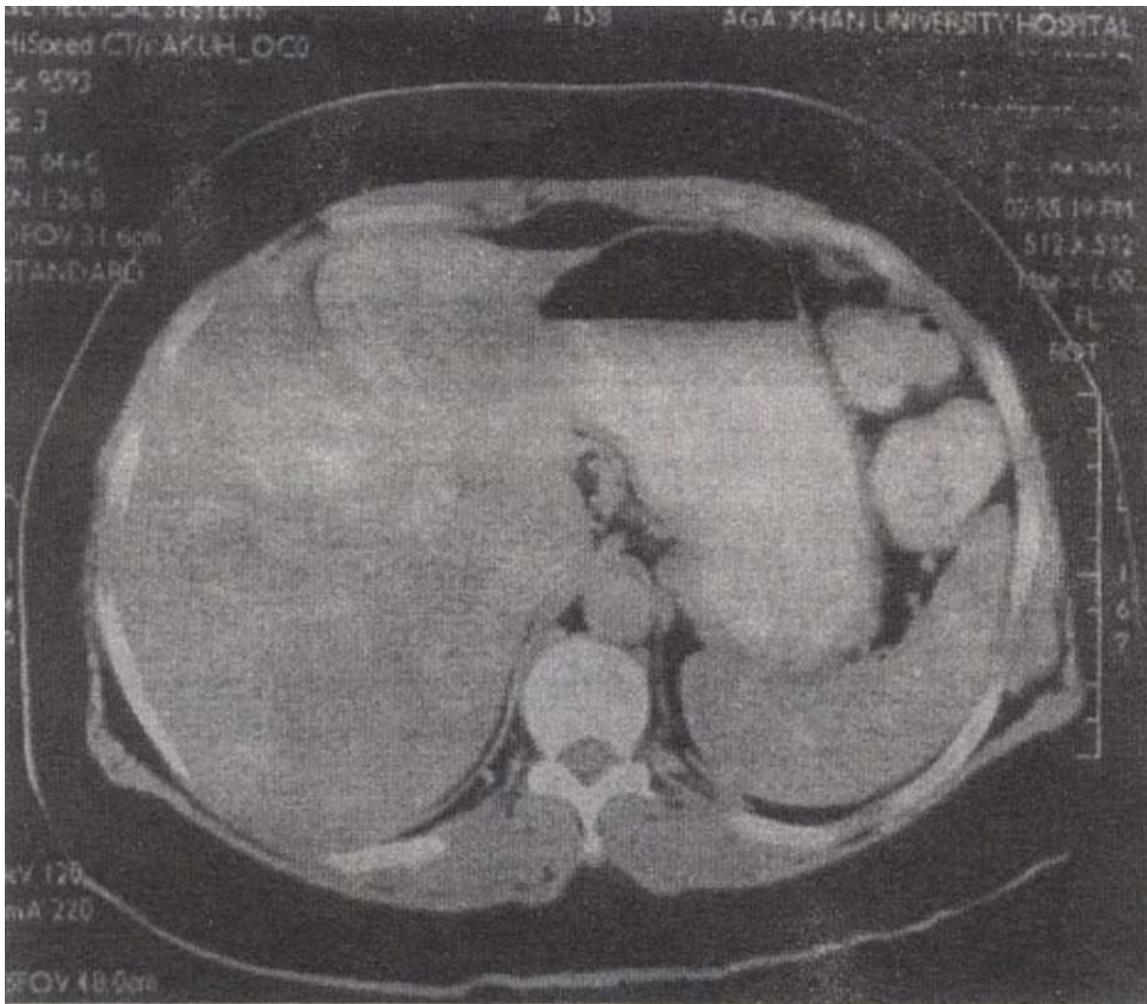


Figure 3. Delayed phase CT scan.

The lesion was heterogeneous with areas that were hypo, iso and hyper dense to the normal liver parenchyma.

Diagnosis: Hepatic hemangioma

Discussion

Hemangiomas are most common benign tumors of liver, noted in up to 7% of patients on autopsy series¹. Upto 20% are multiple. Histology demonstrates over growth of enlarged endothelial lined vascular spaces. While almost always asymptomatic, these tumors can be associated with abdominal pain, fullness and belching. Complications are rare and include bleeding, infarction, necrosis and thrombocytopenia. The clinical importance of these incidentally discovered tumors lies in distinguishing them from primary hepatic malignancies. The classic finding of hemangiomas on U/S is that of a well-defined, echogenic mass. This is seen in approximately 50-60% of hemangiomas². However this appearance can also be seen in adenomas, hepatocellular carcinomas and metastatic

disease. Unchanged finding on serial ultrasound examinations appear to suggest that the lesion is benign. On un-enhanced computed tomography, hemangiomas appear as a round, low attenuation lesion with slight lobulations on the non-contrast images. Following contrast injection, peripheral puddling of contrast (of an attenuation matching aorta) is seen. The classic findings are demonstrated in only 55%³. Classic finding of hemangioma on Tc-99m labeled RBC SPECT is a lesion that is undetectable or demonstrates decreased intensity compared to liver on the flow images and increased intensity to the liver on the 30-60 minutes images. These findings are 100% specific for hemangiomas¹. In literature, there have been only 8 reported false positive cases of hemangiomas³. On Magnetic Resonance Imaging hemangioma appears as homogeneous, well-defined lesion with slight lobulations with low and high signal relative to liver on T1 and T2 weighted images respectively. It demonstrates peripheral puddling of contrast on the contrast enhanced images. The differential diagnosis includes metastasis, sarcomas, endocrine tumors and cystadenocarcinomas. One useful distinguishing feature between hemangiomas and malignancies both of which show increase signal on conventional T2 weighted images, is the more increase in the signal intensity of hemangioma as the time to echo (TE) is increased which glows like a bulb. Signal intensity for malignancy tends to decrease with increase in TE.

References

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3. Tamm EP, Rabushkan LS, Fiahmanñ EK. et al. Intrahepatic extramedullary hematopoiesis mimicking hemangioma on Tc-99m red blood SPECT examination. Clin. Imag., 1995; 19: 88-91.