How Can Chimney Grafts Be Used Effectively With The CERAB Procedure: C-CERAB: Techniques And Results:
Results of multi-center (3) follow-up study
(Belgium, The Netherlands, New Zealand)

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Disclosure

Speaker’s name: Peter Goverde
I have the following potential conflicts of interest to report:
Consulting:
Abbott Vascular; Angioslide; Bard Peripheral Vascular; Bentley-Isomed; Cardionovum; Cordis-Cardinal Health; IMDS; Ivascular; Maquet Getinge group Stille; Veyran; Ziehm Imaging

Aorto-iliac occlusive disease

First Results of the Covered Endovascular Reconstruction of the Aortic Bifurcation (CERAB) Technique for Aortoiliac Occlusive Disease. Grimme FA, Goverde PC, Verbruggen PJ, Zeebregts CJ, Reijnen MM. Eur J Vasc Endovasc Surg. 2015 Sep 3

Midaortic juxtarenal lesions

Risk of occluding visceral arteries
- Embolisation of débris
- Overstenting
- Coral reef encroachment

Aortoiliac Occlusive Lesions

- Current standard for complex juxtarenal occlusive aorto-iliac lesions is open surgical repair
  - 5-year patency rate: 87 - 91%
  - Complication rate: 8 - 12%
  - Mortality rate: 3 - 4%
Late complications of open repair

- Incisional hernia
  - Incidence: 11%
  - Complication rate: 24-30%
  - Recurrence rate: 2-10%

- Postsurgical adhesions
  - Incidence: 67-93%
  - Small bowel obstruction: 19%

Ask your patient: what would you choose?

Open versus endovascular approach

BMS Chimney

- Adel Bin Jabr et al.
- Chimney technique successfully applied in
  - Juxtarenal, suprarenal, thoraco-abdominal & aortic arch aneurysms
  - Treatment type I endoleaks
  - Accidentally covered aortic branches

Juxtarenal aortic occlusive disease

Chimney - CERAB

- Aorta: 12x61 mm Advanta V12 balloon expandable stent-graft (Maquet Getinge Europe BV)
- Expansion of visceral stents (6x38 mm)
- Expansion of aortic stent
- Second aortic stent: 12x 41 or 61 mm Advanta V12 BX stent-graft (Maquet Getinge Europe BV)
- 15 mm overlap
- +/- 20 mm above bifurcation
- “Classic” CERAB
• First Results of the Covered Endovascular Reconstruction of the Aortic Bifurcation (CERAB) Technique for Aortoiliac Occlusive Disease.
Grimme FA, Goverde PC, Verbruggen PJ, Zeelooptz C.J, Rispens MM.
Eur J Vasc Endovasc Surg, 2015 Sep 3

Our clinical experience:

<table>
<thead>
<tr>
<th>n</th>
<th>20</th>
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<tbody>
<tr>
<td>M/F</td>
<td>13/7</td>
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<tr>
<td>mean age</td>
<td>59.8</td>
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Rutherford:

- Rutherford 3: 12
- Rutherford 4: 8

Renal chimneys:

- Renal chimney: 8
- Double renal chimney: 1
- IMA chimney: 11

Smoking:

- Never: 7
- > 10yrs ago: 7
- No, but < 10yrs ago: 5
- Yes <20/day: 28
- Yes >20/day: 7

Diabetes mellitus:

- No: 64
- Adult onset, diet or oral agents: 21
- Adult onset, insulin controlled: 14

Hypertension:

- No: 7
- Controlled, single drug: 50
- Controlled, 2 drugs: 42

Cardiac disease:

- Asymptomatic, normal EKG: 50
- Asymptomatic, no recent MI (>6months), on EKG asymptomatic MI: 14
- Stable angina, controlled ectopy, asymptomatic arrhythmias, compensated heart failure: 28
- Unknown: 7

Pulmonary disease:

- Asymptomatic: 50
- Mild dyspnea on exertion: 42
- Unknown: 7

Renal disease:

- No known renal disease, normal creatinine: 85
- Serum creatinine 120 - 330mmol/L: 14

Carotid disease:

- Asymptomatic, no evidence of disease: 92
- Asymptomatic, evidence of disease (duplex): 7

Hyperlipidae mia:

- Cholesterol/ triglyceride in normal range: 14
- Mild elevation, controllable by diet: 14
- As above, requiring drug control: 14

Obesity:

- No: 50
- Yes: 21
- Unknown: 28

Procedural details:

- Procedure time (min): 155 (100 – 182)
- Contrast dosage (ml): 150 (140 – 180)
- Complications during intervention:
  - None: 57.1
  - Dissection: 35.7
  - Thrombosis: 7.1
- Adjunct treatment (same session):
  - None: 78.6
  - Endarterectomy CFA: 21.4
- Closure of puncture site:
  - Compression: 71
  - Closure device: 86.7
  - Suture: 7.1
- Residual stenosis:
  - No: 100
  - Yes: 0.0

• 100% technical succes rate
• Intensive care admission (1 night) : 8/20
• No 30 day mortality or SAE
• Relief of symptoms immediately after revascularisation
• Mean hospital stay: 2.3 days
Mean follow up was 18 months (range 3-30).
Overall survival during follow up was 100%.
ABI significantly increased from 0.54 (0.47 – 0.60) pre-op to 0.97 (0.90 – 1.00) at 12 months.
1 year primary patency was 93.3% for all grafts
1 year secondary patency was
  100% for the CERAB grafts
  93.3% for the chimney grafts.

ASA (for life) & clopidogrel (at least 1 year)
Follow up by ultrasound (at 1, 3, 6, 12, 18, 24, 30,36 months) or CT-angiography
At the moment:
  All reconstructions are patent
  no complications or re-occlusions reported
Conclusions

- C-CERAB safe and feasible technique
- “Sufficient” distal outflow is also recommended as in classic surgery and as in CERAB
- New alternative to open surgery for complex AOID with a high technical success and low morbidity rate.
- Larger population and longer follow up is needed
- Long term economic benefit need to be proven

Thank you for your attention