Veith Session 64: Venous Imaging Techniques

How To Recognize Variants On The Venous Duplex Exam

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Relevant Disclosures
• None

Venous variants
• Classic
• Variation
  – Clinical relevance

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Saphenous space
Easy to find on DUS, except around knee and ankle

Superficial vein anatomy
‘Variants’

Great saphenous vein (GSV)
**Anterior Accessory GSV**
- Common in thigh
- Parallel to the GSV
  - In saphenous compartment
  - Course more anterior
    - Aligns with SFA and FV on DUS
  - Not a duplication

**Posterior Accessory GSV**
- More common in the calf
- Old eponyms
  - Posterior Arch vein
  - Leonardo’s vein

**Superficial Accessory Saphenous Vein**
- epifascial GSV tributary, parallel to the GSV
  - Can be the main flow channel
    - Segmental GSV hypo or aplasia
  - Can be primary reflux conduit
    - Just under the skin

**GSV hypo or aplasia**
- AA GSV can functionally be the ‘GSV’

**GSV: segmental hypo or aplasia common by knee**
- Superficial Accessory Saphenous Vein: fills the gap
Lymphovenous pathways near the SFJ

Thigh extension of the SSV
Variable primary drainage pattern

Gastrocnemius Vein:
Variable drainage

Deep Vein anatomy

- Drainal:
  - Paired tibial veins
  - Intermuscular veins
- Proximal:
  - Popliteal vein
  - Femoral vein
  - Common femoral vein
  - Iliac veins

Femoral and Popliteal Veins:
Duplications

- Femoral:
  - 21% limbs
- Popliteal:
  - 1% limbs
- Both Fem and pop:
  - 8% limbs

- Clinical implication:
  - False negative diagnosis of DVT

Sciatic embryological remnants

Potential connections
Sciatic embryological remnants

Complete Sciatic Vein
Uncommon
FV Diminutive

Potential connections

Sciatic remnant to DFV:
Common
FV Smaller than usual

Deep vein variants

Sciatic vein

Congenital smaller Fem vein with larger Sciatic-Deep Fem vein

Eberlova J Czech Phys 2011; 150:344-6. (Sciatic nerve rotated medially)

Surgery 1998; 123:637-44.

Thank you for your attention.
Conclusions
Superficial veins: typical variants

- GSV
  - Anterior accessory (great) saphenous vein
  - Superficial saphenous saphenous vein
- SSV
  - Thigh extension
  - Gastrocnemius connections

Conclusions
Deep vein variability

- Duplications
  - Avoid false negative diagnosis of acute DVT
- Congenital sciatic vein dominance
  - Avoid false positive diagnosis of chronic DVT
- Understand how sciatic variants can explain
  - How some patients tolerate acute femoral DVT better than others
  - Guidewire pathways during femoral lysis

Thank you for your attention