Role of atherectomy and DEB for Common Femoral Artery

Aravinda Nanjundappa, MD
Interventional Cardiology and
Vascular Medicine
Cleveland Clinic, Cleveland OH
Disclosure

I have the following potential conflicts of interest to report:

- Consulting
- Employment in industry
- Stockholder of a healthcare company
- Owner of a healthcare company
- Other(s)

☒ I do not have any potential conflict of interest
What is unique about CFA

• Heavily calcified lesions can be challenging for technical success and lower patency rates both short and long term
• Circumferential calcification increases risk of flow limiting dissections and acute vessel recoil after PTA
• Stenting is not the best option due to risk of sub-expansion, compression, malapposition and fractures.
• CFA endarterectomy is the standard of care
• Surgery has complications too Nguyen et al 10% OR return and mortality at 30 days 3.4%
• Endovascular for obese, high risk for wound infection and comorbidities.
How to classify CFA lesions: Can determine endo vs surgery
Endarterectomy vs. Drug Eluting Balloon Angioplasty for Common Femoral Artery Occlusive Disease

Retrospective cohort study
- 60 Endarterectomies, 40 Angioplasties

**Endarterectomy**
- **PRIMARY PATENCY**
  - 1 year: 97%, P=0.003
  - 2 years: 94%, P=0.01

**Angioplasty**
- 1 year: 75%, P=0.03
- 2 years: 57%, P=0.001

No significant difference in complications and adverse events

**CONCLUSION**
Endarterectomy is superior to Drug Eluting Balloon Angioplasty for common femoral artery occlusive disease.

Kuo et al. J Vasc Surg January 2019
Limited studies using IVL, atherectomy, needle and hydraulic fracking and MLA on IVUS

- The safety and effectiveness of IVL-DCB were comparable to those of Ath-DCB in the treatment of calcified CFA disease during the 18-month follow-up. (Dr. Soukas and colleagues)

- One-year primary patency in patients with a postprocedural MLA ≥ 16.0 mm² was significantly higher than that in those with a postprocedural MLA < 16.0 mm² (87.8% versus 44.6%, P < 0.001). (Japanese study IVUS after IVL)
DA followed by DEB

• Between July 2017 and December 2018, 25 patients underwent CFA DA.
• Two had an occluded CFA, and 23 had >70% CFA stenosis as determined by ultrasound scan (USS) and/or computed tomography angiogram (CTA) preoperatively.
• There were no deaths within 30 days.
• Procedure-related complications included 2 cases of CFA pseudoaneurysm (one of them repaired by open surgery) and 1 CFA perforation (repaired with covered stent).
• No distal embolization or limb loss occurred. Mean length of stay was 1.9 days.
• Primary and secondary patency at 3 and 6 months was 100%. At 12 months, it was 96%.
Case of DA followed by DEB

- Distal filter in profunda femoris artery
- IVUS to guide the cuts
- Total of 5 passes
- Post DA NC balloon followed by DEB for 3 mins
- Duplex at 24 hours showed no PSA
DA followed by DEB for CFA and proximal SFA

- Distal filter
- 4 passes
- Impact balloon 7 x 40
Calcified Common Femoral and SFA Disease – Atherectomy + DCB
Case by John Laird, MD
Calcified Common Femoral and SFA Disease – Atherectomy (IVUS directed)+ DCB
Case by John Laird, MD
Role of orbital atherectomy for CFA

- 85 yo woman with history of:
  - CAD
  - PAD L CFA stent 2007,
  - R CFA DA atherectomy
  - PTA of distal right CFA/profunda 2015)
  - Bilateral CAS s/p bilateral stenting
  - Hypertension
  - Hyperlipidemia
  - Neuropathy

- Non-healing right foot ulcer x 3-4 m
6 French destination DPD due to single vessel run off
Kissing balloon followed by DEB
Small plaque persists and single vessel run off
Conclusions

- CFA calcified high risk patients can benefit with atherectomy
- Choice of device is case by case and operator experience
- Direct trail to compare outcomes in the future
Role of atherectomy and DEB for Common Femoral Artery

Aravinda Nanjundappa, MD
Interventional Cardiology and Vascular Medicine
Cleveland Clinic, Cleveland OH