Looking For Reflux In All The Wrong Places

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Current Concepts & Practice

- We look for reflux in deep and superficial trunks: mainly the femoral-popliteal and GSV.
- The initial focus is the femoral valve and the saphenofemoral valve. Then we move on down to the popliteal and tibial valves. Axial reflux is considered bad in either system.
- The assumption is that proper valve function breaks up the blood column and decreases erect venous pressure. And valve reflux prevents this beneficial column interruption.
- The main column interruption is thought to occur at the knee level.

Column Interruption Duration (CID)

- We measured CID sequence in 76 normal limbs after calf pump emptying.
- We used rapid inflation/deflation cuffs around the calf for calf ejection in the standing position.
- This produces calf ejection as good or better than toe stands.

Disclosures

- Royalty Veniti inc.
- US patent IVUS diagnostics in CVD
- US patent venous stent design.

Measuring CID

Linear Probe for Tibial and Hockey stick for GSV
Column interruption duration and Reflow sequence after calf ejection (Time 0 S)

- After calf ejection, all valves close but the femoral valve and SF valve open by mean +8 seconds allowing flow in the femoral vein & GSV above the knee level.
- By +12 S, the popliteal valve and the GSV valve at knee level have opened allowing flow in the upper leg and thigh.

CID Summary

- After calf ejection, all valves close but by +12 seconds, the femoral, popliteal and GSV valve near the knee have opened allowing flow in the thigh portions of the deep and superficial system. The tibial valve(s) and GSV valves in the lower calf remain closed for about 1 to 1 ½ minutes and the segments below remain collapsed providing the longest column interruption in the leg.
- We should stop focusing on proximal reflux, instead monitor CID at the tibial and GSV segments in the gaiter area below the knee.
- Reflux measurement only suggests that CID may be shortened. CID measurement is the real thing.
- Ref. Raju et al. JVS-VLD Currently on line.

END
Column Interruption Unit

- Key Valve
- Collapsed Segment
- Residual Column

RESTING

+0 S

+8 S

+12 S