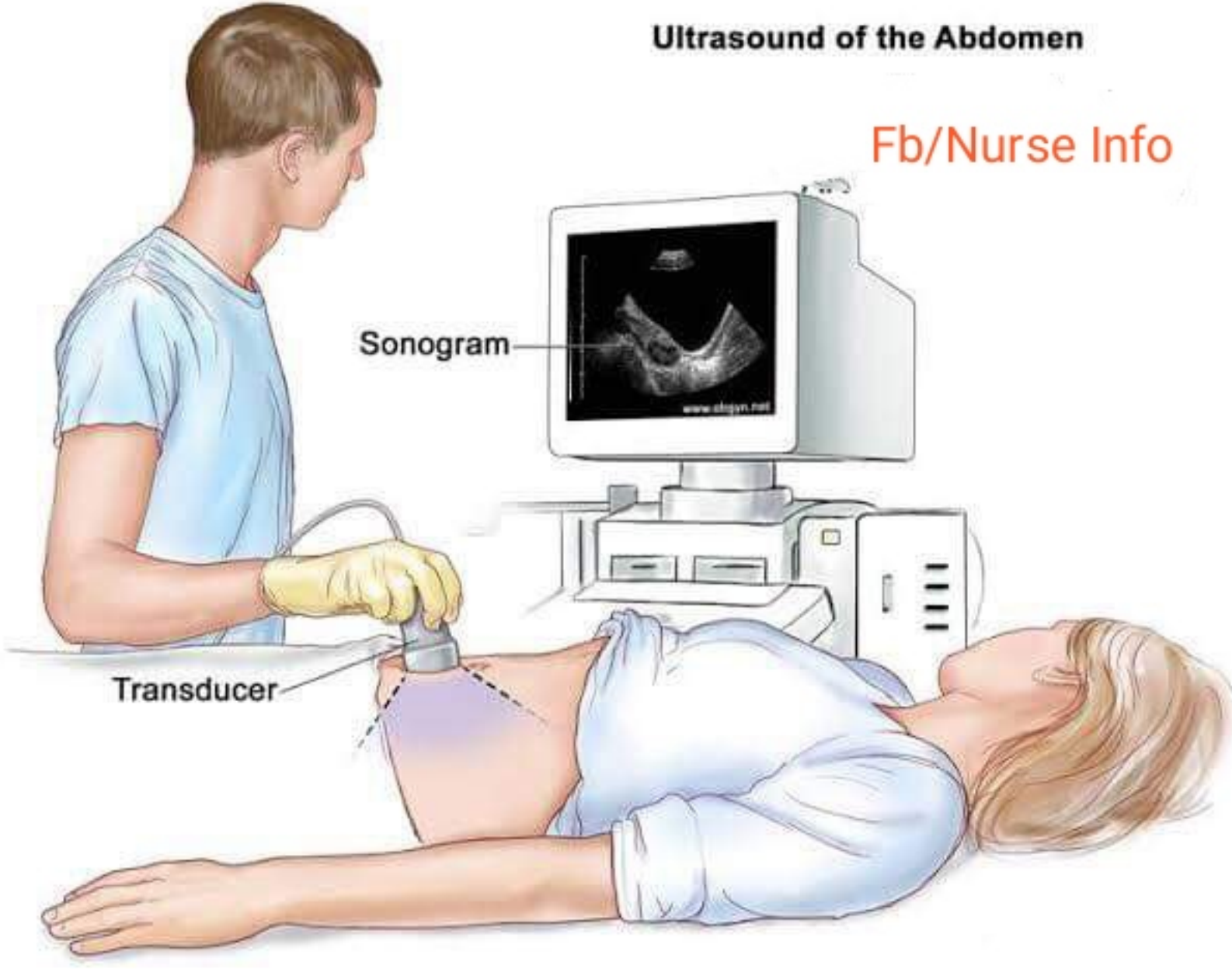
Ultrasound of the Abdomen
Fb/Nurse Info
Sonogram
Transducer

KIDNEY ULTRASOUND

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- The right kidney can be imaged using the right liver (6th segment) lobe as an acoustic window.

KIDNEY ULTRASOUND

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- The renal medullary pyramids are triangular and hypoechogenic.
- The pyelocaliceal system has an echogenic appearance.

KIDNEY ULTRASOUND

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- **The average dimension of the kidneys in adult patients is about 12 cm (craniocaudal dimension).**

KIDNEY ULTRASOUND

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- **The average dimension of the kidneys in adult patients is about 12 cm (craniocaudal dimension).**

KIDNEY ULTRASOUND

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- The renal parenchyma has the same echogenicity or is somewhat more hypoechogenic than hepatic parenchyma.

KIDNEY ULTRASOUND

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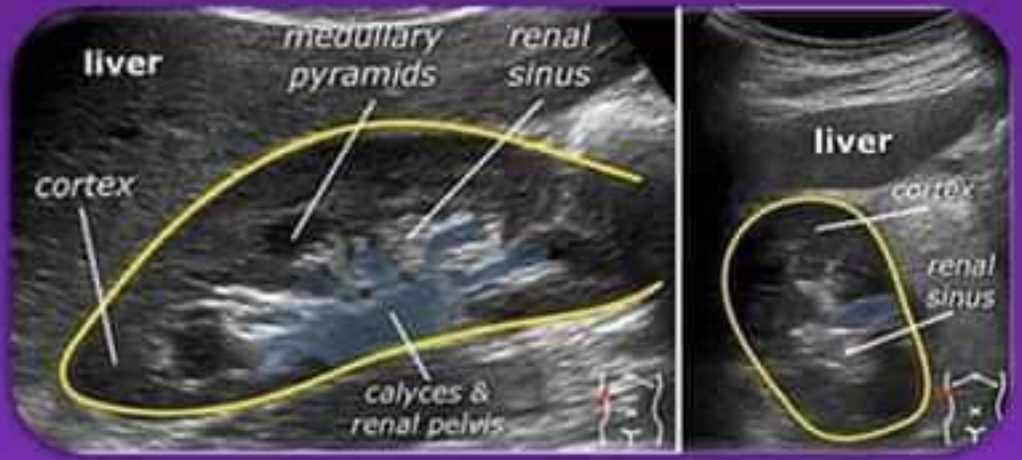
- The adrenal glands should always be evaluated with ultrasound for the presence of abnormalities.
- Look for the V-shape with a hypoechogenic rim and echogenic center.



KIDNEY ULTRASOUND

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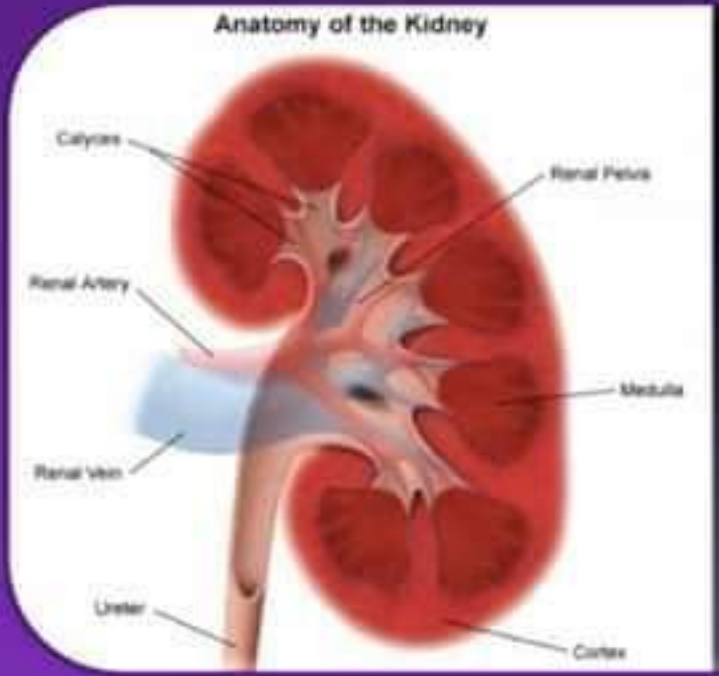

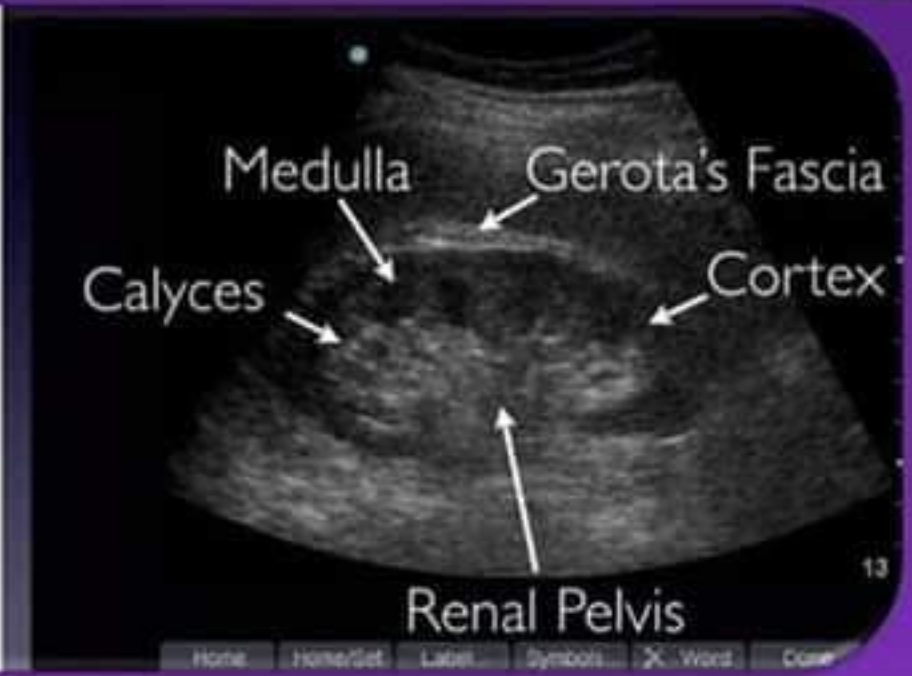

LIVER ULTRASOUND

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- The echo reflection pattern and smooth contours of the liver are best evaluated by imaging the right kidney and the liver lobe together.

LIVER ULTRASOUND

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- A healthy liver has a homogenous echo reflection pattern and smooth contours.
- The echo pattern of the liver is similar to a slightly higher than that of the renal cortex.

LIVER ULTRASOUND

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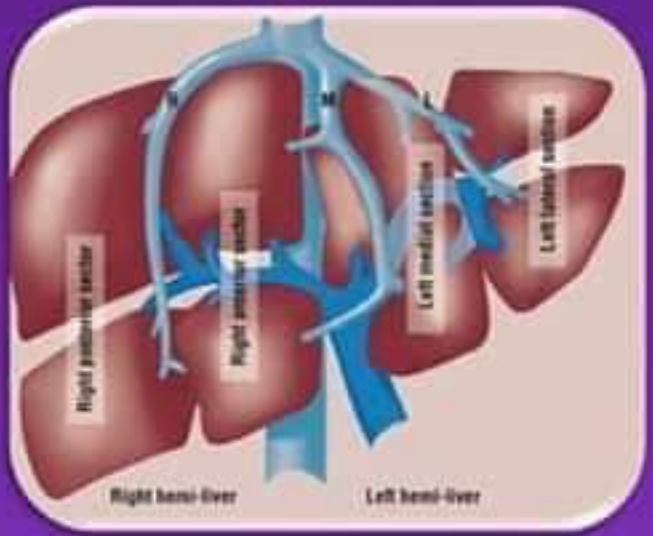
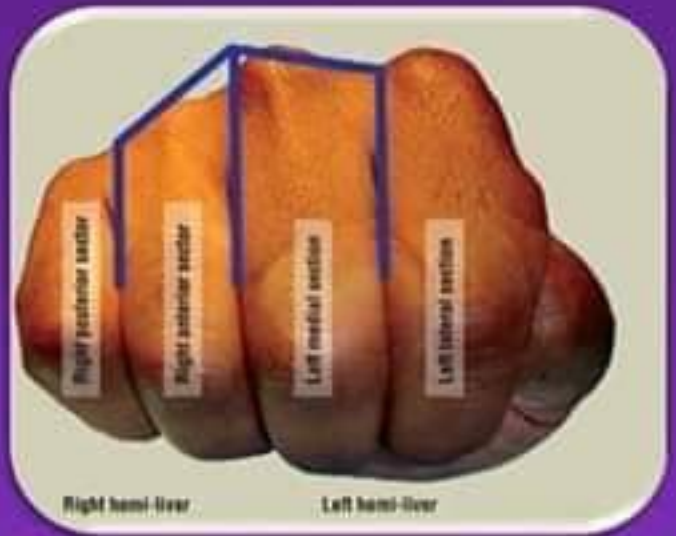
- **A 'handy' way to remember the hepatic segments described by the Couinaud classification.**





LIVER SEGMENTS

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LIVER SEGMENTS

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LIVER ULTRASOUND

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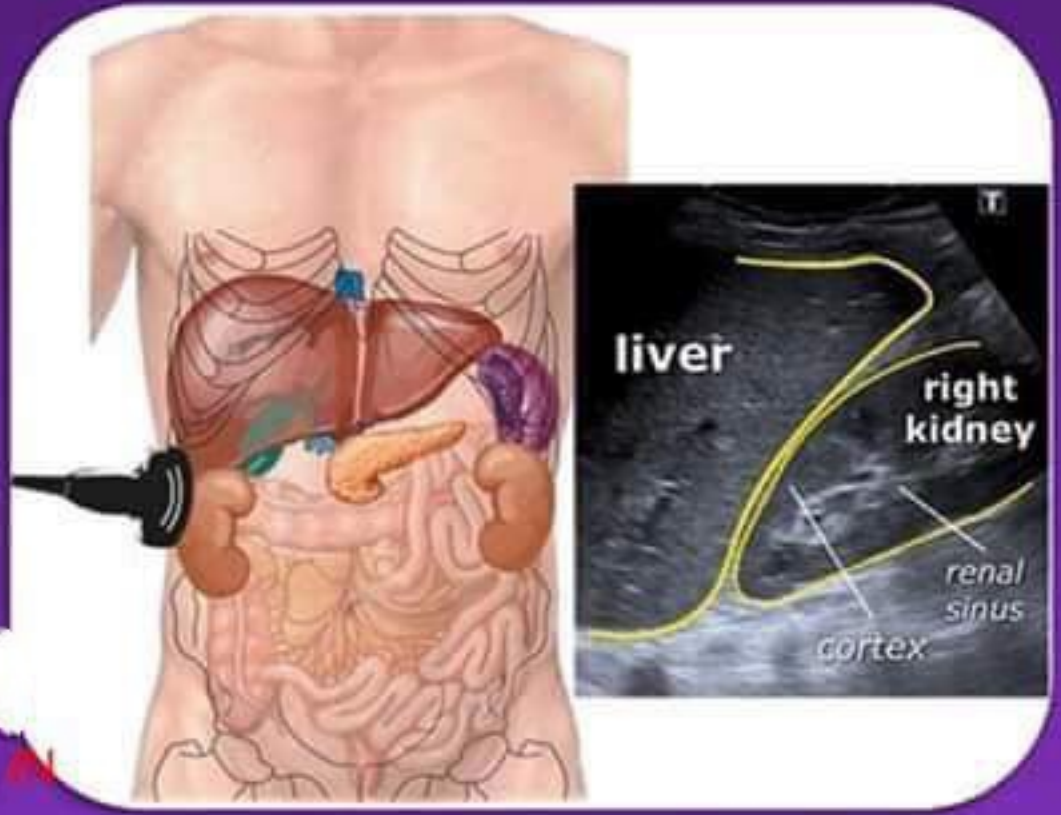

PORTAL VEIN ULTRASOUND

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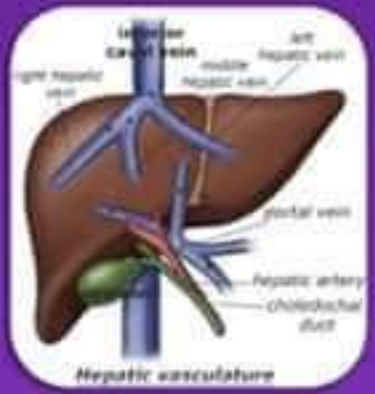
- The main branch of the portal vein can be seen clearly in the hepatic hilum.
- The portal vein can be identified by its echogenic fibrous wall and has a left and right branch at the center of the liver.



HEPATIC VASCULAR ULTRASOUND

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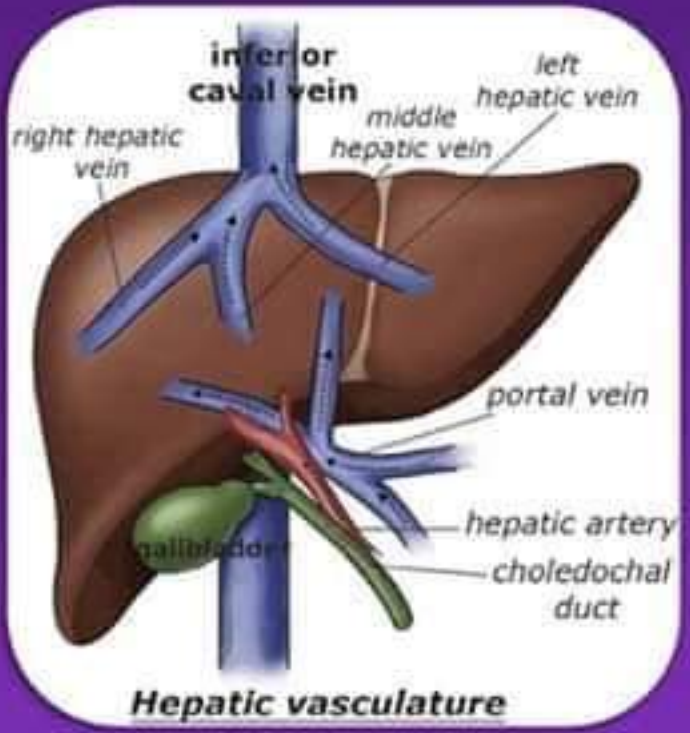

PORTAL VEIN ULTRASOUND

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- The normal direction of flow in the portal vein is Hepatopetal with a monophasic Doppler signal.

PORTAL VEIN ULTRASOUND

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- **The normal direction of flow in the portal vein is Hepatopetal with a monophasic Doppler signal.**

HEPATIC VEINS ULTRASOUND

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- The hepatic veins originate in the inferior caval vein and normally have three main branches; right, middle and left branch.
- The hepatic veins have hypoechogenic walls, making them easily distinguishable from the portal vessels.
- The direction of flow is out of the liver (hepatofugal) with a triphasic Doppler signal.

HEPATIC VEINS ULTRASOUND

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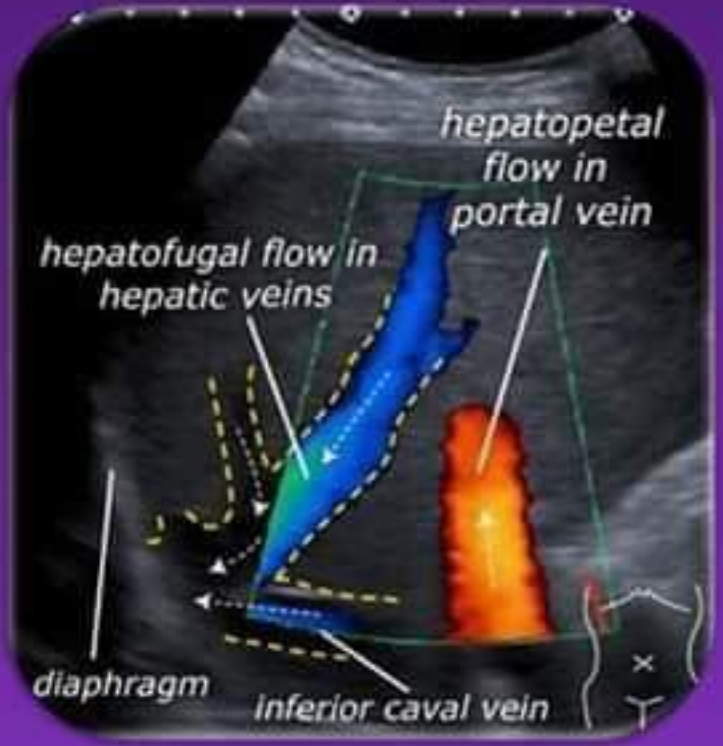

HEPATIC VEINS ULTRASOUND

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HEPATIC ARTERY ULTRASOUND

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- The hepatic artery carries oxygen-rich blood to the liver.
- The main arterial branch is also located in the hepatic hilum.
- There, it (in most cases) passes between the portal vein (anterior) and choledochal duct (posterior) and then branches into the left and right hepatic arteries.

HEPATIC ARTERY ULTRASOUND

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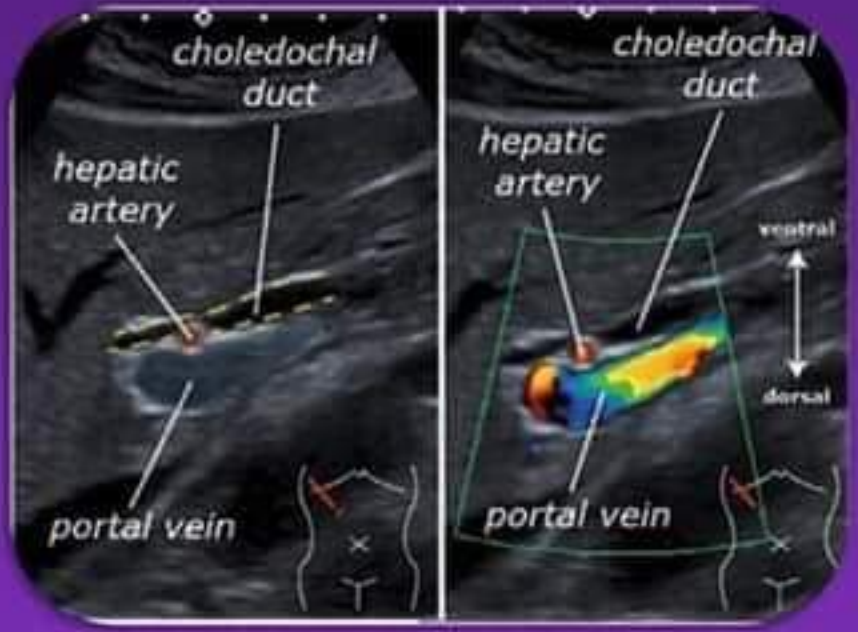

GALLBLADDER ULTRASOUND

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- The gallbladder is best evaluated when the patient is in the fasting state, when the gallbladder is filled with hypoechogenic bile.
- The gallbladder wall thickness is usually < 2 mm.

GALLBLADDER ULTRASOUND

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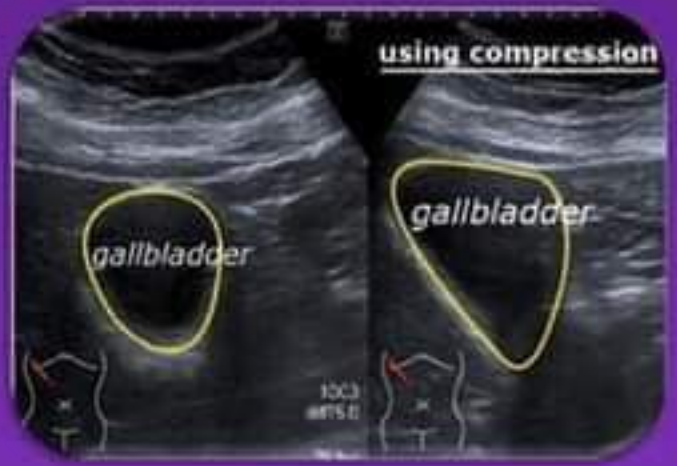
- When the patient inhales deeply, the gallbladder will appear from under the rib cage.
- The gallbladder now lies against the abdominal wall, enabling you to use your echo transducer to push into the gallbladder and evaluate its compressibility.



GALLBLADDER ULTRASOUND

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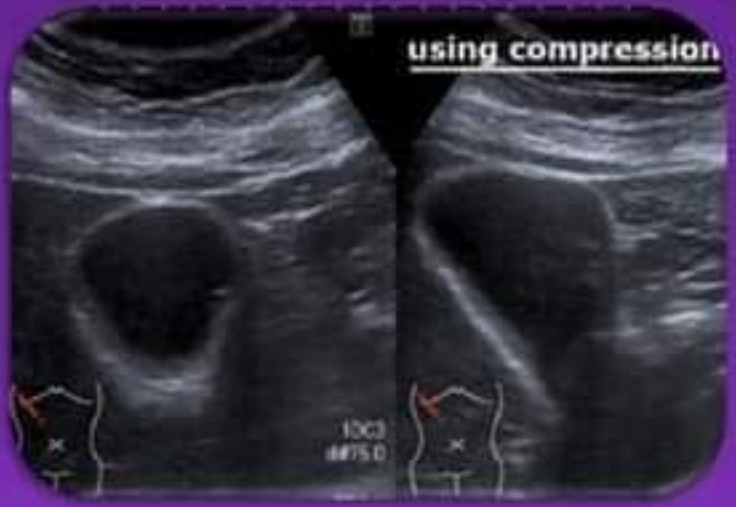
- A filled gallbladder will be partially compressible when you push against it.
- Gallbladder with normal compressibility; visible as a flattening of the rounded contour when extra compression is applied.



CHOLEDOCHAL DUCT ULTRASOUND

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- The choledochal duct is located in the liver hilum.
- Here it passes anterior/ventral of the portal vein.

CHOLEDOCHAL DUCT ULTRASOUND

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- The choledochal duct usually has a diameter < 7 mm. The diameter may increase in elderly patients or patients who are stable after cholecystectomy.


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THANK YOU