

Case Setup

Ultrasound Preparation:

- Ensure phased array, linear, and curvilinear probes are present, functioning and clean.
- Ensure the ultrasound screen is easily visible to the examinee, either directly or via screen share.

When Examinee Enters:

“Hello Doctor, I am Dr. _ and will be assisting as your examiner for this ultrasound case. As a reminder, please ask me to change probes, change depth, gain, or mode of ultrasound to assist you with the case. Please ask for help to reposition the patient or bed. Do you have any questions?”

Case vignette:

“As you have noted, the patient is presenting with lower extremity swelling.”

For diagnostic ultrasound:

“I would like for you to now demonstrate how you would assess using ultrasound to evaluate leg swelling, visualizing the popliteal vein for pathology . Which probe would you like to use?”

Probe settings:

- Linear
 - Gain 10, depth 5cm
- Phased array
 - Gain 10, depth 2cm
- Curvilinear
 - Gain 10, depth 2cm

If asked to change probe settings:

- “Tell me when to stop adjusting [gain/depth]
 - Adjust the gain and depth slowly, allowing the examinee to stop you.

“When you find an acceptable image, please let me know.”

Clip the image, and replay the clip for the participant.

“Thank you, I will take the probe from you now. Please point out any relevant artifacts, anatomy, or pathology that would be important for this complaint.”

Direct the applicant to your computer after they are done with the current clip.

“Please direct your attention to my computer screen. Assume this image is the image you obtained from this patient. I would like you to point out any pathology that would be important for this complaint.”

Application:

On further evaluation, you find a similar finding in the common femoral vein and deep femoral vein. What are your next steps in caring for this patient?

End of case:

“Thank you, that concludes your case.”

Pearls and Pitfalls:

- Compressing the vein fully, sometimes to the point of arterial compression if there is a thrombus.
- Appropriately positioning the patient, with the frog leg position to access the popliteal fossa.
- Ensure you are assessing the popliteal vein and not the often triplicate calf veins. “Pop on top” may be a helpful mnemonic for finding the popliteal vein, as the popliteal vein typically lies more superficial to the artery.
- You may utilize pulsewave to differentiate arterial and venous structures in anomalous anatomy.