Aortoiliac Calcifications

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Disclosure

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I have the following potential conflicts of interest to report:

☑ Consulting: Medtronic, Boston Scientific, Alucent
☐ Employment in industry
☐ Stockholder of a healthcare company
☐ Owner of a healthcare company
☐ Other(s)

☐ I do not have any potential conflict of interest
Iliac calcifications

• Calcification is very common in the iliac arteries, and is associated with decreased procedural success with standard endovascular techniques

• Risk of perforation, dissection and distal embolization
Aorto-iliac bypass
Kissing iliac stents
Crossing Techniques
Option # 1
Ipsilateral crossing
Option # 2 “up and over” crossing
Arm access can be considered
Loop Snare flossing wire
Option #3
Re-entry device
Stent Choice in calcified iliac arteries

• Heavily calcified arteries- safer to use covered stents due to risk of perforation

• Patency is higher for covered stent compared to BMS in TASC C and D
COBEST Revisited: 5 year Review

• Original study showed superior patency for BE CS over BMS in TASC C/D at 18 months
• 77 of original 126 patients had 5 year follow-up
• Primary patency (imaging) 75% versus 63% (p=0.01)
• HR 8.6 for TASC C/D lesion patency

BMS Primary Patency Falls Off at 5 years
Kissing covered iliac sent with 3 year follow up
Aortic bifurcation disease

• When faced with disease extending > 1 cm above the bifurcation, consider aortic stent first

• Covered Endovascular Reconstruction of Aortic Bifurcation (CERAB)

• Aortic stent graft for bifurcation
Bilateral buttock claudication
ABIs 0.6 bilaterally
Aortoiliac stentgraft
Claudication resolved
ABIs 0.9-1.0 bilaterally
What about atherectomy for calcified iliacs

- Atherectomy of the iliac artery is uncommon due to the risk of life-threatening perforation
- A few case series reviewed safety of atherectomy
Acute procedural outcomes of orbital atherectomy for the treatment of iliac artery disease: Sub-analysis of the CONFIRM registries.

• At least one iliac artery lesion treated with orbital atherectomy (n=62 patients; n=68 lesions) were compared to patients with SFA lesion treated with orbital atherectomy (n=1570 patients; n=1809 lesions).

• The orbital atherectomy run time was significantly shorter in the iliac artery group.

• In the iliac group there was one reported perforation and one reported vessel closure. No spasm, dissection or embolization

• The overall procedural complication rate was significantly lower in the iliac group compared to SFA (2.9% vs. 11.2%, p=0.03).
A prospective registry of intravascular lithotripsy enabled vascular access for transfemoral transcatheter aortic valve (TAVR) replacement

C. Di Mario et al. J Am Coll Cardiol Intv (2019)

- 42 patients. **100% achieved successful sheath passage and TAVR intervention**
- Average maximum calcium arc was 265.5°.
- Reference vessel diameter was 8.1 mm. The majority of IVL was performed with a 7-mm catheter
- **No iliofemoral perforation or dissection requiring stent implantation.**
- Access site complications were low (4.6%) with 1 patient developing PSA and 1 requiring endarterectomy
Intravascular Lithotripsy for Treatment of Calcified, Stenotic Iliac Arteries: A Cohort Analysis From the Disrupt PAD III Study

• 118 patients with a total of 200 lesions were enrolled across 20 sites. **101 patients were treated primarily for claudication or critical limb ischemia**, while 17 patients were treated to optimize the iliac vasculature for large-bore access.

• **100% successful IVL catheter delivery.**

• Average reference vessel diameter was 7.3 mm

• **Severe calcification was present in 82.0% of overall cases.**

• Stent placement was performed in 72.9% of the overall cases

• Angiographic complications were minimal with no flow-limiting dissections and a final mean residual stenosis of 12.0%