

CORECAST IMAGE REVIEW #3 SHOW NOTES

EFAST US General:

- Consists of the RUQ view, suprapubic view, LUQ view, subxiphoid cardiac view, and 2 lung sliding views.
- The abdominal views should be obtained in the order listed above, as this is the most to least likely order in which fluid will be found on a FAST exam.
- A minimum of ~200ml of free fluid must be present to be detected on the FAST.
- The FAST exam is a binary exam when it comes to the abdomen, it is positive or negative. If you visualize free fluid in the RUQ, then you don't necessarily have to continue because you have a FAST positive scan.
- Further Learning: <https://www.coreultrasound.com/efast/>

LUQ US General

- Obtain the view: the probe of choice is the curvilinear probe. The probe marker should be facing cephalad (toward the patient's head) mid-axillary line along the patient's inferior L thoracic cage at the posterior axillary line. In this view you want to see spleen, kidney, and diaphragm. This view is notoriously hard with regards to rib shadowing blocking your view. You may have to significantly rock the transducer or move it more posterior than anticipated.
- This view will be the third view obtained in an abdominal FAST scan. Unlike the RUQ view, where fluid first accumulates along the inferior pole of the kidney and then tracks up Morrison's pouch, in the LUQ the first place fluid will collect is the subphrenic space (aka subdiaphragmatic space or suprasplenic space) between the spleen and diaphragm. The diaphragm can be seen as a relatively hyperechoic curvilinear structure with the appropriate view, and is crucial in locating to determine the location of fluid if present.
- Pro tip: if rib shadowing is too much in the RUQ or LUQ, try rotating your transducer to get better positioned in the intercostal space. Also, the phased array transducer can be used as an alternative.

LUQ US #1

- Although the spleen does have a capsule, it will not be as echogenic as seen in this US. The hyperechoic rim seen above the spleen is the diaphragm. This fluid collection is representative of a pleural effusion. Also supportive of this would be if the FAST exam was negative until the LUQ view was obtained. A large amount of fluid in the LUQ in the abdomen without fluid seen in the other views of the FAST would be highly unusual.
- Pro tip: whenever you are questioning something, get another view in a different plane to help support your opinion.

RUQ US General

- Obtain the view: the probe of choice is the curvilinear probe. The probe marker should be facing cephalad (toward the patient's head) mid-axillary line along the patient's inferior R thoracic cage. In this view you want to see diaphragm, liver, and kidney.
- This view will be the first view obtained in a FAST scan. The first place fluid will collect in the RUQ is the inferior pole of the kidney. At least 200ml of free fluid must be present to be detected on FAST.

RUQ #1

- This view is showing fluid tracking down Morrison's pouch between the liver and kidney. Of note, the inferior pole of the kidney is not in this view which makes it an inadequate study if fluid wasn't seen in Morrison's pouch. It is important to get the inferior pole of the kidney as it may be the only place fluid will collect, and if you clear the RUQ by only looking at Morrison's pouch it could result in missing a positive FAST.

RUQ #2

- This view adequately visualizes the inferior pole of the R kidney and shows a pocket of hypoechoic free fluid in the abdomen. It can be appreciated how if you only imaged Morrison's pouch in this patient, you might have missed the free fluid in the abdomen.

Ocular US General

- Obtain the view: The probe of choice is the linear probe. You will cover the eye in tegaderm and attempt to not trap free air between the tegaderm and the eye. You will place gel over the tegaderm and align the probe in the transverse plane. This is to prevent gel from getting into the eye.
- A normal scan will show hypoechoic vitreous humor which appears homogenous, the retina firmly adherent to the posterior aspect of the globe, and a <5mm wide optic nerve when measured 3mm deep to where it inserts into the retina.
- Further Learning: <https://www.coreultrasound.com/onsd/>
- Even More Learning: <https://www.coreultrasound.com/vd-rd/>
- I need more eye US stuff I can't get enough: <https://www.coreultrasound.com/clr/>

Ocular US #1

- This is the ever elusive "eye nipple". It turns out papilledema can be seen on US. Protrusion of the optic disk/optic cup >0.6mm into the globe is positive for papilledema.

Ocular US #2

- You can see a grossly abnormal vitreous humor in the posterior chamber of the eye. Normally it will be homogeneously hypoechoic, but here echogenic material can be visualized floating around as the patient shifts their gaze. BUT is it vitreous detachment or retinal detachment?
- The key lies in locating the optic nerve. If the echogenic abnormality is attached to the optic nerve, it is retinal detachment as the retina is a continuation of the optic nerve. If the echogenic flap is floating in the vitreous humor but does not attach to the optic nerve, then a vitreous detachment is present.