TIPS and Tricks for Crossing Chronic Total Aorto-Iliac Occlusions

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AORTOILIAC ARTERIAL DISEASE

• 1/3 of obstructive lesion affect this segment

• Lesions in the Common and External Iliac segments have established indications for percutaneous intervention

• TransAtlantic Inter-Society Consensus (TASC). Percutaneous vs Surgical

• Surgical procedures are effective but caring higher mortality/morbidity
Type A Lesions
- Unilateral or Bilateral Stenoses of CIA
- Unilateral or Bilateral Single Short (≤3 cm) Stenosis of EIA

Type B Lesions
- Short (≤3 cm) Stenosis of Infrarenal Aorta
- Unilateral CIA Occlusion
- Single or Multiple Stenosis Totaling 3-10 cm Involving the EIA Not Extending Into the CFA
- Unilateral EIA Occlusion Not Involving the Origins of Internal Iliac or CFA

Type C Lesions
- Bilateral CIA Occlusions
- Bilateral EIA Stenosis 3-10 cm Long Not Extending Into the CFA
- Unilateral EIA Stenosis Extending Into the CFA
- Unilateral EIA Occlusions That Involves the Origins of Internal Iliac and/or CFA
- Heavily Calcified Unilateral EIA Occlusion With or Without Involvement of Origins of Internal Iliac and/or CFA

Type D Lesions
- Infra-renal Aortoiliac Occlusion
- Diffuse Disease Involving the Aorta and Both Iliac Arteries Requiring Treatment
- Diffuse Multiple Stenoses Involving the Unilateral CIA, EIA, and CFA
- Unilateral Occlusions of both CFA and EIA
- Bilateral Occlusions of EIA
- Iliac Stenoses in Patients with AAA Requiring Treatment and Not Amenable to Endograft Placement or Other Lesions Requiring Open Aortic or Iliac Surgery
Type A
Endovascular treatment of choice

Type C
Currently, surgery treatment is more often used but insufficient evidence for recommendation

Type B
Currently, endovascular treatment is more often used but insufficient evidence for recommendation

Type D
Surgical treatment of choice

TASC II
Considerations

- Safe initial passage of the occlusion --> access
- Retrograde, Crossover, Brachial access?
- Ipsilateral/Contralateral
- Subintimal/medial crossing --> Re-Entry? (most common reason for failure)
- Many prefer the antegrade approach to the lesions.
External Iliac Artery Occlusions

- Crossover and Antegrade
- 6-7 F sheath
- Hydrophilic 0.035in wire or 0.018in
- Support Catheter
- Careful not to dissect to CFA. Potential Re-Entry
- Stent implantation. Covered/Self Expanding/Balloon Expandable
Common Iliac Artery Occlusion

- Crossover/Antegrade from Contra Femoral or Brachial arteriotomy

- Limited Support crossing from Contralateral access

- Optimal stent placement at the aortic bifurcation requires externalization of the wire at the CFA site

- Then Work Retrograde

- Left Brachial approach preferred by many (90 cm sheath)
Occluded Aortic Bifurcation

- Technically demanding
- Bilateral access needed
- Kissing balloon/stent techniques
- Bilateral retrograde crossing vs Brachial crossing and externalization of wires then work retrograde.
Choosing a Strategy
Subintimal approach

Re-entry devices
1. Outback® Re-Entry device (Cordis)
2. Pioneer Re-Entry device (Medtronic)

True lumen devices
3. Frontrunner® (Cordis)
4. Crosser™ (Bard)
5. Wildcat (Avinger)[a]
Outback Catheter
Figure 1. Intravascular ultrasound image obtained during subintimal angioplasty with the Pioneer catheter (Medtronic, Inc.). This image was taken prior to 12 o’clock orientation of the true lumen. Solid arrow indicates the needle trajectory marker. Dashed arrow indicates the true lumen with blood flow.
Ocelot Catheter
OCT imaging