Mid term outcome of hybrid revascularisation procedures for TASC C and D aorto-iliac and femoro-popliteal disease

V. Zymvragoudakis, S. D. Patel, L. Biasi, T. Lea, T. Donati, K. Katsanos, H. Zayed
What is a hybrid procedure?

- Hybrid revascularisation combines both open and endovascular techniques simultaneously.
Advantages of hybrid revascularisation procedures

- Less invasive than open revascularisation
- Allows prompt lower limb revascularisation
- Reduces length of hospital stay and overall cost
- Convenient to patients
- Alternative to open surgery in medically high risk patients

Increasingly used in multilevel arterial occlusive disease
• Lack of long term outcome and durability data.
  ▫ Particularly in TASC C and D lesions
Aim

- To look at mid term outcomes of hybrid revascularisation procedures in advanced (TASC C and D) lesions
Methods

• Retrospective analysis of consecutive patients between 2011 – 2013
  ▫ Inclusion
    • Procedure for critical limb ischaemia or incapacitating intermittent claudication
    • TASC C & D aorto-iliac or femoro-popliteal lesions
    • Simultaneous open and endovascular procedures
  ▫ Exclusion
    • Acute limb ischaemia
Endpoints

1) Primary and assisted primary patency by Kaplan-Meier analysis

2) Amputation free survival and limb salvage by Kaplan-Meier analysis
Results

• 83 hybrid procedures in 79 patients

  ▫ Indications for treatment
    • Critical limb ischaemia (63%)
    • Incapacitating intermittent claudication (37%)

  ▫ Mean clinical follow up
    • 19 (+/- 10 months)

  ▫ Median inpatient stay
    • 7 Days (1-106)
# Procedural variables

<table>
<thead>
<tr>
<th></th>
<th>No.(%) N=83</th>
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<tbody>
<tr>
<td><strong>Open Procedure</strong></td>
<td></td>
</tr>
<tr>
<td>CFA Endarterectomy</td>
<td>73 (88)</td>
</tr>
<tr>
<td>CFA Interposition graft</td>
<td>5 (6)</td>
</tr>
<tr>
<td>Femoral-Femoral cross over graft</td>
<td>3 (4)</td>
</tr>
<tr>
<td>Infrainguinal bypass</td>
<td>2 (2)</td>
</tr>
<tr>
<td><strong>Endovascular Target Artery</strong></td>
<td></td>
</tr>
<tr>
<td>Common/External iliac</td>
<td>46 (55)</td>
</tr>
<tr>
<td>Superficial Femoral/Popliteal</td>
<td>33 (40)</td>
</tr>
<tr>
<td>Infra-genicular vessel</td>
<td>4 (5)</td>
</tr>
<tr>
<td><strong>Endovascular Technique</strong></td>
<td></td>
</tr>
<tr>
<td>Nitinol Stent</td>
<td>55 (66)</td>
</tr>
<tr>
<td>Covered Stent</td>
<td>23 (28)</td>
</tr>
<tr>
<td>Balloon angioplasty</td>
<td>5 (6)</td>
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Primary and assisted primary patency

Primary patency
• 86% at 1 year
• 69% at 2 years

Assisted primary patency
• 89% at 1 year
• 80% at 2 years
Amputation free survival - limb salvage rate

Amputation free survival
- 84% at 1 year
- 75% at 2 years

Limb salvage rate
- 93% at 1 year
- 84% at 2 years
## Results

<table>
<thead>
<tr>
<th>Technical success rate</th>
<th>96.3%</th>
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<tr>
<td>30 day mortality</td>
<td>2.4%</td>
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- **endovascular interventions to maintain target vessel patency**: 14
- **patients required subsequent bypass surgery**: 5
- **major lower limb amputations**: 9

## Complications

<p>| | |</p>
<table>
<thead>
<tr>
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<tbody>
<tr>
<td>patch/graft infections</td>
<td>3</td>
</tr>
<tr>
<td>pseudoaneurysms</td>
<td>2</td>
</tr>
<tr>
<td>wound complications</td>
<td>3</td>
</tr>
</tbody>
</table>
Conclusion

• Hybrid revascularisation for advanced occlusive lesions has a high technical success rate

• Good limb salvage and amputation free survival rates

• Is now a real alternative to extensive open surgery
What’s next?

• Increase case numbers in the series
• Long term follow up
• Look at aorto-bifemoral results
Any Questions?