

MULTIPLE CHOICE

VT PERIPHERAL VENOUS - PRACTICE SET

PROPOSED FOR REVIEW - questions are the author's verbatim Q&A; distractors are auto-selected from other answers in the same bank and must be checked by a subject-matter reviewer (a distractor could coincidentally be correct). Not authoritative assessment content.

1. Which gray-scale feature most strongly favors acute over chronic deep vein thrombosis?

- A. Contracted vein with brightly echogenic, wall-adherent thrombus
- B. Multiple intraluminal collateral channels
- C. Dilated vein with low-echogenicity, poorly attached, spongy thrombus
- D. Calcified valve cusps with shadowing

2. In a patient with chronic venous insufficiency, sonographic findings of an incompetent saphenofemoral junction typically include:

- A. Non-compressibility of the GSV with hypoechoic intraluminal thrombus
- B. Absent flow throughout the common femoral vein
- C. Sharp arterial spectral signal at the SFJ
- D. Reversed flow at the SFJ on Valsalva or distal augmentation release lasting longer than the reflux threshold

3. What is the primary purpose of perforating veins in the lower extremity?

- A. Direct blood from the deep system into the superficial system
- B. Direct blood from the superficial system into the deep system
- C. Connect the great saphenous to the small saphenous vein
- D. Drain blood from muscle compartments into the skin

4. For the great saphenous and small saphenous veins, the commonly accepted threshold for pathologic reflux on duplex testing is reverse flow lasting longer than:

- A. 0.1 second
- B. 0.5 second
- C. 2 seconds
- D. 5 seconds

5. Why is compression for DVT evaluation performed in the transverse plane rather than the longitudinal plane?

- A. The transducer can slide off a vein in longitudinal view, falsely simulating compression
- B. Color Doppler only works in the transverse plane
- C. The transverse plane has higher frame rate for compression
- D. The longitudinal plane cannot demonstrate venous valves

6. Mirror-image artifact in venous Doppler is most likely to be misinterpreted as which finding?

- A. Venous valve incompetence at a single point
- B. Bidirectional flow / reflux in a vein
- C. Loss of phasicity
- D. Acute thrombus

7. During an upper extremity venous duplex, which vein is least likely to be fully evaluated by compression because of overlying bony structures?

- A. Subclavian vein
- B. Cephalic vein
- C. Basilic vein
- D. Internal jugular vein

8. During venous mapping for an autologous lower extremity bypass, which great saphenous vein characteristic would render the conduit unacceptable?

- A. Visualization of competent valves along the vein
- B. A single tributary at the saphenofemoral junction

- C. GSV diameter greater than the femoral vein
- D. Multiple segments of luminal thrombus or sclerosed vein along the course

9. Which finding most strongly indicates superficial thrombophlebitis rather than deep venous thrombosis?

- A. Non-compressible great saphenous vein with surrounding soft-tissue inflammation and a palpable subcutaneous cord
- B. Free-floating thrombus tail at the saphenofemoral junction extending into the common femoral vein
- C. Echogenic material in the popliteal vein with loss of phasicity
- D. Non-compressible common femoral vein with distention

10. During a distal augmentation maneuver, the calf is squeezed while the spectral Doppler is sampled in the popliteal vein. What is the expected normal response?

- A. A pulsatile arterial-type spectral signal
- B. Sustained reverse (retrograde) flow lasting several seconds
- C. No change in the venous waveform
- D. A prompt, brisk increase in cephalad venous flow

11. What is the single most reliable gray-scale finding used to diagnose acute deep vein thrombosis?

- A. Absence of color filling on color Doppler
- B. Inability to fully coapt the vein walls with transducer compression in the transverse plane
- C. Loss of respiratory phasicity on spectral Doppler
- D. Failure of distal augmentation

12. On a normal lower extremity venous Doppler tracing, the antegrade flow is augmented when a patient performs a deep inspiration in which configuration?

- A. It briefly decreases during inspiration and increases on expiration because of diaphragmatic effect on intra-abdominal pressure
- B. It reverses completely during inspiration
- C. It briefly increases during inspiration and decreases on expiration
- D. It is unaffected by respiration

13. The femoral vein in the thigh was previously known by which name?

- A. Profunda femoris vein
- B. Superficial femoral vein
- C. Common femoral vein
- D. Great saphenous vein

14. A patient with chronic indwelling PICC line presents with arm swelling. Duplex shows the catheter within a non-compressible, mildly distended basilic vein with low-level intraluminal echoes and absent color flow around the catheter. The most likely diagnosis is:

- A. Superficial thrombophlebitis of the cephalic vein
- B. Normal PICC line position
- C. Catheter-associated upper extremity deep vein thrombosis
- D. Subclavian artery thrombosis

15. The CEAP classification used in venous insufficiency stands for clinical, etiologic, anatomic, and which fourth component?

- A. Prognostic
- B. Pathophysiologic
- C. Pulmonary
- D. Procedural

16. During venous mapping for an autologous bypass conduit, which measurement is most commonly used to determine whether the great saphenous vein is acceptable for use?

- A. Vein diameter measured in transverse plane along the length of the vein
- B. Peak systolic velocity in the femoral artery
- C. Reflux time at the saphenofemoral junction
- D. Resistive index of the popliteal artery

17. During a venous duplex, applying excessive transducer pressure during color Doppler interrogation of a deep vein can result in:

- A. Acute thrombus formation from probe pressure
- B. Aliasing in the adjacent artery

- C. Artificially increased venous flow velocities
- D. False-positive absence of color flow due to vein compression

18. Paget-Schroetter syndrome (effort thrombosis) most commonly produces thrombus in which vein?

- A. Axillosubclavian (subclavian) vein
- B. Femoral vein
- C. Cephalic vein
- D. Internal jugular vein

19. Which lower extremity vein is formed by the union of the posterior tibial and peroneal (fibular) veins?

- A. Common femoral vein
- B. Tibioperoneal trunk
- C. Popliteal vein
- D. Profunda femoris vein

20. A 65-year-old presents with left leg swelling. Duplex shows non-compressible, distended common femoral, femoral, and popliteal veins with hypoechoic intraluminal material and absent color flow. The most appropriate interpretation is:

- A. Superficial thrombophlebitis of the great saphenous vein
- B. Chronic post-thrombotic changes
- C. Acute proximal (iliofemoral / femoropopliteal) deep vein thrombosis
- D. May-Thurner syndrome without thrombus

21. A patient undergoing venous reflux evaluation is positioned and a Valsalva maneuver is performed at the common femoral vein. After release of Valsalva, the spectral Doppler shows reversed flow lasting longer than 1 second. This finding indicates:

- A. A normal response to Valsalva
- B. Valvular incompetence at or proximal to the sample site
- C. Acute thrombus in the common femoral vein
- D. Compression of the iliac vein

22. Which finding on a venous reflux study most specifically indicates incompetence of a perforating vein rather than incompetence of the great saphenous vein?

- A. Reversed flow at the saphenopopliteal junction on calf release
- B. Outward (deep-to-superficial) flow through a vein crossing the muscular fascia on release of distal compression
- C. Reversed flow in the common femoral vein on Valsalva
- D. Reversed flow at the saphenofemoral junction on Valsalva

23. True or False: Augmentation of venous flow by distal calf squeeze that produces no increase in cephalad flow in the popliteal vein suggests venous obstruction between the squeeze site and the transducer.

- A. False
- B. True

24. Which finding on a venous duplex is MOST suggestive of post-thrombotic syndrome (chronic post-DVT changes) rather than acute DVT?

- A. Fully compressible, anechoic vein with normal phasicity
- B. Thickened, echogenic vein walls with web-like residual material and surrounding collaterals
- C. Free-floating thrombus tail extending into a patent lumen
- D. Vein larger than the adjacent artery filled with hypoechoic material

25. The small (lesser) saphenous vein typically terminates at which anatomic location?

- A. Saphenopopliteal junction
- B. Saphenofemoral junction
- C. Common femoral vein
- D. Posterior tibial vein at the ankle