Below Knee Deep Vein Thrombosis As Part Of Ilio-Femoral DVT: How I Deal With It

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Ilio-femoral Deep Vein Thrombosis is the area to attack if you want to “treat” DVT

- But what are you to do if the thrombus extends below the knee?
  - Fuhhhgeddabadit- inflow doesn't matter
  - Yougottawurraybadit- inflow does matter

Disclosures
- Cook Medical
- Bard
- Medtronic
- Marvao Medical
- Straub
- Boston Scientific

Thrombosed popliteal vein: approaches (in the context of an ilio-femoral DVT)
- Catheter Directed Thrombolysis (CDT)
  - Fuhhhgeddabadit: Standard upstream directed popliteal vein puncture- ignore pop v thrombus
  - Posterior tibial vein at the ankle
  - In either case use stockings plus pneumatic compression boots
  - Criss-cross: Retrograde/Downstream Popliteal Vein puncture + Upstream Pop v puncture
  - CDT to above and below knee
  - CDT below knee; PMT above knee

- Single Session Pharmaco-Mechanical Venous Thrombectomy (SS PMT)
  - PMT to above and below knee

Posterior Tibial Vein Catheter Directed Thrombolysis

PROS: In line access; supine approach
CONS: Technically tricky, no bigger than 6F sheath
Hmmmmm
Funny looking veins

6F sheath
IV Heparin @1000u/h
Aim APTT 60-100s

5F Infusion Catheter
90 cm shaft
90 cm infusion length
Posterior Tibial Vein Access
- 6F maximum sheath
- Spasm common
- Arterial puncture can occur
- Usually CDT calf to iliac veins
- Can use for PMT with a 6F device
  - Usually need a separate access for stent etc

Multi-session
Combined
CDT Lysis below knee
PMT above knee
- 62 year old man
- Acute left leg swelling
Initial below knee appearances
Main calf veins are occluded
Start below knee CDT while getting to work on above knee veins

Aggressive use of aspiration catheter
10F sheath in cephalad direction
Post thrombectomy
Post Aspiration
Post Stenting
Post Balloon
Above knee segment is finished
"Drainfix"™ keeping 5F CDT catheter in position for Overnight lysis

Pre Rx calf veins
Post overnight CDT calf veins

Post Overnight CDT
Note inflow From Profunda
50 year old man

- No prior history
- Right IF DVT
- Tense phlegmasia
Initial venogram through 5F catheter with tip in upper 1/3 calf
No flow cephalad
Start Rx by injecting 5-10mg tPa into this thrombus while setting up thrombectomy device
After 10 minutes before using AngioJet®
After single pass Zelante™
Post Thrombectomy
Post aspiration
Post Balloon
Post Stent
Prone
Right
CV
EBV
CFV
Final
IF-DVT with Infra-popliteal vein thrombosis

CDT- pros

- Single popliteal venous puncture is quick/easy
- Less cath lab time - let the infusion do the work
- Criss cross enables access to below knee veins

CDT- cons

- Not single session
- Need HDU bed/repeat venograms/cost/hassle
- Risks of CDT in general
- Only accesses 1 of 6 veins (X cross or ankle)

PMT- pros

- Potentially single session
- Lower lysis risks
- Can use aspiration catheter
- Balloon/stents/filters are easy through popliteal vein access
- No need HDU bed/cost
- Quicker mobilisation after single session is a big advantage

PMT- cons

- Criss-cross
  - Not as easy as it looks
  - Potential for leaving thrombus behind mid popliteal vein has thrombus left behind
- Posterior Tibial Vein
  - Won't take more than 6F (AngioJet Solent™ is 6F)
  - Difficult to use adequate size balloons
  - Often need a second puncture IJV/CFV

There are lots of ways to skin this particular cat

If you want to learn more try this!