Value And Limitations Of Cryopreserved Allografts For The Treatment Of Arterial Prosthetic Graft Infections

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Disclosures

W.L. Gore:
TEVAR Training—course director

Prairie Research (Bard):
LEVANT-2—consultant

Silkroad:
Silkroad—consultant

Peripheral Arterial Infections

Etiology:
• Primary mycotic
• Closure device infection
• Prosthetic infection
  – Break in sterility
  – Secondary seeding
  – Incisional breakdown

Arterial Infections: Presentation

Signs/Symptoms:
• Cellulitis
• Draining sinus
• Sepsis
• Aneurysm/pseudoaneurysm
• Bleeding

Arterial Infections: Treatment

• Ligation
• Extra-anatomic bypass
• Antibiotic graft
• Autologous replacement
• Cryopreserved allograft

Cryopreserved Allografts

Brown KE, et al. JVS 2009
Purpose

To evaluate the outcomes of cryopreserved arterial allografts for peripheral arterial reconstructions in contaminated and infected surgical fields.

Methods

• Retrospective review
• Single tertiary academic center
• 59 patients underwent peripheral arterial cryopreserved reconstruction 2002-2017
• Excluded aortic-based reconstructions
• Mean follow-up 28 months

Results: Distribution of treatment areas

<table>
<thead>
<tr>
<th>Lower extremity:</th>
<th>(n=51)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Iliac to iliac</td>
<td>1</td>
</tr>
<tr>
<td>Iliac to femoral</td>
<td>22</td>
</tr>
<tr>
<td>Femoral patch angioplasty</td>
<td>2</td>
</tr>
<tr>
<td>Femoral to popliteal</td>
<td></td>
</tr>
<tr>
<td>Above knee</td>
<td>4</td>
</tr>
<tr>
<td>Below knee</td>
<td>4</td>
</tr>
<tr>
<td>Femoral to tibial vessel</td>
<td>3</td>
</tr>
<tr>
<td>Infrageniculate (popliteal to DP)</td>
<td>1</td>
</tr>
<tr>
<td>Upper extremity:</td>
<td>(n=2)</td>
</tr>
<tr>
<td>Subclavian to axillary</td>
<td>1</td>
</tr>
<tr>
<td>Brachial to axillary</td>
<td>1</td>
</tr>
<tr>
<td>Mesenteric/Abdominal:</td>
<td>(n=3)</td>
</tr>
<tr>
<td>External iliac to SMA</td>
<td>1</td>
</tr>
<tr>
<td>Carotid:</td>
<td>(n=3)</td>
</tr>
<tr>
<td>Common carotid to ICA</td>
<td>1</td>
</tr>
</tbody>
</table>

Results

• 30-day mortality: 9%
• 30-day conduit-related complication: 14%
  - Bleeding (n=4)
  - Infection (n=4)
• Late conduit-related complication: 16%
  - Infection (n=1)
  - Graft thrombosis (n=3)
  - Major amputation (n=1)
  - Pseudoaneurysm (n=2)
  - Bleeding (n=1)

Summary

Peripheral arterial infections can be treated with cryopreserved arterial allografts
• Maintain in-flow
• Low incidence of repeat infection
• Adjunctive muscle flap coverage (61%)
Conclusion

Cryopreserved arterial allografts are a valuable alternative conduit in the setting of peripheral arterial infections.