Reconstruction of the Aortoiliac segment in occlusive disease using the AFX® unibody stent

Dr Angie Arnold
Department of Vascular and Endovascular Therapy
Flinders Medical Centre
Bedford Park, Adelaide, South Australia

Dr P Puckridge, Dr YT Wong, Dr C Delaney, Dr N Wise, Dr E Travers
Disclosure

Speaker name:
Dr Angie Arnold

I have the following potential conflicts of interest to report:

- I do not have any potential conflict of interest
Aortoiliac occlusive disease (AIOD)

- No endovascular device specifically engineered for the treatment of AIOD
AIOD

• Endologix AFX® stent has been used

• Limited published series demonstrate this is safe and effective
  • TS Maldonado et al EJVES 2016 52:64-74
  • Van Haren et al JVS 2017; 65:398-405
AFX Design Features

- Unibody self expanding stent
- Duraply PTFE (multilayered) on inner cobalt-chromium stent cage
- Low profile access (17F/7F)
- Anatomical reconstruction
- Suitable for “narrow” distal aorta
FMC Cohort

- Sept 2016 – Nov 2018
- 30 patients

<table>
<thead>
<tr>
<th>Condition</th>
<th>Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>Average age</td>
<td>69</td>
</tr>
<tr>
<td>Hypertension</td>
<td>23</td>
</tr>
<tr>
<td>Smoking</td>
<td>15 active, 7 ex-smoker, 6 non-smoker, 2 unknown</td>
</tr>
<tr>
<td>Ischaemic heart disease</td>
<td>8</td>
</tr>
<tr>
<td>Renal impairment</td>
<td>4</td>
</tr>
<tr>
<td>Hypercholestrolaemia</td>
<td>15</td>
</tr>
<tr>
<td>Diabetes</td>
<td>3</td>
</tr>
</tbody>
</table>
Extensive Disease

22 patients required adjuvant treatment

- Extension of treatment zone to CIA or EIA with stenting
- Femoral endarterectomy
- Combination
Outcomes

• Mortality
  • 30 day mortality = 0
  • 12 month mortality = 3
    • CLI
    • Significant co-morbid disease
    • Death unrelated to stenting

• Morbidity
  • 9 (31%) complications at 30 days

<table>
<thead>
<tr>
<th>Complication Details</th>
<th>Outcome</th>
</tr>
</thead>
<tbody>
<tr>
<td>Surgical site Groin Haematoma with post-operative anaemia. Open access with CFAE.</td>
<td>Conservative management with transfusion</td>
</tr>
<tr>
<td>Superficial groin collection post open access with endarterectomy.</td>
<td>Incision and drainage</td>
</tr>
<tr>
<td>Superficial groin collection post percutaneous access with closure device (proglide).</td>
<td>Incision and drainage</td>
</tr>
<tr>
<td>Groin collection involving prosthetic patch post CFAE.</td>
<td>Incision and drainage + patch replacement with vein and sartorial flap</td>
</tr>
<tr>
<td>Coronary Type 2 Non-STEMI secondary to anaemia. Right CFA endarterectomy.</td>
<td>Resolved with medical management</td>
</tr>
<tr>
<td>Respiratory Exacerbation COPD. Percutaneous access.</td>
<td>Resolution with course steroids and oral antibiotics</td>
</tr>
<tr>
<td>Urinary Post-operative re-admission with retention. Percutaneous access.</td>
<td>Long term IDC for treatment pre-existing BPH</td>
</tr>
</tbody>
</table>
Outcomes

- 100% Technical angiographic success
- 100% Primary Patency at 1 year (n=14)
- 0% TLR and Major Limb amputation rate
Outcomes

- Mean LOS 3 day (1-22)
- Increased LOS with tissue loss and adjunctive endarterectomy

Comparison length of stay by Rutherford Classification

Comparison length of stay for Endarterectomy vs Non-endarterectomy

P = 0.005 Kruskal Wallis

P = 0.001 Mann-Whitney
Outcomes

Rutherford Classification Pre and Post AFX® stent

- Pre-treatment
- Post Treatment

Number of Patients

- Rutherford 5
- Rutherford 4
- Rutherford 3
- Rutherford 2
- Rutherford 1
- Rutherford 0
## Costs

<table>
<thead>
<tr>
<th>Surgery Type</th>
<th>Median Stay (days)</th>
<th>Total Costs (AUD)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aorto-Bifemoral bypass</td>
<td>6.68</td>
<td>$38,580</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Endovascular Treatment</th>
<th>Median Stay (days)</th>
<th>Total Costs (AUD)</th>
</tr>
</thead>
<tbody>
<tr>
<td>AFX stent</td>
<td>1.10</td>
<td>$16,661</td>
</tr>
</tbody>
</table>

- Financial years 2015/16 and 2016/17
Conclusion

• Effective and safe treatment option for advanced AIOD disease
• Cost-effective
Reconstruction of the Aortoiliac segment in occlusive disease using the AFX® unibody stent

Dr Angie Arnold
Department of Vascular and Endovascular Therapy
Flinders Medical Centre
Bedford Park, Adelaide, South Australia

Dr P Puckridge, Dr YT Wong, Dr C Delaney, Dr N Wise, Dr E Travers