Endovascular Treatment of Chronic Central Venous Obstruction: How I do it

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Conflict of Interest

I have no conflict of interest
Non-Thrombotic Central Venous Obstruction

• “May-Thurner Syndrome” = External venous compression
• Etiology: Arterial anatomy; tumor, Adipose, Gravid Uterus
• Symptoms: Unilateral pain, swelling, heaviness
• Permissive lesion for iliofemoral DVT
Non-Thrombotic Central Venous Obstruction

- Identifying patients for venogram/IVUS can be challenging
- Low threshold for venogram
- Need high quality iliocaval venous duplex
  - Look for decreased respiratory variation
  - Deep venous reflux
  - B mode stenosis
  - Velocity ratio max stenosis / normal vein > 4
- Unilateral leg swelling
- Thigh+ calf leg swelling
- Venous stasis ulcers (unilateral)
- CT venogram
Indications to Treat

**LCIV Compression**

**Iliofemoral DVT**

**LYSIS -> STENT**

**Leg Swelling**

1. Presence of ipsilateral DVT
2. Significant symptoms should be treated selectively (CEAP 3-6)
Venogram imaging revealing evidence of physiologically significant compression of the LCIV including:

- Retroperitoneal collateralization
- Contralateral cross-filling
- Contrast stagnation
Intravascular ultrasound (IVUS)

- Luminal narrowing of the LCIV or extensive intravascular webs.
- Guidance for lesion identification
- Choice of intervention should be guided by symptoms and physiology of flow
Critical Steps in Treating Non-Thrombotic Iliocaval Stenosis

1. Ipsilateral 9F Access
2. Venogram and IVUS
   ▪ Two Views
   ▪ Evaluate for physiologic signs of compression
   ▪ Decision to Treat
3. Contralateral Access
4. Repeat IVUS With measurements
5. Mark the screen, lock table
Critical Steps in Treating Non-Thrombotic Iliocaval Stenosis

1. WALLSTENT (Boston Scientific)
2. Stent Diameter and Length
   - Length 60-90mm
   - Diameter chosen by IVUS
     - IVUS -> 10-20% oversizing by CIV/EIV landing zone
     - 16-20mm
3. Proximal Stent Landing: 2cm beyond Point of max compression
4. Post-Dilate (2mm < stent diameter)
5. Repeat IVUS and measurements
   - Stent- vein wall apposition
Follow up in Non-Thrombotic Iliocaval Stenosis

1. 2 week appointment with iliocaval venous duplex. New baseline flow and stent patency.
2. Follow up at 6 months, then yearly duplex.
3. ASA 81mg for life. Plavix 90 days. If on anticoagulation, then ASA + Anticoagls for life
4. Re-intervention if loss of respiratory variation, velocity jets, Velocity ratio > 4, or B mode stenosis > 50% on duplex.
Chronic Thrombotic Central Venous Obstruction

- Etiology: Multifactorial, iliocaval compression, malignancy, IVC filter, inherited thrombophilia
- Symptoms: Unilateral or bilateral pain, swelling, heaviness, ulcer
- Treat based on symptoms (Post-thrombotic syndrome, ulcers)
Chronic Thrombotic Central Venous Obstruction

- Complicated intervention and technical algorithm
- Not enough time to cover this in the remaining 30 seconds
Chronic Central Venous Obstruction

- Don’t Dabble
- Chronic thrombotic vs non-thrombotic are different
- IVUS is a must for all cases
- A good vascular lab is essential
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