

Assessment of liver lesions

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Some liver lesions are not cancerous and it is therefore important to determine the most likely cause of a liver lesion so patients can be managed appropriately. Imaging is often sufficient for diagnosis of the lesion type.

Remember

- With increasing use of abdominal imaging to assess symptoms or as part of routine health checks, liver lesions are found commonly and may be a source of significant concern for both patient and doctor.
- There are many causes of liver lesions, ranging from benign, vascular or infective lesions to primary or secondary malignancy.
- The identification of a solid lesion in a patient with underlying chronic liver disease should always raise concern for primary liver cancer.

- Many lesions can be diagnosed by characteristic appearances on imaging without the need for needle biopsy or surgical excision.
- It is important to determine the most likely cause of a lesion so that patients can either be reassured if no further assessment is required or be offered appropriate treatment.

Assessment and management

In order to accurately diagnose the nature of a liver lesion, a thorough review of the patient's age, gender, medication history (e.g. oral contraceptive pill), past medical history (particularly chronic liver disease or malignancy) and the current clinical scenario is important. This may give clues as to the likely aetiology of the lesion.

Incidental liver lesions in a well person

- Appearance on ultrasound may be characteristic and further imaging may not be required.
- Simple cysts are easily identified on ultrasound and usually require no further assessment.
- Haemangiomas are common, and frequently have a characteristic appearance on ultrasound – well circumscribed and hyperechoic (Figure 1). If atypical features are present, CT scan or MRI scan may confirm the diagnosis. A nuclear scan (technetium-labelled red blood cell scan) is not usually required.

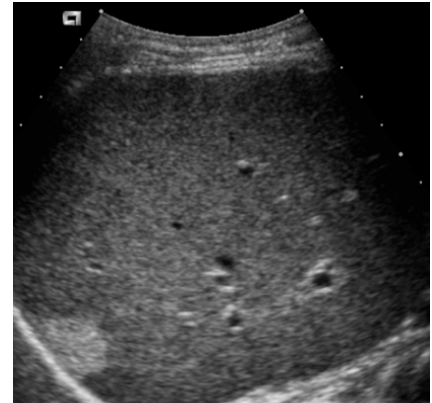


Figure 1. Ultrasound of liver showing a hyperechoic lesion typical of a haemangioma.

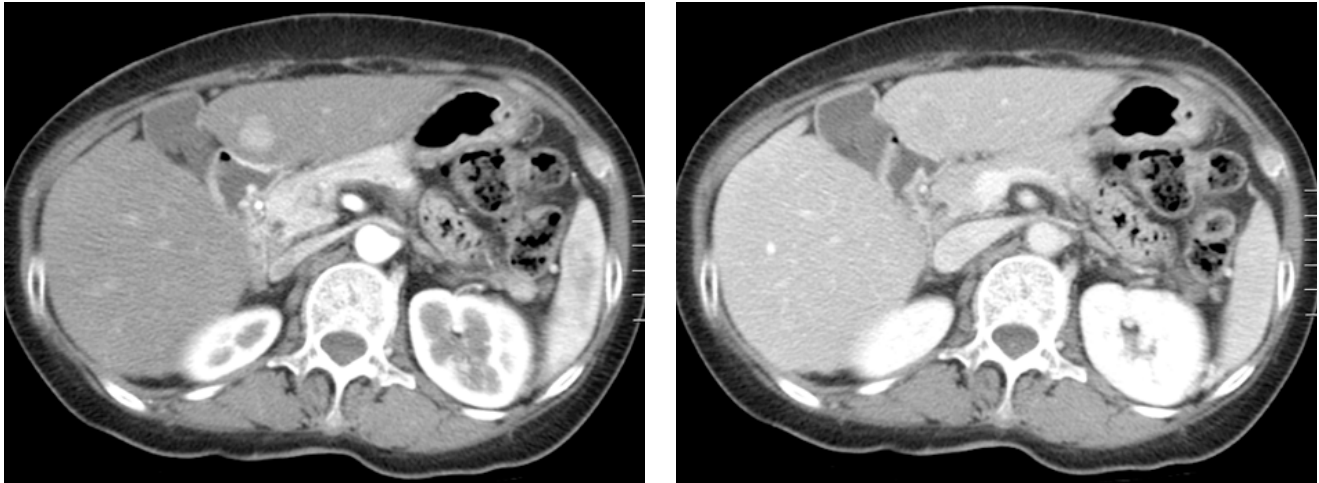


Figure 2. Ultrasound of liver showing a hypoechoic lesion in a patient with chronic hepatitis B. Triple phase CT recommended for further characterisation.

- If a solid lesion is not typical of haemangioma, a triple phase CT scan or MRI scan (with gadolinium) should be performed (Figures 2 and 3a and b).
- Solid lesions that may be found incidentally include adenoma (commonly contains fat visible on MRI), focal nodular hyperplasia (characteristically has a central scar on CT and MRI) and malignancy. Biopsy is often unnecessary and should only be performed after specialist consultation. Adenomas may regress after cessation of the oral contraceptive pill.

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Figures 3a and b. Arterial (a, left) and portal (b, right) phases of triple phase CT scan of the patient in Figure 2. Enhancement on arterial phase and washout on portal phase is typical of hepatocellular carcinoma. The lesion was subsequently resected.

Liver lesions in a patient with chronic liver disease or cirrhosis

- Hepatocellular carcinoma (HCC) is a common complication of cirrhosis, occurring in 2 to 5% of patients with cirrhosis per year.
- Patients with known cirrhosis should be offered screening for HCC with six-monthly ultrasound and alpha-fetoprotein (AFP) level determination.
- If ultrasound identifies a new solid lesion or a growing lesion, further imaging with a high quality triple phase CT scan or MRI scan with gadolinium is recommended.
- Classic features of HCC include an arterially enhancing lesion with washout on the portal venous phase of the scan. Lesions under 2 cm diameter may not show characteristic features. Serum AFP may be normal in a patient with HCC.
- In a patient who may be amenable to curative therapy (resection or liver transplantation), percutaneous biopsy should not be performed.
- Patients with cirrhosis and a liver lesion should be referred to a hepatologist or hepatobiliary surgeon for further assessment because a

range of therapies is available in experienced treatment centres. These therapies include chemoembolisation, radiofrequency ablation, resection and transplantation.

Liver lesions in a symptomatic patient or a patient with a history of extrahepatic malignancy

- A hepatic abscess may be present in a patient who has fever and pain, or who has travelled overseas recently.
- Hepatic adenomas may present with abdominal discomfort or pain. They usually occur in women and can grow under hormonal stimulation, such as with the oral contraceptive pill or during pregnancy. Malignant transformation may rarely occur. Large adenomas may rupture or bleed and should be considered for surgical resection.
- Metastatic lesions are usually multiple although may be solitary in up to 10% of cases. On ultrasound, they characteristically have a hypoechoic halo. Larger lesions may have central necrosis. On CT or MRI, metastases are usually hypovascular, although imaging

appearance can be variable depending on the underlying malignancy.

- The liver is the most common site of metastases from colorectal cancer. Resection of solitary or a few hepatic metastases may result in good long-term survival.
- If metastatic disease is suspected, a thorough search for a primary lesion may be warranted. Usually a biopsy will be required to confirm the nature of the lesion and direct further investigations and management. Biopsy may be performed percutaneously under ultrasound or CT guidance (fine needle aspiration biopsy and core biopsy) or laparoscopically.

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References

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