Complex Aortoiliac Disease: Open repair—both in line and extra-anatomic: When is it indicated and what are the results?

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Disclosure

Peter A. Schneider

.................................................................

I have the following potential conflicts of interest to report:

- Scientific Advisory Board (non-paid): Cardinal, Abbott, Medtronic
- Royalty (modest): Cook
- Co-founder and Chief Medical Officer: Intact, Cagent
Aortoiliac Intervention

- The success of iliac angioplasty and stenting is the basis from which noncoronary endovascular intervention was developed.
- The mainstay of treatment in the iliac arteries is balloon angioplasty with stent placement.
Multiple failures

Margins of TASC D

Infection
When to consider open surgery?

- Open surgery is for the disease morphologies that are at the margins
  - Multiple failures of endo
  - Infection
- Aortoiliac-extensiveness, juxtaposition to renals, extension to common femoral
- Common femoral-bulky disease, poor endo solutions
  - Especially when occluded or extending into femoral bifurcation
Open Surgery Options

- **In-line:**
  - Aortofemoral bypass

- **Extra-anatomic:**
  - Axillo-femoral bypass
  - Femoral-femoral bypass
Patency rate for endo reconstructions is negatively affected by occlusion status.
Aortofemoral Bypass Wins on Patency


Open Repair: Aortofemoral Bypass

• Mortality: 4.1%
• Major complications: 16%
  • Meta-analysis of 29 studies, 5378 patients
• Sexual function
  – Erectile dysfunction in up to 28%
• Length of stay
• More than half are for claudication

### Open Repair: Axillo-bifemoral Bypass

<table>
<thead>
<tr>
<th>Reference</th>
<th>5 Year Patency</th>
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<td>Mohan et al.</td>
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<td>J Vasc Surg 1995;5:801</td>
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<td>El-Massry et al.</td>
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<td>J Vasc Surg 1993;17:107</td>
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<td>Mii et al.</td>
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<td>J Am Coll Surg 1998;186:581</td>
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<td>Onohara et al.</td>
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<td>J Cardiovasc Surg 2000;41:905</td>
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<td>Schneider et al.</td>
<td>63%</td>
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Open Repair: Axillo-femoral Bypass

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<tr>
<th>Maneuver</th>
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<tr>
<td>Either Dacron or ringed PTFE</td>
<td>Similar patency</td>
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<tr>
<td>Infraclavicular incision</td>
<td>Muscle splitting pec major</td>
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<td>Tunnel beneath pec major, along anterior axillary line</td>
<td>Leave laxity to account for shoulder movement</td>
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<tr>
<td>Medial to anterior superior iliac spine</td>
<td>Avoid occlusion when laying on side</td>
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<td>Tunnel fem-fem just above the pubis</td>
<td>Keep low and just above the bone</td>
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### Endovascular Treatment of TASC C and D Aortoiliac Lesions

**Table IV. Primary and secondary patency rates**

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<th>First author</th>
<th>Year</th>
<th>1 year PP (%)</th>
<th>1 year SP (%)</th>
<th>2 year PP (%)</th>
<th>2 year SP (%)</th>
<th>3 year PP (%)</th>
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C, Results for patients with TASC type C lesions; D, results for patients with TASC type D lesions; PP, primary patency; SP, secondary patency.

- primary assisted patency.
- limb salvage rate.

**Primary patency**
- One year: 70%–97%
- Five year: 60%–86%

A lesions: Endo therapy of choice

B lesions: Endo preferred therapy

C lesions: Surgery preferred unless high risk

D lesions: Surgery treatment of choice
TASC B Lesion: Poor candidate for endo treatment due to disease location
A lesions: Endo therapy of choice

B lesions: Endo preferred therapy

C lesions: Surgery preferred unless high risk

D lesions: Surgery treatment of choice
TASC D:
Endo is our first choice for most patients with aortic occlusion
TASC D:
Flush occlusions are bad actors

From R Malik
TASC D:
Right foot gangrene
Total body calcification
Awful COPD

Left profunda
Left side guidewire Passed from above
TASC D:
Rest pain
Recent MI
C lesions: Surgery preferred unless high risk

D lesions: Surgery treatment of choice

Consider hybrid procedures when common femoral disease is combined with iliac occlusive disease.
Who Gets Open Surgery? <10%

- Multiple endo failures
- Aortic disease
  - Long occlusions
  - Juxtaposed to renals
- CFA disease
  - Especially occlusions

Extra-anatomic now more common
Consider hybrid procedures
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