

Imaging of hepatobiliary system

GIT/Lecture 4

Done by:

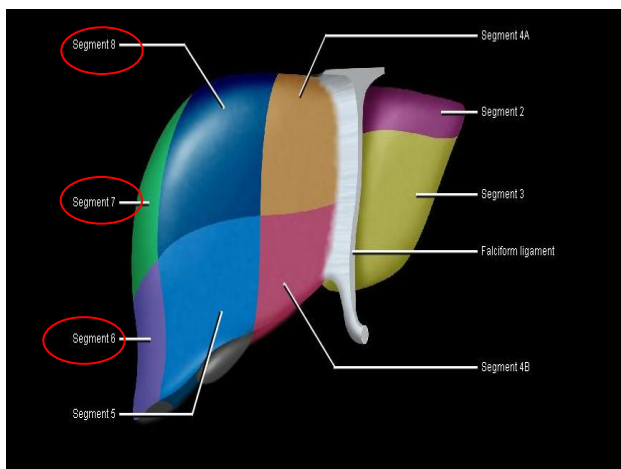
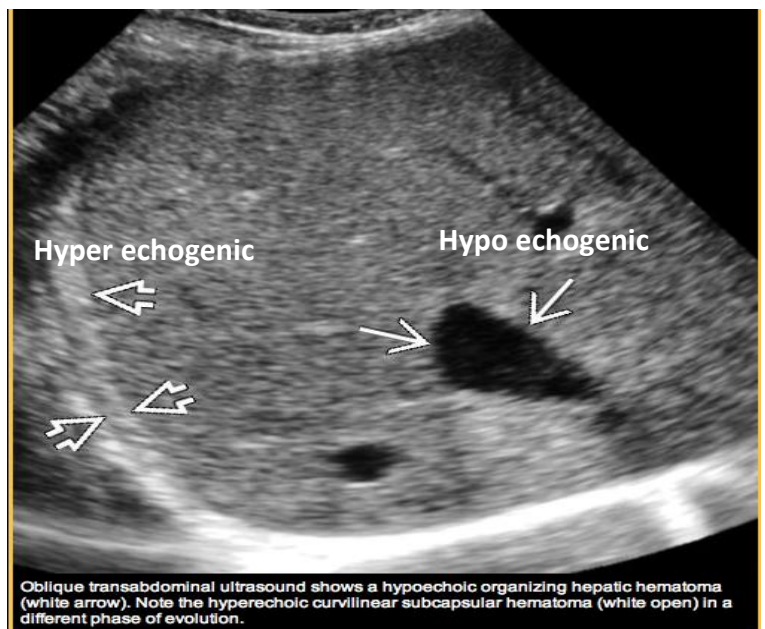
Hend AlQahtani and Group C4 female

- This lecture includes only the notes that have been said during the lecture.

1-Hepatic trauma US

Ultrasonographic Findings :

- Grayscale ultrasound
- Lesions are common in segments 6, 7 and 8 which may be difficult to image in a trauma setting .
- Helpful ancillary signs:
Subcapsular hematoma(**Hyper echogenic**), hemoperitoneum,



Transverse view.

Common finding in liver trauma : Low echogenicity (areas are not conforming to its normal anatomy means traumatic lesions on US)

-Advantages : quick, fast & beside the pt.

-Disadvantages : operator dependent

❖ Hepatic trauma CT

CT Findings :

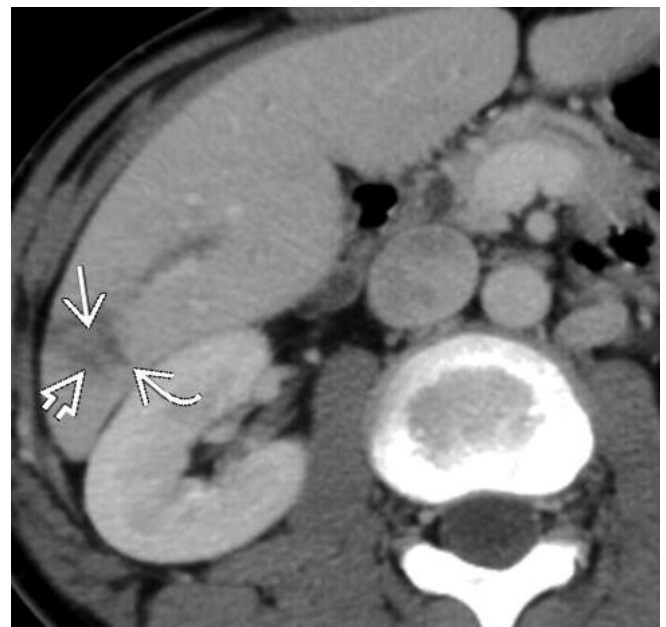
- Lacerations

CT from the same pt (the US pt.)

In trauma setting it is ok to go for CT scan (now it is found in emergency room)

-Advantages : Not operator dependent/ Active hemorrhage can seen(in the liver & biliary tree)

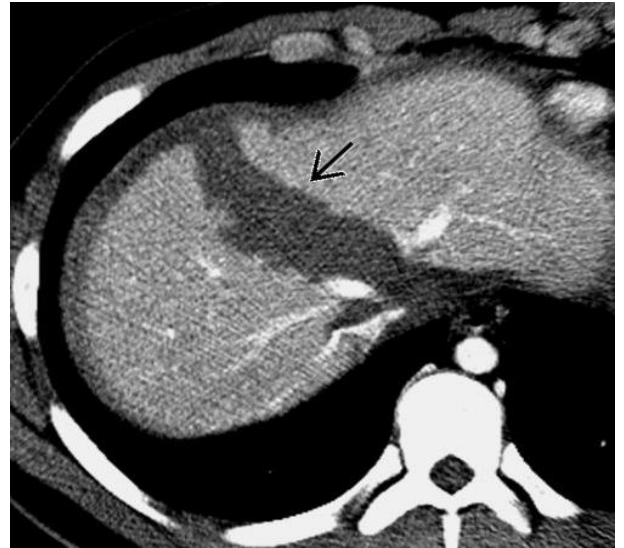
-Disadvantages: large amount of radiation.



❖ Hepatic trauma :

• CECT (contrast enhanced computed tomography):

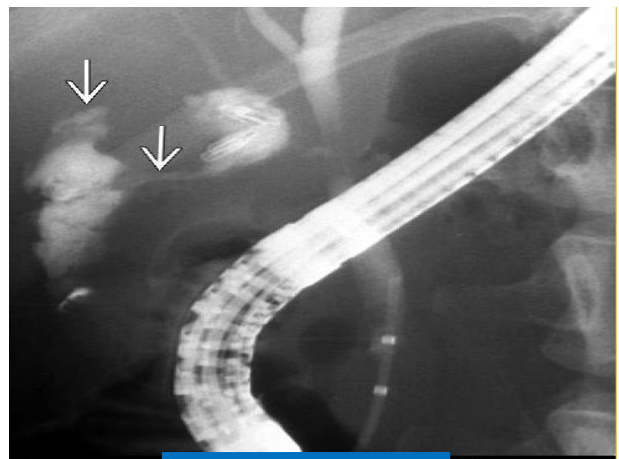
- Active hemorrhage Isodense to enhanced vessels Seen as contrast extravasation (85-350 HU).
- Extravasated contrast material and surrounding decreased attenuation clot.
- Hemoperitoneum: Perihepatic and peritoneal recess collections of blood Periportal tracking: Linear, focal or diffuse periportal zones of decreased HU
- Due to dissecting blood, bile or dilated periportal lymphatics
- CT diagnosis of liver trauma Accuracy: 96% Sensitivity: 100% Specificity: 94%



2- BILIARY TRAUMA :



CT with contrast



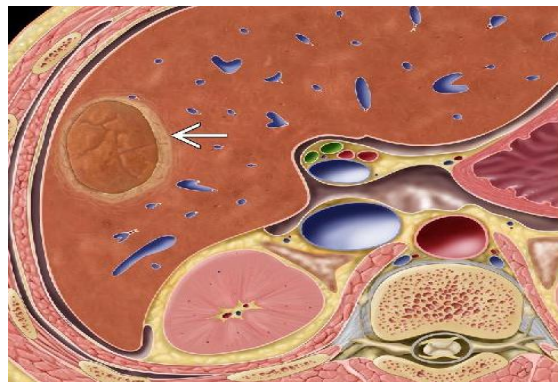
endoscopy

- Biliary trauma could be from surgery or trauma setting
- the trauma will cause fluid accumulation .
- Bile leaks out of the gallbladder

3-Amebic abcess :

- General Features
- Best diagnostic clue: **Peripherally located, sharply defined, round, hypodense mass with enhancing capsule**
- Location
 - Right lobe (72%) > left lobe (13%)
 - Usually peripheral
- Size: **Few mm to several cm**
- Other general features
- Most often solitary (85%)

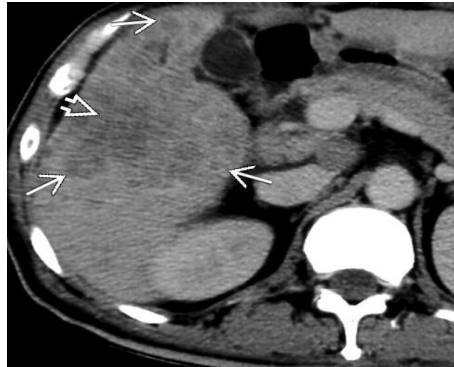
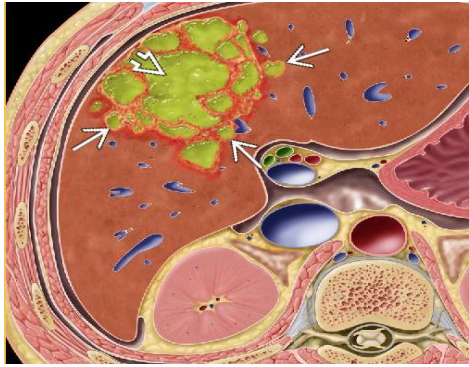
Common finding : Low density lesion , round surrounded by ring
Presentation : low WBC , fever,



4-Pyogenic abcess:

- General Features
- Best diagnostic clue: **"Cluster" sign**: Cluster of small pyogenic abscesses coalesce into a single large cavity
- Location
 - Varies based on origin
 - Portal origin: **Right lobe (65%)**; left lobe (12%); both lobes (23%)
 - Biliary tract origin: 90% involve both lobes, close to biliary ducts
 - If due to infection following an interventional procedure, the abscess is in the vicinity of the site of the procedure
- Size: **Varies from few millimeters to 10**





5-Fatty liver

- Terminology
- **Steatosis** is metabolic complication of variety of toxic, ischemic, and infectious insults to liver/Imaging
- **Diffuse (more common) or focal fatty infiltration**
- Decreased signal intensity of liver on T1 opposed-phase GRE images
- **Often lobar, segmental, or wedge-shaped**
- More common along hepatic vessels, ligaments, and fissures Presence of normal vessels coursing through "lesion" (fatty infiltration) Imaging cannot determine etiology of steatosis
- NECT(**non contrast enhanced CT**): Liver attenuation < spleen
- US: ↑ echogenicity, ↑ attenuation of sound beam

Causes: fatty diet, alcohol.

- Opposite to the amebic abscess.

Small micro abscesses convergent together (cluster).
مثل عناقيد العنب, ill defined, not surrounded by ring.

Notes:

In US :

Fatty liver may be diagnosed if liver echogenicity exceeds that of renal cortex and spleen and there is attenuation of the ultrasound wave ..

In CT :

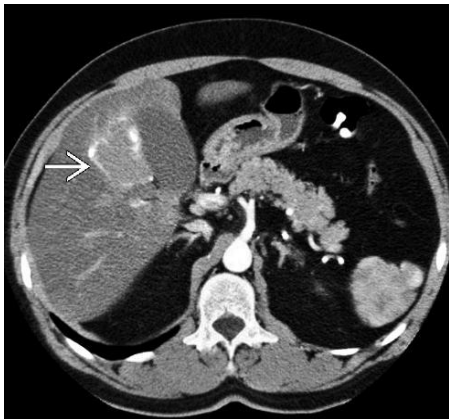
Fatty liver can be diagnosed if the attenuation of the liver is at least 10 HU less than that of the spleen



-From its location (left lobe around flaciform ligament) you can know that it is not hematoma or abscess.

6-hemangioma :

CT

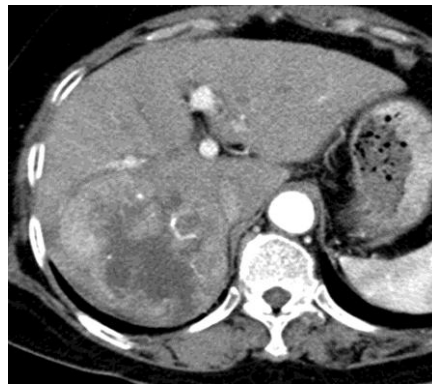


Benign, blood sacs in the liver.

Follow the aorta (the blood circulation) ، هي عبارة أكياس دموية لذلك رح تتبع الاورطاء،

The 4 images of the CT show the contrast (bright) flow in different times, in the last 2 images you can see the disappearance of the contrast from the aorta as the blood circulate.

7-Hepatoma HCC" **hepatocellular carcinoma**" :



Massive lobulated mass , cirrhosis.

loss of weight, hx of hepatitis or schistosomiasis.

If these found in the pt hx the most common cause is HCC.