Technical Tricks for Iliac Vein Stenting

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Disclosures

• **Symposia Honoraria & Proctor Fees:**
  • Abbott, Endologix

• **Symposia Honoraria:**
  • Boston Scientific, Medtronic, Penumbra, Shockwave

• **VIVA Board Member**

• **National PI/Co-PI:** C-GUARDIANS, CONFIDENCE, SAPPHIRE WW, CANOPY, PERFORMANCE 3

• **Stock Options:** INSPIRE MD

• **Research Grants, Stocks, Equity:** None
Thoughts BEFORE Iliac Venous Stenting...

• What is the timing and urgency of the DVT and venous disease?

• **Pre- Procedure** bilateral venous duplex

• Most patients should have **pre-stent** CT VENOGRAMs
  - **CTV:** → *often uncovers etiology, and/or reason NOT to stent*

• What is the Etiology of the DVT? Provoked? Hyper-coaguable state?

• Are thrombolytics best first, or planning single session intervention?
35 year female with extensive DVT left leg....

Huge fibroids causing LCIV compression and severe swelling
Large Bony Spur compressing RCIV

(Seen first on IVUS in “self-pay” patient)
Iliac Vein Stenting Considerations..

• In general, we would like to get access below the major thrombus
• Often a second access is very helpful for ostial CIV disease (angios)
• Truly want *good inflow* to stented area
• Want to stent “normal to normal”, avoid short, undersized stents
• IVUS is extremely helpful and ~ mandatory for venous stenting cases
• Want to avoid significant stenting into IVC covering contra CIV (M-T)
• Many ways to accurately define the iliac bifurcation
• Often upsize sheath by 2F so can maintain wire position while performing thrombectomy next to the wire (esp. if difficult crossing)
~Acute Left leg swelling

Left Iliac vein occlusion
18F Sheath

Crossing into IVC
035 IVUS
035 IVUS; MARK Bifurcation
IVUS: IVC into clot LCIV With compression
IVC OK

LCIV narrowing, clot?
Wiring right CIV

Angio from RCIV

Clot; Bifurcation well visualized

DUAL angios
Penumbra Flash Thrombectomy, Then larger PTA

“Dynamic angio” from RCIV with PTA up
Dual angios, significant clot
More Flash Thrombectomy

Angio after more Penumbra Flash Thrombectomy
Dual angios

IVUS: Clear knowledge of bifurcation coupled with roadmap and bony landmarks
IVUS-assisted 20X80 venous stent placement
Using all information (final dual angio, IVUS, tape, bony landmarks) to place 20X80 stent
PTA LCIV stent

Final angios
Hairy cell leukemia young patient with severe L>R leg edema

Patient prone; Left popliteal vein access

Left Iliac vein occlusion

Crossing into “IVC”
Angio: Clearly in a collateral vein

Re-wire: another collateral found
Wiring into true LCIV

IVUS LCIV
Supra-renal clot also

2 tpa catheters:
1 LCIV to prox IVC;
2\textsuperscript{nd} dIVC to dRSFV
After tpa angios  

IVUS: Clot and compression  

Supra renal protection discs
PTA  Inari 20F Flow Triever  Flow Triever to Supra-renal thrombus
Larger PTA; Repeat IVUS

Deploying 18X60 venous stent
Conclusions

• Iliac venous stenting can be performed safely and effectively with long term durable results
• There are several stents designed specifically for effective venous stenting
• Careful attention to detail in terms of pre-procedure evaluation of the patient, coupled with meticulous planning and good procedural technique are paramount to the success of this procedure
Thank You Very Much for Your Attention!