

Open Options For Lower Extremity Revascularization

Nicholas J. Morrissey, M.D. F.A.C.S.

Assistant Professor of Vascular Surgery

Columbia/Weill Cornell Division of Vascular Surgery

The New York Presbyterian Hospital



TRANSCATHETER CARDIOVASCULAR THERAPEUTICS

-
-
-

Issues in Lower Extremity Revascularization

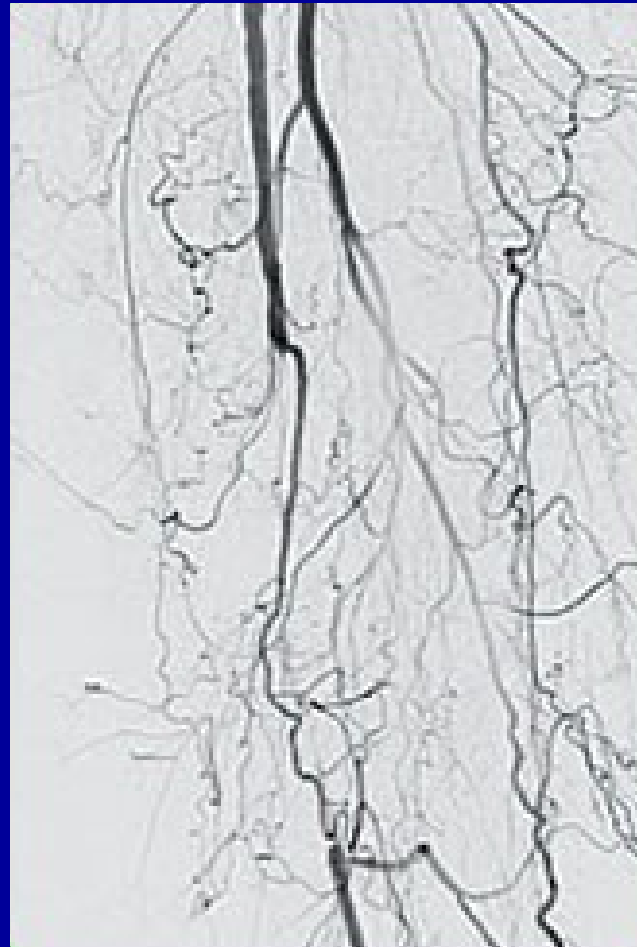
- Indication
 - Claudication
 - Rest pain
 - Ulcer
 - Gangrene

Patient

- Physiology/comorbidities
- Age
- Functional status
- Goals of therapy
 - Long-term patency
 - Flow to heal wound

Level of Disease

- Aortoiliac
- EIA/CFA
- SFA
- POP at knee
- Tibials



Aortoiliac Disease

- Frequently buttock/thigh claudication
- Distal vessels frequently spared
- Hypoplastic distal aorta syndrome
 - Diminutive vessels
 - Middle-aged females
 - Heavy smokers

Aortoiliac Disease: Options

- Aortobifemoral bypass
 - 70-80% 10 year patency
 - Patency based on outflow status
 - Inflow status
 - Transabdominal
 - Complication risks in patients with comorbidities
 - Graft infection

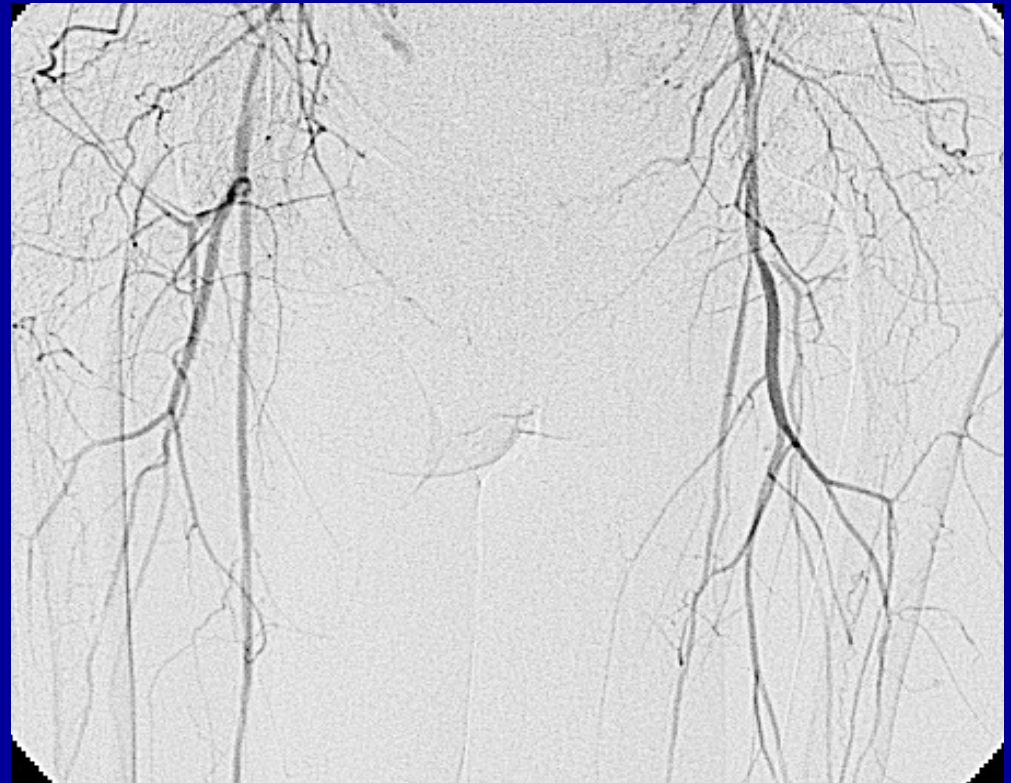
Aortoiliac Disease

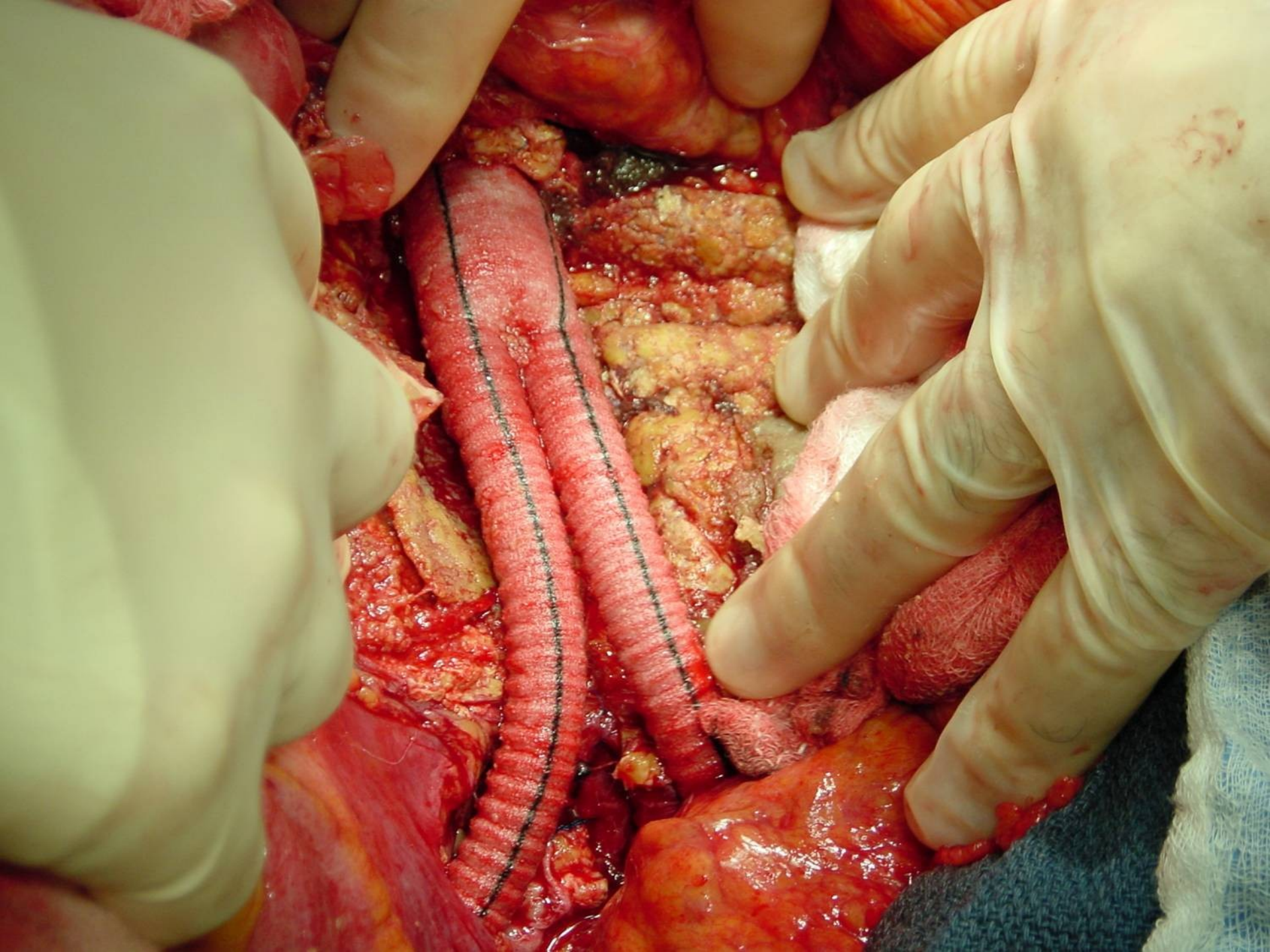
- 49 year old female
- Former heavy smoker
- Claudication at 1/2 block



Aortoiliac disease

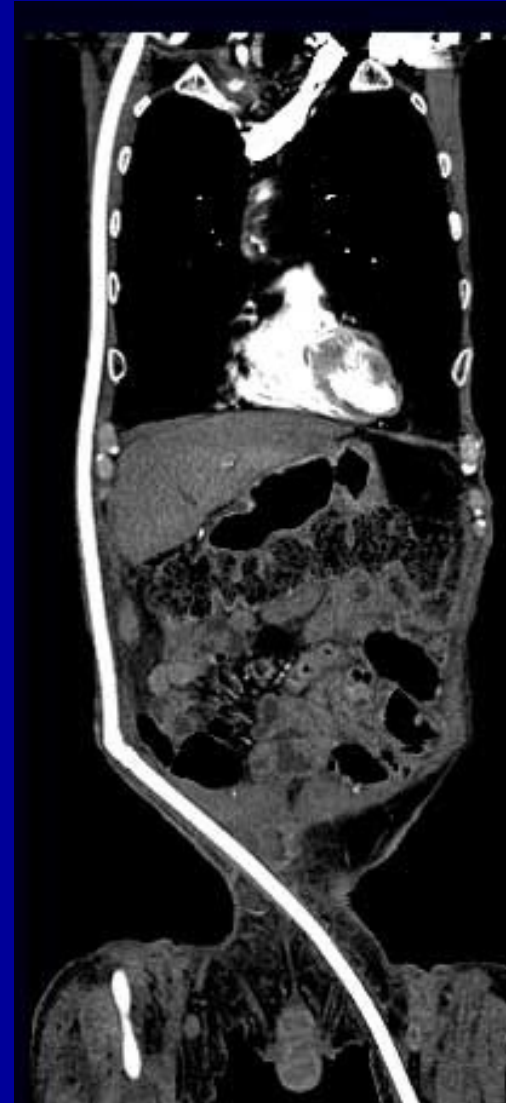
- No cardiac history
- (-) stress Thallium
- No tissue loss
- Aortobifemoral bypass
- d/c post op day 4
- Symptom free at 1 year.
- Palpable pedal pulses





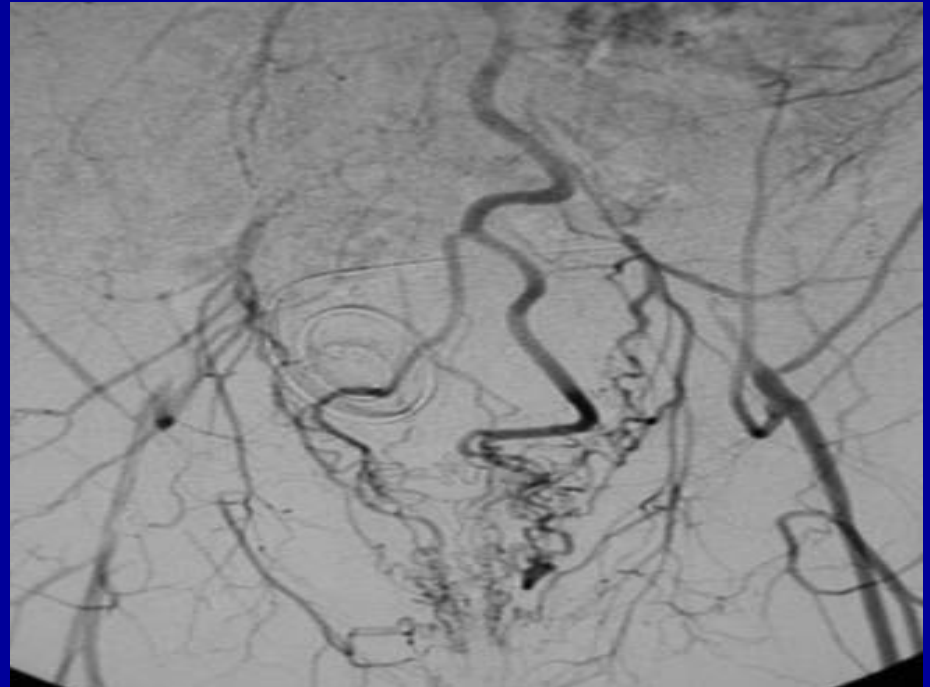
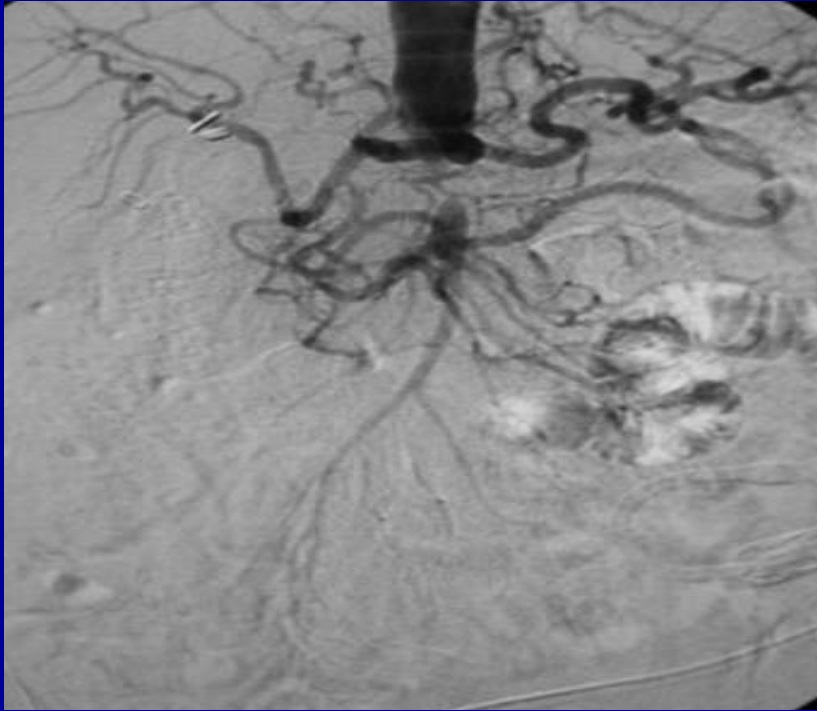
Aortoiliac Disease: Options

- Poor risk candidates with severe comorbidities
- Failed percutaneous intervention
- Failed previous aortobifemoral bypass
- Hostile abdomen
- *Axillary-bifemoral bypass*



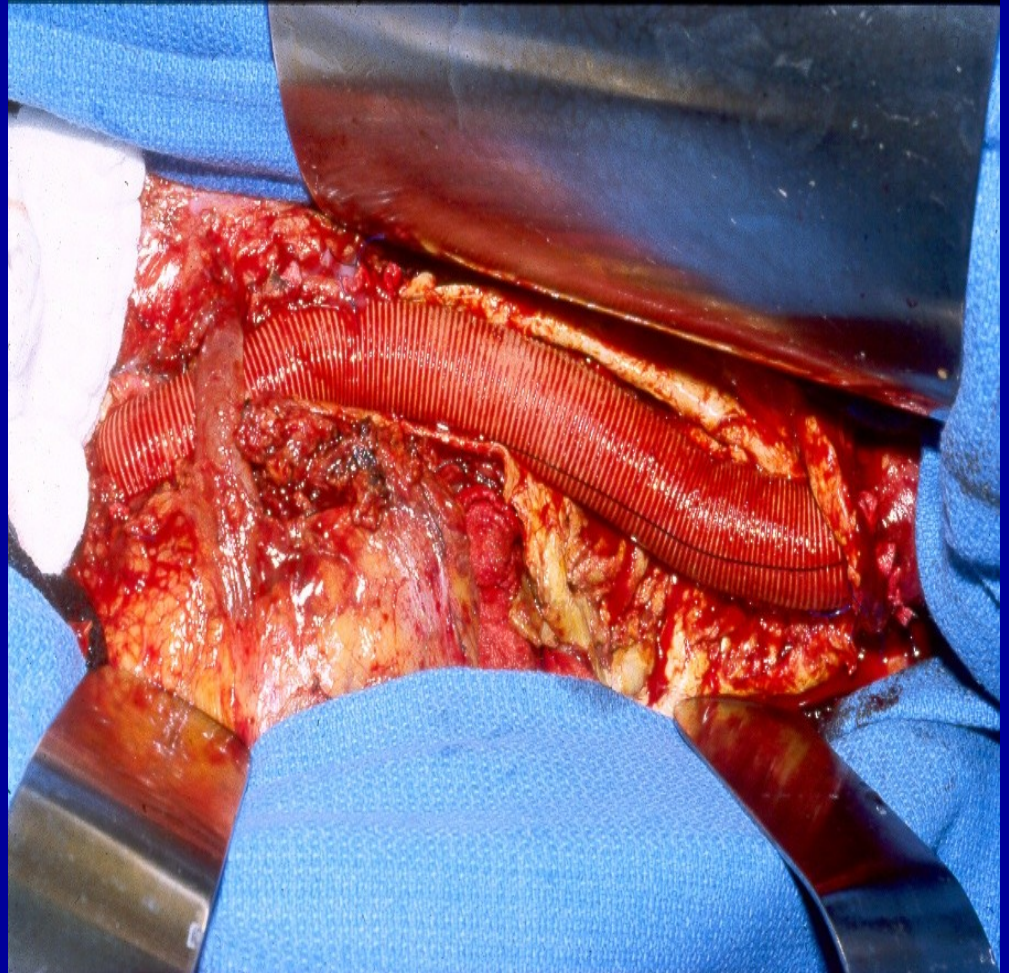
Axillary-Bifemoral Bypass

- 50-70% 10 year patency
- Lower morbidity



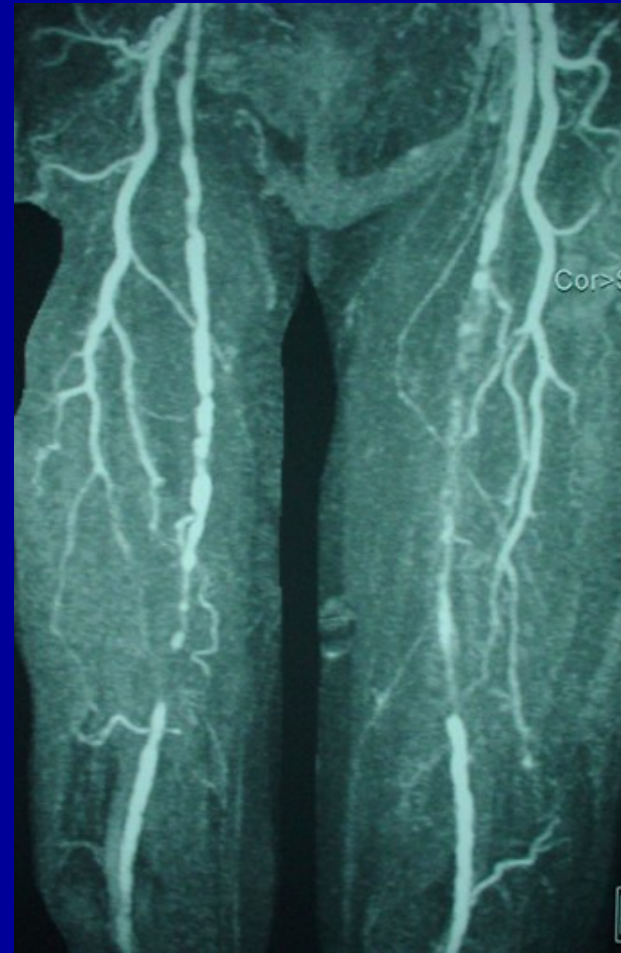
Aortoiliac Disease:Options

- Unusable infrarenal aorta
- Failed previous aortobifemoral
- Thoraco-femoral bypass



Femoral Artery Disease

- Physiology + Anatomy
- Goals of therapy
- Age/ risk status of patient



Open/Endo Decisions

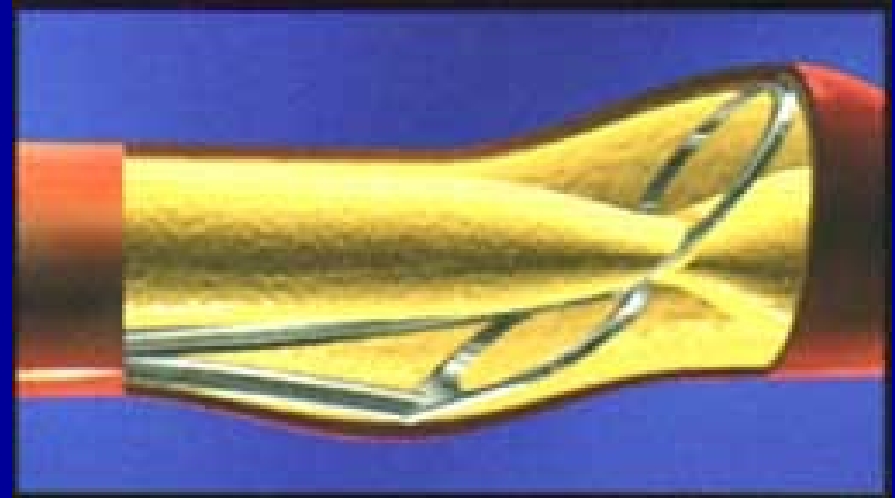
- Older
- Significant comorbidity
- Limb salvage
- Favorable lesions
- ENDO
- Younger
- Healthy
- Lifestyle limiting claudication
- Unfavorable lesions
 - Highly subjective
- Excellent conduit options
- OPEN

Less Attractive Locations for Endovascular Therapy

- Distal external iliac artery
- Common femoral artery bifurcation
- Proximal profunda femoris artery
- Popliteal behind the knee
- All are relative!

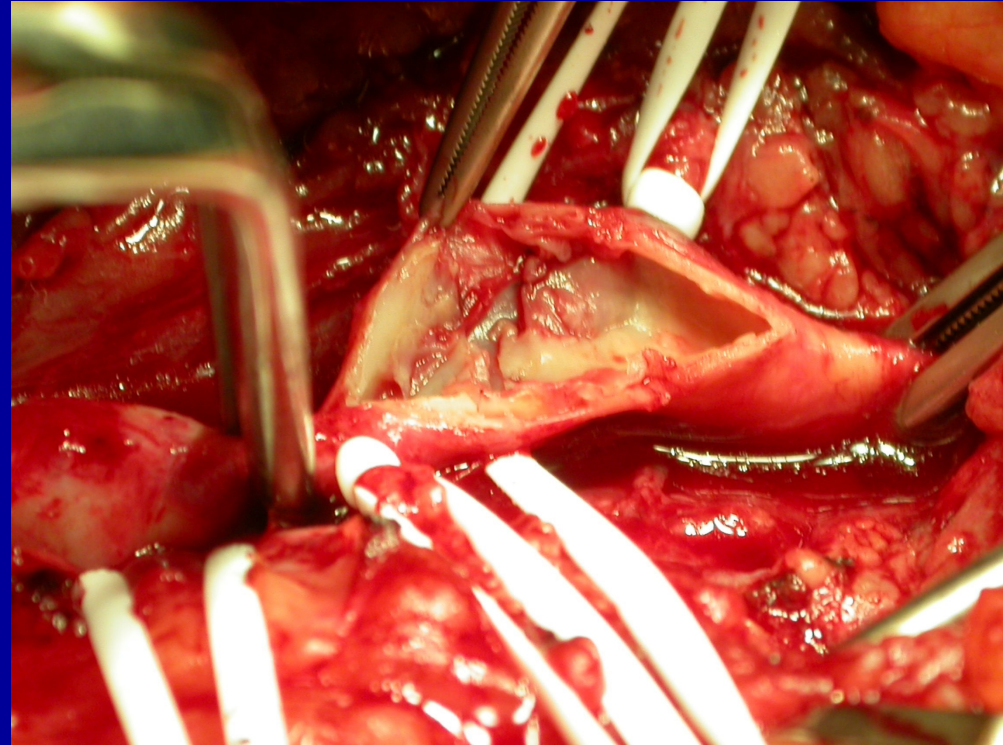
Open Options in Femoral Artery Disease

- Local endarterectomy/patch angioplasty of CFA and PFA SFA origins
- Remote endarterectomy (Molring cutter)
- Bypass
- Combined procedures



CFA Endarterectomy

- Focal occlusion of CFA/distal EIA
- Local anesthesia
- Endarterectomy/patch angioplasty
- Home POD 1



SFA Disease

- Extent of disease
- Occlusion vs. stenosis
- Level of reconstitution
 - Relative to joint
 - Runoff status
 - Don't burn bridges – don't dissect past reconstitution point

Severe Claudication

- 62 YO female
- ½ block claudication
- 0.8 ABI drops to 0.4 with exercise



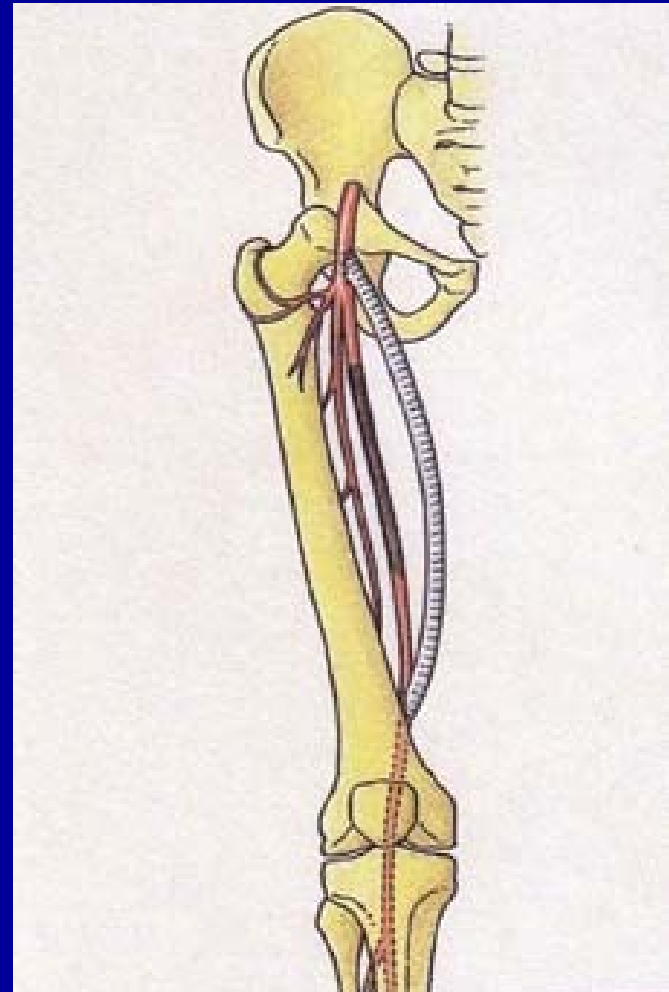
Severe Claudication

- Antegrade access
- Cross with .014 wire
- Balloon/stent
- Palpable pulses in feet
- Asymptomatic
- Patent at 1 year; no duplex evidence restenosis



SFA Disease: Open Options

- Fem-pop bypass
 - AK
 - BK
 - Vein
 - Prosthetic



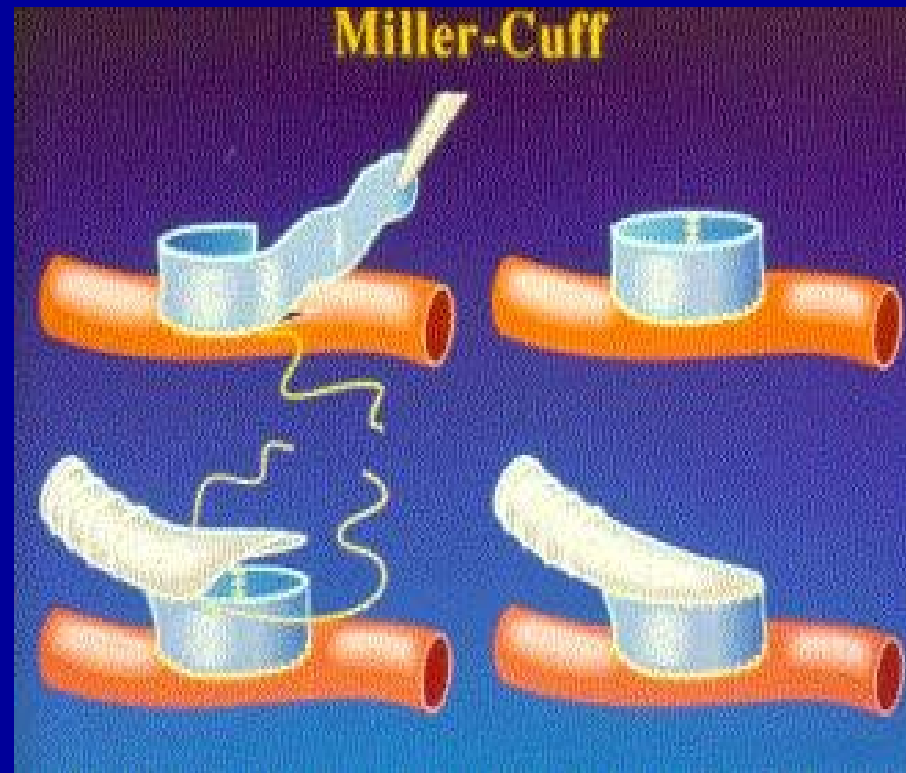
Fem-pop bypass: Outcomes

- Earlier data suggest prosthetic = vein patency in AK pop
- Recent studies
 - improvement in long term patency with vein
- Patency with vein still superior to percutaneous-evolving



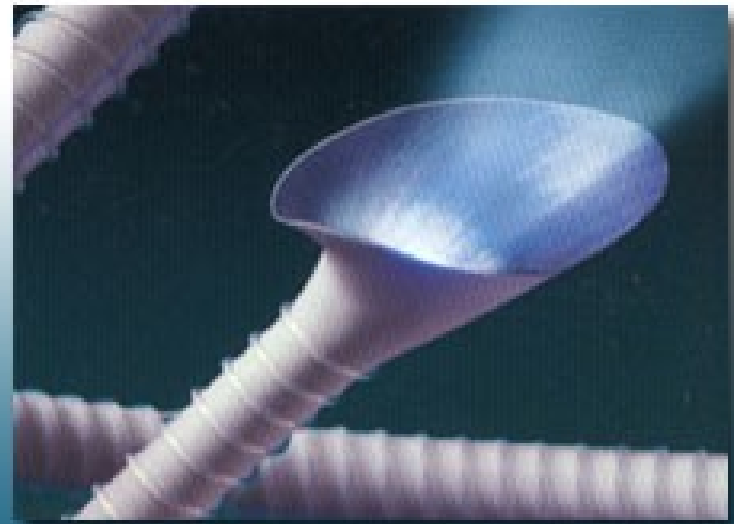
Improving Prosthetic Patency

- Vein cuffs/patches
- Concomitant AV fistula to increase outflow



Engineered Prosthetics

- Attempts to mimic flow dynamics of vein bypass
- Failed to demonstrate significant improvement over standard prosthetic



Hybrid Procedures

- Multilevel disease
- Parts amenable to endo techniques
- Certain areas less optimal for endo approach
 - CFA
 - Distal EIA
 - Long segment occluded iliacs

Hybrid Procedures

- CFA endarterectomy and retrograde iliac angioplasty
 - Local anesthesia
 - Expose artery
 - Puncture, wire , sheath
 - Iliac angioplasty
 - CFA endarterectomy +/- patch

Hybrid Procedures

- Aortoiliac and femoral disease
- Tissue loss
- Aortobifemoral bypass +
- Endovascular recanalization of SFA/pop/tibial disease

Hybrid Procedures

- 50 year old male
- Heavy smoker
- Bilateral gangrene
- Previous iliac intervention within 9 months
- Multilevel disease



Hybrid procedures

- SFA occlusion
- Aortobifemoral bypass
- SFA recanalization/angioplasty via brachial and native aortoiliac approach
- Wounds healing



Summary

- Open options are important in all aspects of lower extremity revascularization
- Percutaneous techniques evolving and improving
- Toolbox concept- team must have all options available
- Open techniques are not stagnant during endo revolution