



EE Moore

Denver Health / University of Colorado Denver

Research Support : Haemonetics, Instrumentation Laboratory, Hemosonics, Stago, Diapharma, Prytime, Humacyte & Genentech

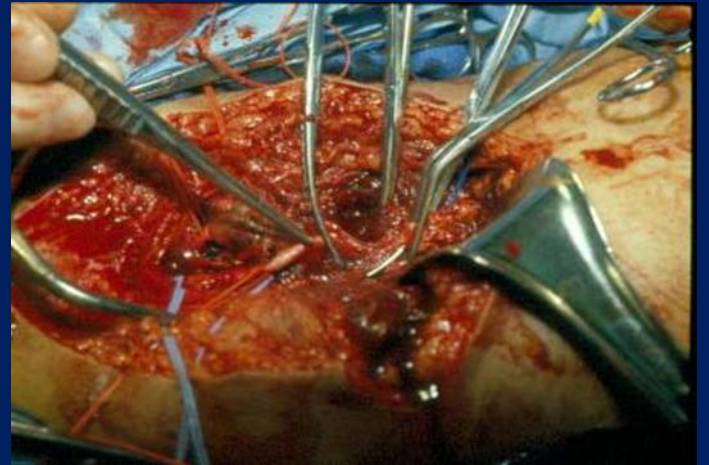
Shared IP: Haemonetics; **Co-founder:** ThromboTherapeutics Inc

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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



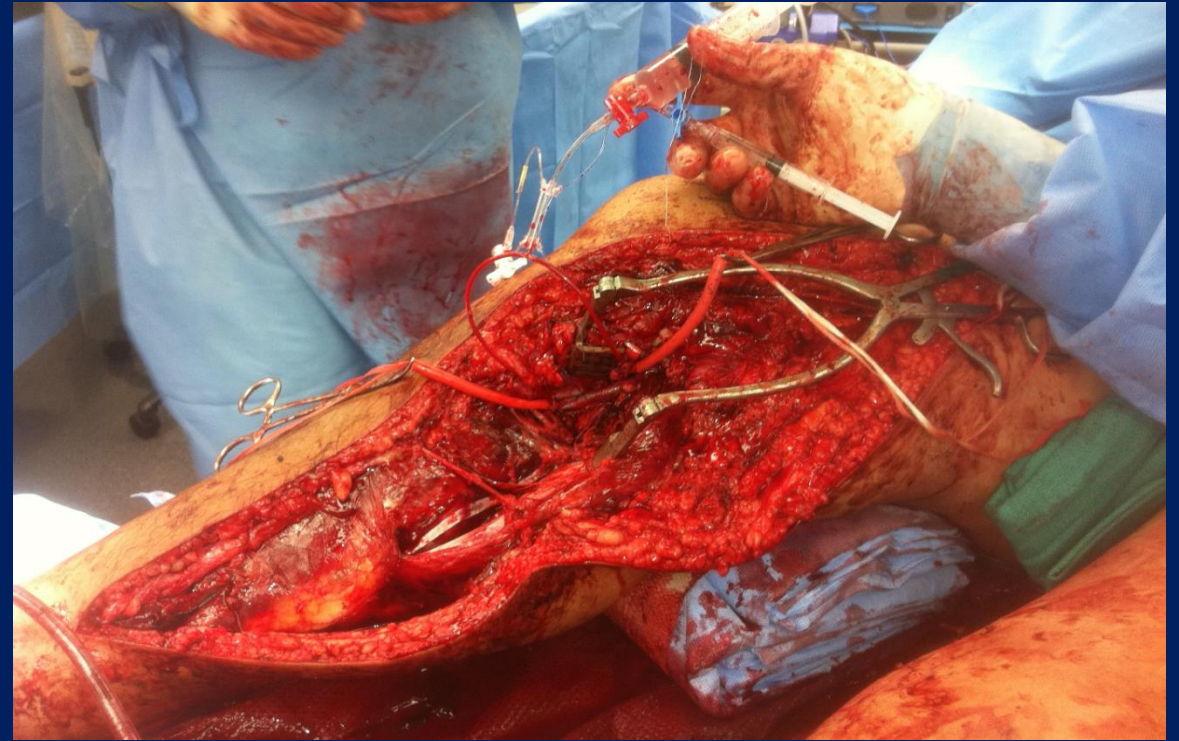
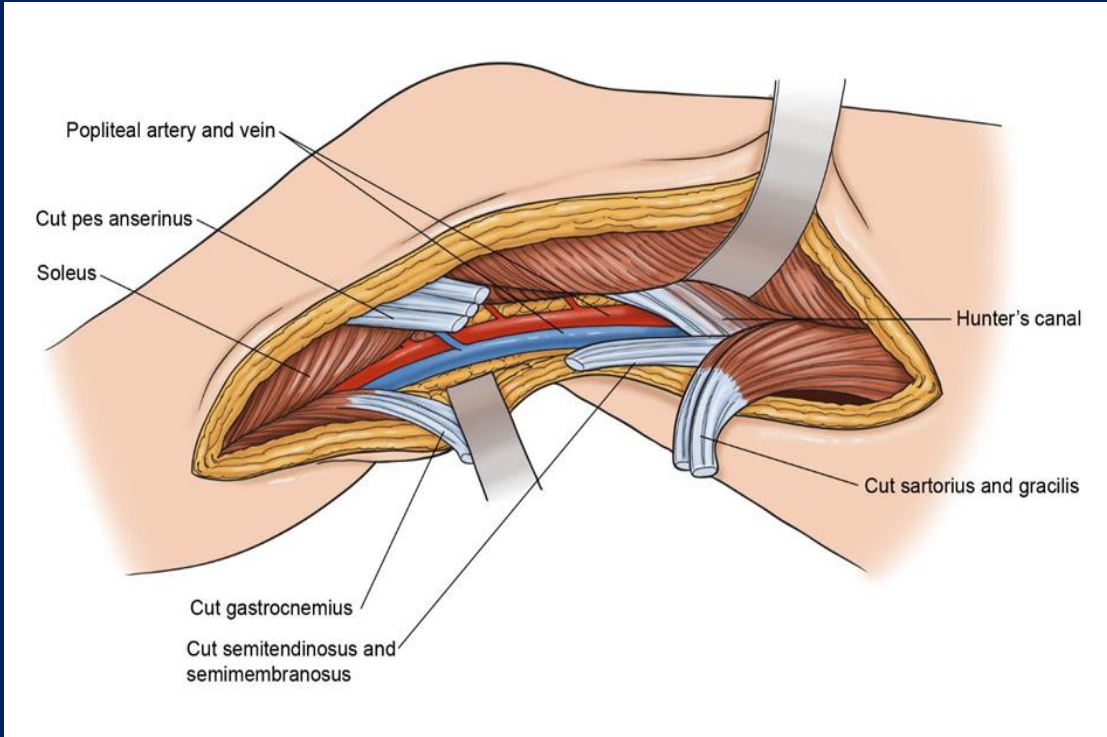
Bring your Anatomy Text



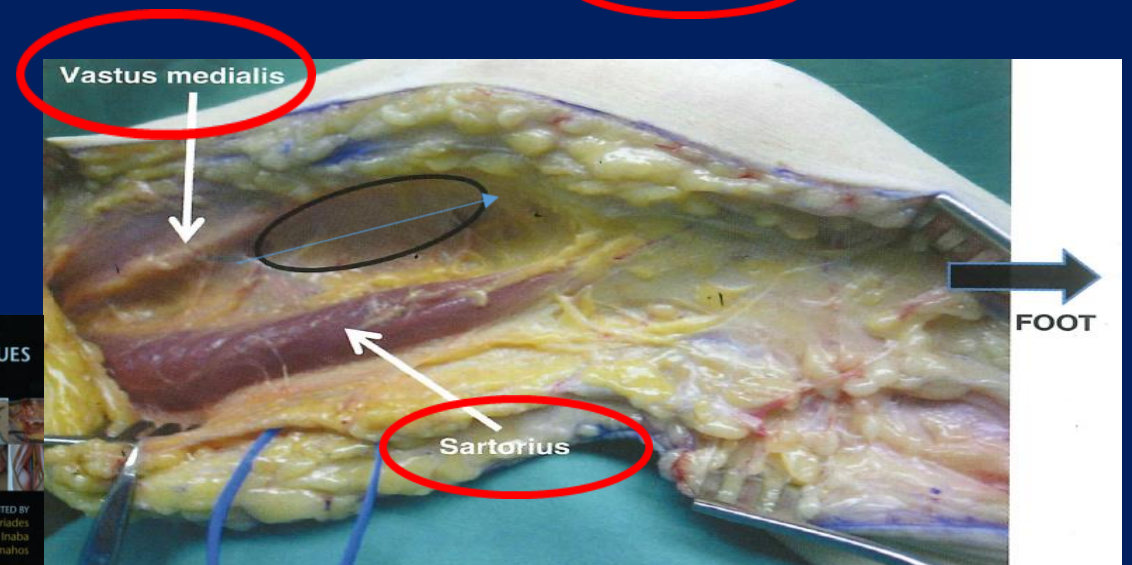
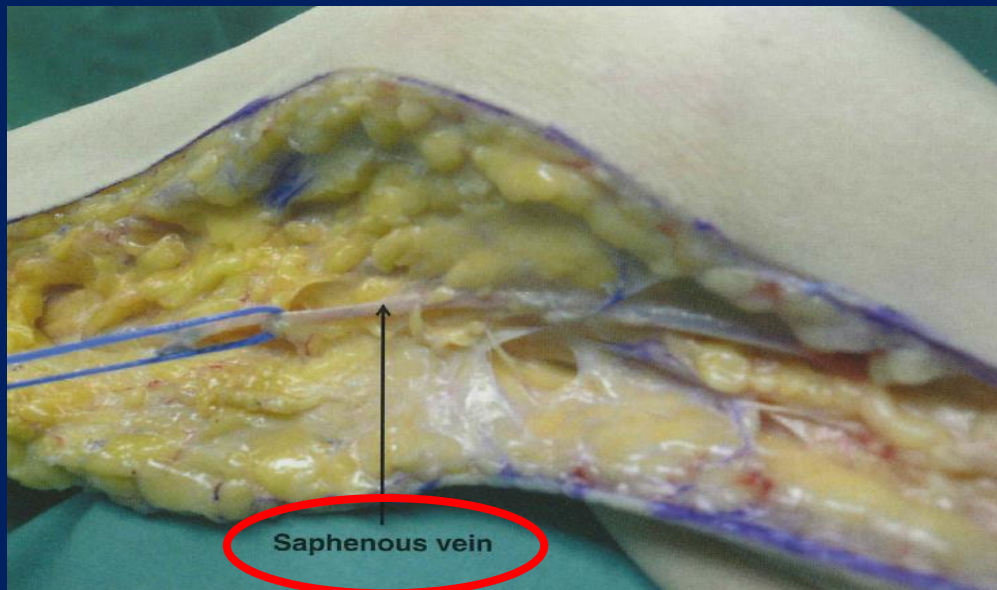
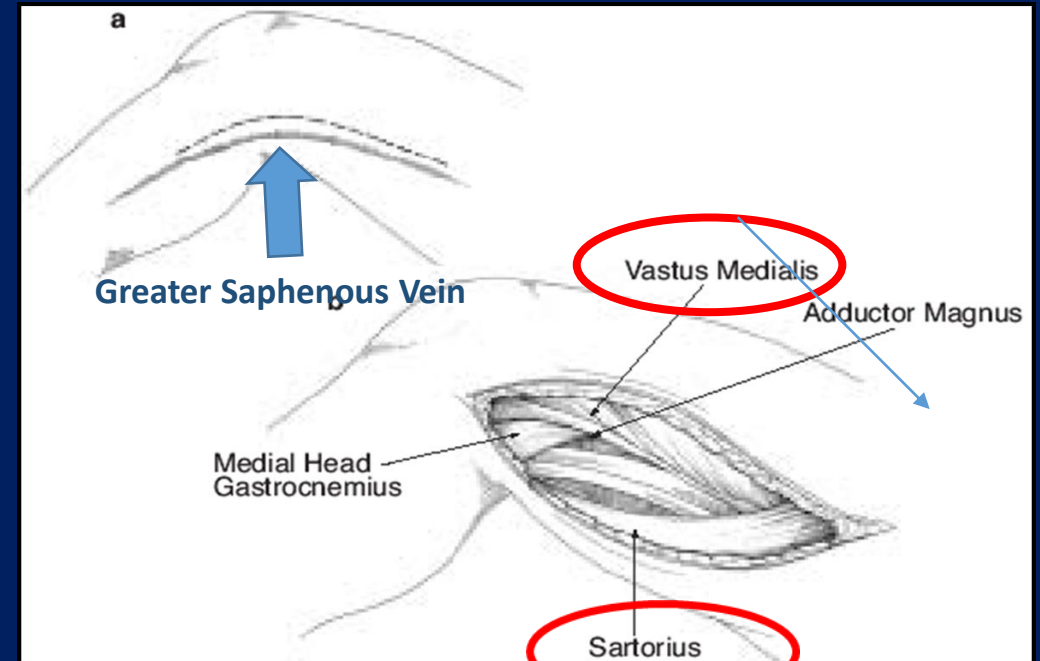
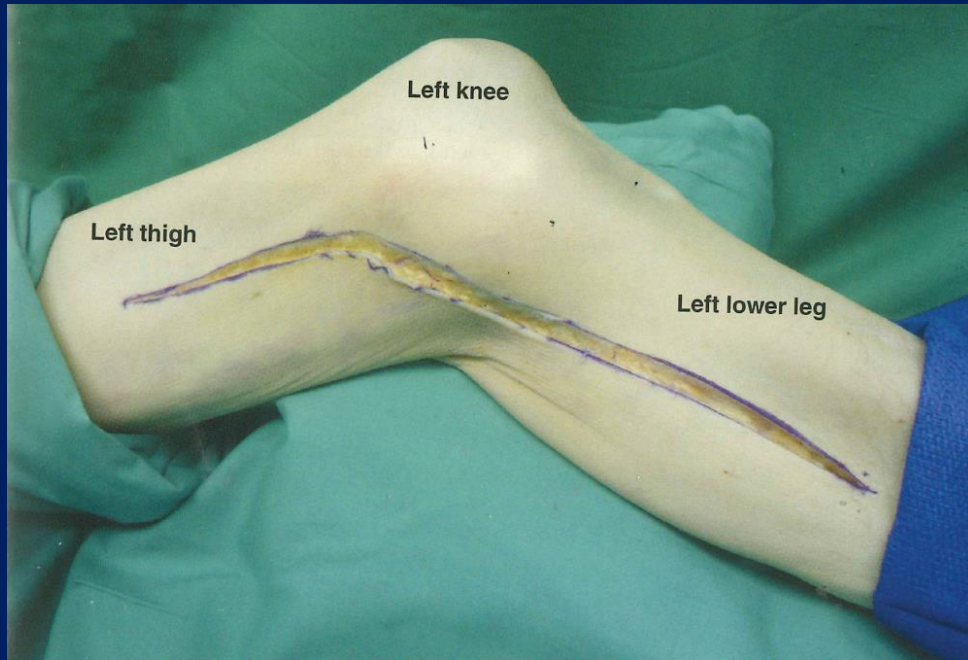
Popliteal Arterial Injury Exposure : Options

- 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

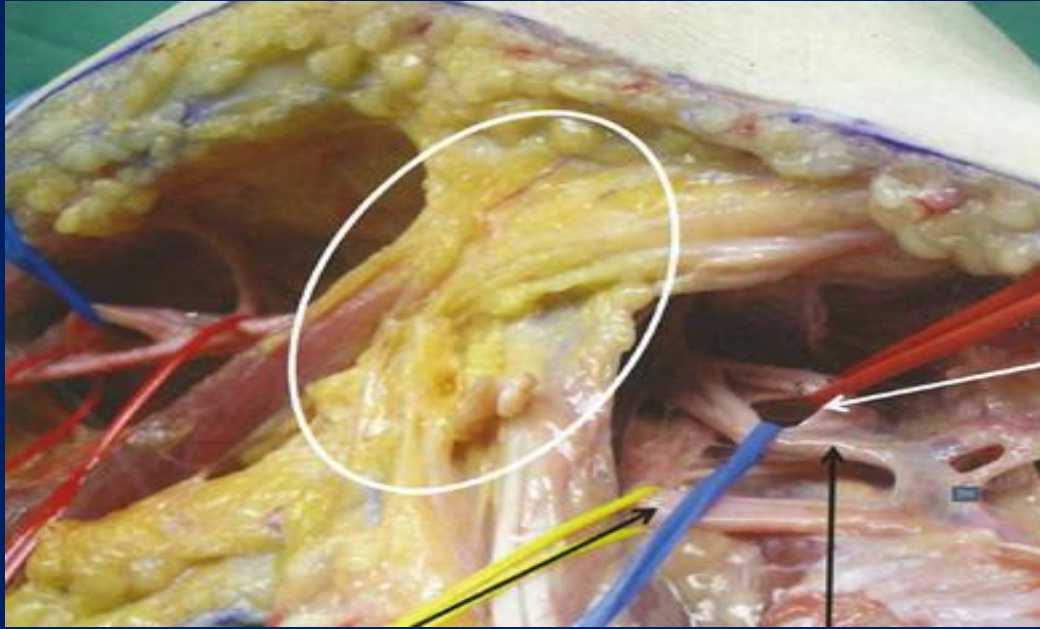


ATLAS OF
SURGICAL TECHNIQUES
IN TRAUMA

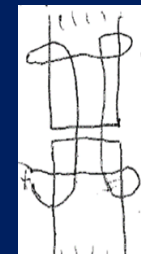
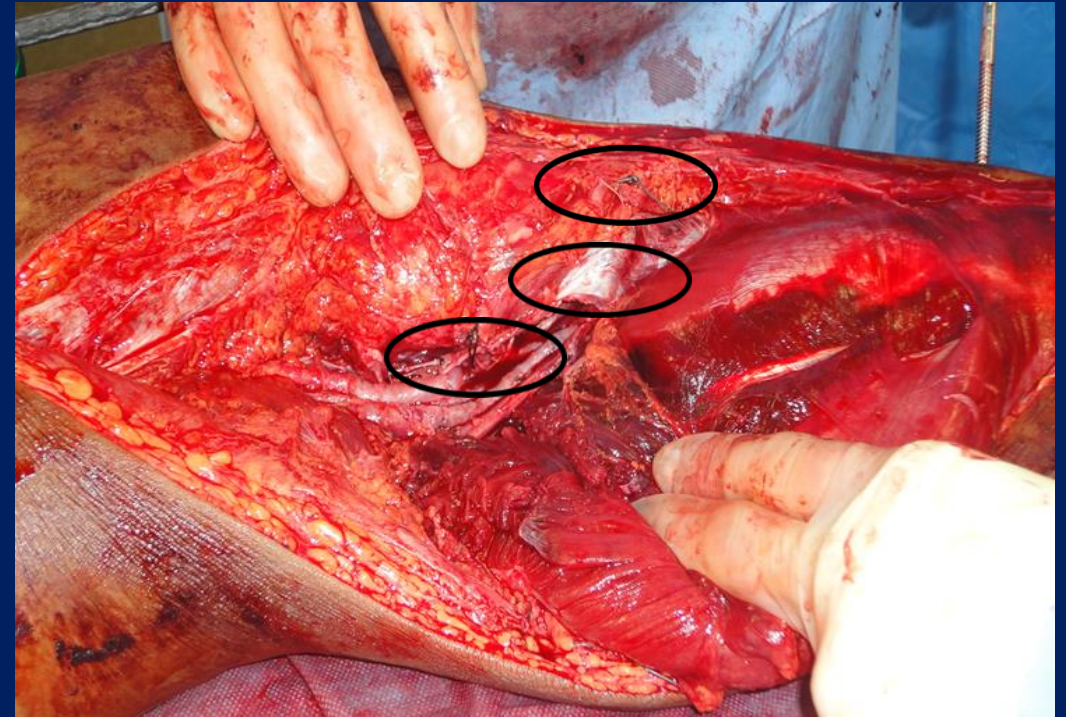


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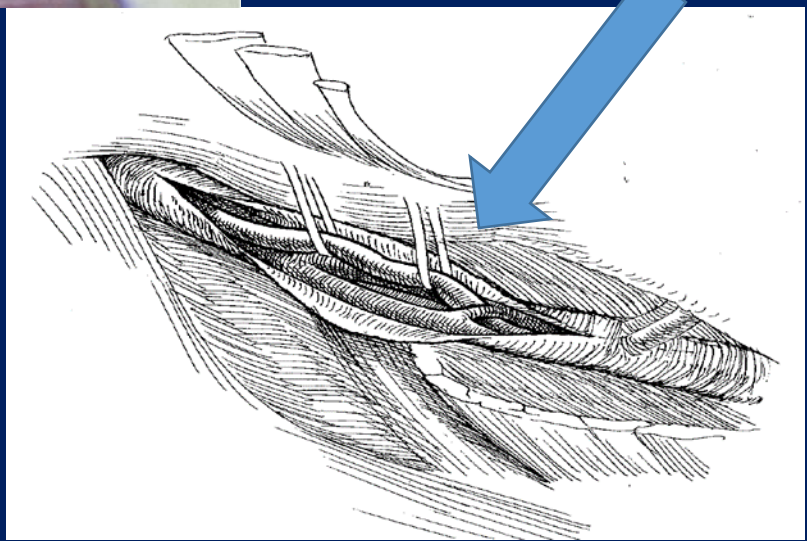
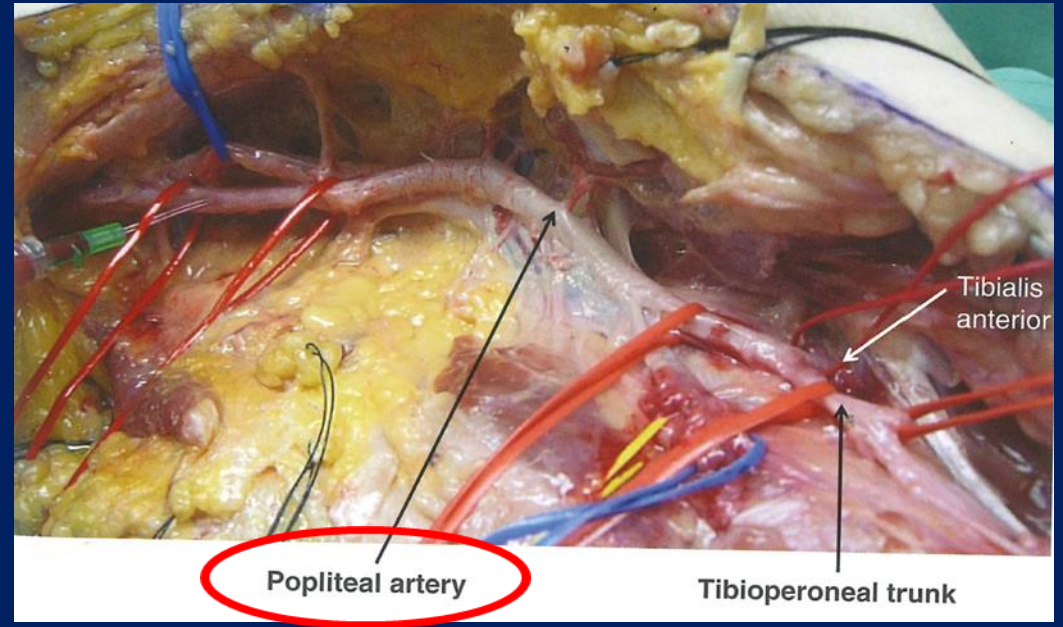
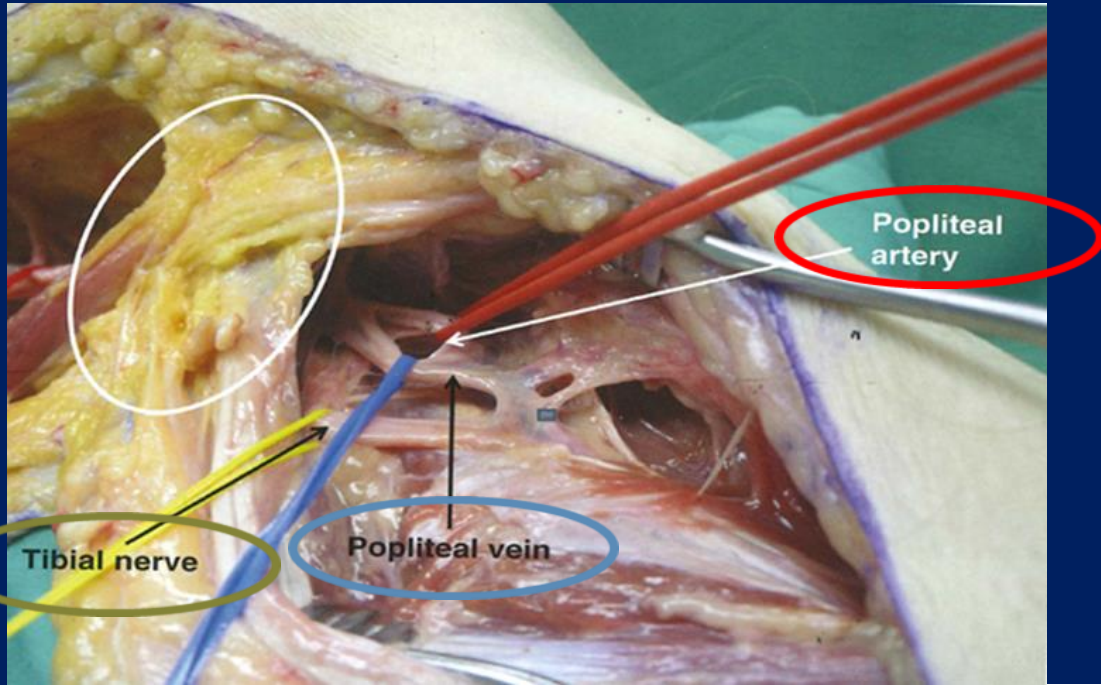
Medial: Step 2 ... Divide Pes anserinus (SGS)



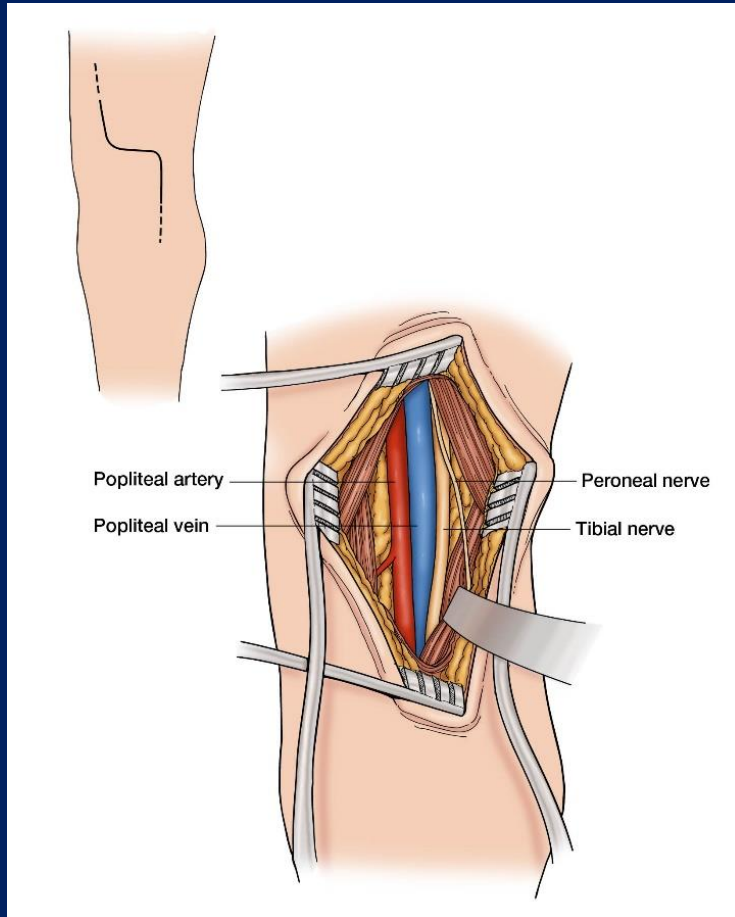
Different suture for each tendon



Medial : Step 3 ... Isolate Popliteal Artery



Posterior Approach



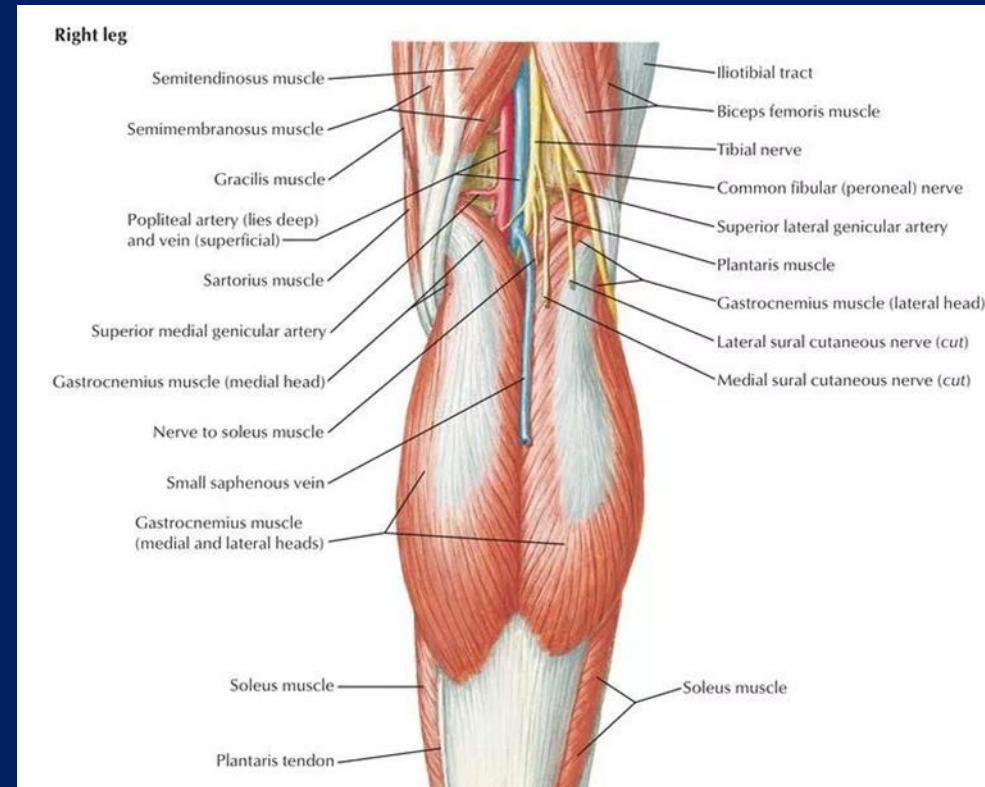
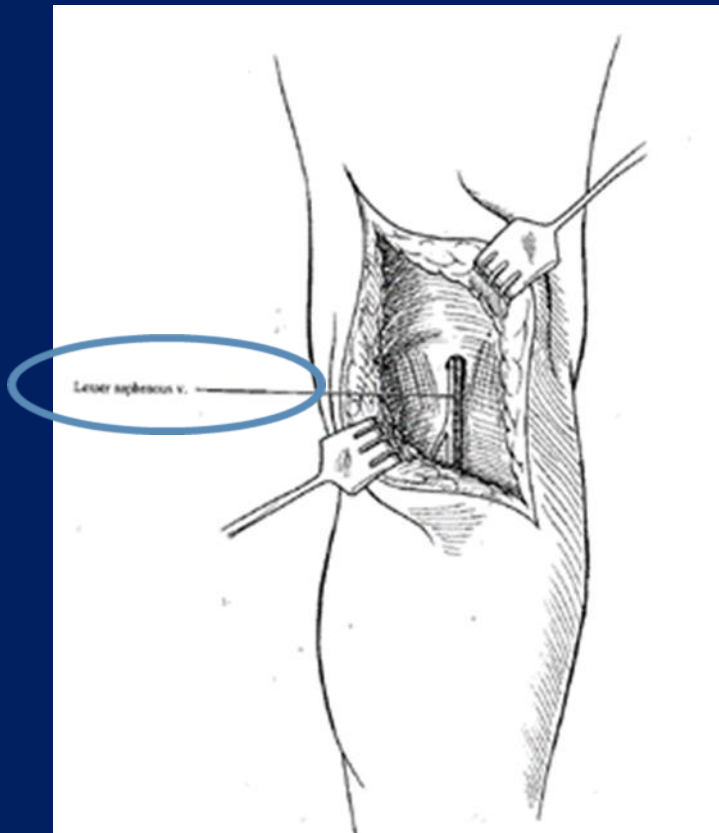
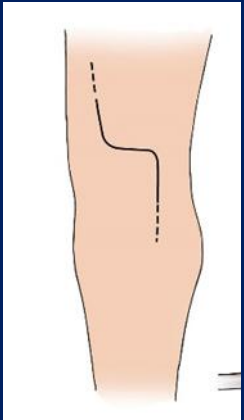
Artery
Vein
Nerve



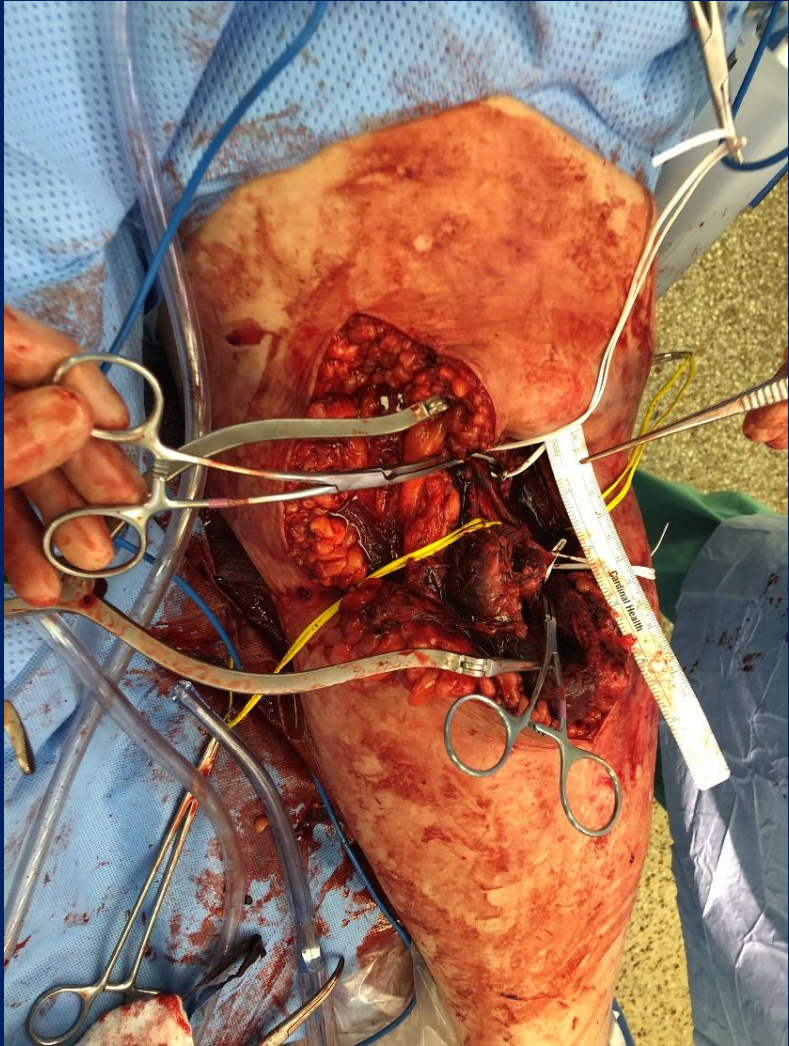
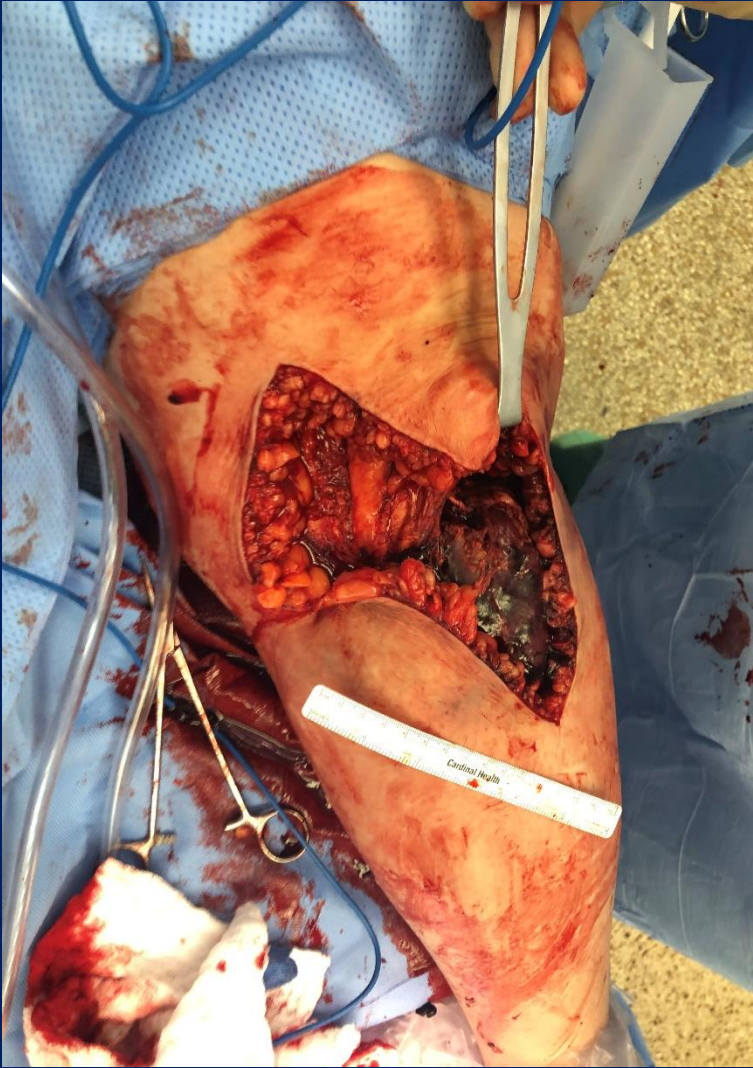
Morbid Obesity



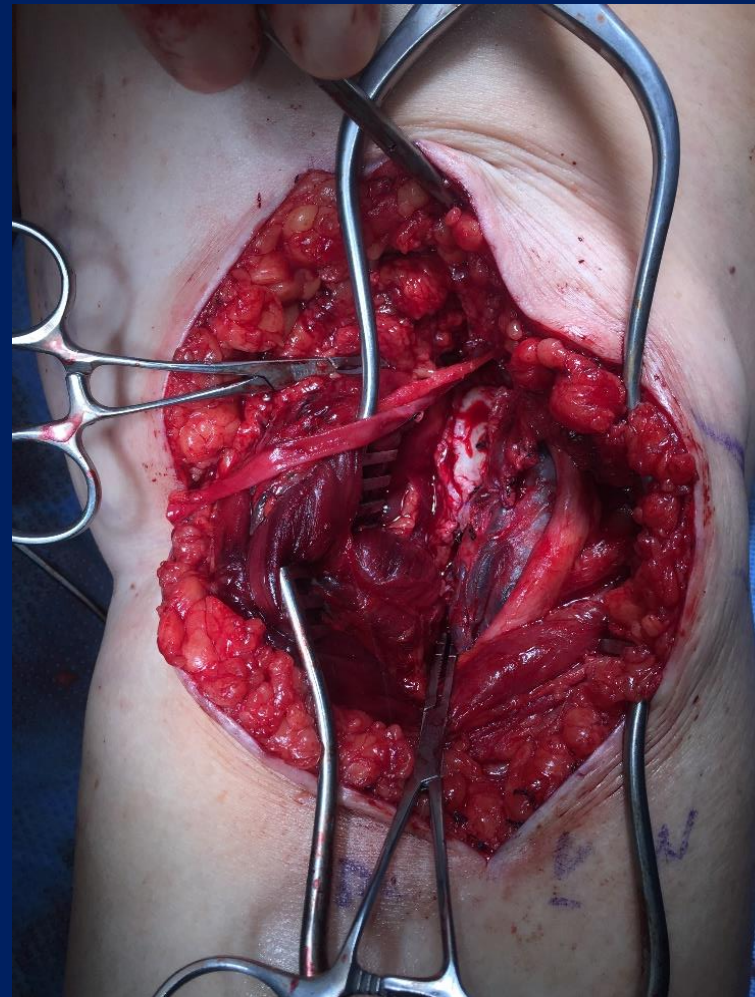
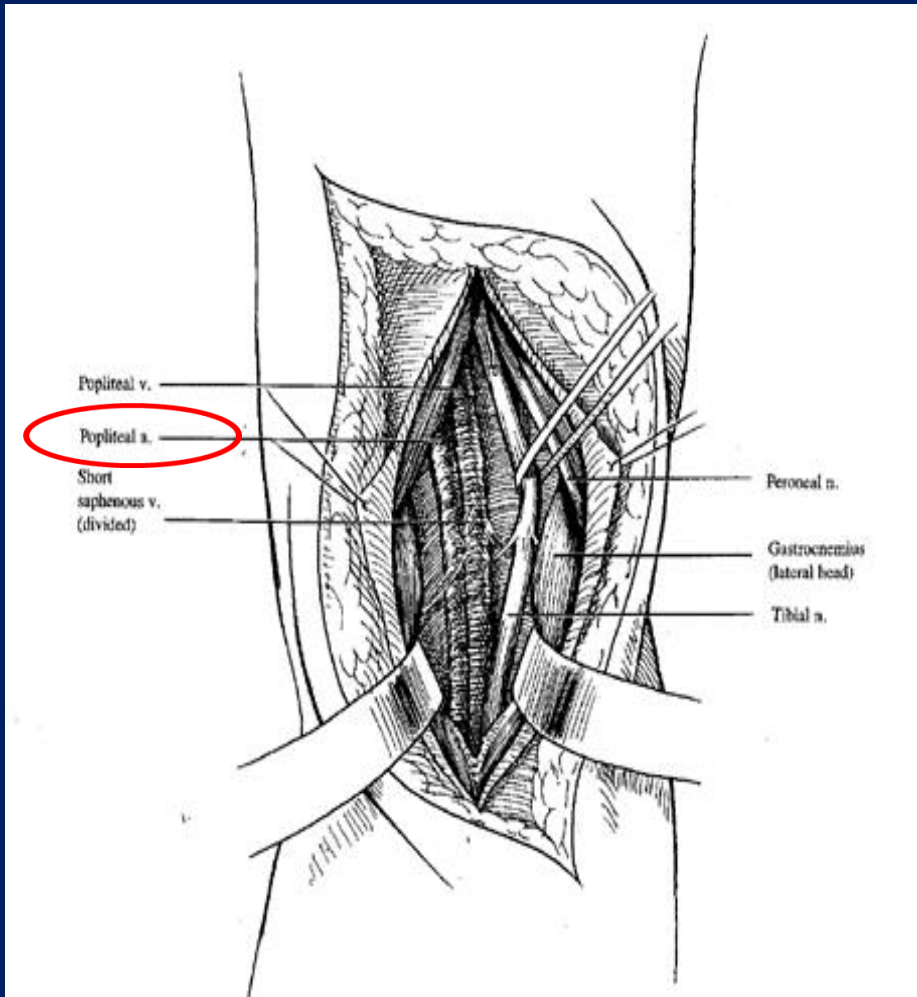
Posterior Approach : Lesser Saphenous Vein



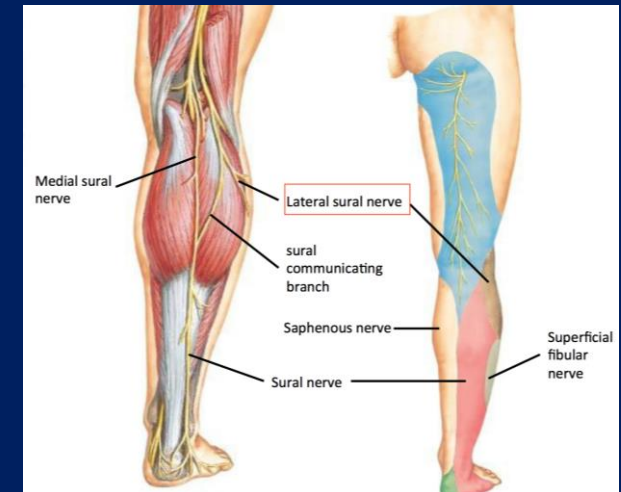
Posterior Incision



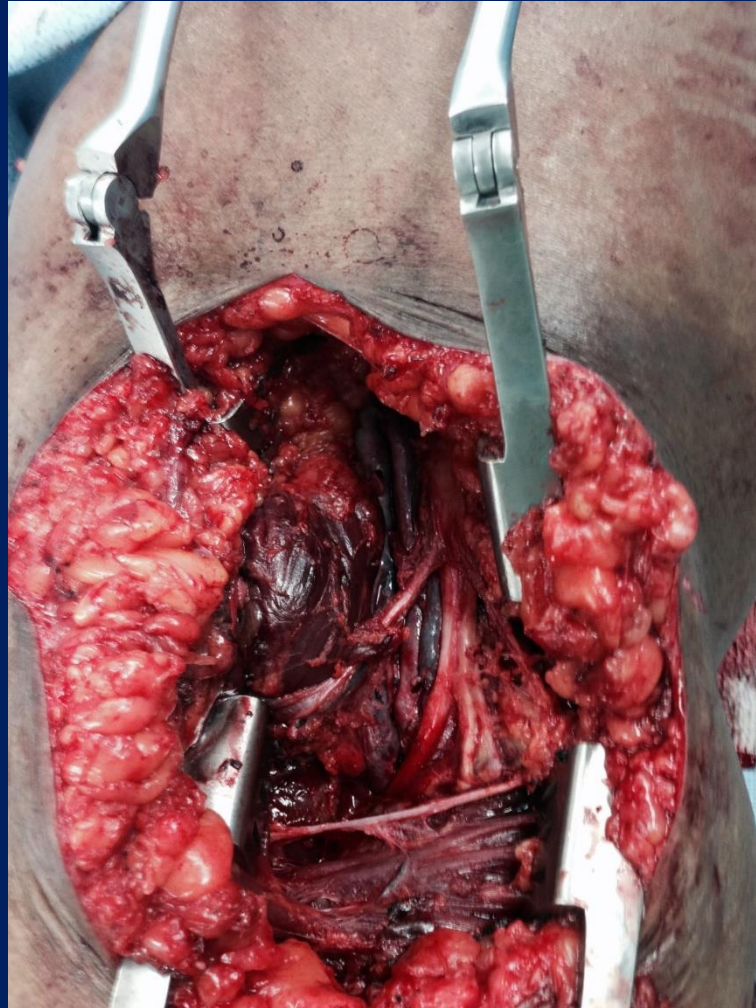
Posterior Approach : Popliteal Artery



Artery
Vein
Nerve

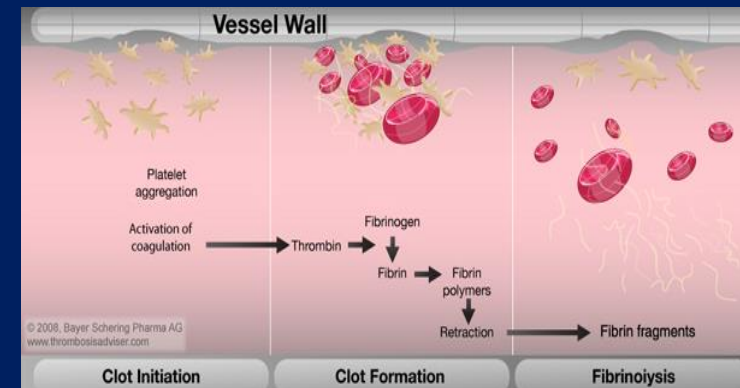


Tibial, Peroneal, and Sural Nerves

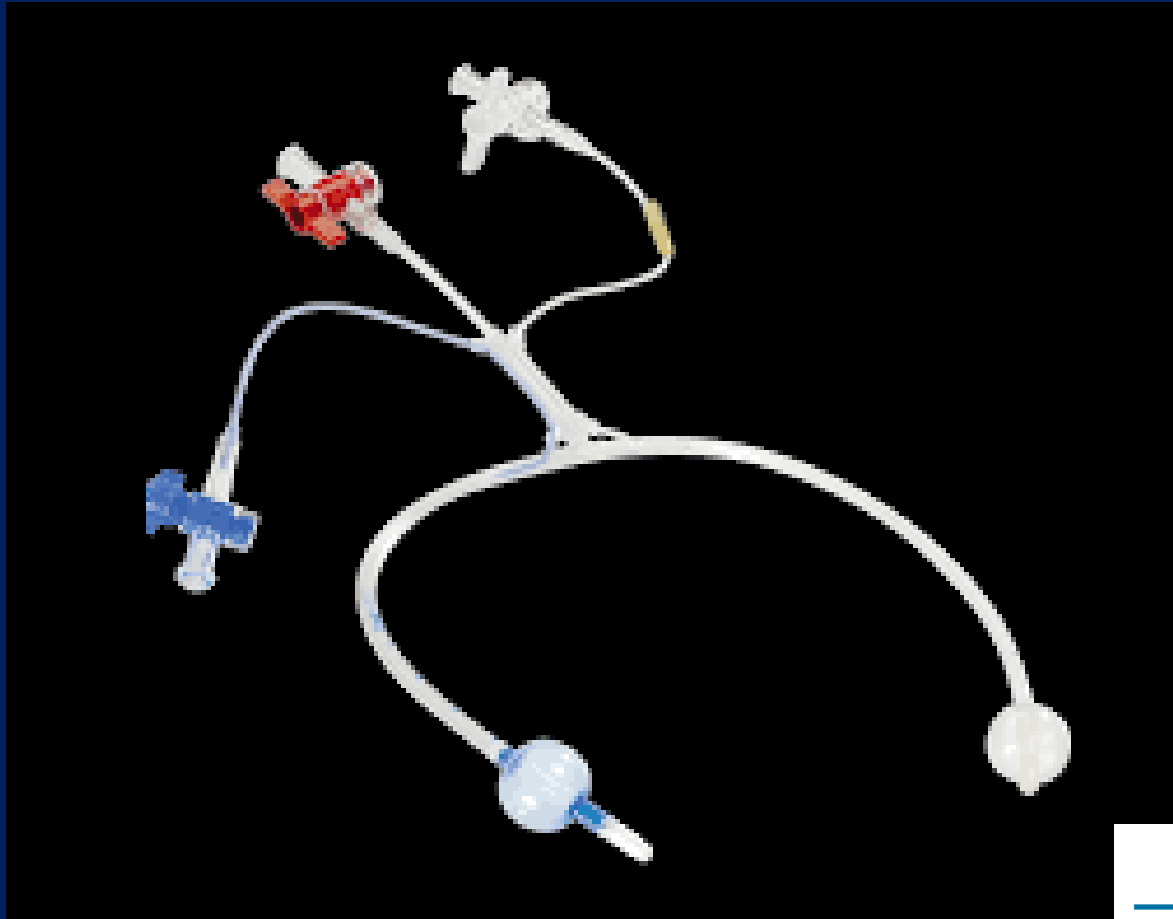


Priority Reestablish Perfusion

- Proximal thrombectomy
- Distal thrombectomy
- Regional heparin
- Vascular shunt



Pruitt Inahara



White = Distal Balloon

Red = Infusion / Transducing

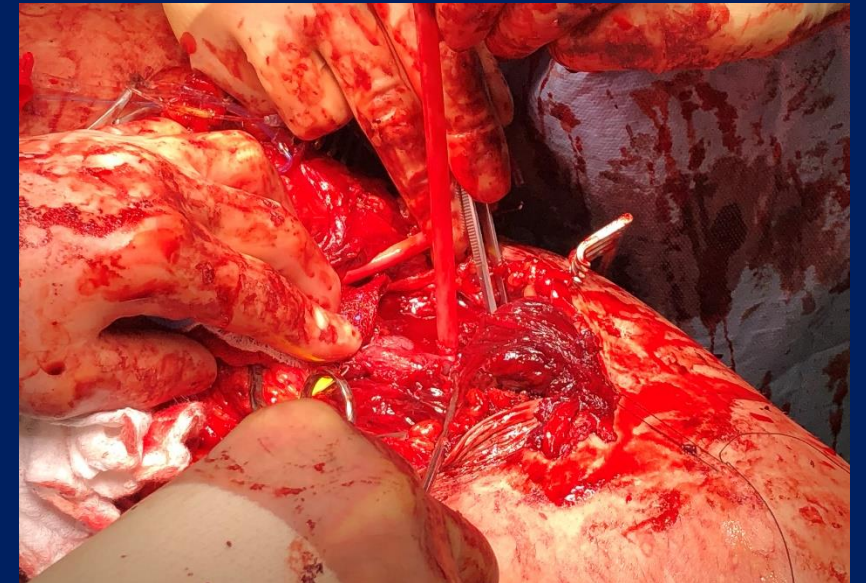
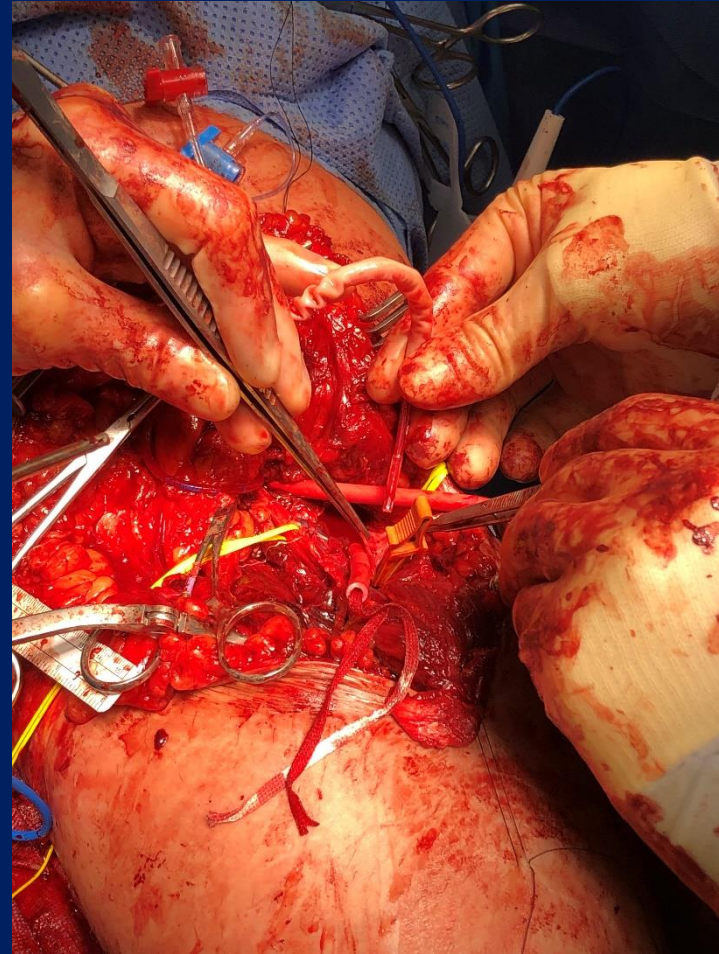
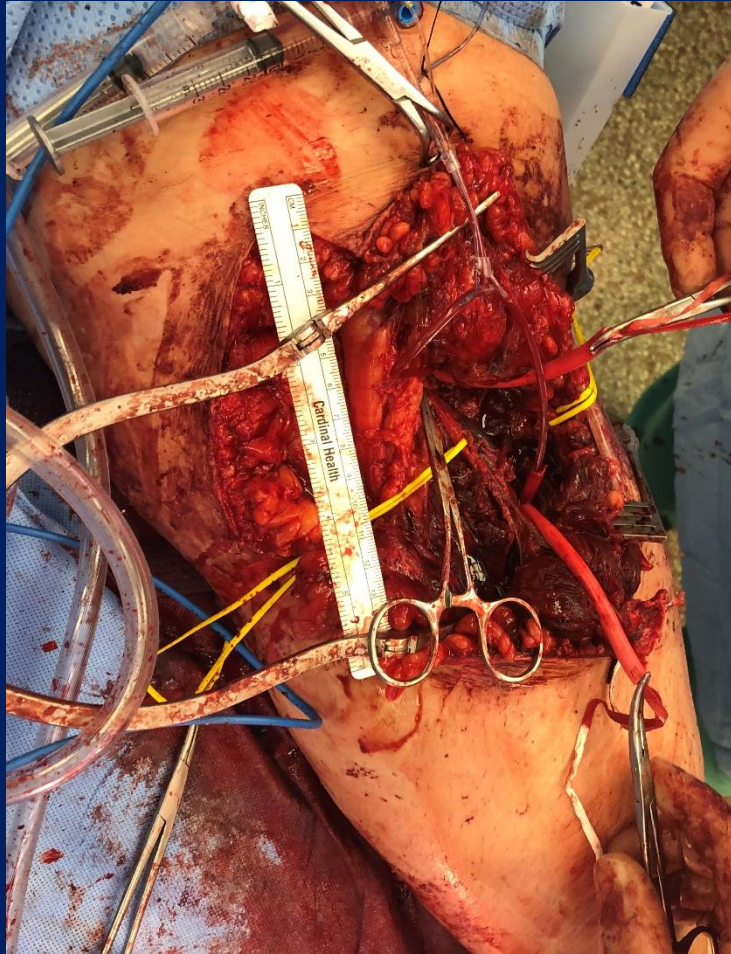
Blue = Proximal Balloon

Description	Diameter	Length
Shunt with T-Port	8F	31 cm
Shunt with T-Port	9F	31 cm
Shunt without T-Port	9F	31 cm
Shunt with T-Port	10F	31 cm

Pruitt-Inahara T arm

- Confirm perfusion
- Measure perfusion pressure
- Administer antispasmodic agents
- Administer fibrinolytic agents
- Perform arteriography

Pruitt Inahara Shunt



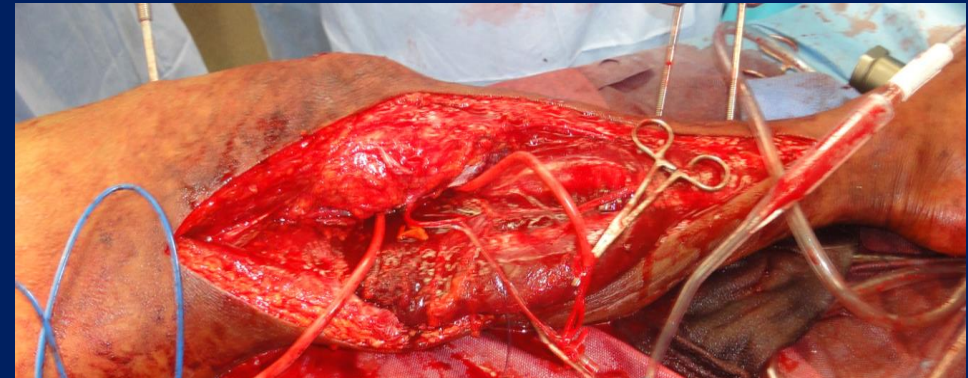
Vasospasm and Residual Clot

Vasospasm

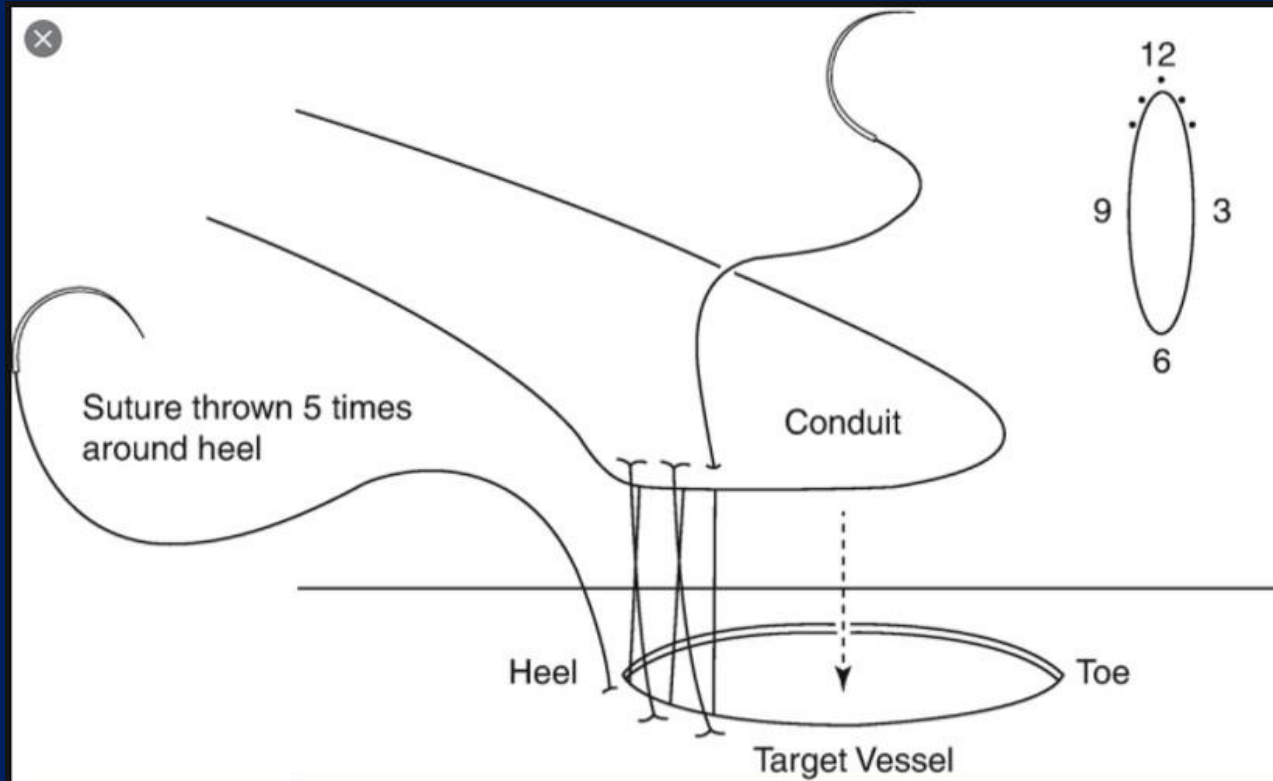
- Nitroglycerine 200 mcg bolus
- Verapamil 10 mg bolus
- Papaverine 60 mg drip / 15 min

Residual Clot

- Alteplase 5 mg bolus + 5 mg drip / 15 min



Parachute Technique

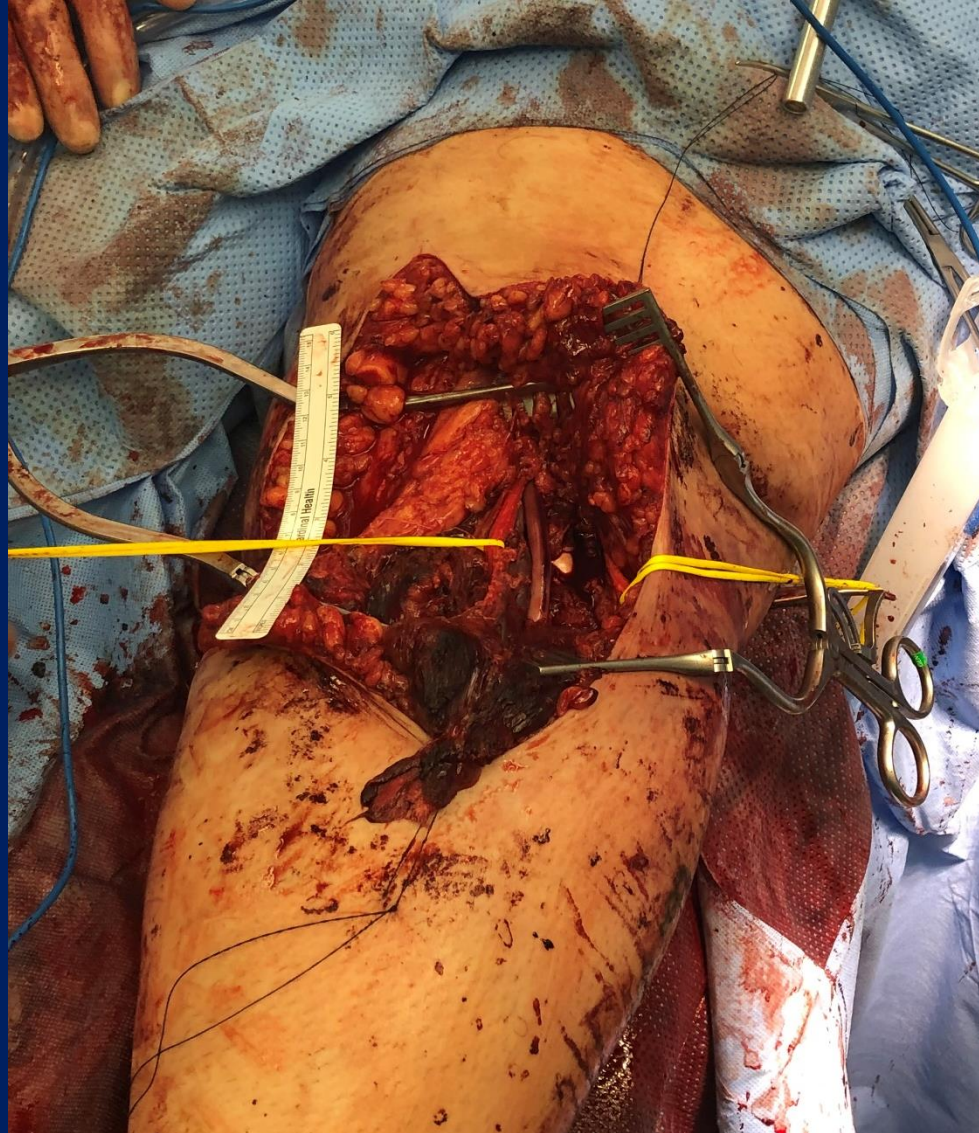


Restore Coagulation Homeostasis

Do not over-correct coagulation status

- **Minimize FFP / PCC / Plts / Cryo**
- **Avoid TXA**

Popliteal Artery Interposition Graft



5 cm Humacyte Graft

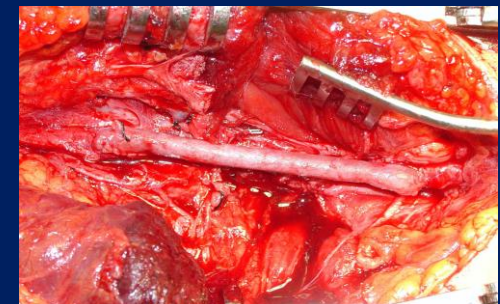
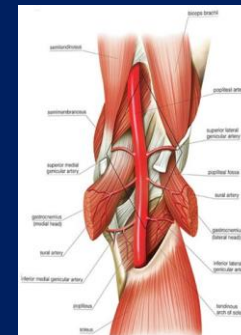
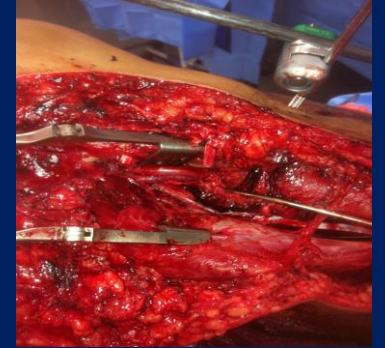
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Posterior is the Optimal Approach to the Injured Popliteal Artery

