

# **ULTRASOUND of LIVER with ELASTOGRAPHY**

## **Patient Prep (recommended):**

1. Patients are recommended (including those who have had a cholecystectomy) to be NPO for 6 hours prior to an abdominal ultrasound examination.
  - a. If a patient has not been NPO (or tube feeding not stopped) for 6 hours, the technologist will scan the patients and document patient preparation.
  - b. Patients who are inadequately prepped may be required to undergo a second limited examination to view the organ that was unable to be imaged.
2. Patient may take water with medications up to exam time (small volumes only).

## **Survey:**

Perform a real-time survey of the abdomen with attention to Liver and CHD/CBD.

Use Doppler or color flow to distinguish vessels and on any abnormalities.

## **Image Documentation:**

Each image must be labeled with the patient's full name, medical record number, accession number, initials of the imaging technologist, organ/area identification, scanning plane and patient orientation if different from supine.

If an image of a structure is not well seen, take an image of the structure and annotate the purpose of the image.

## **General Procedure description:**

1. The liver AND CHD/CBD should be surveyed for abnormalities with real-time imaging. Representative images of normal organs in two planes should be obtained, usually in short and long axes.
2. The important vasculature of the organs should be examined and documented. It is advisable to document color flow of major vessels for patency.
3. CHD/CBD diameter measurement is to be recorded.
4. Any mass or abnormality should be imaged in two planes with measurements in three orthogonal planes. Color flow images should be documented of any mass or abnormality.
5. Using Elastography 10 samples of the liver will be documented.

## **Guidelines for abdomen ultrasound:**

### **LIVER**

1. Six long axis images thru the liver (to include the right and left lobe). Scan planes demonstrating the IVC, head of pancreas, the right kidney and main portal vein.

2. Six transverse or subcostal images thru the liver (to include the right and left lobe). Scan planes should include the main portal vein, its bifurcation, the hepatic veins and their confluence to the IVC.
3. One color flow images demonstrating patency of the main portal vein. One color flow images demonstrating patency of the hepatic veins and their junction with the IVC.

### **COMMON DILE DUCT:**

1. One image long axis of CBD/CHD with measurement
2. One image transverse of CBD/CHD.

If organs cannot be seen or an organ is removed documentation should be noted on images and worksheet.

### **ELASTOGRAPHY**

1. Using Elastography take 10 samples in the right lobe of the liver and save the image.
  - a. Saving the image puts the value into the report.
2. An intercostal imaging approach in the right lobe of the liver needs to be used.
3. Make sure no vessels are in the sample area.
4. The elastography measurement needs to be taken at a depth of 2cm below the capsule of the liver. This means that the top of the sample box is at a depth of 2cm below the capsule of the liver.
5. The most accurate measurement is with the sample box perpendicular in the liver and not angled.
6. The best way to have the patient hold their breath is to just stop breathing. Taking in a deep breath or blowing their breath all the way out can affect the measurements.
7. Minimal scanning pressure (light pressure) needs to be utilized on the patient with the transducer.
8. An average of the samples will be provided.
9. Patients with ascites or large body habitus can produce inadequate data so make sure this information is documented regarding patients.
10. Print report page.

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