Subacute massive and occlusive DVT hits back with vengeance

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Disclosure

Speaker name:
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I have the following potential conflicts of interest to report:

☐ Consulting
☐ Employment in industry
☐ Stockholder of a healthcare company
☐ Owner of a healthcare company
☐ Other(s)

☐ I do not have any potential conflict of interest
H/P

- 48 yo woman: 3 week h/o subacute severe left thigh/calf pain a/w edema, pleuritic CP & SOB.

- VTE risk factor: Obesity - No previous VTE events

- Duplex venous US: LLE extensive occlusive thrombosis of all deep veins (including visualized ext iliac vein) and GSV

- CT chest: Right upper and lower lobar non-occlusive PE

- Warfarin → Dc’d → Compliant → INR: 2.5 to 3 for 3 weeks
Readmission

• Readmitted 18 days later: Worsening venous claudication, swelling, disabling pain & redness of left ankle, calf and thigh

• Exam: Worsening LLE post-phlebitic syndrome

• Duplex: No change
Plan

- Popliteal vein access
- Venography - **IVUS**
- Possible IVC filter

- Catheter directed US facilitated thrombolytic therapy

  And/or

- Mechanical thrombectomy
First procedure

- Prone
- Pop vein access (4 F Micro → 8F)
- 4F glide cath – 0.035 Glidewire advantage
- Crossing into IVC
- Patent IVC – thrombus at ostial CIV
- **IVUS:** Left CIV compression - 86% stenosis
- IVC filter: Option ELITE
- **EKOS 105-50 cm**
LLE Venogram

IVC
IVUS

L CIV compression: 86%

L CIV reference

CIV Compression

CIV Reference

Area

Area = 56.36 mm²
Perimeter = 30.69 mm

Area

Area = 406.30 mm²
Perimeter = 73.23 mm
IVUS: L EIV

EIV stenosis

Area = 310.86 mm²
Perimeter = 64.41 mm

EIV reference

Area = 335.17 mm²
Perimeter = 66.16 mm
IVUS: L CFV

Area
Area = 227.97 mm²
Perimeter = 55.13 mm
22 hours later

LLE Venogram

Right iliac venogram
Penumbra CAT8 – 4 passes

Following venogram
PTA with 16x40 mm followed by 18 X 40 mm
Post prolonged PTA times
20x80 mm Wall stent in CIV-EIV - Post dil 18x40 mm
18x90 mm Wall stent in EIV-CFV - Post dil 16x40 mm
What’s going on!!! - ACT 310...
Thoughts...

- Inflow problem?
- Outflow problem?

- But wait a min...

- Why a recurrent massive thrombosis of wire, stents and IVC filter??

- Heparin resistance - Hypercoagulable state!
Another EKOS 135-50 cm
3rd day: 18 hours of TPA – Bivalirudin started
Zelante Angiojet of CIV stent and IVC filter residual thrombus
18x90 mm Wall Stent in CFV & distal EIV – Post dil Atlas 16 mm
IVUS post-Intervention

CIV stent

EIV stent

Area
Area = 14.149 mm²
Perimeter = 42.86 mm

Area
Area = 139.85 mm²
Perimeter = 42.63 mm
Dabigatran Rx ... 45 days later: Supine images
IVC filter retrieval
Unique aspects of the case

CIV Mechanical Compression + Heparin Resistance

Duration of anticoagulation?
Take home

• In case of **recurrent thrombosis** during a deep venous intervention:

  1. Severe inflow compromise
  2. Severe vessel recoil
  3. Severe outflow stenosis
  4. Resistance to Heparin → Immediate change of anticoagulation agent

• Proceed with catheter directed thrombolysis or pharmaco-mechanical thrombectomy depending on extent of thrombotic burden.
Thank you
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