Endovascular Treatment of Mesenteric Angina: Tips, Tricks, & Techniques

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Disclosures

• **Symposium Honoraria and Course Proctor**
  – Abbott, Medtronic, TriVascular

• **Symposium Honoraria**
  – Spectranetics, Cordis, Bard, Cardiovascular Research Foundation, Boston Scientific

• **National PI**
  – CANOPY, SAPPHIRE WW

• **Stock, Research Grants, etc.**
  – None
Background Considerations

- Mesenteric angina is greatly under-recognized - often “last Dx entertained”
  - Higher index of suspicion in CAD, PVD pts.
  - Pay attention - collaterals seen @ aortography
- “Endo first” for most revascularizations
- Treat ONLY if patient is truly symptomatic
- Rich collateral supply - Sx’s in general only if high stenosis in ≥ 2 vessels (~Exception: SMA)
- Median Arcuate Ligament Syndrome (celiac) - usually doesn’t require intervention; surgery 1st?
Collaterals Seen @ Aortography

Note: Also Renal FMD
Endovascular Treatment

Technical Considerations

• Need coaxial guide support
• Use 0.014 (or 0.018)” supportive wires
• Low profile 0.014 balloons and stents
• Pre-dilate majority of cases
• Need view which visualizes ostium (usually lateral or >90 degrees)
• Cover the ostium with stent!
Access- Femoral or Brachial/ Radial?
Femoral vs. Arm?

• **Femoral:**
  – *Advantages:* allows straight lateral view for visualization, larger sheaths ok, easier, ~less access complications (radial<CFA<Brachial)
  – *Disadvantages:* less coaxial, guide prolapses
  – *Guides:* (renal length) 6-7F IMA, RE-S, MORPH catheter

• **Brachial or Radial:**
  – *Advantages:* Excellent coaxial support!
  – *Disadvantages:* harder to visualize ostium
  – *Guide:* Multipurpose (coronary)
General Interventional Tips

- OK to treat 2 vessels in same setting
- SMA most important
- IF multi-vessel PVI planned, do NON-CTO vessel first
- EPD’s: *not helpful in general*
- IVUS IS very helpful, do AFTER pre-PTA
- Celiac has unique issues- tortuous and early major branches (wire best in hepatic)
Celiac and SMA PVI: 

Skin-to-skin Steps......

• Pick Access (use prior imaging info)
• Do Abdominal Aortography 2 Views
  – Slight LAO: adjust catheter; collaterals, etc.
  – Straight (≥90°) lateral: Ostial dz seen; Bony LM
• (if possible) LEAVE table in place after lateral aortography
  – Use landmarks to engage catheter w/ ↓ manipulation
• Anticoagulate (heparin)
• Place Guide or Sheath
  – ARM: 6F Multipurpose
  – LEG: 6-7F IM, RE-S cath or 6F MORPH (supportive)
PVI Steps Continued....(2)

• Good Coaxial Guide position!
• Select optimal angiographic view
• We wire with Floppy 0.014 wire “pre-loaded” into 90 cm 0.014 Quick Cross
• Get floppy wire “deep!”, XC for 0.014 support wire; WATCH wire position
• Pre-PTA (please!)~ conservatively with 0.014 noncompliant balloon (4.5-5.0 X 20)
• Take angio w/ balloon deflated- “measure”
PVI Steps Continued....(3)

• Re-engage guide over balloon
• *Consider IVUS for diameter, length*
• SLOWLY advance stent, watch for prolapse of guide (esp. w/ femoral access)
• Position stent, make sure that you cover ostium! (1+ stent tine w/in aorta inferiorly)
• Withdraw guide into aorta, confirm stent position, inflate holding guide and stent
PVI Steps Continued....(4)

- Deploy stent at ~ nominal, then withdraw stent balloon partially into Ao for ↑ inflation
- Re-engage guide into stent over stent balloon
- Careful angios, done?, remove wires
Celiac Intervention w/ Occluded SMA
Wired w/ 0.014 Floppy wire, 0.014 Quick Cross catheter in for wire XC
0.014 Spartacore wire in
“Measure” length for stent to follow
PTA

Re-engaging Guide over balloon
Note difficulty delivering stent despite support wire and good guide position
“Buddy wire” in...
Guide Back-
slow inflation
Mildly underexpanded

PTA 9 X 20 Sterling
Note collaterals to SMA
LB- severe, long SMA Dz
Floppy wire in through Guide and QC cath
Quick Cross cath in...
IVUS for length and diameter stent
FMD; Vertical Tight Celiac; 100% SMA
Multipurpose Guide: Left Brachial Access

PTA
Note: Guide Back
Celiac AND SMA filling
Severe mesenteric Angina with 30# Wt. Loss- Live Case
Celiac
CONCLUSIONS

• Mesenteric angina is greatly under-recognized and under-treated
• Endovascular therapy works well with proper techniques performed by experienced operators in patients with true symptoms related to mesenteric stenoses
Thank You for Your Attention!!