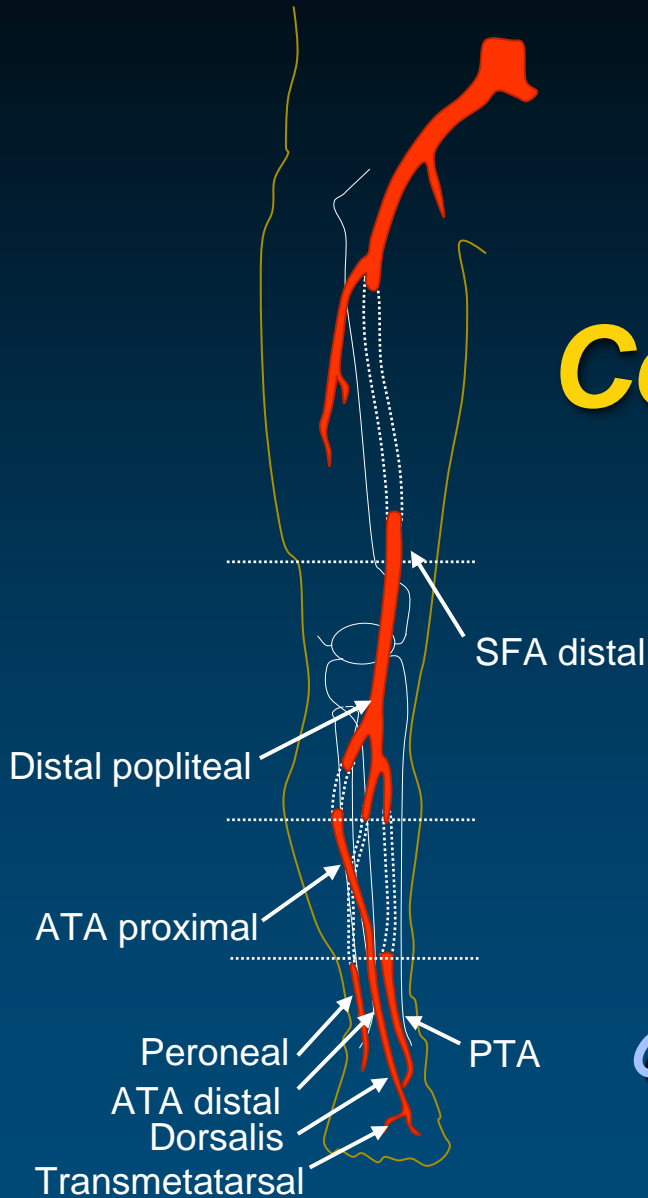


Management of *Complicated SFA Lesion*



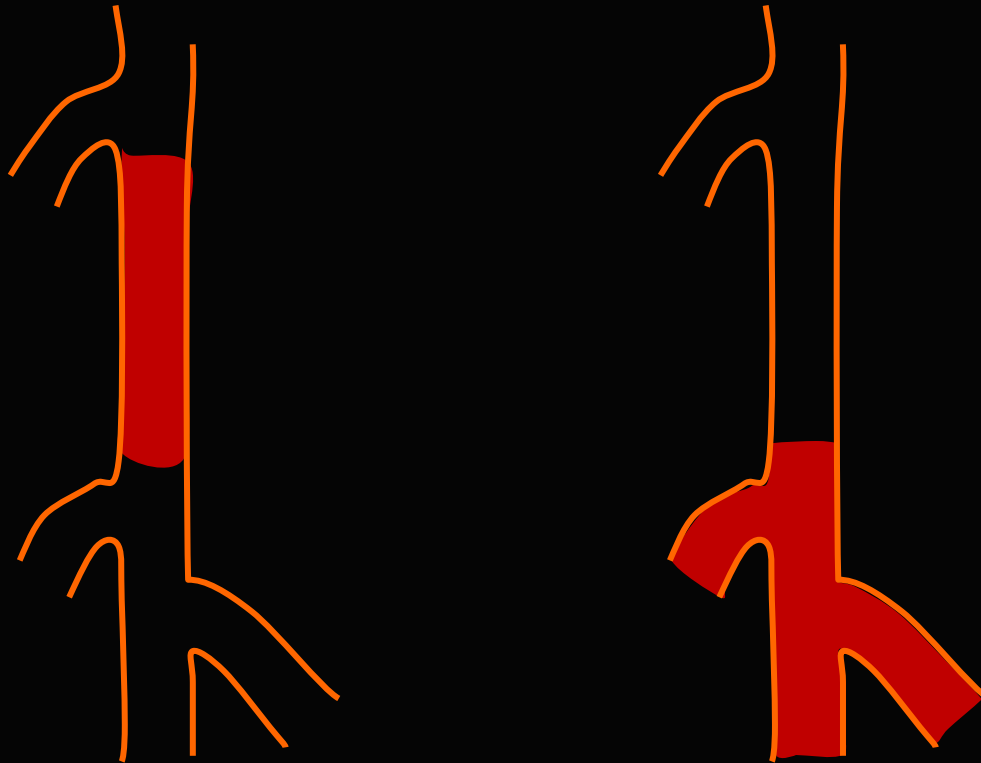
Jae-Hwan Lee, MD, PhD

**Cardiovascular Center in
Chungnam National University Hospital**



TASC IIb Classification

Femoropopliteal Disease – Type D Lesions



+ Failure of endovascular treatment

Complicated SFA lesion ?

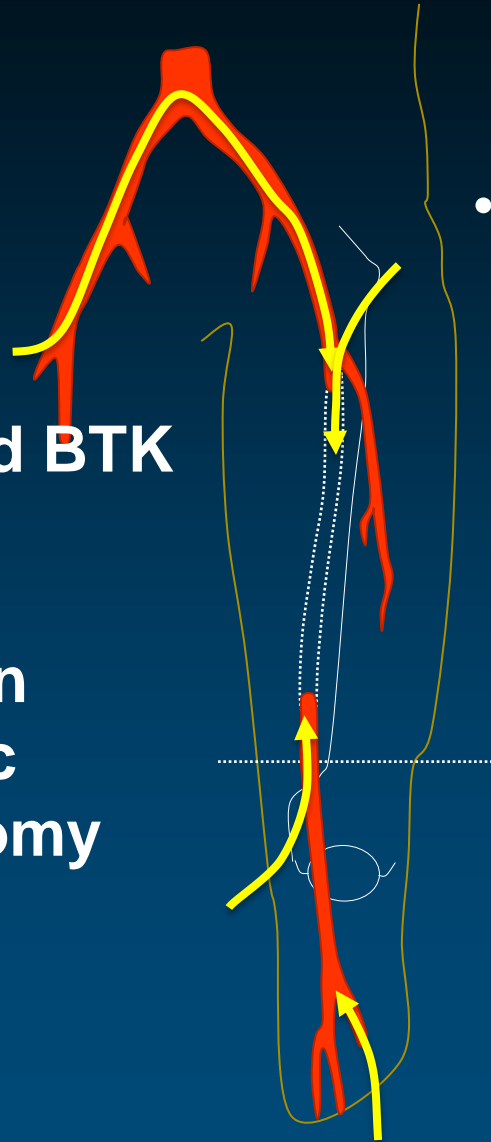
- Long SFA CTO
- Flush occlusion (stumpless ostial occlusion)
- Iliac CTO extended to SFA
- Heavy calcification
- In-stent total occlusion
- SFA CTO extended to popliteal artery
- Distal popliteal occlusion extending into origin of all tibial vessels
- Acute limb ischemia with thrombus
- Previous failure of endovascular treatment

Approaches

- **Contralateral femoral**
 - For most SFA treatment
 - Can evaluate iliac and coronary arteries
- **Ipsilateral antegrade**
 - Better back up support
 - Difficult for SFA ostial lesion
- **Retrograde**
 - From dSFA, P3, or Any pedal arteries
- **Radial or Brachial**

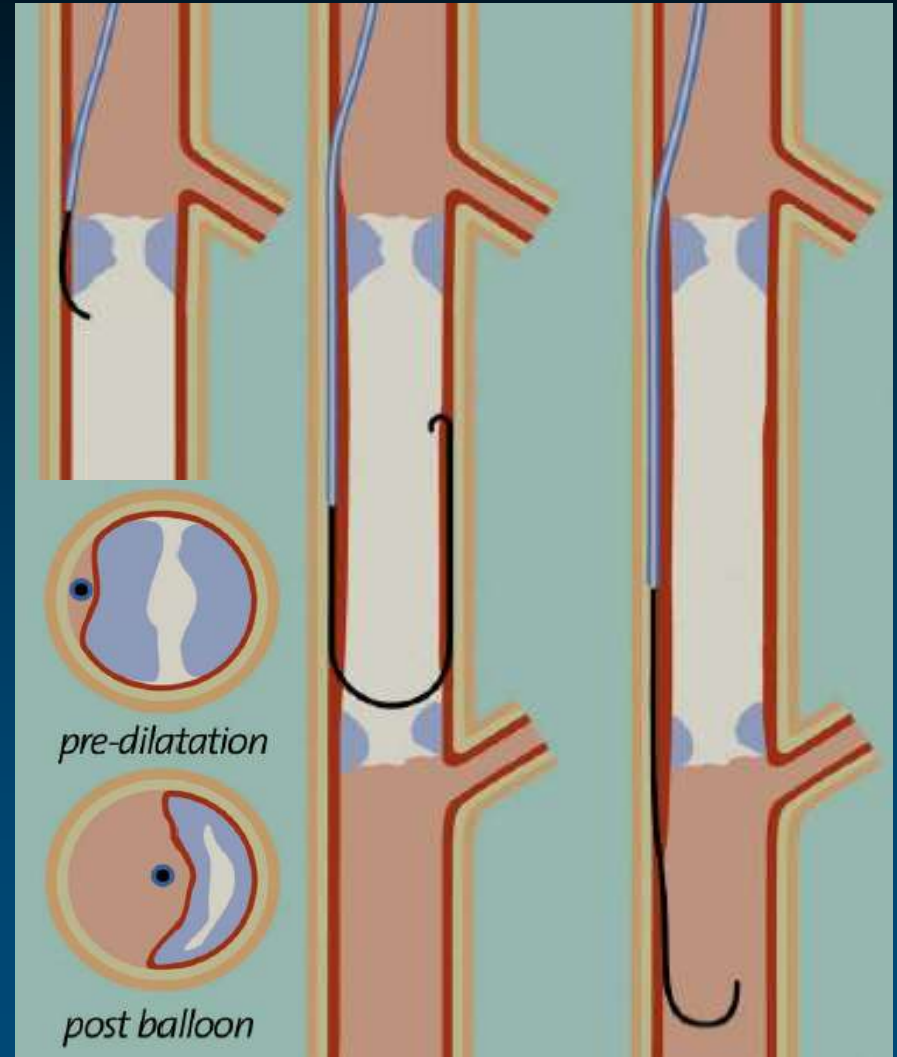
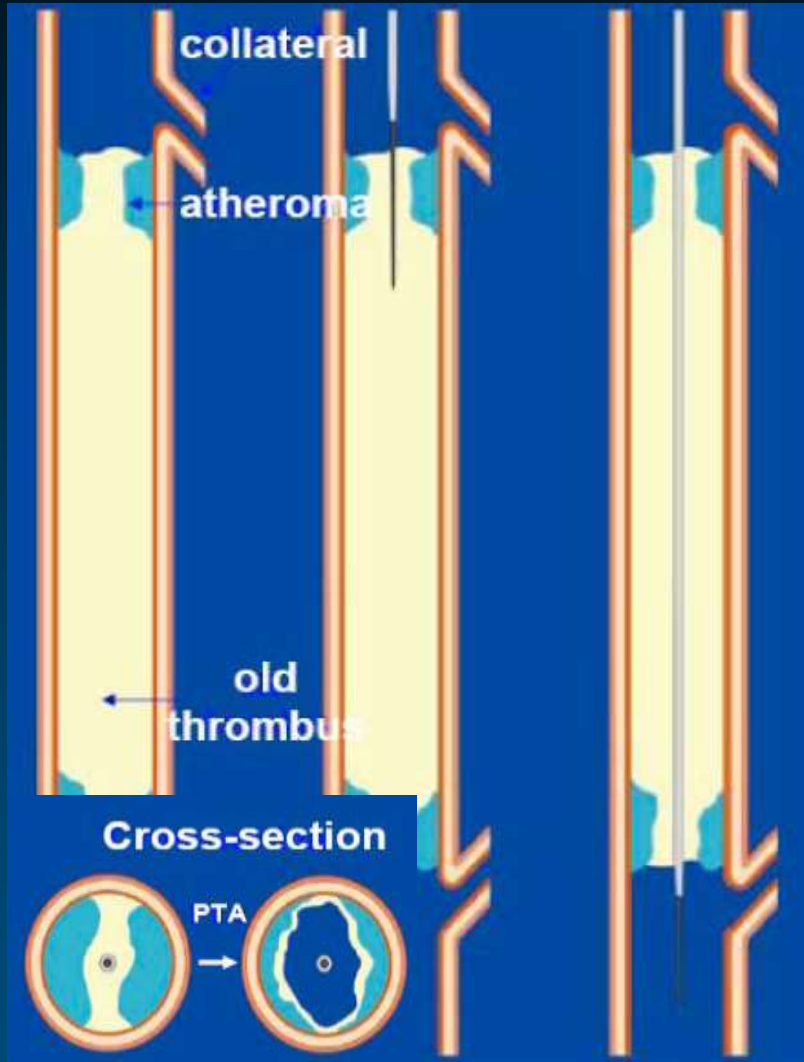
Sheath for Femoropopliteal Intervention

- **Contralateral femoral**
 - Ansel for SFA
 - Shuttle for combined BTK
 - 6 Fr for most lesion
 - 5 Fr for simple lesion or difficult aortoiliac
 - 7~8 Fr for arterectomy

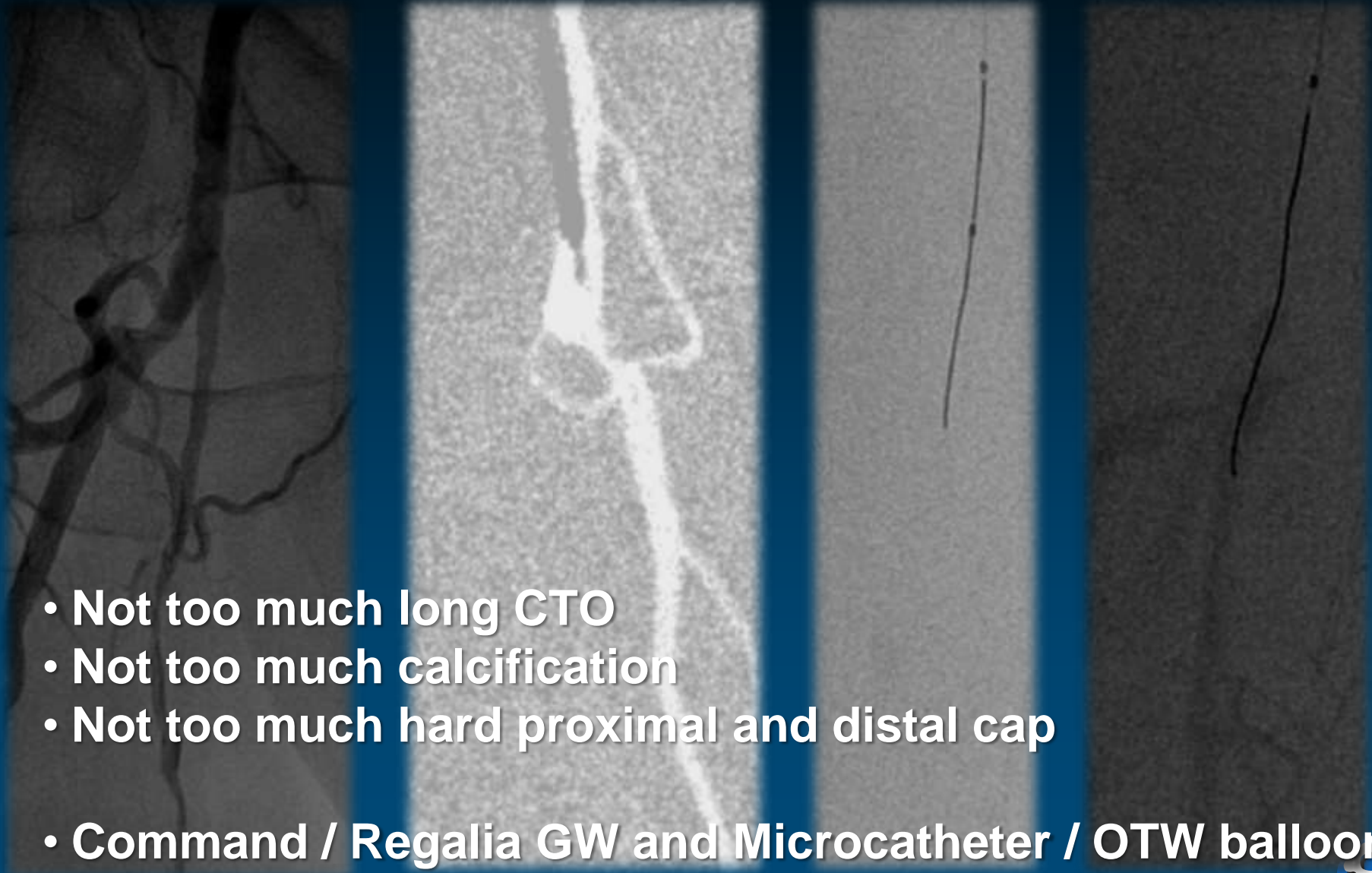


- **Ipsilateral femoral**
 - Ansel
 - 5~6 Fr for most
 - 7 Fr for arterectomy
- **Retrograde access**
 - Sheathless or
 - 4-6 Fr Terumo

Intraluminal vs. Subintimal

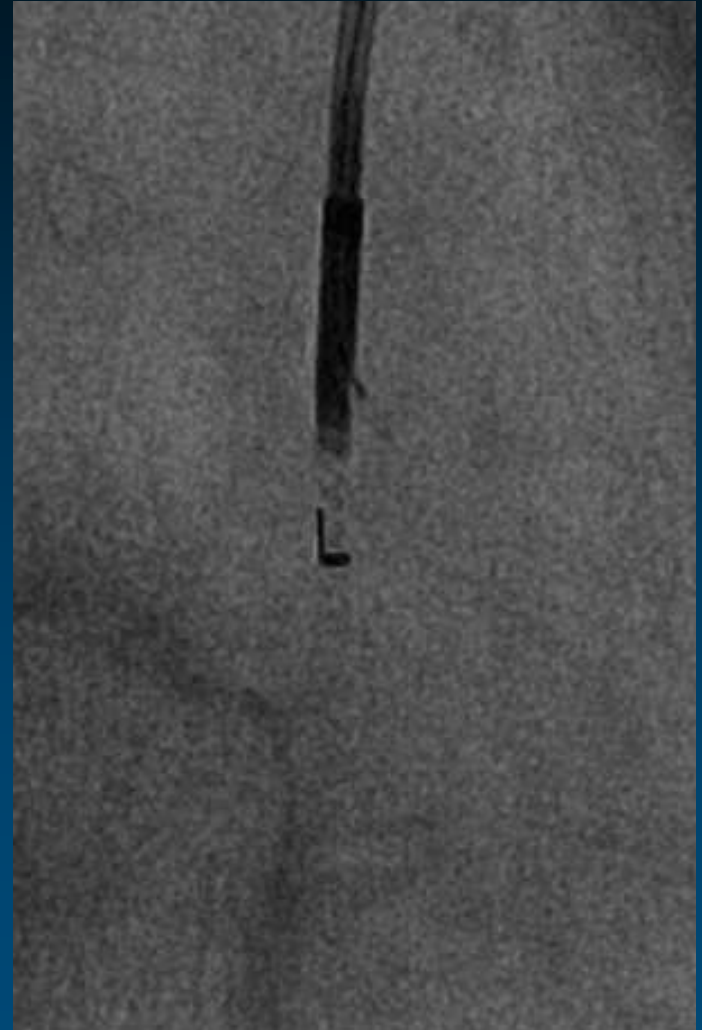


Antegrade Intraluminal CTO Wiring



- Not too much long CTO
- Not too much calcification
- Not too much hard proximal and distal cap
- Command / Regalia GW and Microcatheter / OTW balloon

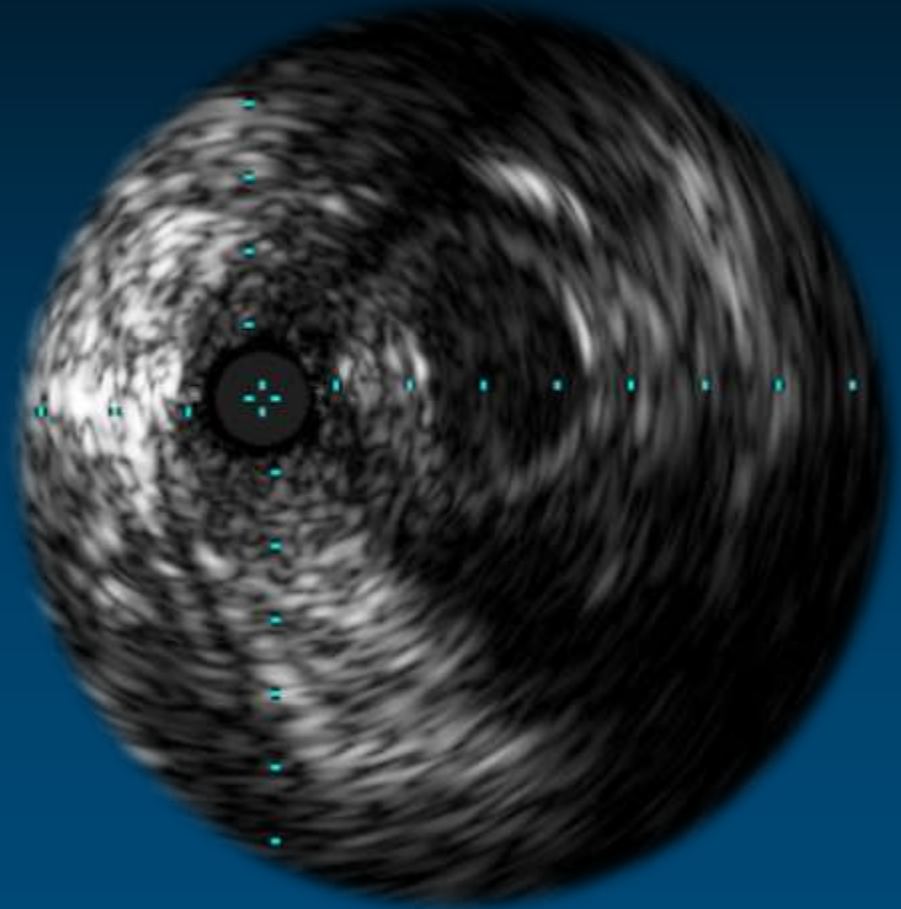
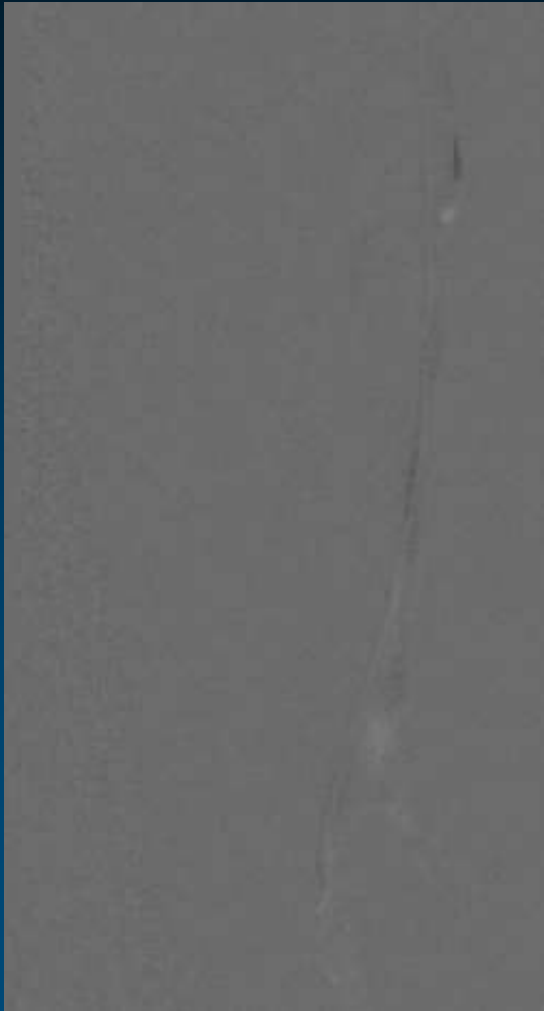
Outback reentry for distal SFA



- Should extend FL more distally
- Artificial new path
 - unavoidable stenting required for thick subintimal membrane

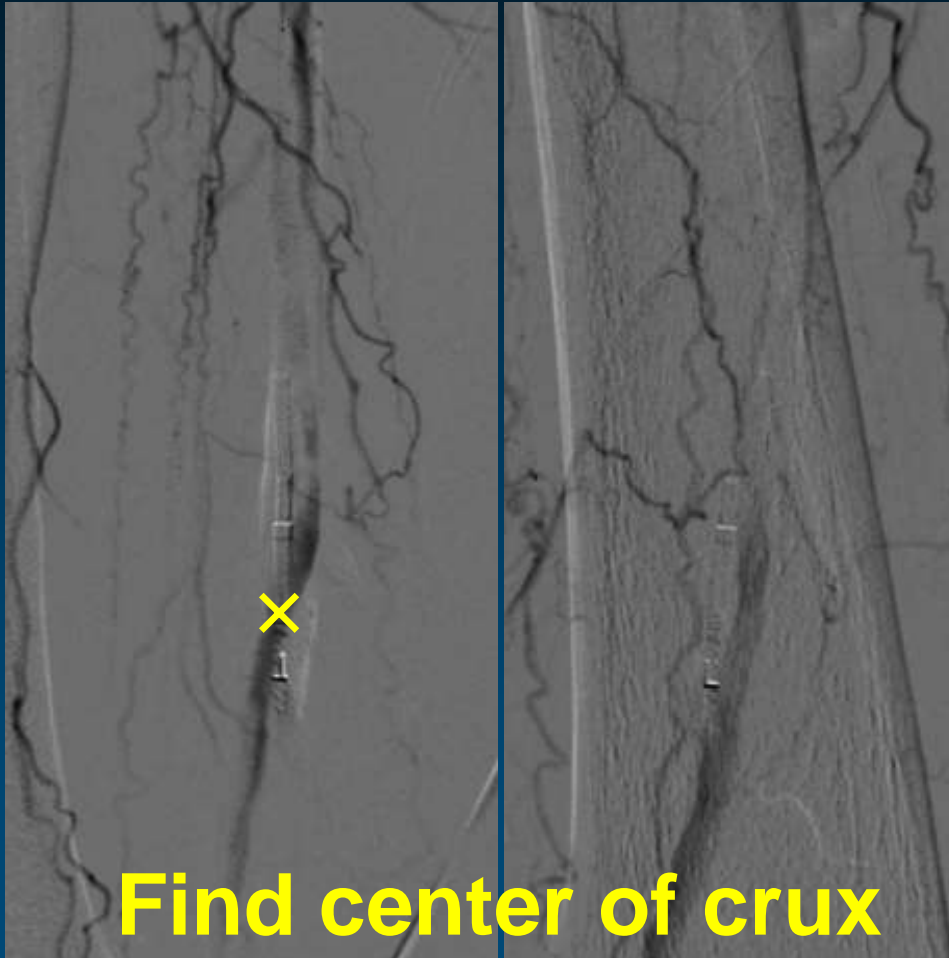
Difficult Outback Reentry

Spiral dissection

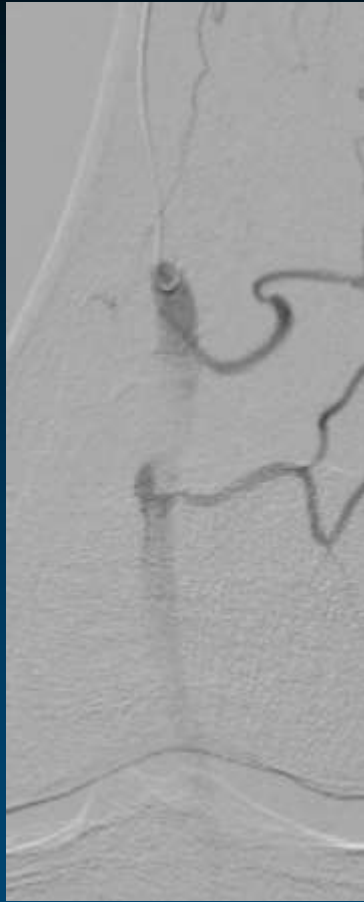


Difficult Outback Reentry

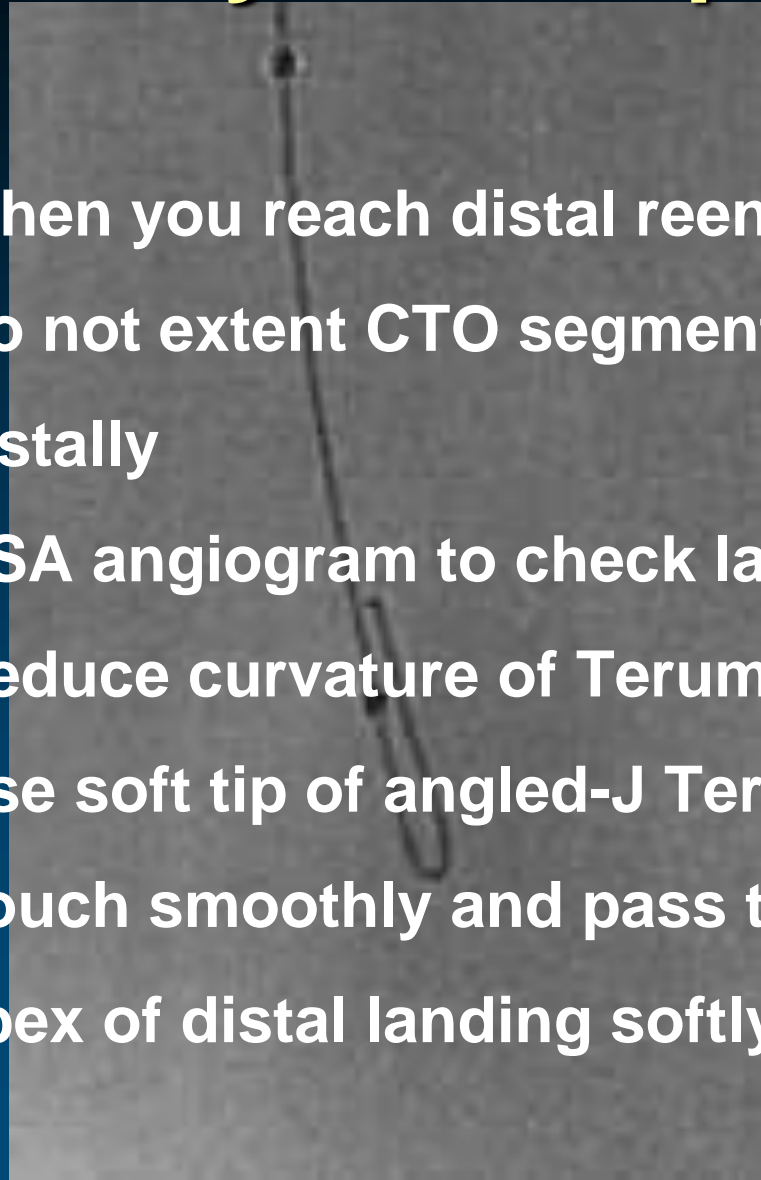
Spiral dissection



My Routine Reentry Technique



- When you reach distal reentry
- Do not extent CTO segment distally
- DSA angiogram to check landing
- Reduce curvature of Terumo wire
- Use soft tip of angled-J Terumo
- Touch smoothly and pass the apex of distal landing softly



My Routine Reentry Technique

For failed Terumo GW passage

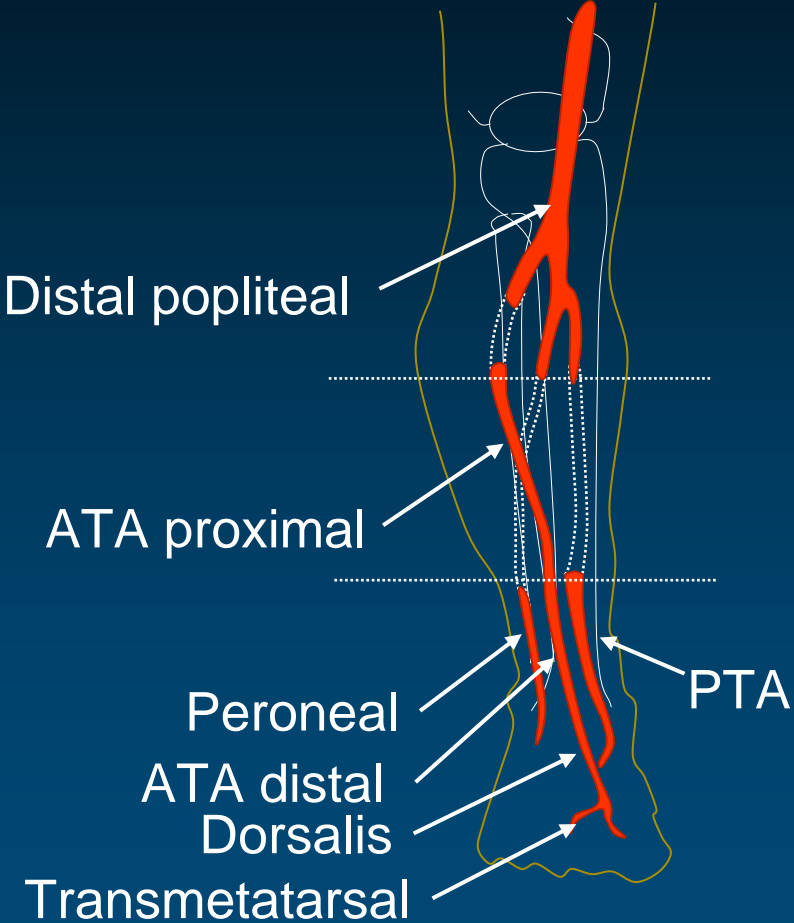
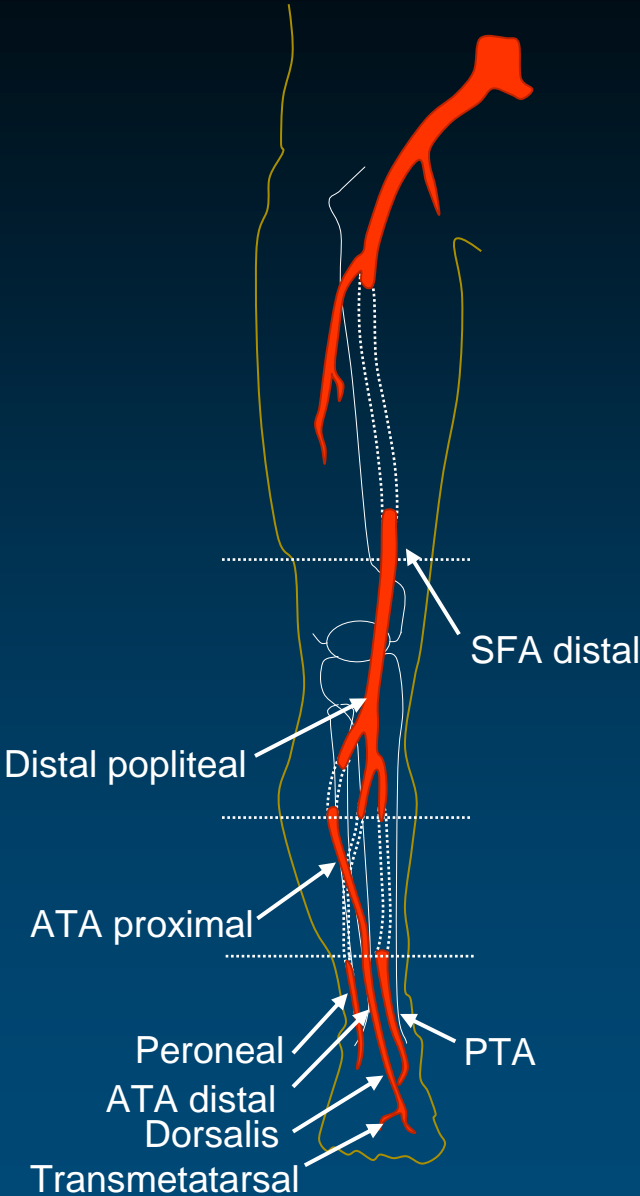
- If, angled-J Terumo passage failed
- ASTATO 20 or 30g
 - Intentional penetration
 - Support catheter mandatory
 - Multidirectional view



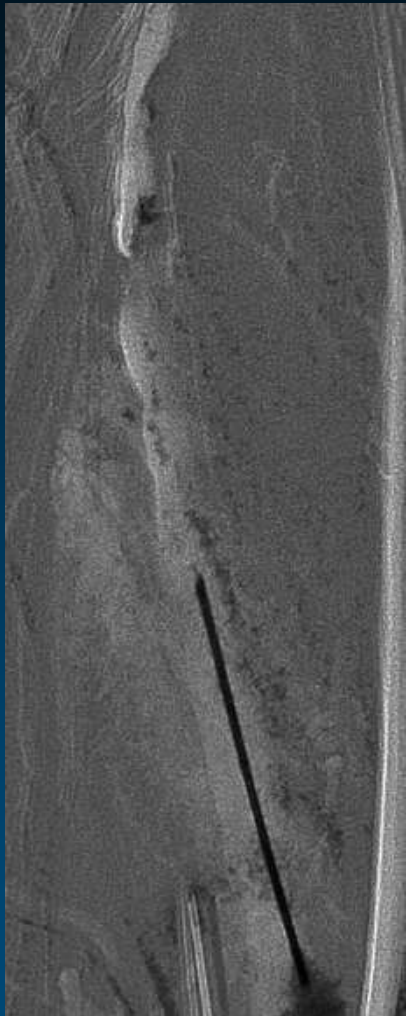
Difficulty \geq 5-10 min

Rapidly switch to retrograde access

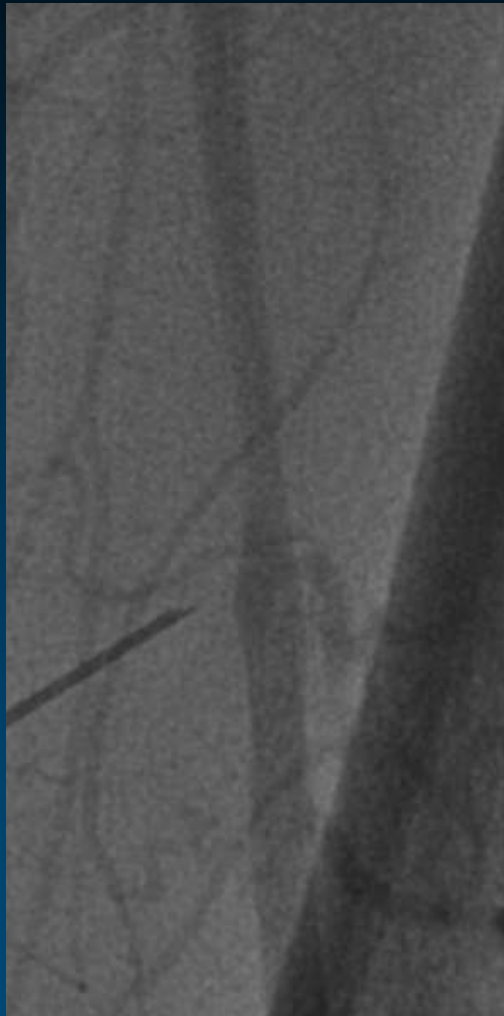
Retrograde Puncture in Supine Patient Position



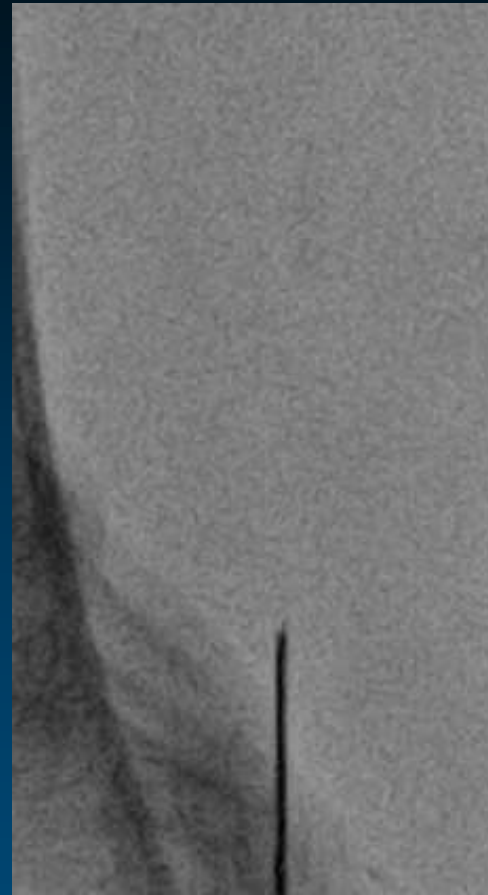
Distal SFA Puncture in Supine Position



LAO 45

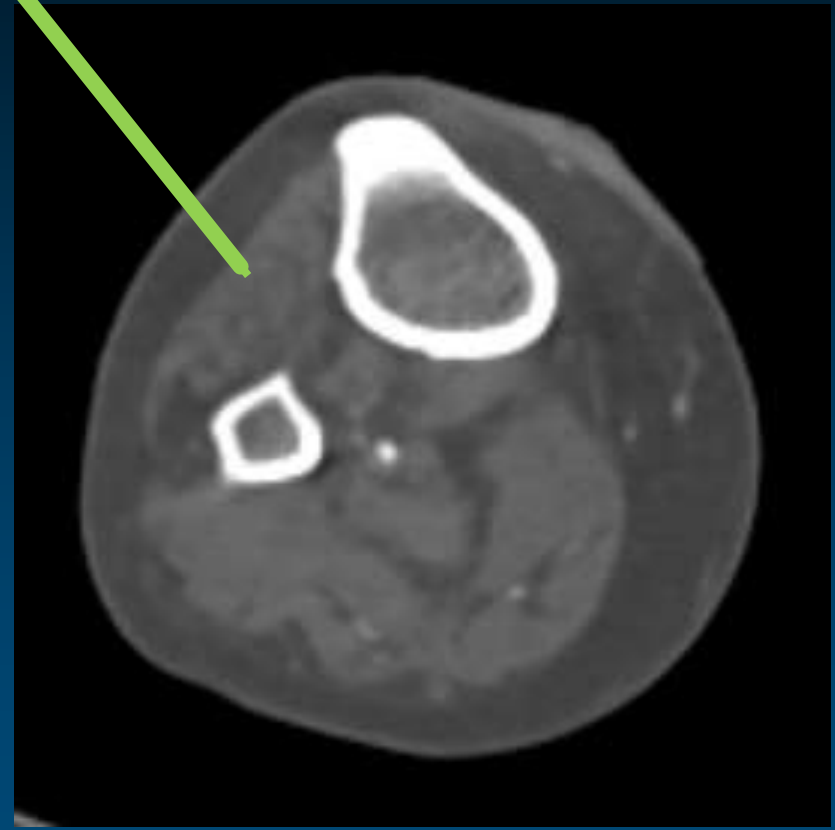


RAO 45



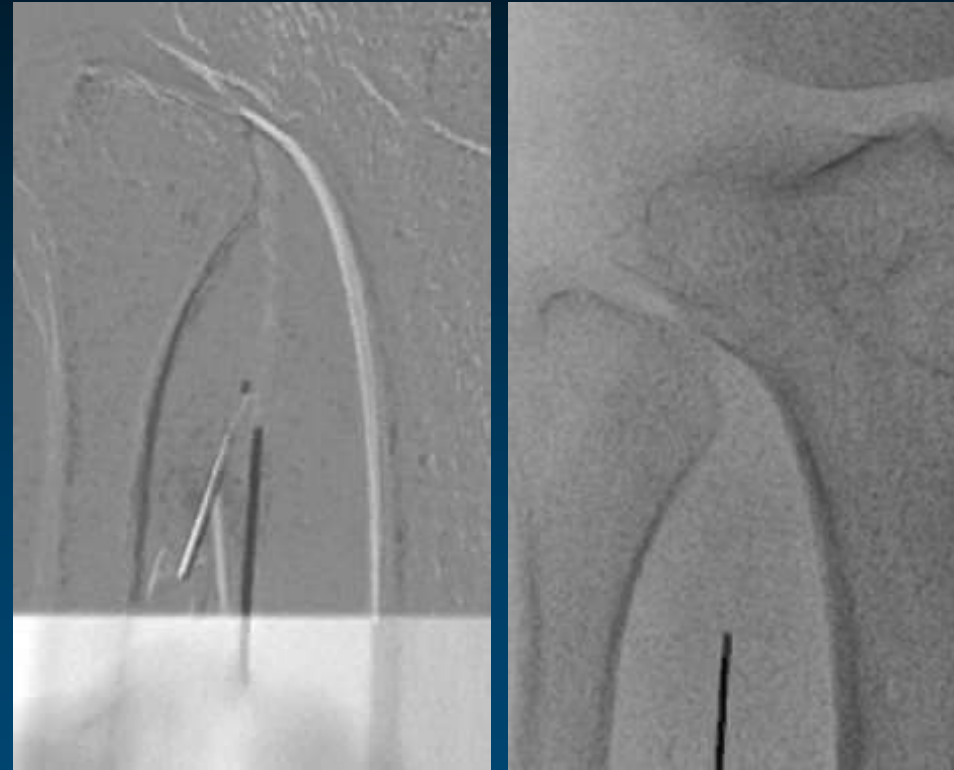
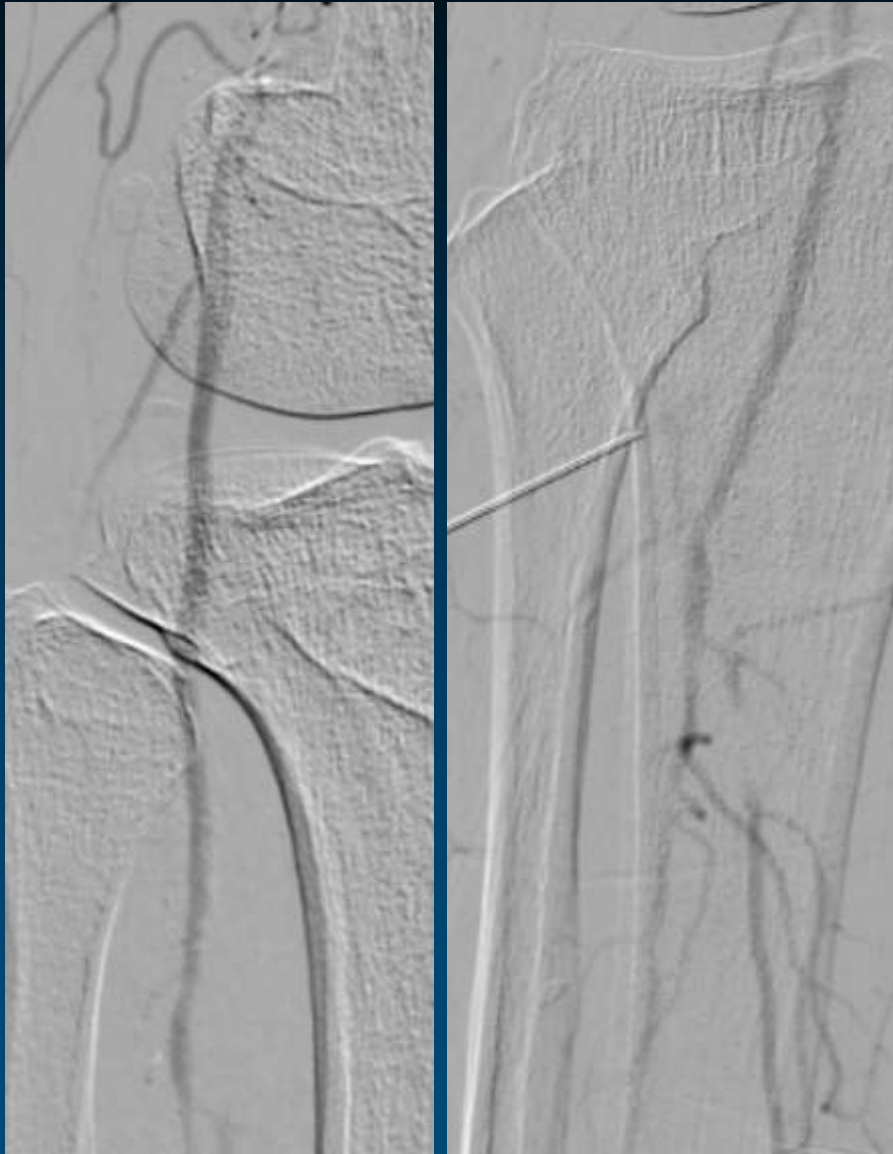
> 110°

Distal P3 Puncture in Supine Position



RAO 45

Distal P3 Puncture in Supine Position

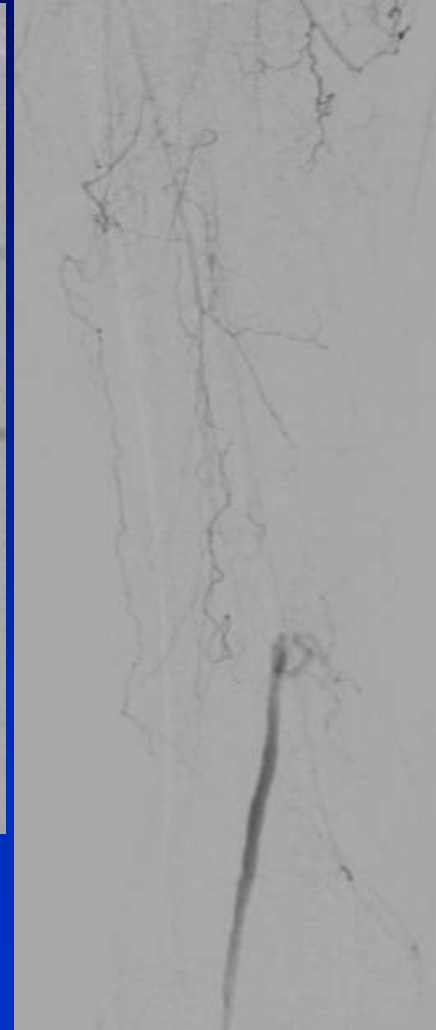
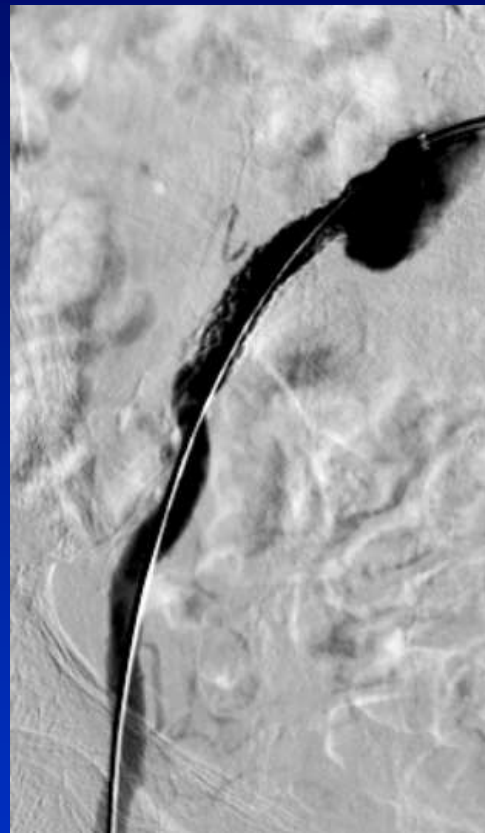
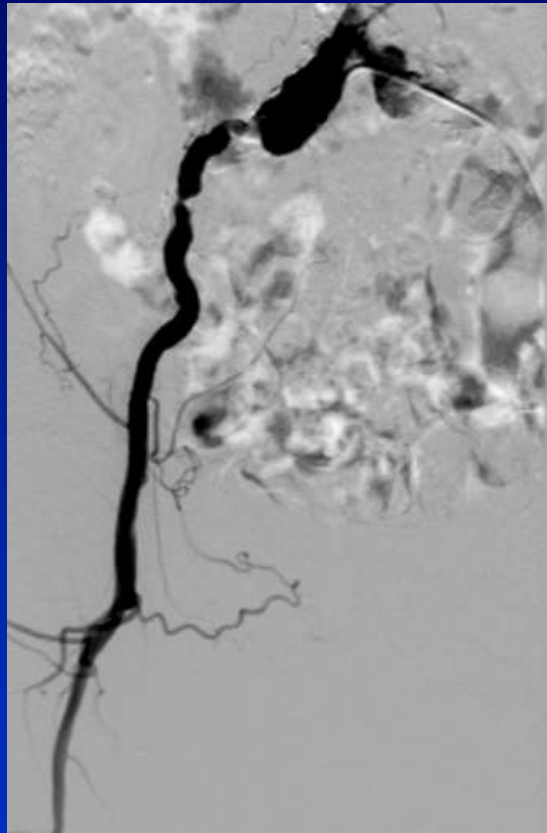


btw heads of tibia & fibula

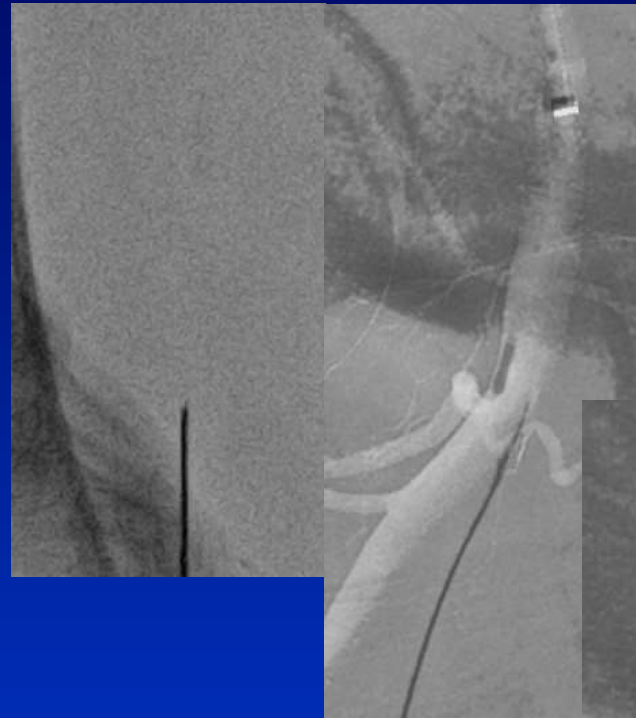
Flush Occlusion

Stumpless SFA CTO

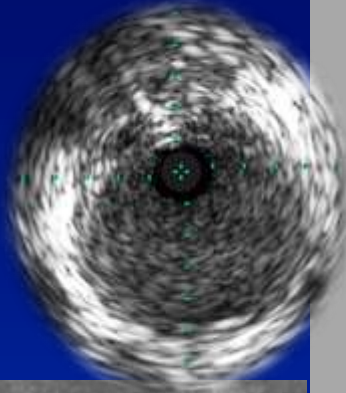
Stumpless SFA CTO case



Stumpless SFA CTO case



dSFA puncture



ASTATO

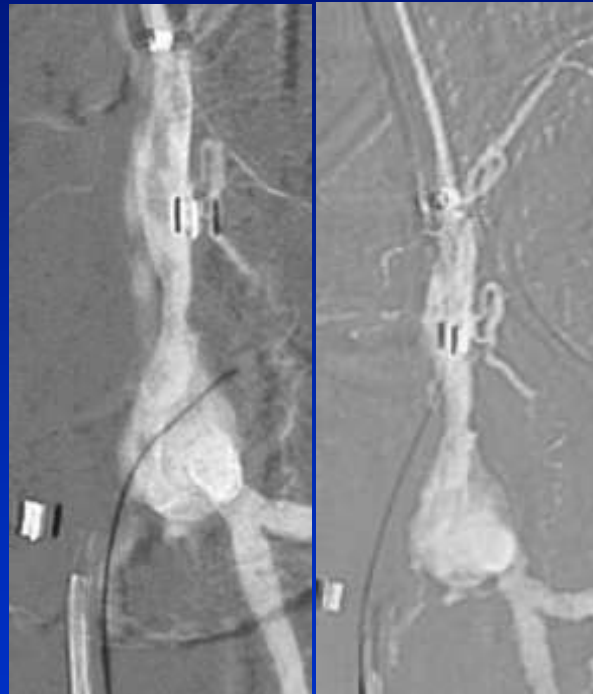
*Higher SFA ostium
than expected*

Stumpless SFA CTO case

F/78, Cr 2.0, DM, HTN, 3VD

20 YA, S/P Left femoral patch angioplasty?

Unhealed left toes ulcer



*Retrograde approach
From ATA
Reentry with ASTATO*

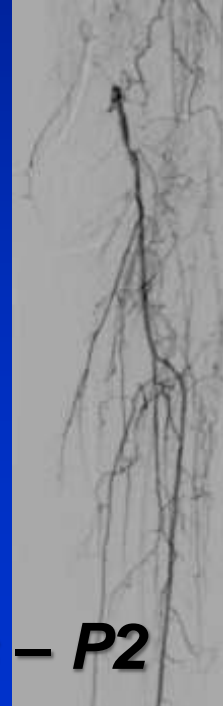


POBA

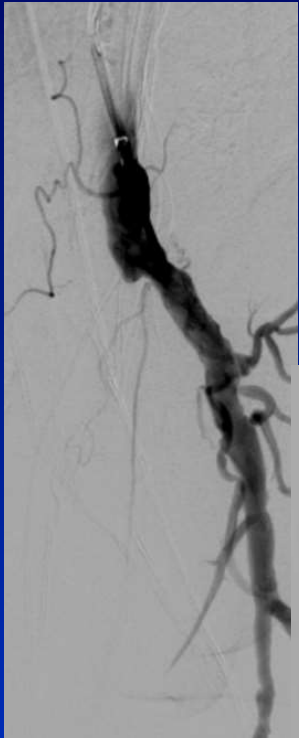
Stent



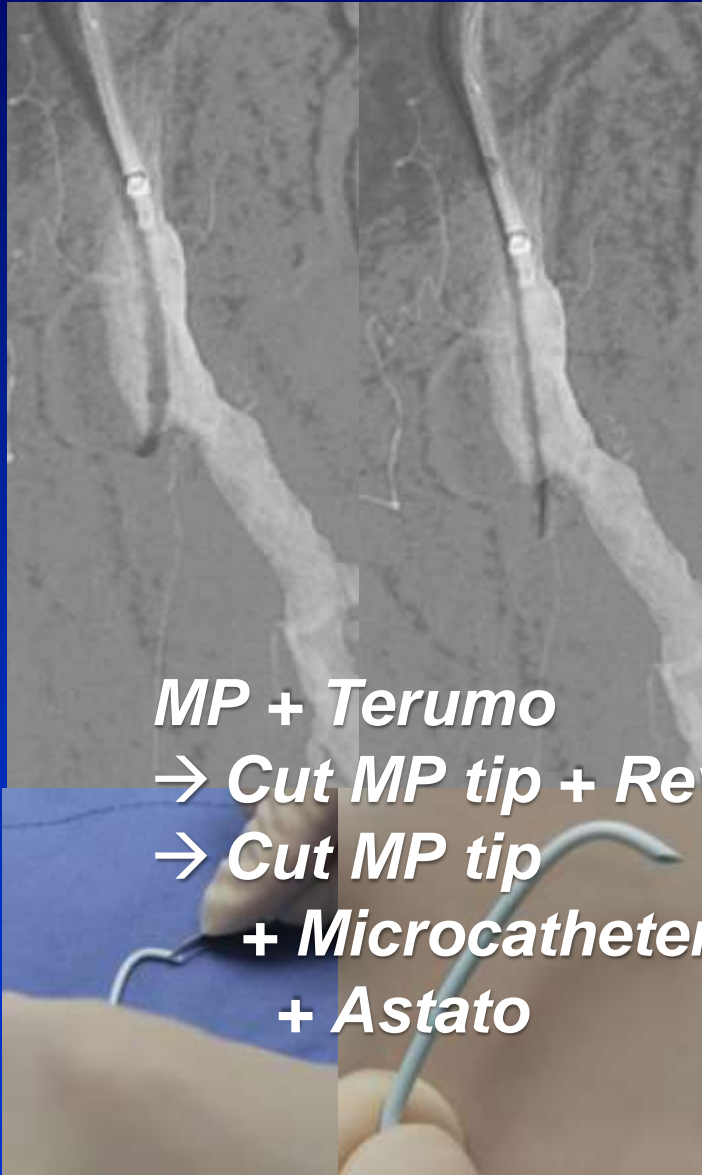
*CTO,
SFA os – P2*



Hard proximal cap case

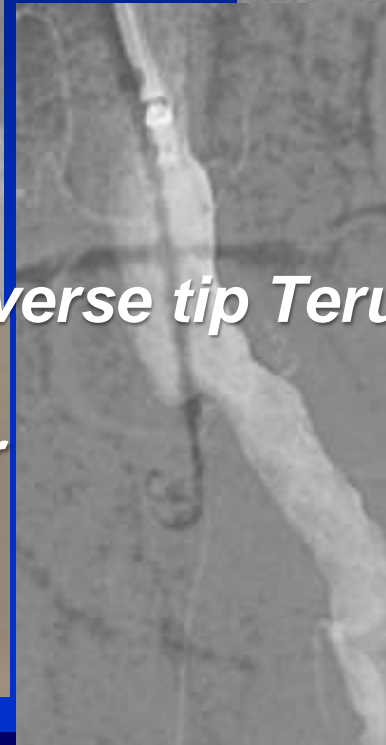


SFA ostial CTO

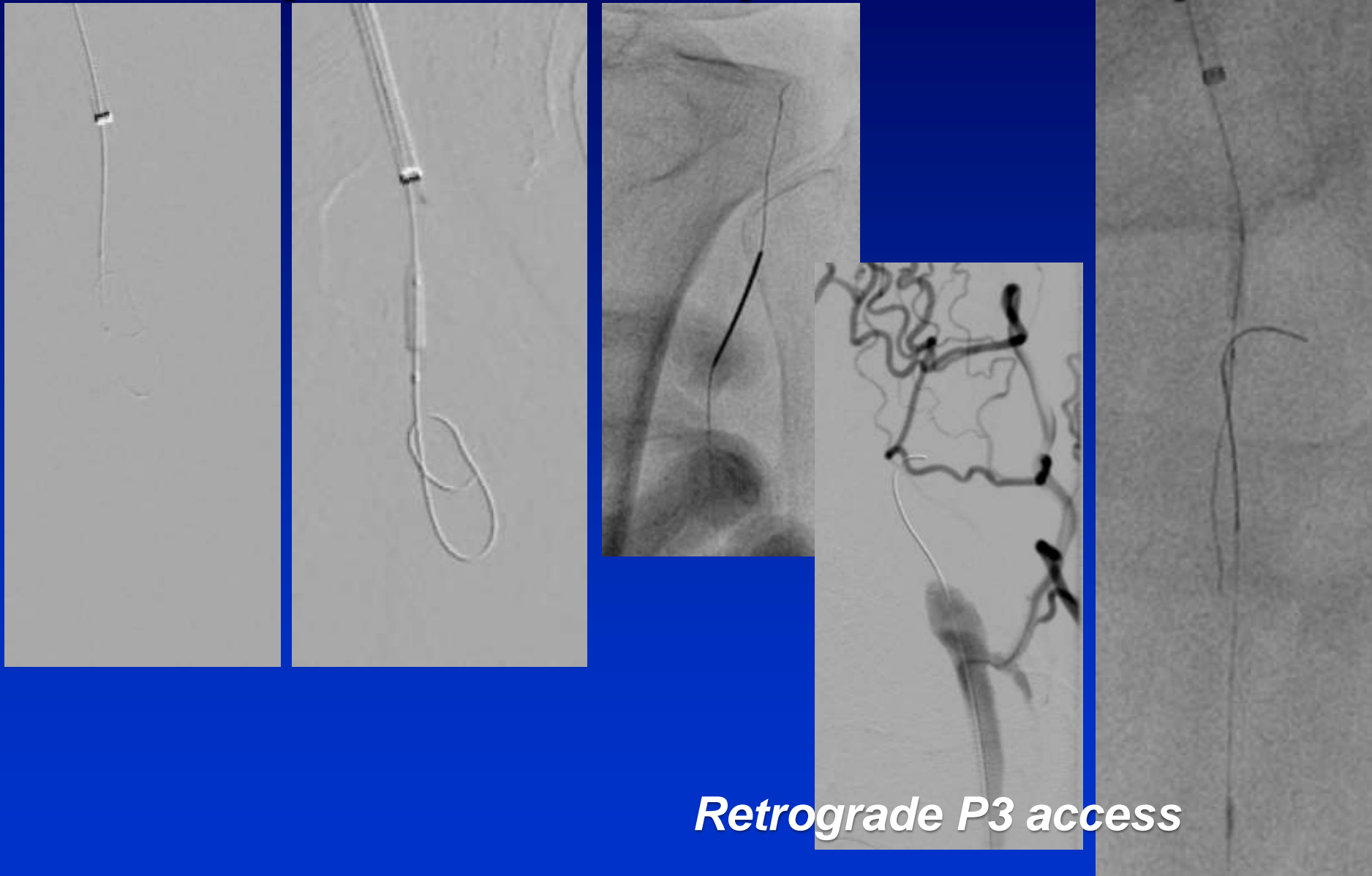


MP + Terumo
→ *Cut MP tip + Reverse tip Terumo*
→ *Cut MP tip*
+ *Microcatheter*
+ *Astato*

2.0x15mm

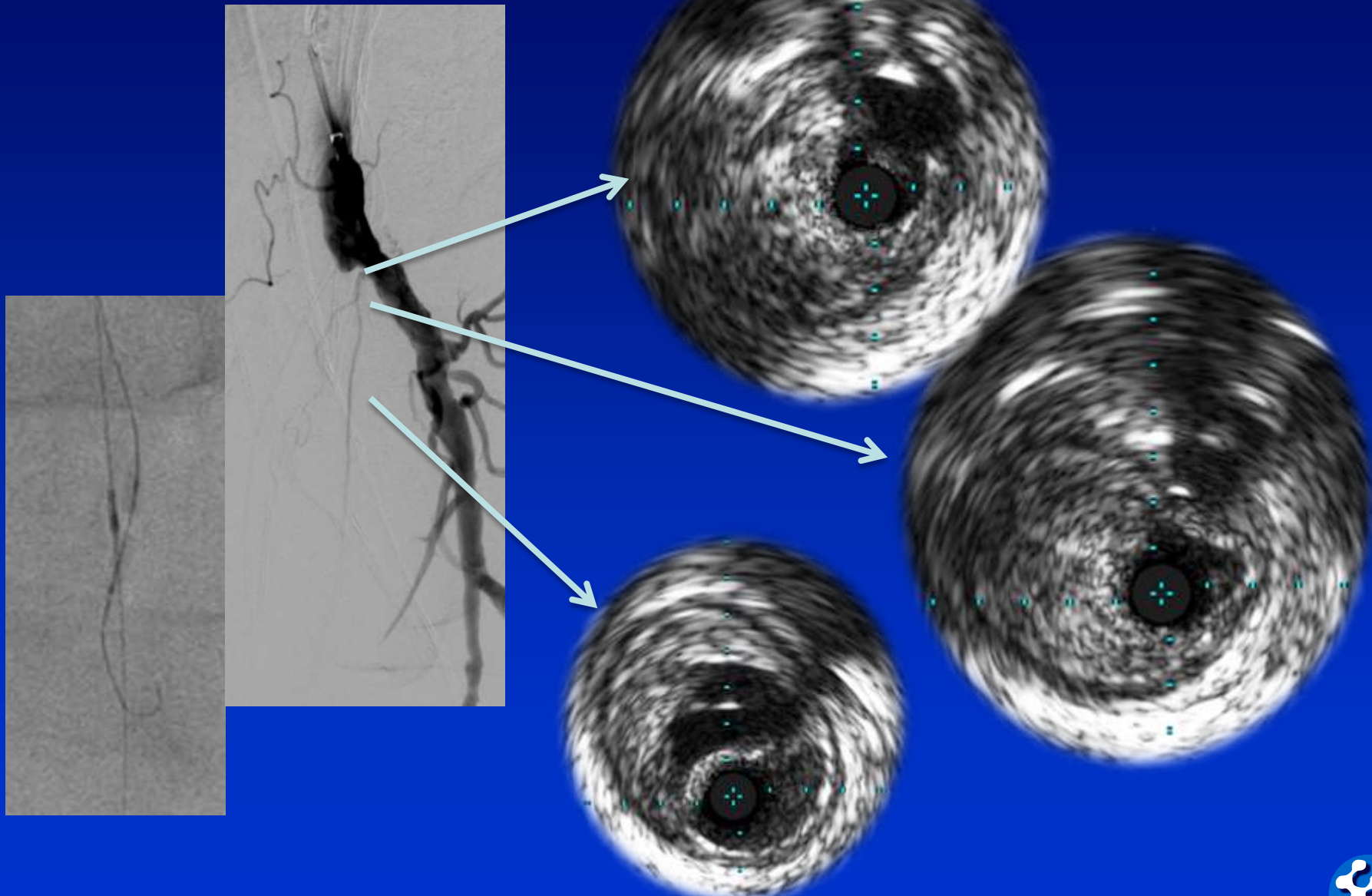


Ruptured hard proximal cap

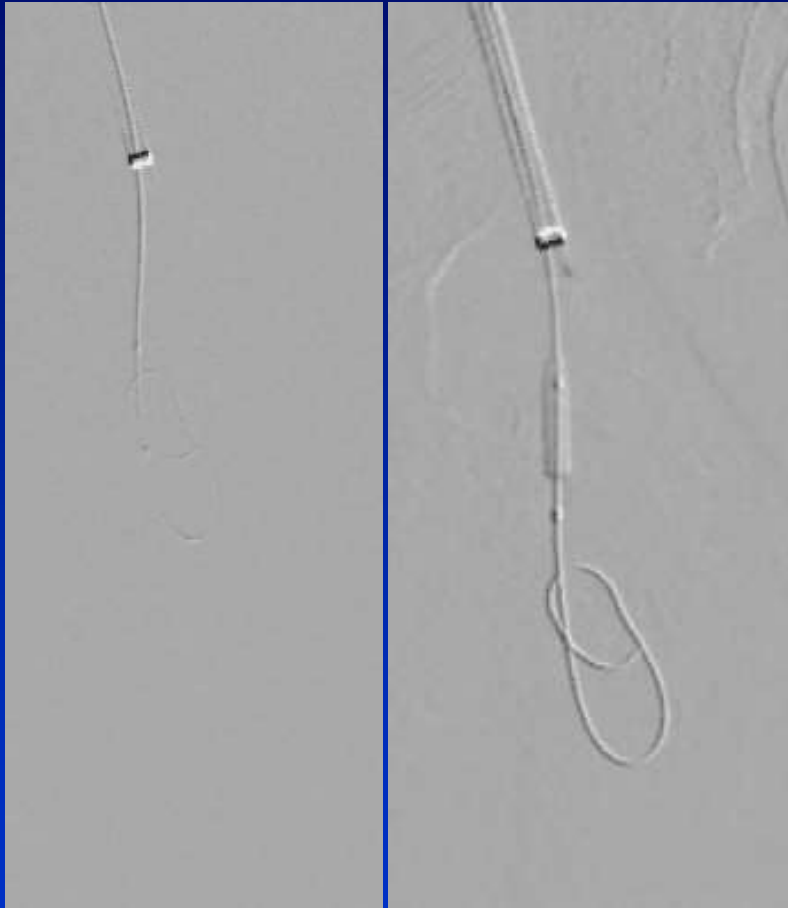


Retrograde P3 access

Ruptured Hard Proximal Cap



Ruptured Hard Proximal Cap



Prolonged ballooning

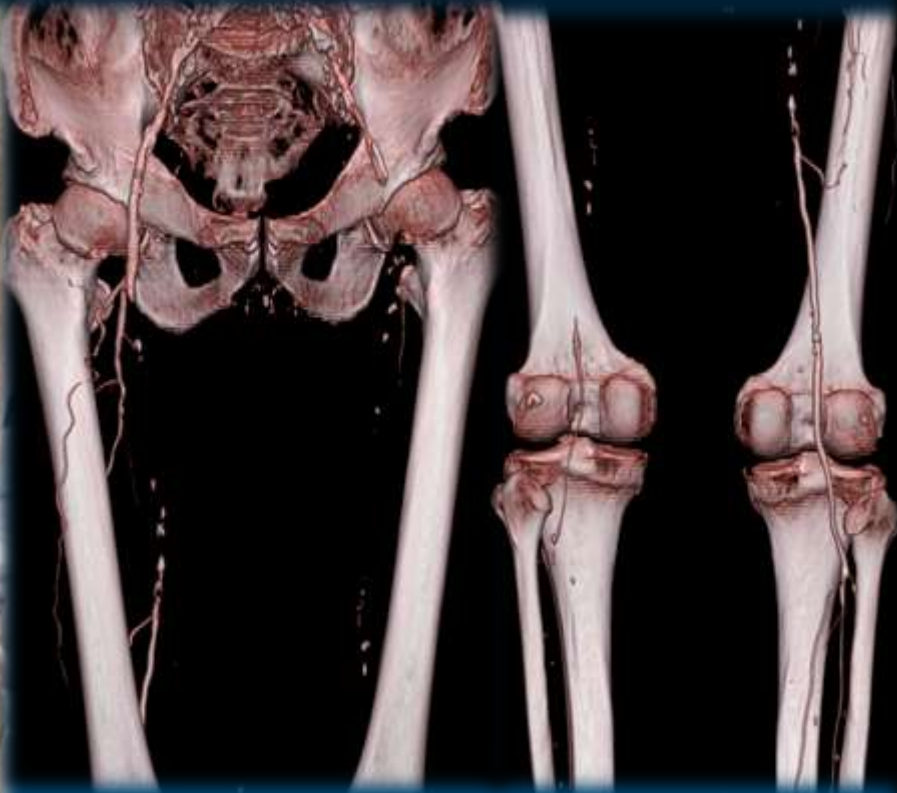


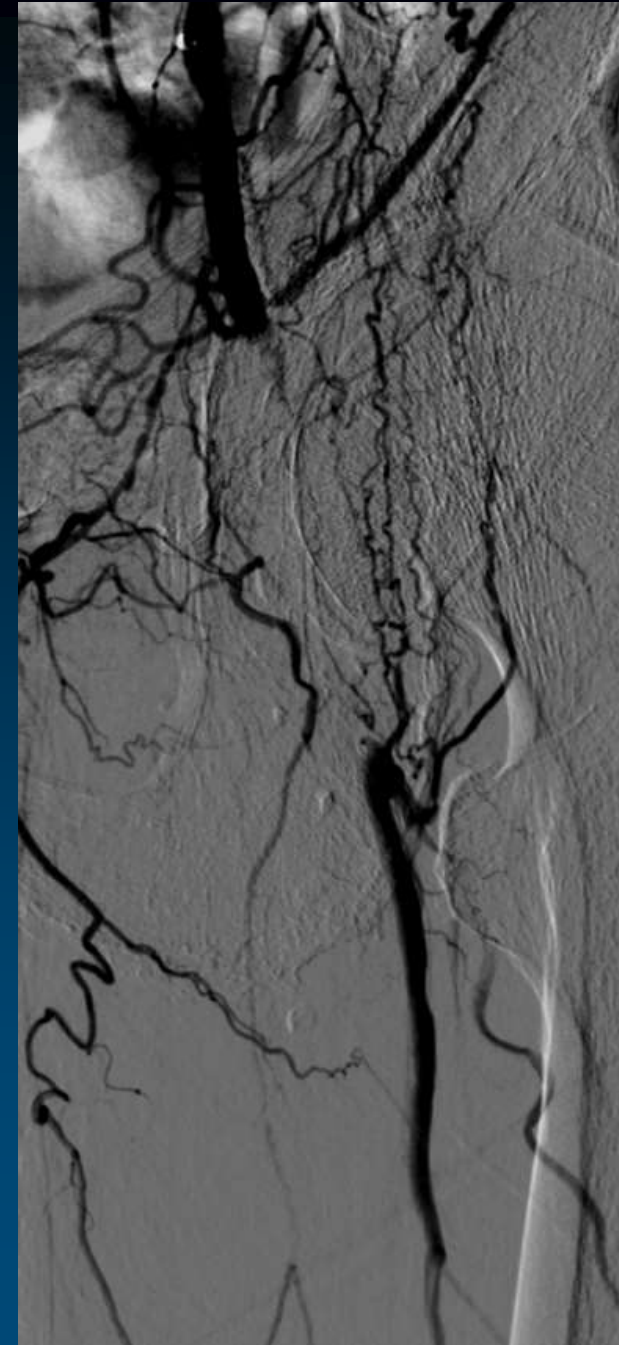
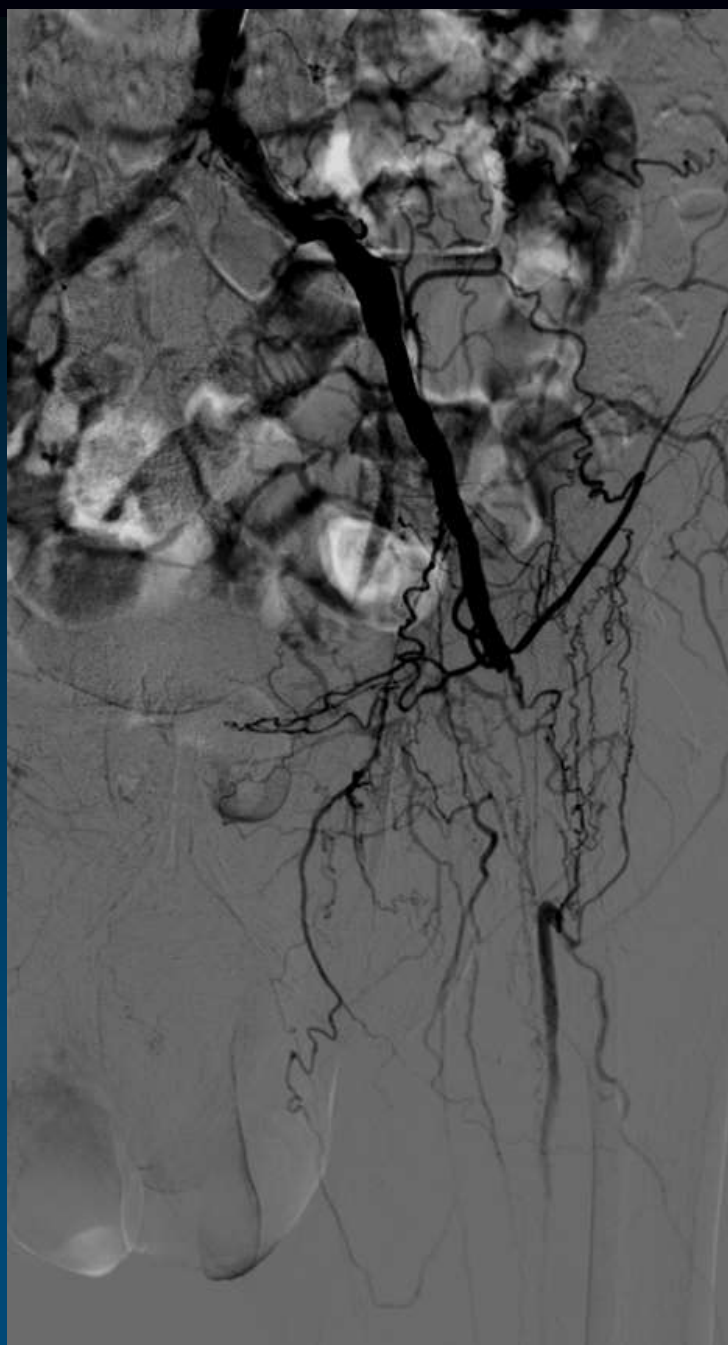
Spot stenting

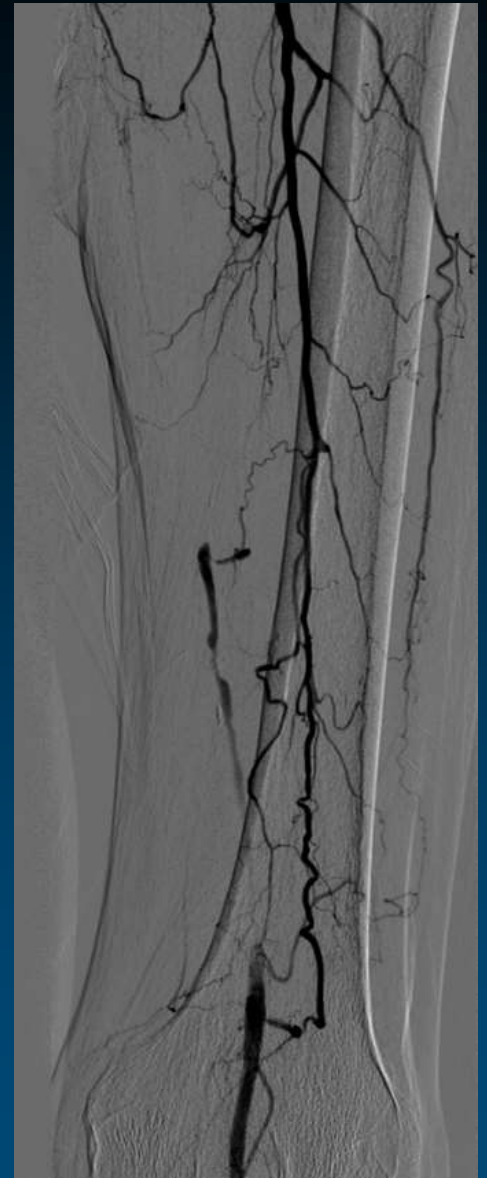
Iliac CTO

extended to SFA

72 YO man, a hearing and speech-impaired person
HTN, Smoking
Left pretibial gangrene d/t repetitive hand scratch
NSTEMI with CHF







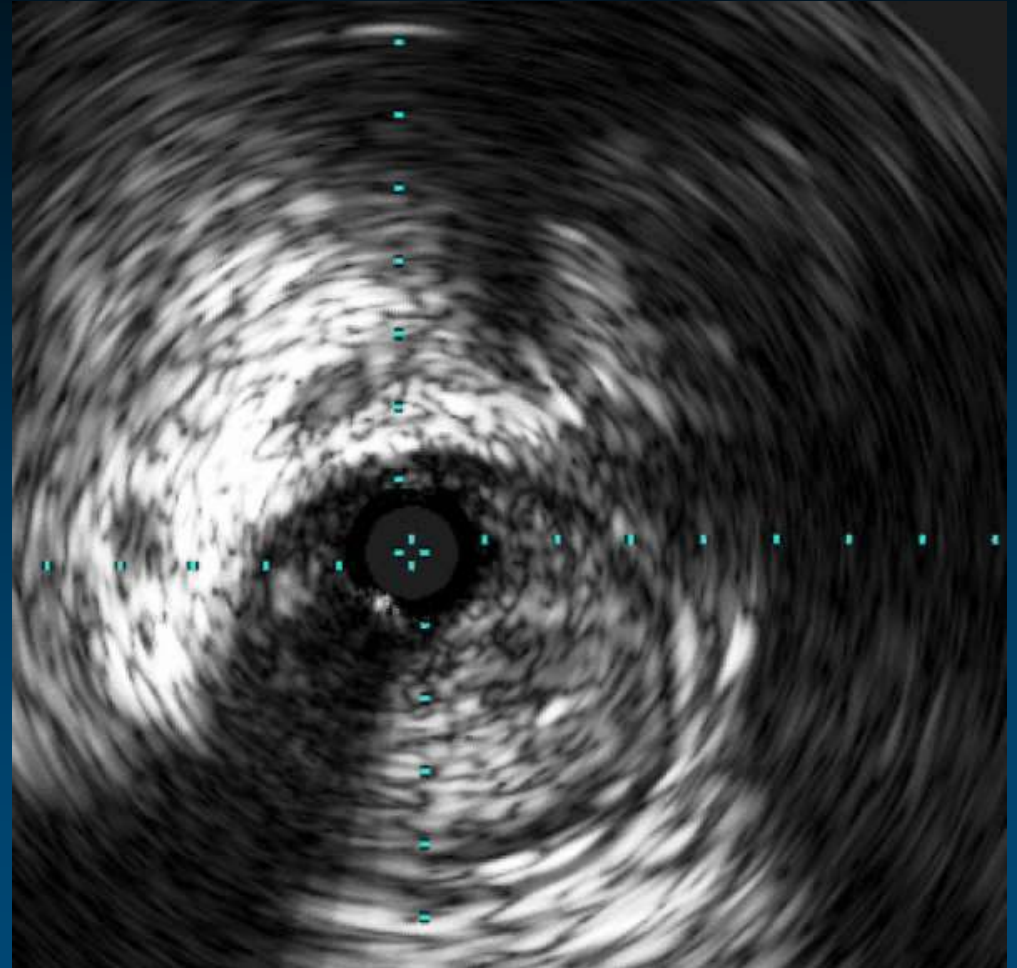
5 Fr Glide + Angled J Terumo

CFA to DFA ballooning



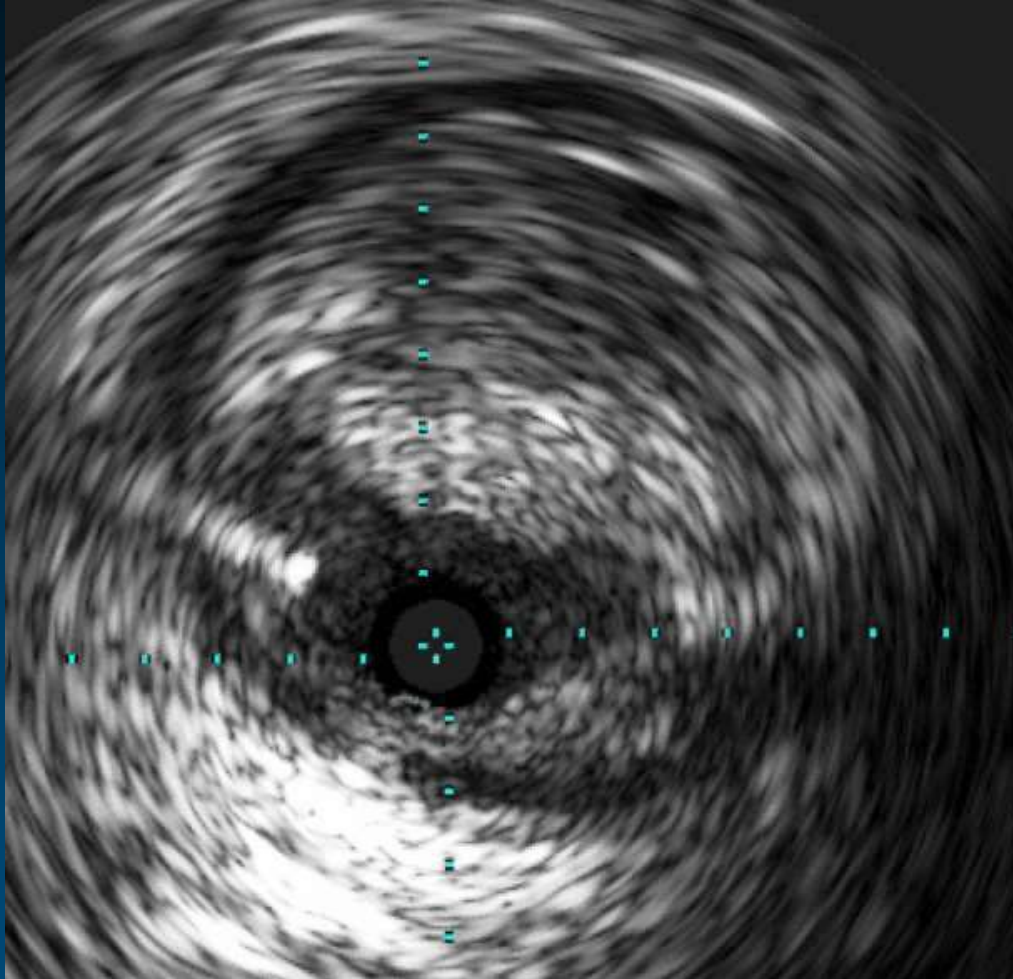
4.0×100 mm balloon, 10 atm

IVUS-guided SFA ostial wiring



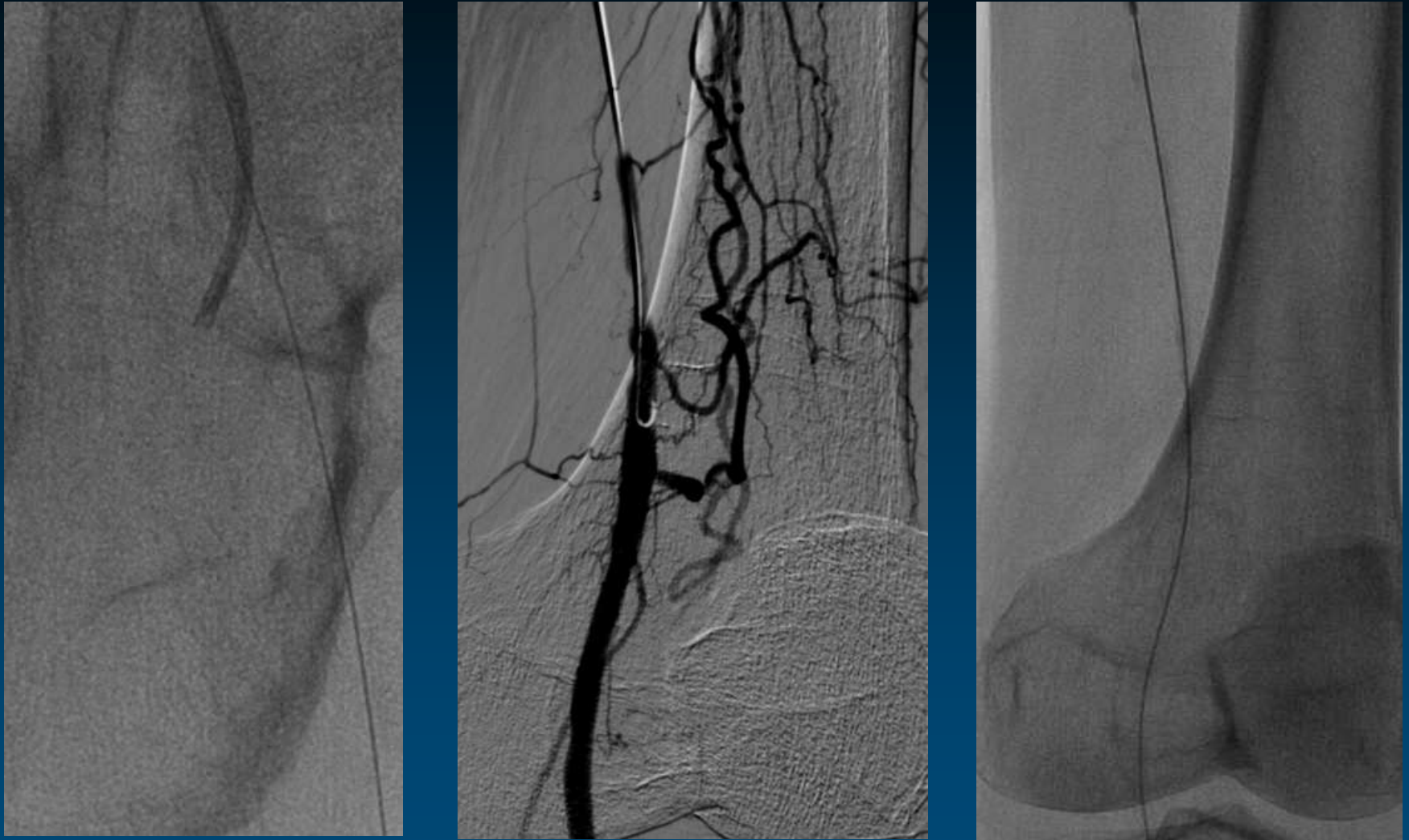
0.014" GW + Finecross

IVUS-guided SFA ostial wiring



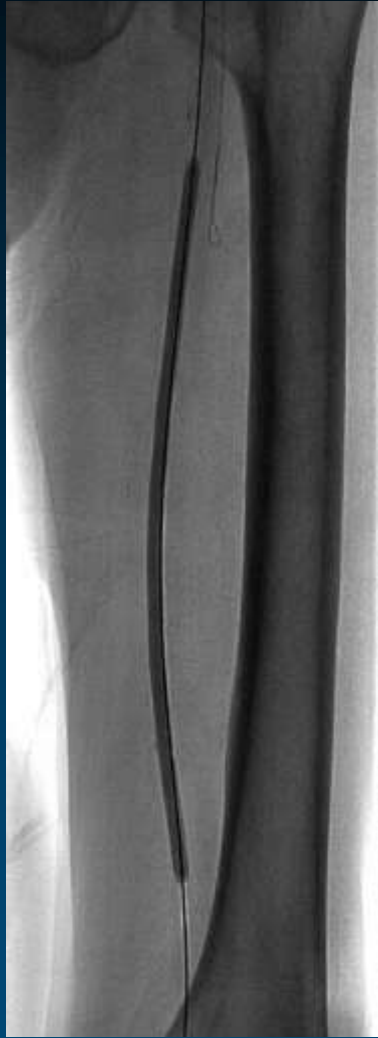
5 Fr Glide + 0.035" Terumo wire

Subintimal Angioplasty



5 Fr Glide + Angled-J Terumo wire

Balloon angioplasty

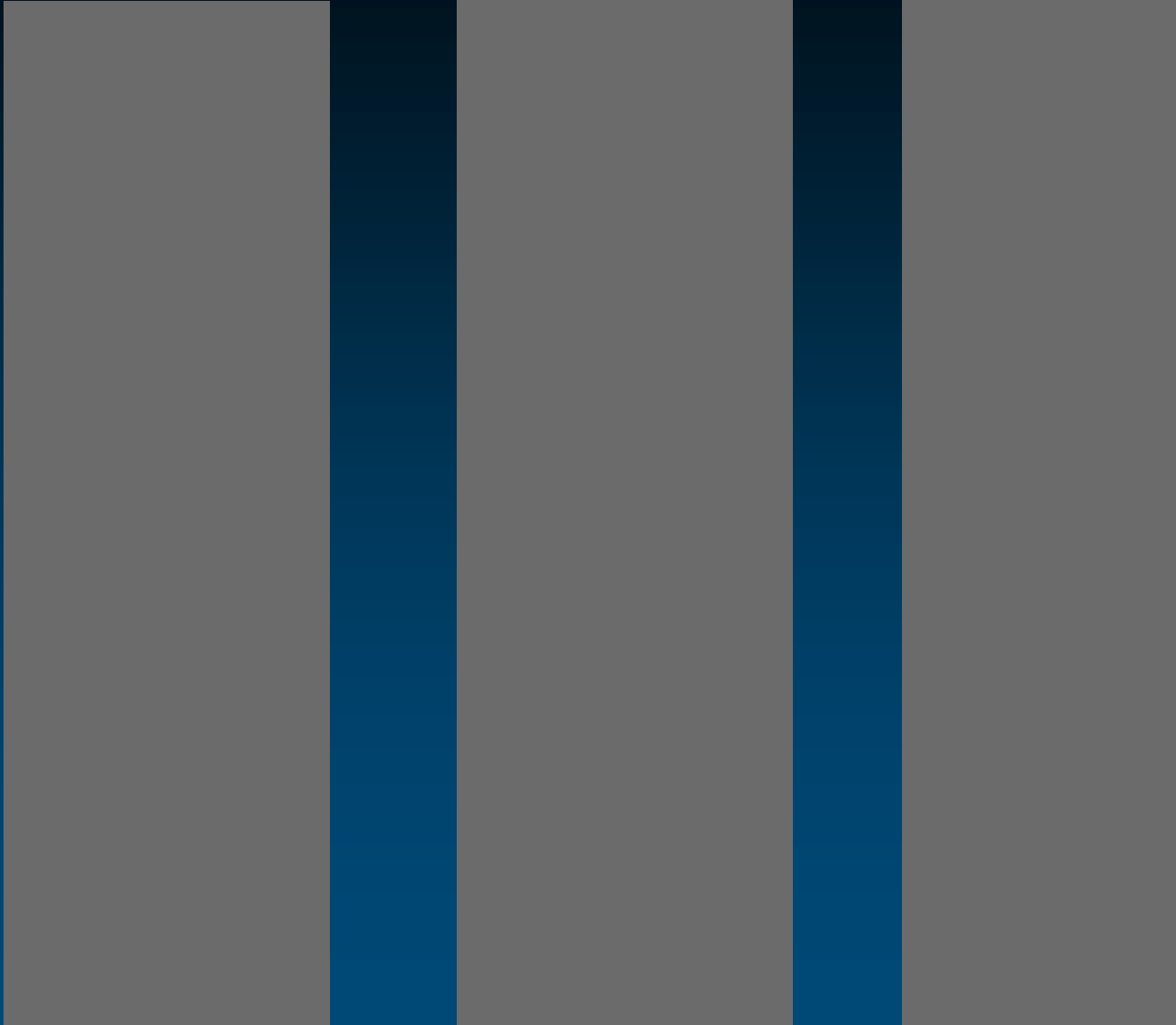


5.0 × 200 mm



6.0 × 100 mm

Final Angiogram



22nd Mar

31st May

5th June

24th June

5th July

22nd July

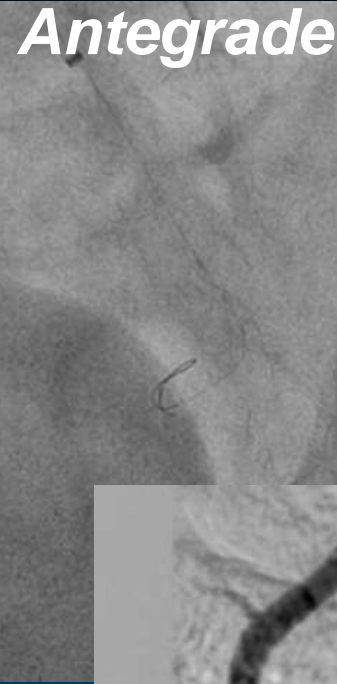


PTA (28th Mar)

*Debridement
(5th and 15th June)*

*Skin graft
(5th July)*

Ilio-SFA CTO, M/71, Rutherford III claudication

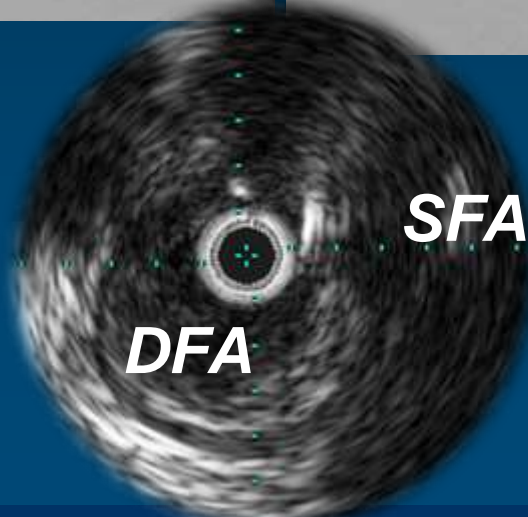
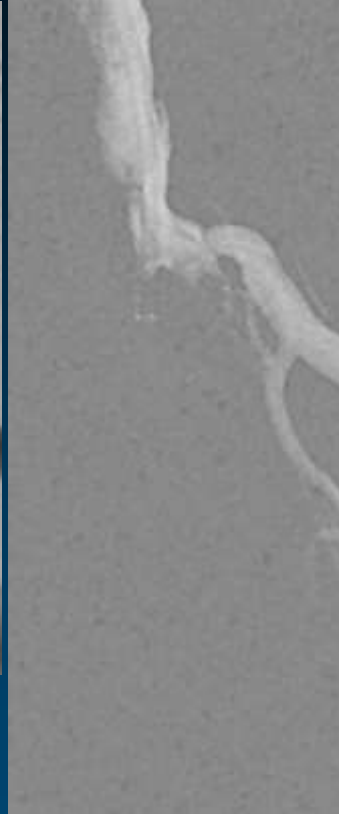
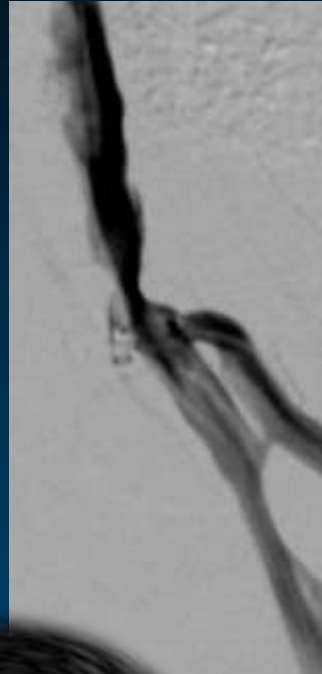
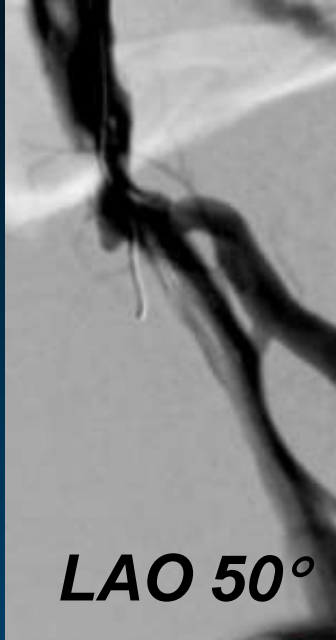


Ilio – SFA CTO



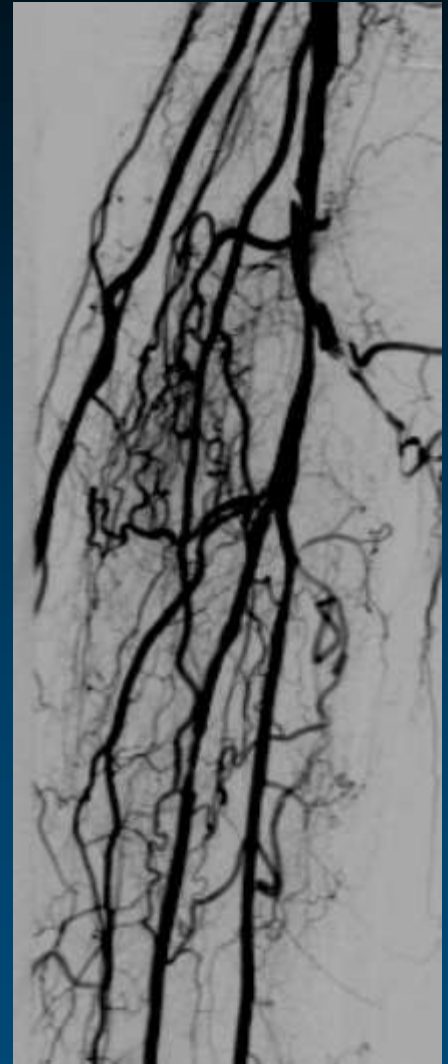
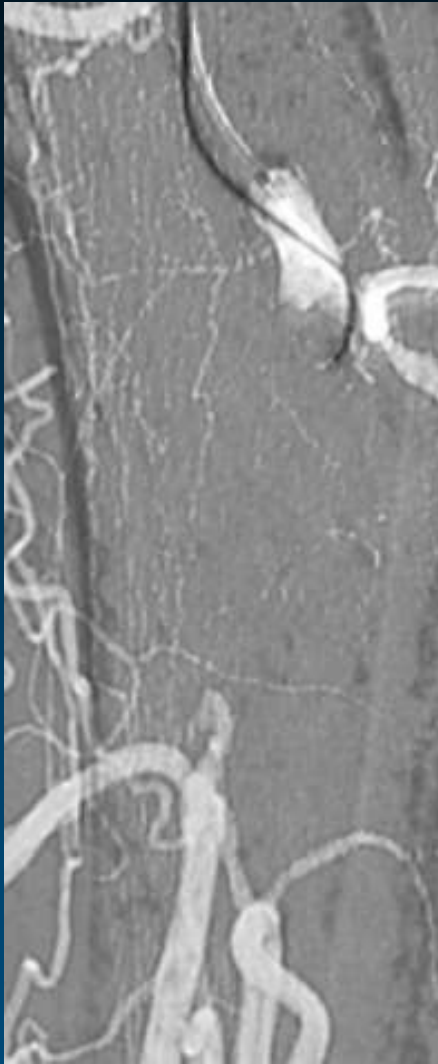
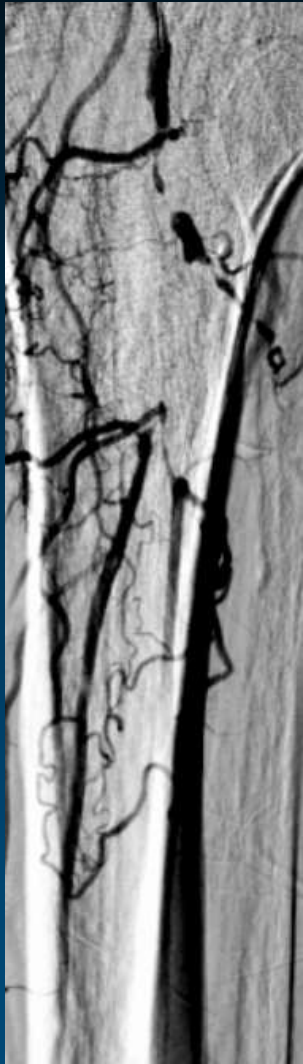
Stumpless SFA CTO

– Need More Oblique View

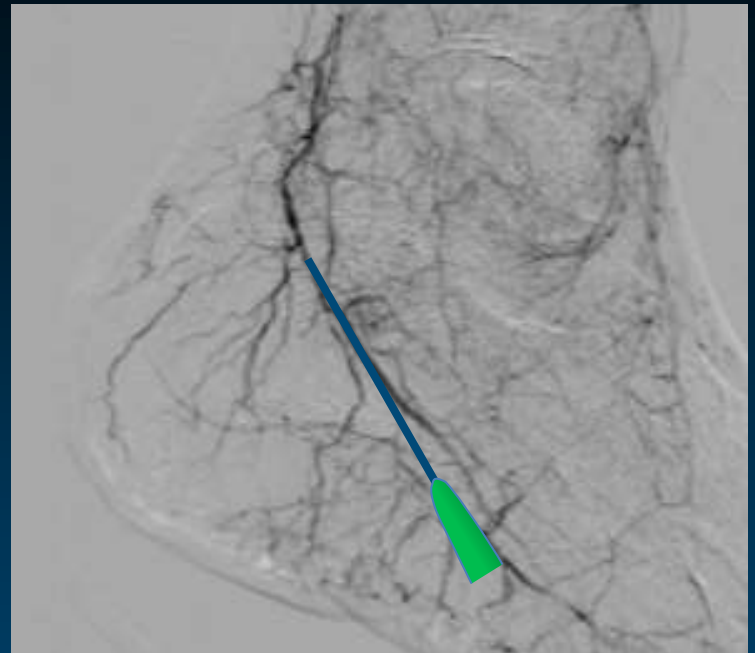
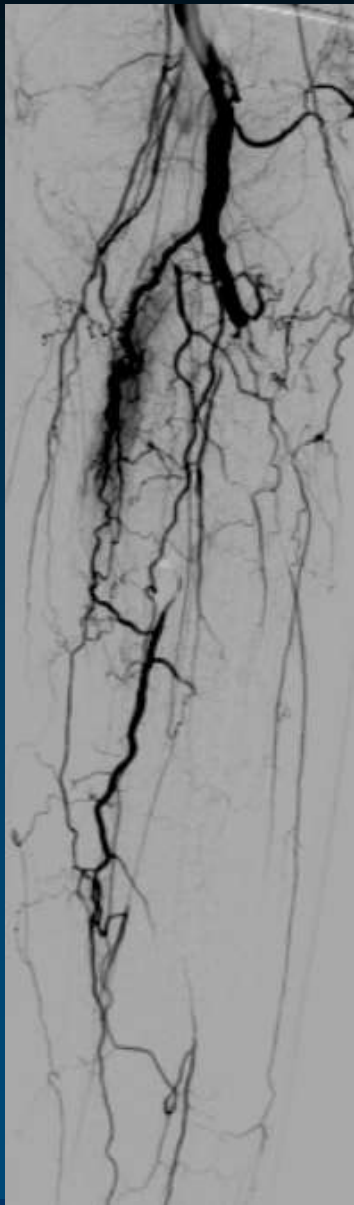


Flush Popliteal Occlusion (Stumpless Tibial CTO)

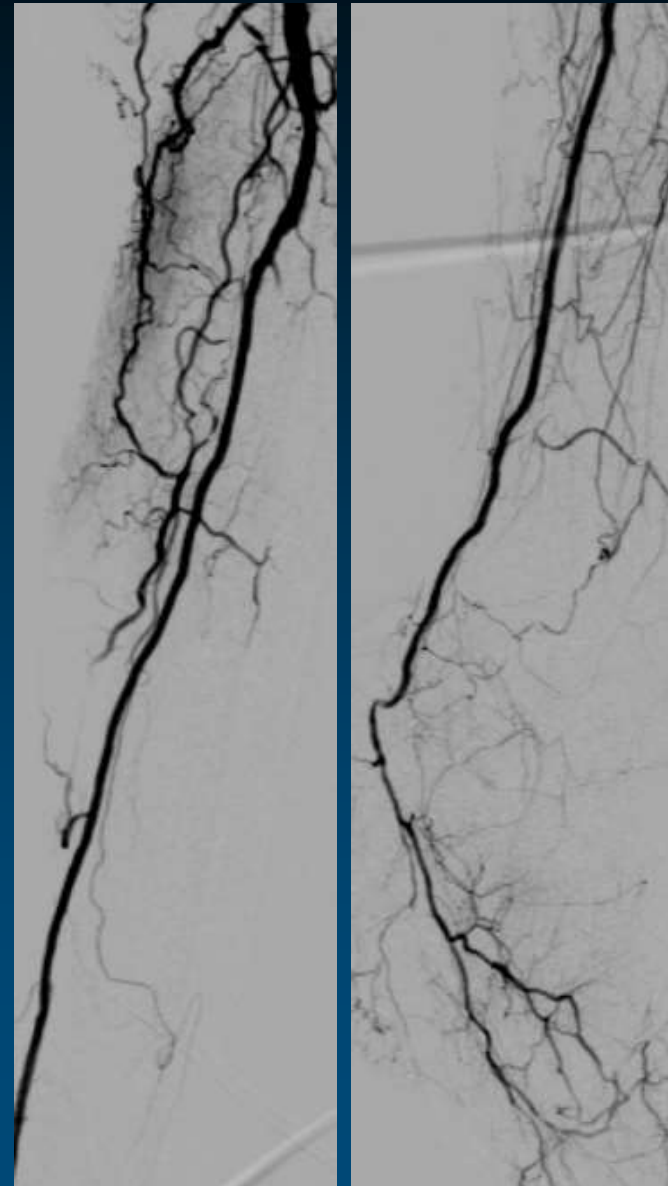
PTA Puncture – Contrast Pinching



Posterior Tibial Artery Puncture



Posterior Tibial Artery Puncture

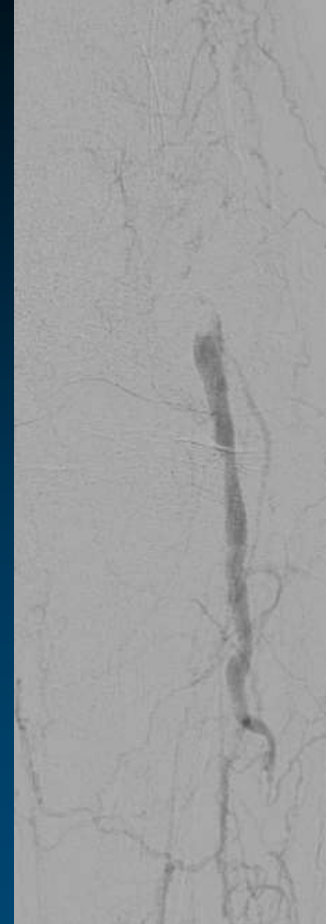
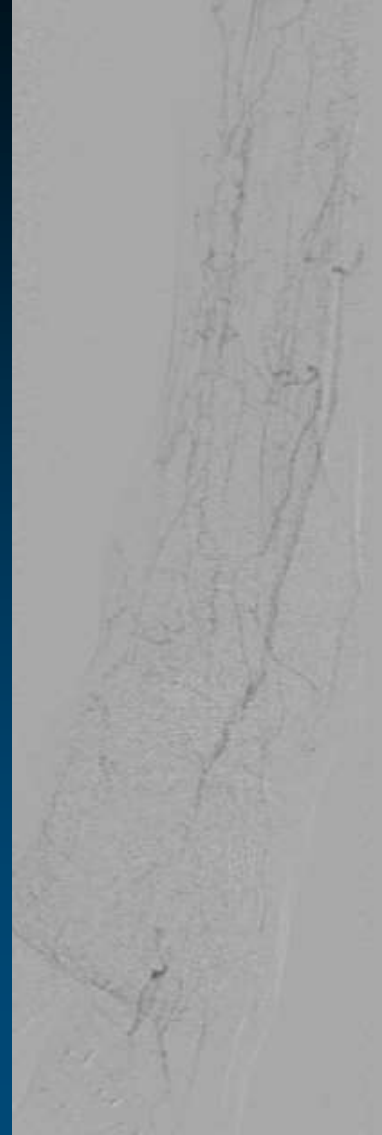
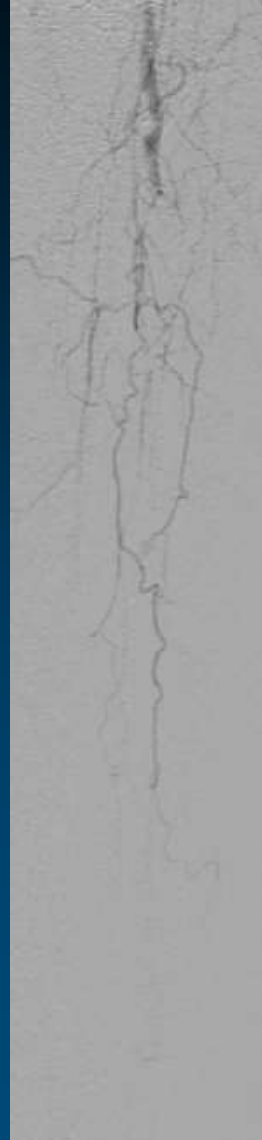
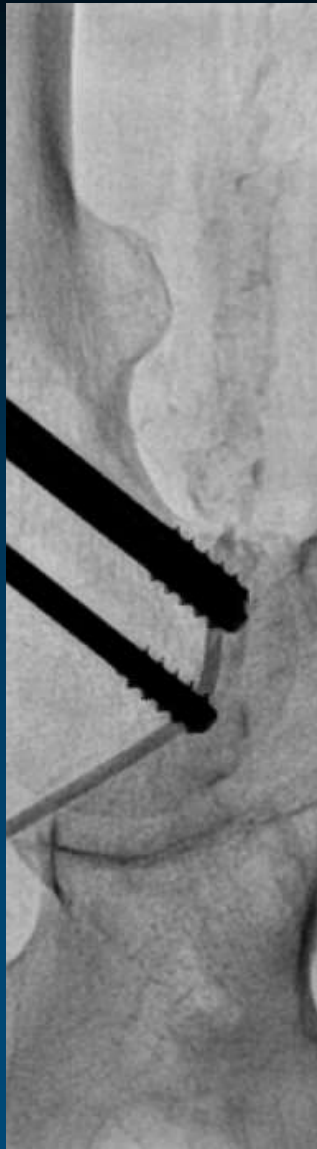
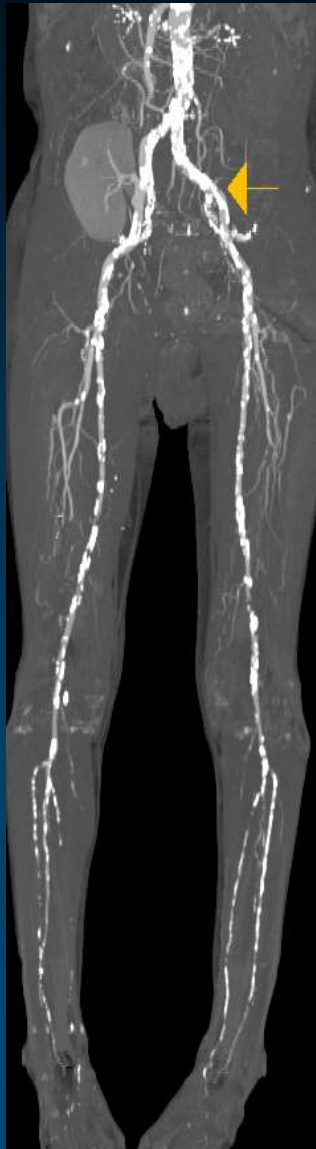


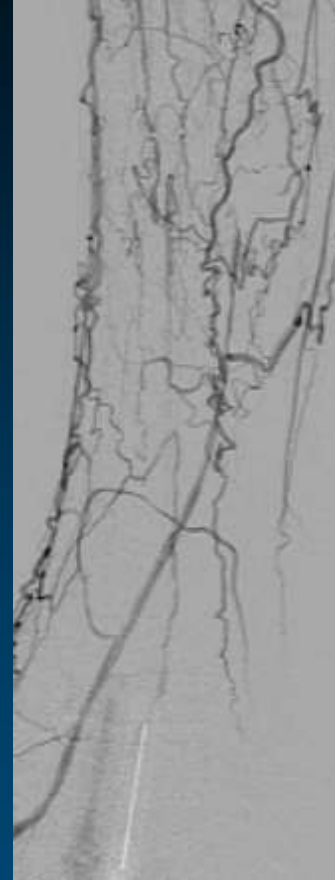
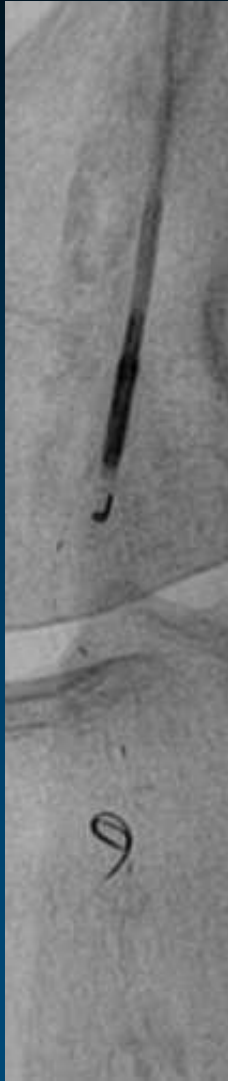
In case of no back bleeding;

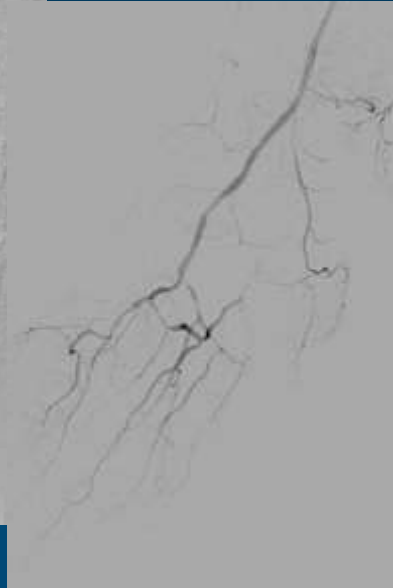
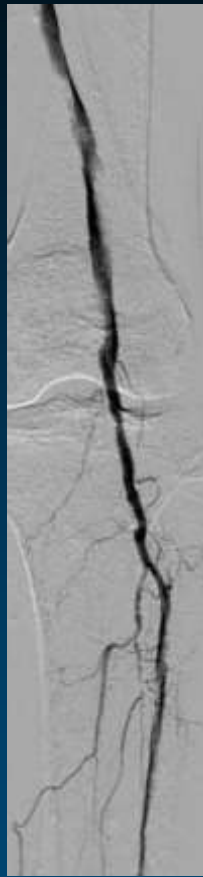
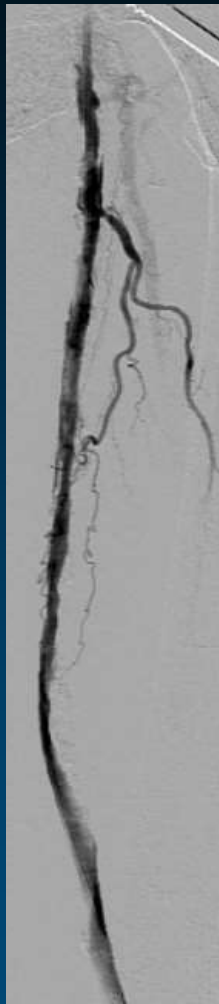
- Don't pull back the needle
- Rotate tube 60-90°
- Load the GW into the needle while contrast injection via proximal sheath

Calcification

Failed Twice Previously

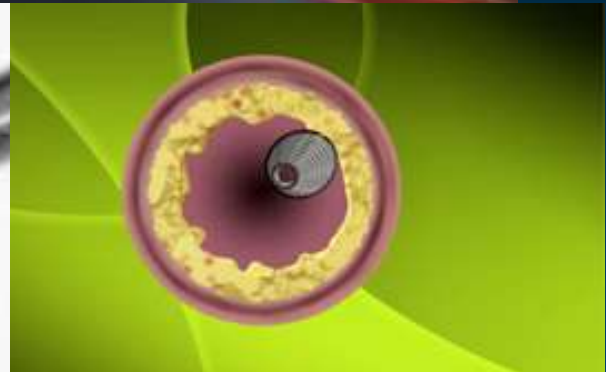






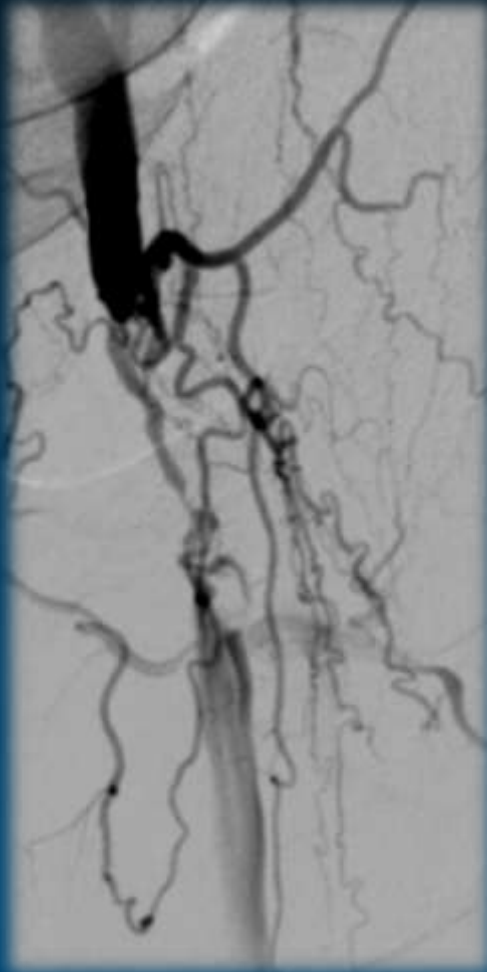
Atherectomy

- Directional TurboHawk
- Rotational Pathway
- Orbital Diamondback
- Athero-ablative Laser



CFA Calcification

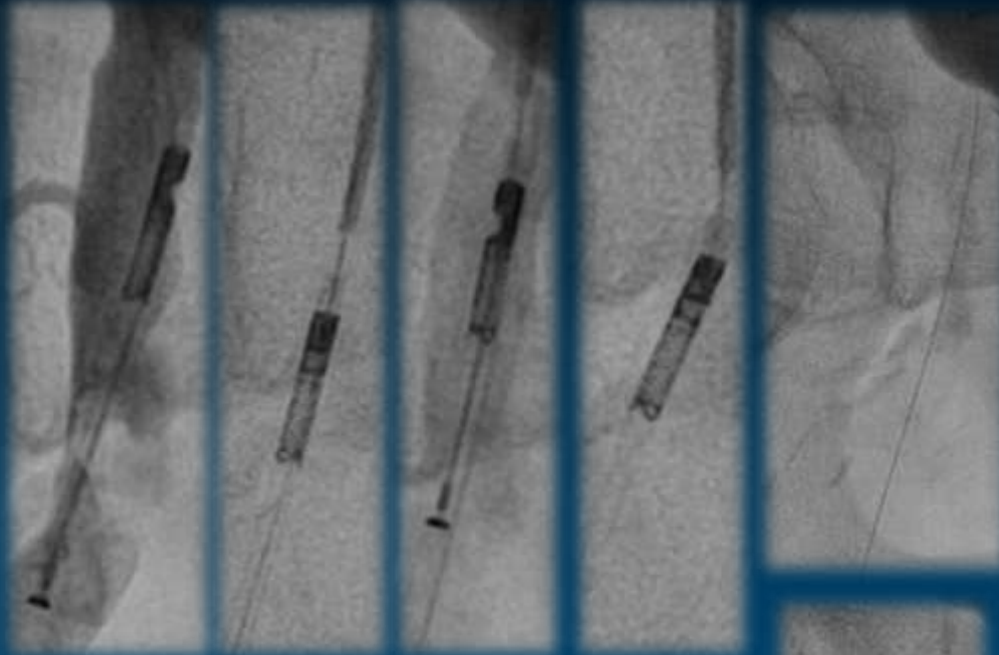
Unwilling to stent



Turbohawk Artherectomy+DCB

CFA Calcification

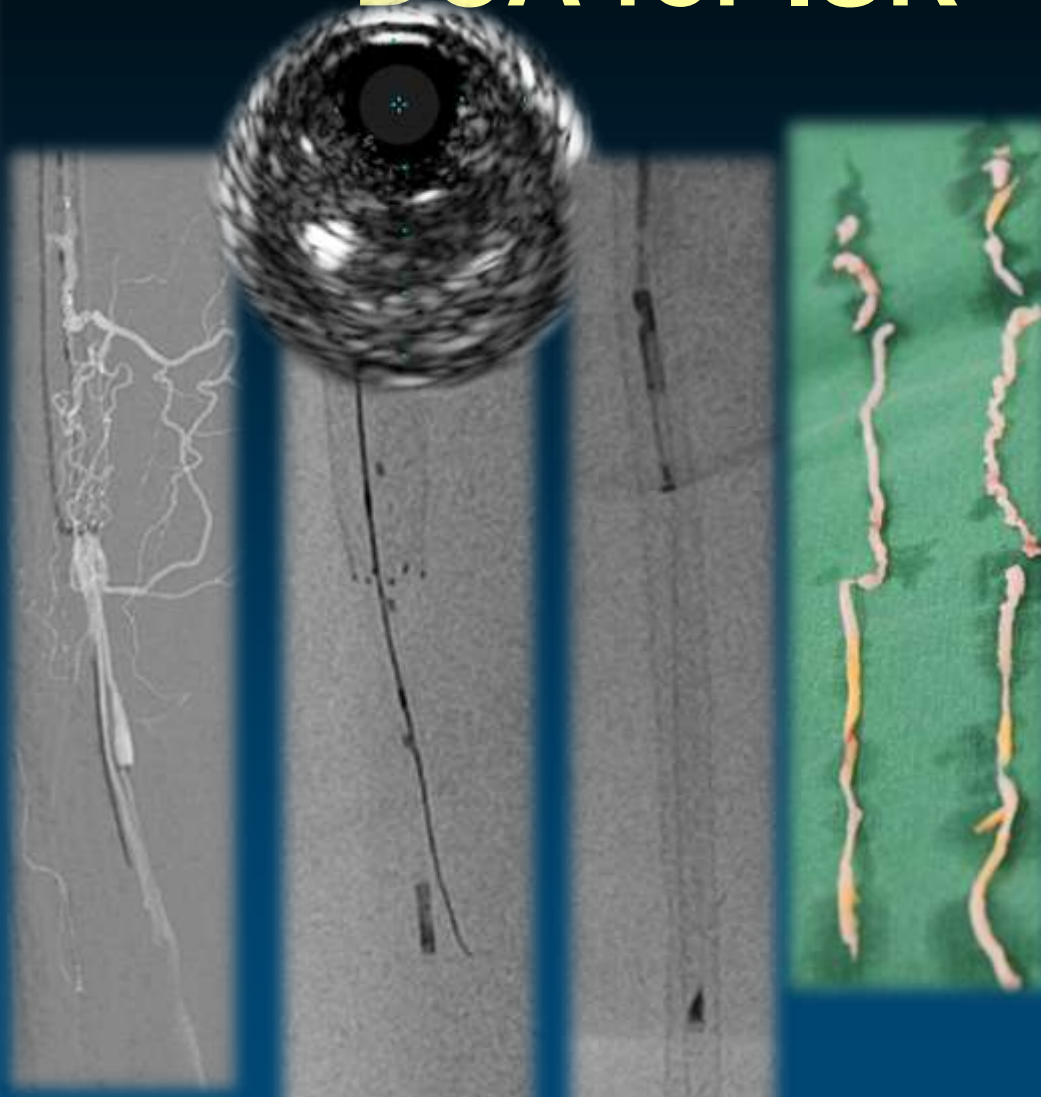
Unwilling to stent



Turbohawk Artherectomy+DCB

In-Stent Restenosis

DCA for ISR



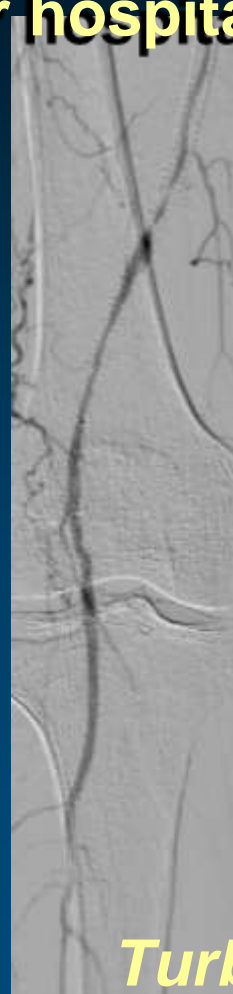
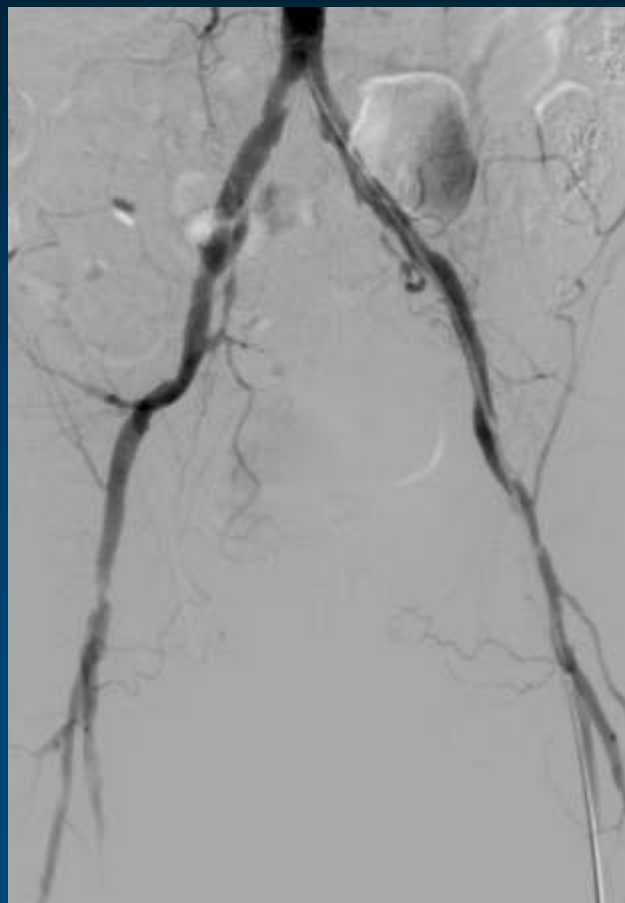
Turbohawk Arterectomy+DCB

M/69, DM

Both L/E Rutherford 3 claudication

S/P both SFA long stenting, 3 YA

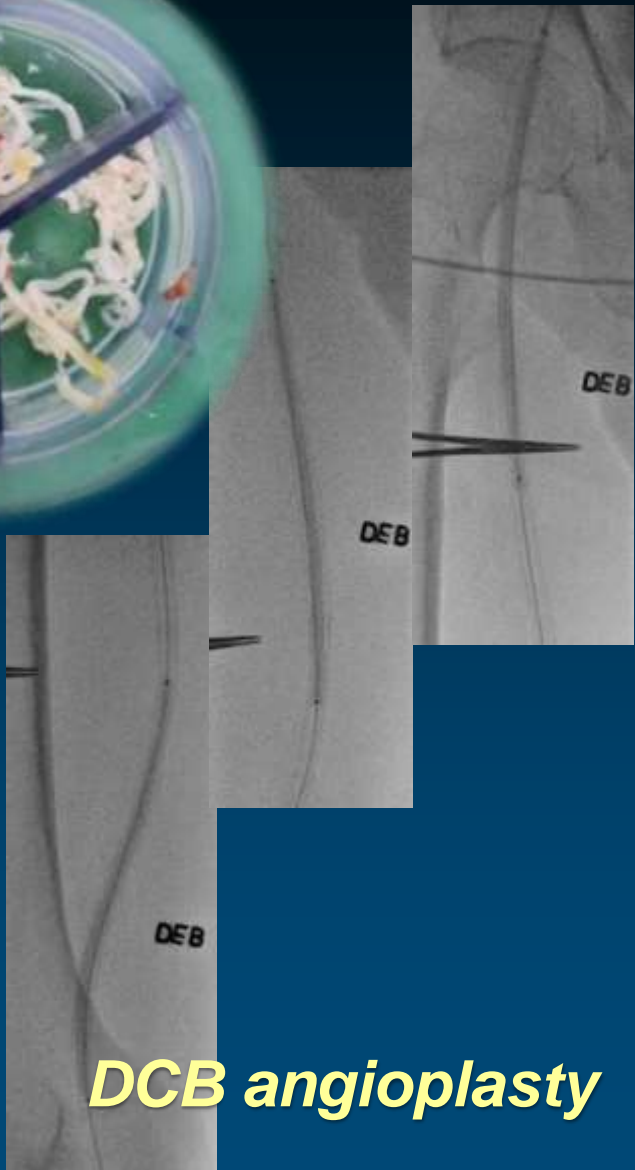
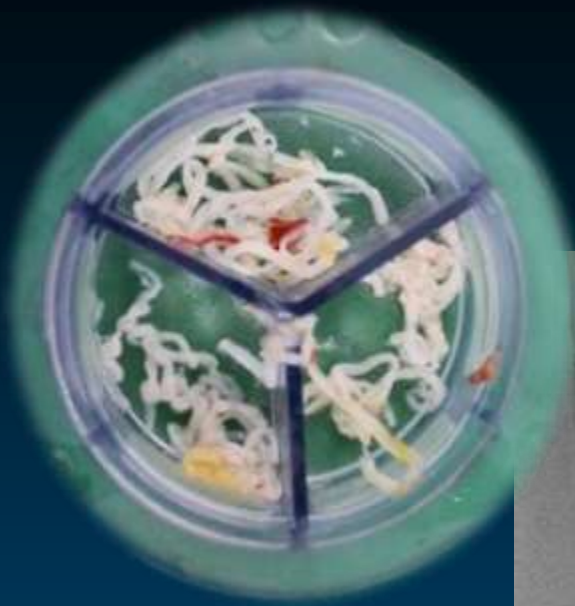
→ 6 sessions of TVR (other hospital)



Turbohawk Artherectomy



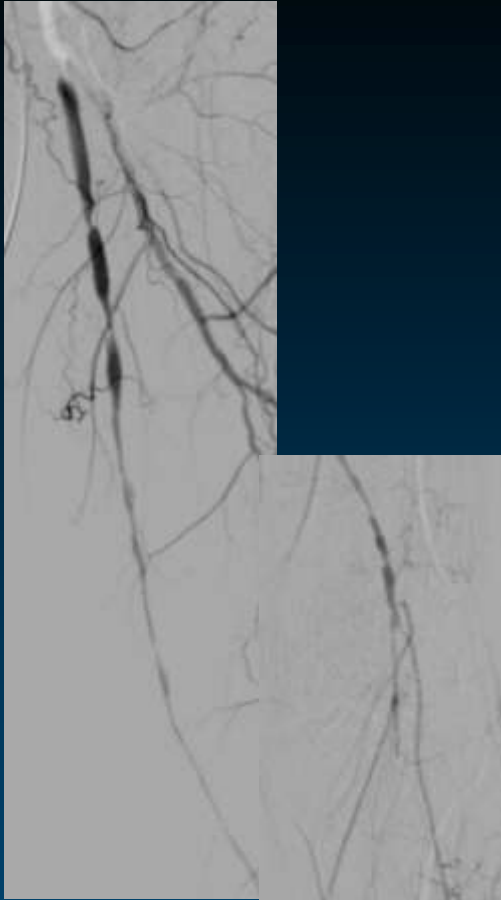
**After
atherectomy**



DCB angioplasty



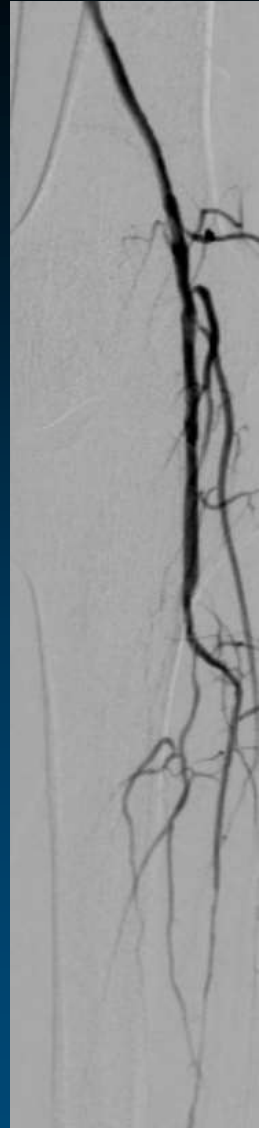
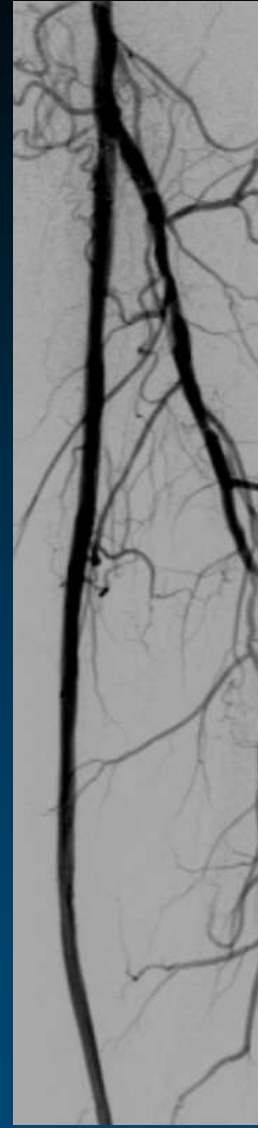
Final



Left SFA ISR



**Turbohawk atherectomy
& DCB angioplasty**



Final

ALI with Thrombus

Case

- Age : 61
- Sex : F
- Slowly progressing dyspnea, NYHA Fc 3
- Right leg pain, coldness and numbness for 2 weeks
- ECG; Afib
- TTE; Severe MS, MVA 0.9 cm², LAA thrombi



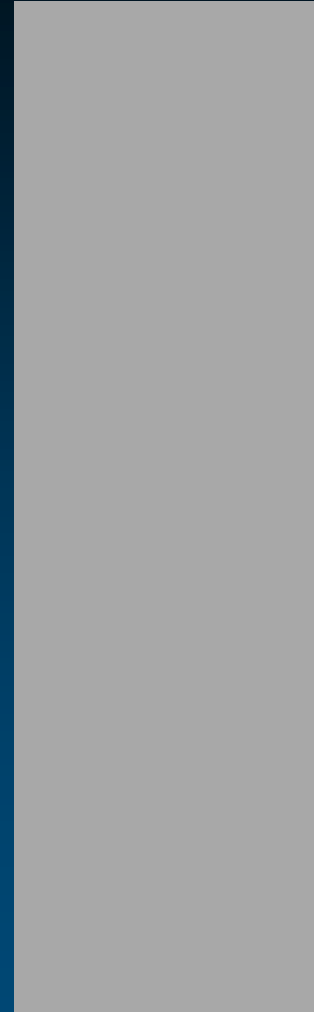
Right popliteal embolic occlusion



Baseline

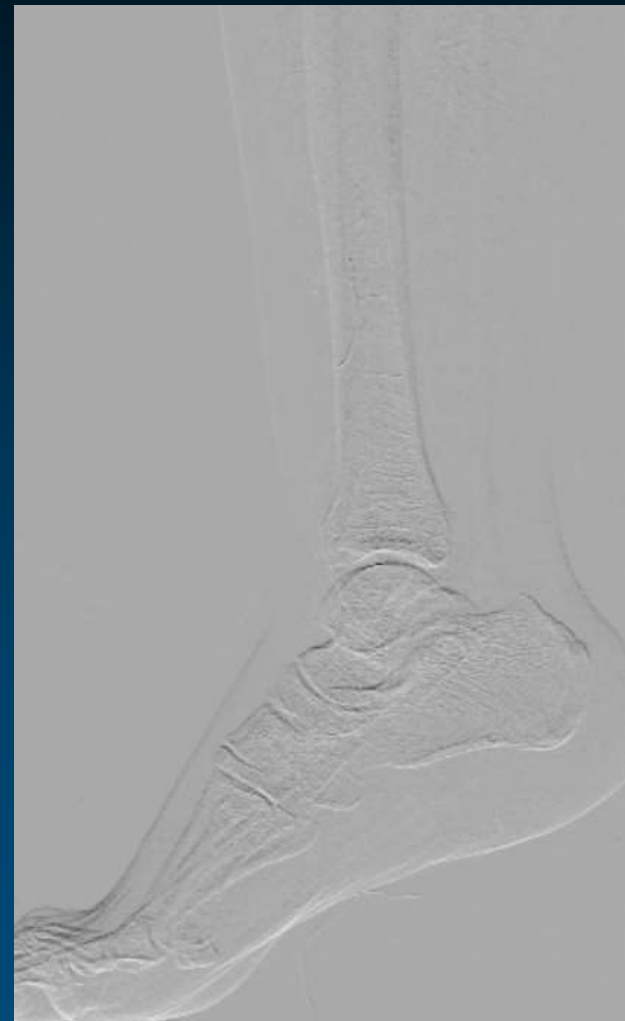
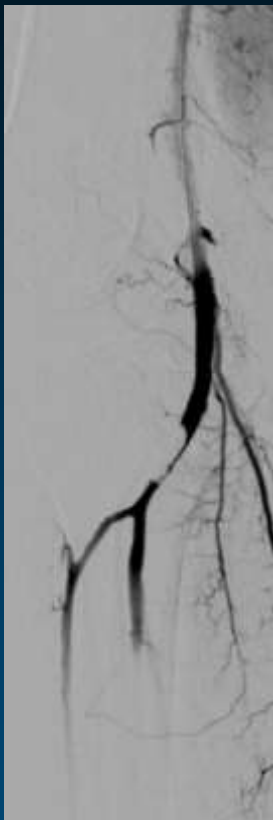


Aspiration with 7Fr sheath



**Angiogram using
suction catheter**

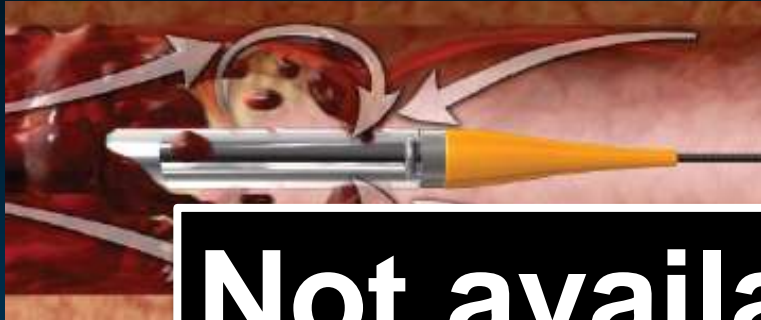
Thrombectomy using both sheath and suction catheter



Sheath aspiration for P3

Final angiogram of the 1st procedure

Devices for CBT



Angiojet™ ULTRA, BSC

Not available in Korea

Rotarex, Straub Medical

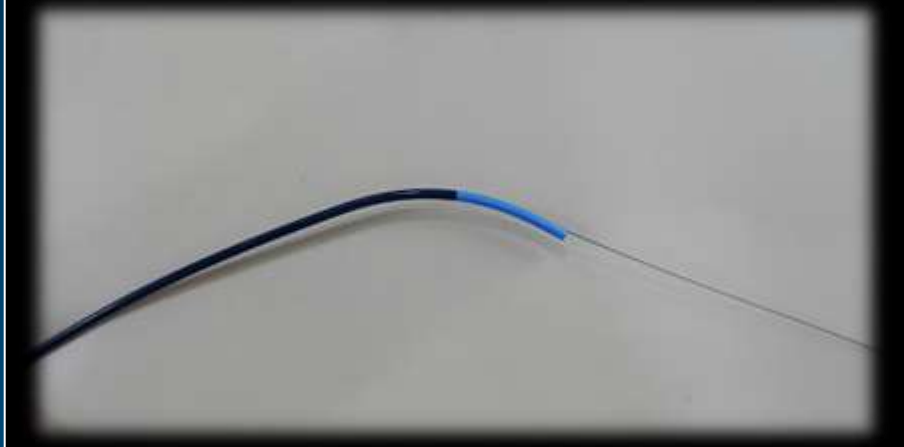


Not effective for large vessel

Export or Suction catheter

Combination

Ansel sheath + Dilator + Command GW



For thrombusuction



For sheath reinsertion

The only option in Korea; *Thrombosuction by sheath*



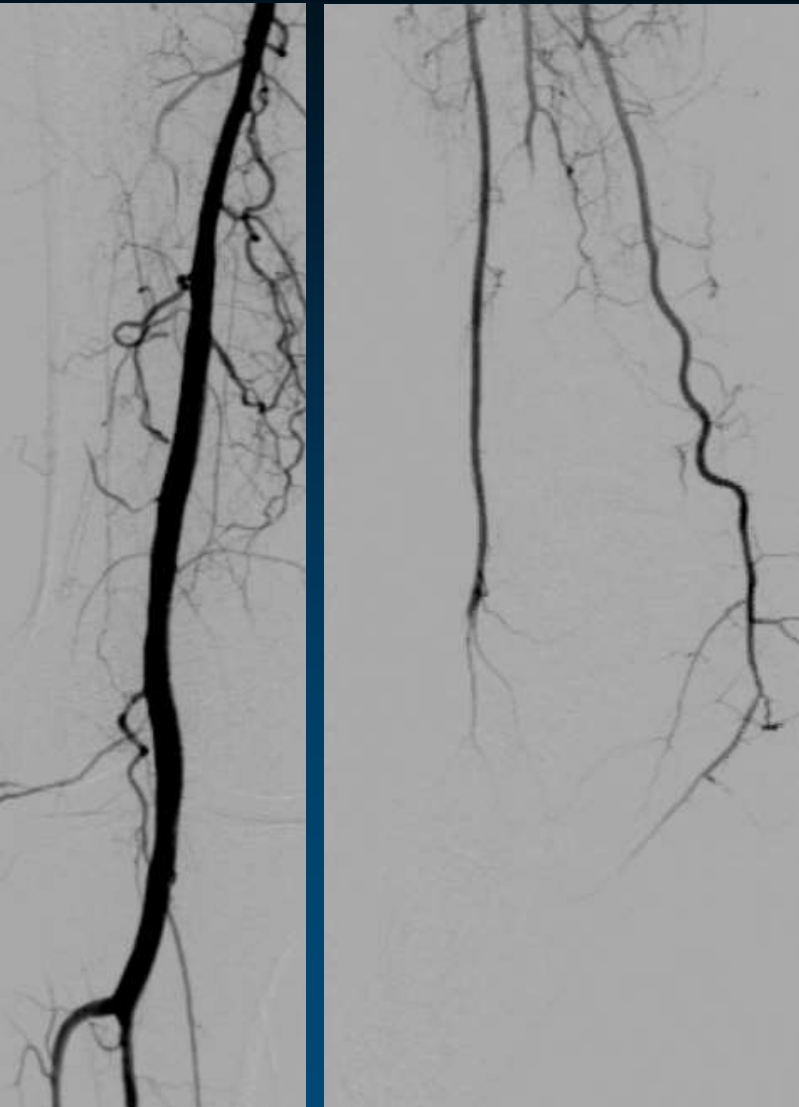
The only option in Korea; *Thrombosuction by sheath*



Thrombus on the table



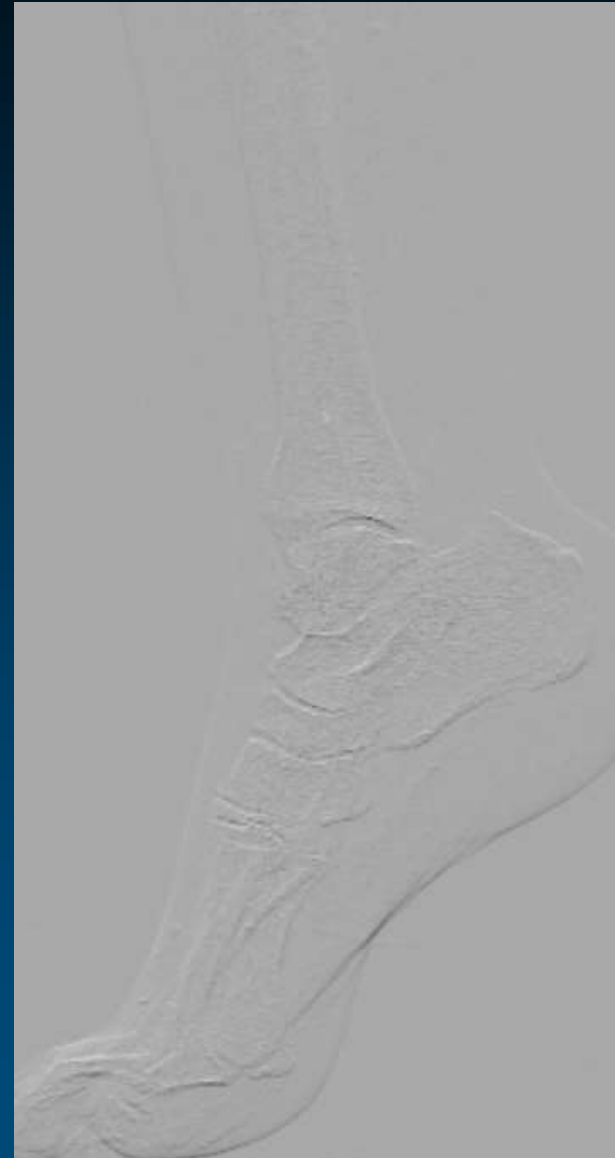
After overnight UK infusion, 100,000U/hr



Suction and balloon angioplasty

Next day angiogram

Final angiogram



Complex SFA Intervention

- ***To obtain good results***
 - Knowledge of arterial anatomy
 - Good treatment strategy
 - Proper back up support
 - Knowledge of new access and techniques
 - Knowledge of dedicated devices
 - Appropriate selection of device

Retrograde approach is promising



For Making Good Footprints

Thanks for the Time