Aortobifemoral Graft Infection

- Aortobifemoral graft (ABFG) infection
  - Mortality 15-72%
  - Limb loss 11-27%
- Complete graft excision with revascularization
  - Extra anatomic bypass
  - Cryopreserved aortoiliac reconstruction
  - Neo-aortoiliac system with femoral vein
  - Rifampin-soaked prosthetic graft

Questions?

For apparently isolated unilateral graft limb infection and excision:
- What is the rate of late contralateral or main body graft infection?
- Time to contralateral infection?
- Predictors of contralateral infection?
- Consequences of contralateral infection?

Unilateral ABFG Limb Infection

OHSU experience (2001-2014)

- Inclusion criteria
  - Apparently isolated unilateral ABFG infection (n=15)
  - Unilateral graft limb excision

- Exclusion criteria
  - Main body infection or obvious bilateral limb infections
  - Endovascular graft infections or aortic tube graft infections

- Outcomes
  - 30-day and overall mortality
  - Limb salvage
  - Contralateral limb or main body graft infection

Surgical Approach
Patient Characteristics (n=15)

<table>
<thead>
<tr>
<th>Variable</th>
<th>(n)</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age at initial ABFG (median, yrs)</td>
<td>61.0</td>
<td>+/-7.4</td>
</tr>
<tr>
<td>Age at infx ABFG (median, yrs)</td>
<td>68.0</td>
<td>+/-6.9</td>
</tr>
<tr>
<td>ABFG for occlusive disease</td>
<td>11(73)</td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>10(67)</td>
<td></td>
</tr>
<tr>
<td>PAD</td>
<td>12(80)</td>
<td></td>
</tr>
<tr>
<td>CAD</td>
<td>7(47)</td>
<td></td>
</tr>
<tr>
<td>Hypertension</td>
<td>14(93)</td>
<td></td>
</tr>
<tr>
<td>Hyperlipidemia</td>
<td>12(80)</td>
<td></td>
</tr>
<tr>
<td>Chronic kidney disease</td>
<td>5(17)</td>
<td></td>
</tr>
<tr>
<td>Diabetes</td>
<td>3(20)</td>
<td></td>
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<tr>
<td>Smoking</td>
<td>12(80)</td>
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Presentation and Imaging

- 2 patients presented with sepsis
- Median time from original ABFG to infected ABFG limb: 73.5 months

Revascularization

Adjuncts:
- Sartorius flap (7)
- Rectus abdominus flap (1)
- Wound Vac (4)

Morbidity

- Contralateral infection (median 23.2 months): 7 (47%)
- Graft thrombosis: 3 (20)
- Amputation: 0
- Myocardial infarction: 3 (20)
- Acute renal failure (no HD): 3 (20)
- C. Diff colitis: 1 (7)

Predicting Contralateral Infection

- ABFG for occlusive disease
- Sartorius myoplasty
- Blake drain placement
- Wound vacuum dressing
- Suprainguinal infection
- Age at initial ABFG (median, yrs)
- Age at infx ABFG (median, yrs)

30-day mortality: 0
Overall mortality: 6 (40%)
Median follow-up: 44.7 months
Causes: MI, sepsis, TAAA, unknown (3)
Predicting Contralateral Infection

Infection above inguinal ligament (p=0.07)

Culture-positive Suprainguinal graft infection 71% PPV
Isolated infrainguinal graft limb infection 75% NPV

Microbiology

<table>
<thead>
<tr>
<th>Organism at initial graft infection (n=15)</th>
<th>Organism from contralateral graft limb (n=7)</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Coag negative staphylococcus</td>
<td>Coag negative staphylococcus</td>
<td>1</td>
</tr>
<tr>
<td>MSSA*</td>
<td>MSSA*</td>
<td>1</td>
</tr>
<tr>
<td>Culture negative</td>
<td>Positive</td>
<td>1</td>
</tr>
<tr>
<td>E. Coli</td>
<td>E. Coli</td>
<td>1</td>
</tr>
<tr>
<td>Citrobacter*</td>
<td></td>
<td>1</td>
</tr>
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Conclusions

Following unilateral excision of infected ABFG:

- 50% develop contralateral limb infection
  BUT this occurs late (~2 years), is not predicted by initial culture data, and does not influence mortality.
- ABFG for AIOD and clinical suspicion for suprainguinal infection may predict contralateral graft limb infection.

Recommendations

Unilateral graft excision reasonable if:
No clear suprainguinal involvement
Significant comorbidities

Management should include:
Early broad-spectrum antibiotics, yes
Retropertitoneal exploration, yes
Intraoperative cultures, yes
Extra-anatomic revascularization, most cases
Extended, targeted, antibiotics, maybe