CORECAST IMAGE REVIEW #2 SHOW NOTES

DVT US General (Lower Extremity)

- Obtain the view: the probe of choice is the linear probe. The probe marker should be facing the patients RIGHT and the probe marker on the screen should be on the LEFT. Start with the probe marker medially on the leg just below the inguinal ligament. From lateral to medial the teaching is NAVL (nerve, artery, vein, labia), or venous penis (the vein being closer than or more medial than the artery).
- Follow the common femoral vein which subsequently turns into the femoral vein (formerly known as the superficial femoral vein) all the way down to the adductor canal. These veins are accompanied by an artery which helps you know you are evaluating the correct deep veins. Your work is not done; you still need to evaluate the popliteal vein. Have the patient bow their leg out "frog legged" and place the probe along the posterior aspect of the leg behind the knee in the transverse plane with the probe marker pointing toward the medial aspect of whichever leg you are evaluating. The popliteal veins will subsequently split into the calf veins. Follow them down as far as you can.
- To properly evaluate, while following the veins down you will need to compress every centimeter to where the walls of the vein touch. Normal findings should be a vein that is fully compressible. A non-compressible vein or echoic structure within the vein lumen is concerning for thrombosis. Be aware that an echogenic structure in the vein can possible be a valve which is a normal finding.
- Further Learning: https://www.coreultrasound.com/dvt/

Venous # 1

- This is NOT a DVT scan. Notice that there is only one vessel in view during the scan. There is no accompanying artery. This is therefore a superficial vein and cannot be used to rule out DVT. A common mistake is imaging the greater saphenous vein (no accompanying artery) instead of the femoral vein (accompanying artery).
- Pro tip: an extensive superficial venous thrombosis still gets anticoagulated.
- Pro tip: if you scan for superficial venous thrombosis and it is present, you need to make sure there is no accompanying DVT as there is an increased likelihood.

Venous #2

- While ultrasounding in the starting point of the groin, sometimes it can be hard to identify what is a vessel and what isn't. Veins and arteries are tubular structures that will continue in a certain plane of the ultrasound. If while imaging and the tubular structure closes on itself, it is in fact not a tube but a sphere.
- In this case the spheres represent lymphadenopathy of the groin, which has a differential including bacterial infection, viral infection, and malignancy. Lymphadenitis often accompanies an impressive cellulitis.

Lower Lung Field US Basics

- Obtain the view: the probe of choice is the curvilinear probe. The probe marker should be pointing cephalad (toward the patient's head). The probe marker on the screen should be on the left. Place the probe on the mid-axillary line along the inferior aspect of the thoracic cage.
- Pro tip: if rib shadowing is too hindering to your evaluation, switch to the phased array probe.
- Normal Scan: there will be no hypoechoic fluid accumulation in the most dependent part of the scan (the costophrenic recess if sitting at 45 degrees in bed) indicating no pleural effusion. There will be no B lines or hyperechoic lung parenchyma present that would indicate lung consolidation.
- If looking for a pleural effusion look for a mirror sign or a spine sign to help identify: https://www.coreultrasound.com/pleural-effusions-part-1/
- Further learning: https://www.coreultrasound.com/how-to-perform-a-pulmonary-exam/

Lung #1

- There is hypoechoic fluid accumulation in the costophrenic space representative of pleural effusion. There is a more hyperechoic lung parenchyma than expected, representing consolidation.
- Further learning: https://www.coreultrasound.com/pneumonia/

Pneumothorax Lung US Basics

- Obtain the view: the probe of choice is the linear probe (if part of an EFAST, okay to use the curvilinear probe). Place the probe oriented in the sagittal plane with the probe marker pointing cephalad (toward the patient's head). The probe marker on the screen should be on the left. Evaluate the visceral-parietal pleural interface within a rib space in multiple lung fields.
- A normal scan will reveal continuous pleural sliding referenced as "ants marching on a log". The absence of sliding is indicative of a pneumothorax in the right clinical setting.
- If both lung sliding and an abrupt absence of lung sliding are present within the same image, this is called a lung point and is specific for pneumothorax.

Lung #2

- There is both lung sliding and absence of lung sliding in the same frame aka a lung point, indicating pneumothorax.
- Pro tip: to better evaluate the lungs and get rid of the ribs in your way, rotate the probe to further explore the intercostal space and mitigate posterior acoustic shadowing from the ribs.

Lung #3

- This is a hydro lung-point. In this scan you can see the absence of sliding and sliding present in the same frame. This lung point is specific for pneumothorax. Not only that, you can also see hypoechoic fluid accumulation within the pleural space. This is a great view because you can appreciate what is happening with the parenchyma of the lung since you can use the pleural effusion as a window. Normally with isolated pneumothorax you just have to use your imagination.

Cardiac US General

- Obtain the view: the probe of choice is the phased array probe. All cardiac views mentioned are under assumption that the ultrasound machine is under cardiac settings with the probe marker located on the RIGHT of the screen.

- Apical 4-Chamber (A4C) View: the phased array probe should be positioned inferior to the nipple on males or in the inframammary fold on females. The probe marker should be pointing toward the patients left and the probe should be perpendicular to the skin or slightly angled pointing toward the patient's head.
- Parasternal Long Axis View: visualize a horizontal line connecting the nipples (aka the nip-line) and a vertical line along the left sternal border. Place the probe at the intersection of the lines with the probe marker pointing toward the patient's right shoulder.
- Expert tip: If you are ever having trouble obtaining a view have the person lay in the left lateral decubitus position and re-attempt.
- Further learning: https://www.coreultrasound.com/how-to-obtain-cardiac-windows/

Cardiac #1

- This view is an off axis parasternal long view. There is a complex fluid accumulation in the pericardial sac. Of utmost importance is that in your parasternal long views you have the descending aorta in frame, that way if a fluid accumulation is present you can determine where it is located.
- Fluid accumulation between the aorta and heart chambers indicates a pericardial effusion. If the fluid accumulates deep to the aorta on the scan, it is representative of the pleural effusion.
- Further Learning: https://www.coreultrasound.com/pericardial-effusion/