Deep Vein Pathology Seen with IVUS: what it looks like and what it means

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Disclosure

Speaker name:
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I have the following potential conflicts of interest to report:
Consulting: Medtronic, Cook, Veniti, Bard, Phillips-Volcano,
Boston Scientific, Gore, EKOS-BTG,
Initial IVUS - (left) IVC to femoral vein
Deciding lesion stenosis - CIV

Area % stenosis = \( \frac{114.0 - 42.2}{114} \times 100 = 63\% \)

Min diam % = \( \frac{9.5 - 3.6}{9.5} \times 100 = 62\% \)

CIV stenosis at vessel-crossing, focal, normal wall - NIVL
Deciding lesion stenosis – EIV, CFV

Occluded
Area % stenosis = 100%
Min diam % = 100%

Size of patent distal CFV
Min diam = 7.6mm
Max diam = 13.6 mm
Area 85.7 mm$^2$
Deciding the Landing Zones

With IVUS
- Use the cm marking on the IVUS catheter to indicate extent of stenting
- Use IVUS head for exact positioning

With venogram
- May need several injections
- Contralateral CFV injection
- Oblique views

Appr. 24 cm on the IVUS catheter
Sizing of the Stent

“Normal” CIV
Max diam 14.1 mm
Min diam 9.5 mm

“Normal” CFV
Max diam 7.6 mm
Min diam 13.6 mm
Identifying Central “Landing Zone”

Stenting from centrum to periphery
Starting >5mm central to lesion
Identifying Peripheral “Landing Zone”

Pre-dilation IVUS

Occluded Proximal CFV

9cm stent will end land if placed with 5 cm overlap

Overlap 5cm

Stent lower limit

The distal landing zone has priority over extent of overlap
IVUS – Lower end of stent
IVUS – Post-stenting
Summary

• IVUS add significant diagnostic value
• Reduces radiation
• Reduces contrast
• Repeatable
• Improves sensitivity of diagnostic testing
• Essential part of a complete venous service
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