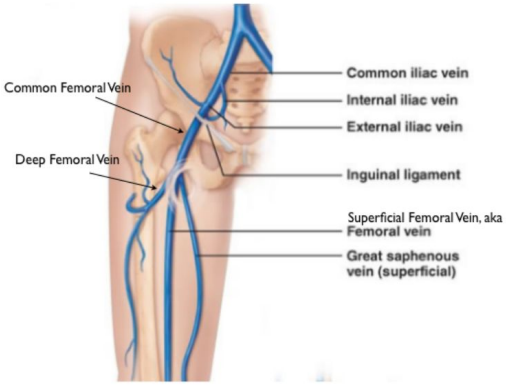
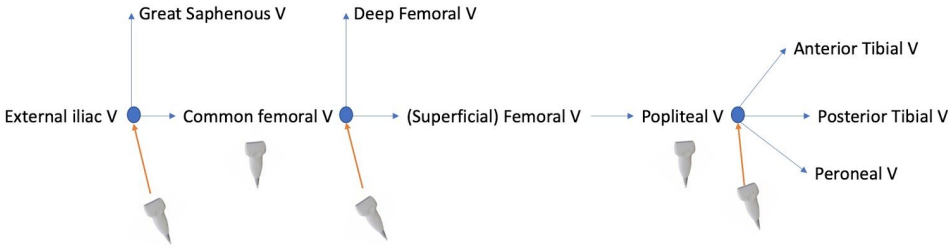
DVT Ultrasound *to evaluate for clots in the deep venous system of the lower extremities*

Anatomy

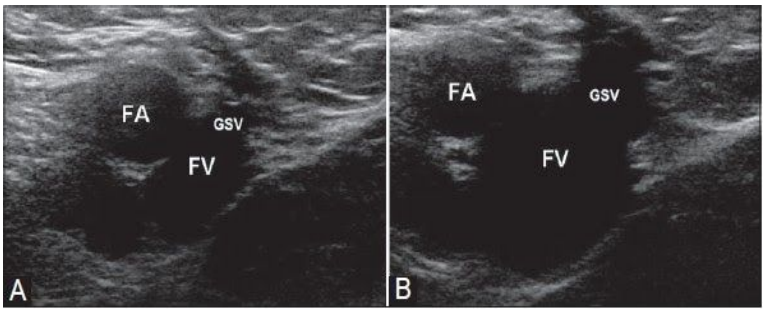
- *External iliac vein* passed beneath the inguinal ligament to become the *common femoral vein (CFV)*
- The *greater saphenous vein (GSV)* empties into *CFV* at the saphenofemoral junction. A clot at the junction has a high likelihood of embolizing into the *CFV* even though the *GSV* is superficial
- Just distal, *CFV* bifurcates into the *deep femoral vein (DFV)* and *(superficial) femoral vein (FV)*. Superficial is a misnomer as they are both part of the deep vein system
- *Popliteal vein* trifurcates into the *peroneal vein, anterior tibial vein*, and *posterior tibial vein*





Technique

- Have patient position with hips flexed and externally rotated with knee flexed 30 degrees
- To improve visualization of leg veins, lift the head of the bed more, or have the patient hang their leg off the edge of the bed
- At each point, apply firm pressure with probe to completely collapse vein in order to exclude presence of clot
- 5 locations to get compressed and uncompressed images: 1) *CFV* proximal to saphenofemoral junction 2) saphenofemoral junction (mickey mouse sign) 3) *FV* and *DFV* 4) *popliteal vein* proximal to trifurcation 5) *popliteal vein* at trifurcation
- If scan is negative for DVT, patient should still get a formal repeat US in 5-7 days. ED focused 2 point compression DVT study is limited and does not assess for DVTs of the calf and thigh



Signs DVT:

- Visualization of clot
- Failure to completely compress the venous walls
- No color on Doppler flow
- Lack of augmentation: suggests clot obstruction distal to the probe
  - Augmentation: use color doppler on the common femoral vein and squeeze the calf for ↑ flow
  - Enlarged lymph nodes can be mistaken for DVTs
- Lack of respiratory variation suggests clot obstruction proximal to the probe