EE Moore
Denver Health / University of Colorado Denver

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Popliteal Arterial Exposure: General Principles

- Bring Anatomy Text to the OR
- Discuss Pros / Cons of Access Choice
- Anticipate Need for GS Vein
- External Skeletal Fixation for Instability
- Shunt First if Prolonged Ischemia
- Identify Tibial Nerve
- Secure Proximal Arterial Control
- Obtain Distal Control before Entering Hematoma
Bring your Anatomy Text
Popliteal Arterial Injury Exposure: Options

1) Medial / Single Incision ... Direct Reconstruction

2) Medial / Two Incisions ... Bypass

3) Posterior Incision ... Direct Reconstruction

4) Lateral ... Extra-anatomic Bypass
Medial Single Incision
Medial: Step 1 ... Incision
Medial: Step 2 ... Divide Pes anserinus ( SGS )

Different suture for each tendon
Medial: Step 3 .... Isolate Popliteal Artery
Posterior Approach

Artery
Vein
Nerve
Morbid Obesity
Posterior Approach: Lesser Saphenous Vein
Posterior Approach: Popliteal Artery

Artery
Vein
Nerve
Tibial, Peroneal, and Sural Nerves
Priority Reestablish Perfusion

- Proximal thrombectomy
- Distal thrombectomy
- Regional heparin
- Vascular shunt
White = Distal Balloon
Red = Infusion / Transducing
Blue = Proximal Balloon

<table>
<thead>
<tr>
<th>Description</th>
<th>Diameter</th>
<th>Length</th>
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<tbody>
<tr>
<td>Shunt with T-Port</td>
<td>8F</td>
<td>31 cm</td>
</tr>
<tr>
<td>Shunt with T-Port</td>
<td>9F</td>
<td>31 cm</td>
</tr>
<tr>
<td>Shunt without T-Port</td>
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<td>31 cm</td>
</tr>
<tr>
<td>Shunt with T-Port</td>
<td>10F</td>
<td>31 cm</td>
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Pruitt-Inahara T arm

- Confirm perfusion
- **Measure perfusion pressure**
- Administer antispasmodic agents
- **Administer fibrinolytic agents**
- Perform arteriography
Vasospasm and Residual Clot

Vasospasm
• Nitroglycerine 200 mcg bolus
• Verapamil 10 mg bolus
• Papaverine 60 mg drip / 15 min

Residual Clot
• Alteplase 5 mg bolus + 5 mg drip / 15 min
Parachute Technique

Suture thrown 5 times around heel

Heel
Target Vessel

Conduit

12
9
3
6

Toe
Restore Coagulation Homeostasis

Do not over-correct coagulation status

- Minimize FFP / PCC / Plts / Cryo
- Avoid TXA
Pooleiteal Artery Interposition Graft

5 cm Humacyte Graft
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Posterior is the Optimal Approach to the Injured Popliteal Artery