Open Options For Lower Extremity Revascularization

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Presenter Disclosure Information

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Within the past 12 months, the presenter or their spouse/partner have had the financial interest/arrangement or affiliation with the organization listed below.

Company Name: Boston Scientific
Relationship: Research Support
Issues in Lower Extremity Revascularization

- Indication
  - Claudication
  - Rest pain
  - Ulcer
  - Gangrene
Patient

- Physiology/comorbidities
- Age
- Functional status
- Goals of therapy
  - Long-term patency
  - Flow to heal wound
Level of Disease

- Aortoiliac
- EIA/CFA
- SFA
- POP at knee
- Tibials
Aortoiliac Disease

- Frequently buttock/thigh claudication
- Distal vessels frequently spared
- Hypoplastic distal aorta syndrome
  - Diminutive vessels
  - Middle-aged females
  - Heavy smokers
Aortoiliac Disease: Options

• Aortobifemoral bypass
  – 70-80% 10 year patency
  – Patency based on outflow status
  – Inflow status
  – Transabdominal
  – Complication risks in patients with comorbidities
  – Graft infection
Aortoiliac Disease

- 49 year old female
- Former heavy smoker
- Claudication at ½ block
Aortoiliac disease

- No cardiac history
- (-) stress Thallium
- No tissue loss
- Aortobifemoral bypass
- d/c post op day 4
- Symptom free at 1 year.
- Palpable pedal pulses
Aortoiliac Disease: Options

- Poor risk candidates with severe comorbidities
- Failed percutaneous intervention
- Failed previous aortobifemoral bypass
- Hostile abdomen
- Axillary-bifemoral bypass
Axillary-Bifemoral Bypass

- 50-70% 10 year patency
- Lower morbidity
Aortoiliac Disease: Options

- Unusable infrarenal aorta
- Failed previous aortobifemoral
- Thoraco-femoral bypass
Femoral Artery Disease

- Physiology + Anatomy
- Goals of therapy
- Age/ risk status of patient
Open/Endo Decisions

• Older
• Significant comorbidity
• Limb salvage
• Favorable lesions
• ENDO

• Younger
• Healthy
• Lifestyle limiting claudication
• Unfavorable lesions
  – Highly subjective
• Excellent conduit options
• OPEN
Less Attractive Locations for Endovascular Therapy

- Distal external iliac artery
- Common femoral artery bifurcation
- Proximal profunda femoris artery
- Popliteal behind the knee
- All are relative!
Open Options in Femoral Artery Disease

- Local endarterectomy/patch angioplasty of CFA and PFA SFA origins
- Remote endarterectomy (Mollring cutter)
- Bypass
- Combined procedures
CFA Endarterectomy

- Focal occlusion of CFA/distal EIA
- Local anesthesia
- Endarterectomy/patch angioplasty
- Home POD 1
SFA Disease

• Extent of disease
• Occlusion vs. stenosis
• Level of reconstitution
  – Relative to joint
  – Runoff status
  – Don’t burn bridges – don’t dissect past reconstitution point
Severe Claudication

- 62 YO female
- ½ block claudication
- 0.8 ABI drops to 0.4 with exercise
Severe Claudication

- Antegrade access
- Cross with .014 wire
- Balloon/stent
- Palpable pulses in feet
- Asymptomatic
- Patent at 1 year; no duplex evidence restenosis
SFA Disease: Open Options

- Fem-pop bypass
  - AK
  - BK
  - Vein
  - Prosthetic
Fem-pop bypass: Outcomes

• Earlier data suggest prosthetic = vein patency in AK pop
• Recent studies -improvement in long term patency with vein
• Patency with vein still superior to percutaneous-evolving
Improving Prosthetic Patency

- Vein cuffs/patches
- Concomitant AV fistula to increase outflow
Engineered Prosthetics

- Attempts to mimic flow dynamics of vein bypass
- Failed to demonstrate significant improvement over standard prosthetic
Hybrid Procedures

• Multilevel disease
• Parts amenable to endo techniques
• Certain areas less optimal for endo approach
  – CFA
  – Distal EIA
  – Long segment occluded iliacs
Hybrid Procedures

• CFA endarterectomy and retrograde iliac angioplasty
  – Local anesthesia
  – Expose artery
  – Puncture, wire, sheath
  – Iliac angioplasty
  – CFA endarterectomy +/- patch
Hybrid Procedures

• Aortoiliac and femoral disease
• Tissue loss
• Aortobifemoral bypass +
• Endovascular recanalization of SFA/pop/tibial disease
Hybrid Procedures

- 50 year old male
- Heavy smoker
- Bilateral gangrene
- Previous iliac intervention within 9 months
- Multilevel disease
Hybrid procedures

- SFA occlusion
- Aortobifemoral bypass
- SFA recanalization/angioplasty via brachial and native aortoiliac approach
- Wounds healing
Summary

• Open options are important in all aspects of lower extremity revascularization
• Percutaneous techniques evolving and improving
• Toolbox concept- team must have all options available
• Open techniques are not stagnant during endo revolution