Gall bladder and biliary tract scanning

Anatomy:

Gallbladder:

Gallbladder is pear shape sac located in the right upper quadrant (RUQ).It is located inferior to right lobe of the liver. Lateral to IVC and porta hepatise and anterior to right kidney. The gallbladder composed of three parts: fundus body and neck. The fundus is the distal end and broadest part of the gallbladder and anterior to the superior pole of the right kidney. The main section of the gallbladder is body. The narrow proximal end is neck which continuous as the cystic duct.

(Neck is stationary part while body and fundus are floating).

The normal size of gallbladder is 3 cm in width and (7-10) cm in length.

Biliary tract:

The right and left hepatic ducts exit from the liver and form common hepatic duct. The duct of gallbladder (cystic duct) joins with common hepatic duct to form common bile duct (CBD) which is formed just distal to portal hepatise.

The normal size of common hepatic duct is 4 mm and CBD is 7 mm.

Portal triad comprises three elements .CBD, right hepatic artery and portal vein.



Normal variant:

Different shape: (Phrygian cap (the gallbladder fundus is fold over)).

Different position.

Septations: -partially or totally divided the gallbladder.

-partially or totally divided the cystic duct produce double gallbladder.

Duplication of CBD: (very rare).

Appearance:

-Anechoic (fluid filled structure)

-Slightly echogenic line of the gallbladder wall. (Thin wall)

Patient preparation:

Patient should be fasting (6-12) hours before the exam because it is contracting and emptying of bile when eating so we can’t see the gallbladder and to reduce the gases.

Probe:

(2-5)MHz probe is used.

Patient position:

Patient may be supine or left lateral decubitus.

Breathing technique:

Deep held inspiration.

Procedure:

1. Preparing the room, open the machine and choose the correct probe for scanning.
2. Patient supine with extended legs.
3. Place the probe inferior to the costal at right angle of the ribs (we see the gallbladder at longitudinal plane with anechoic texture and slightly echogenic line of the wall).
4. When change the plane of probe we see gallbladder in transverse plane.
5. When change the position of the patient to the left lateral decubitus and moving the probe until we see the neck of gallbladder in longitudinal plane.
6. After locating the neck of gallbladder we move the probe slowly and go inside the liver to see the CBD with hepatic artery and portal vein.
7. Then take measurement of CBD “2.4 mm”. (up to 3 mm is normal).
8. Then slightly move the probe superiorly ( in the midline near to the right)

Outside the liver at the hilum to see the CBD.

1. After located CBD we take measurement “2.6 mm”. (up to 7 mm is normal).

