Chimney CERAB (ChERAB) for bilateral lower extremity CLTI with mesenteric stenosis

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Disclosures

Speaker: Jesse Chait
☑️ I do not have any potential conflicts of interest

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☒ I do not have any potential conflicts of interest
Clinical presentation

- 64-year-old male with bilateral lower extremity rest pain and extensive skin and soft tissue loss
- CAD s/p CABG, COPD, active smoker with 100+ pack-years, hypertension, hyperlipidemia, severe chronic malnutrition
Diagnostic evaluation

<table>
<thead>
<tr>
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<th>Left</th>
<th>Right</th>
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<tbody>
<tr>
<td>ABI</td>
<td>0.22</td>
<td>0.31</td>
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<tr>
<td>TBI</td>
<td>0.15</td>
<td>0.08</td>
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- Positive stress test
  - Preoperative PCI
  - DES to LAD
Preoperative imaging

- CA 100%
- SMA 70%
- IMA 50%
- Aorta 80%
- R CIA 100%
- L CIA 80%
- IIA 100%
- Femorals 80%
Preoperative planning

IMA to bifurcation distance
32 mm

IMA diameter
4.8 mm

Aortic diameter
16 mm
Operative approach

1. Exposure of bilateral femoral artery bifurcation via longitudinal groin incisions

2. Left brachial artery access
   • 6 Fr x 70 cm Raabe sheath
Operative approach

3. Antegrade bilateral iliac artery recanalization
   • V14 & V18 Control wires
   • Subintimal at femoral arteries

4. Establishment of brachio-bi-femoral through-and-through wire access
   • Bilateral femoral arteries opened anteriorly to ensure intraluminal wire location
Operative approach

5. Right common iliac artery intravascular lithotripsy
   • 6 x 60 mm Shockwave M⁵⁺
6. Antegrade transbrachial IMA cannulation
Sheath advancement

- Difficulty advancing 8 Fr right femoral sheath retrograde into aortic true lumen
- Bi-directional serial balloon angioplasty and transfemoral intravascular lithotripsy
- Balloon-assisted sheath advancement into terminal aorta
Operative approach

7. Aortic and IMA stents deployed simultaneously
   • Aortic: 11 x 29 mm VBX
   • IMA: 5 x 19 mm Express LD

8. Aortic VBX post-dilated
   • 16 x 40 mm Atlas

9. Completion iliac stenting
   • CIA: 8 x 59 mm VBX
   • EIA: 7 x 15 mm Viabahn
Operative approach

10. Bilateral common femoral endarterectomy with bovine pericardial patch angioplasty

- Transbrachial proximal balloon control
- 7 x 20 mm Charger
- Distal aspect of Viabahn incorporated into suture line of patch angioplasty
Operative approach
Clinical outcome

• Planned left transtibial amputation due to irreversible tissue loss

• Patent aortoiliac and IMA stents at 2 months

• Right lower extremity wounds healed without amputation at 2 month follow-up
Technical considerations

- Meticulous measurement of all diseased segments is imperative for technical and clinical success
  - Aortic diameter & distance between IMA & bifurcation
  - IMA diameter & disease morphology
  - Extension of aortic disease proximal to IMA
- Radial and/or percutaneous femoral access is feasible in anatomically appropriate patients
Technical considerations

• Antegrade aortoiliac recanalization is preferred
  • Increased working room
  • Improved pushability
  • Decreased radiation exposure
  • High chance of success

• Through-and-through wire access allows for improved device delivery for plaque modification, angioplasty, and stenting
Technical considerations

- VBX allows for reproducible overexpansion and foreshortening
  - 8L x 39 $\rightarrow$ 16 x 25 mm
  - 11 x 29 mm $\rightarrow$ 16 x 18 mm

- Covered stenting of IMA is not mandatory and may negatively impact patency
Technical considerations

• Proximal balloon occlusion of femoral arteries from upper extremity approach obviates need to clamp diseased or stented vessels

• Several benefits of surgical femoral exposure:
  • Distal embolic protection
  • Wire access within true lumen
  • Durable femoral reconstruction
  • Preservation of profunda femoris
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