Featured Lectures II: Tip Toeing Cross the Finish Line: Hurdles in BTK Intervention:

Distal Puncture Beyond Dorsalis Pedis Artery

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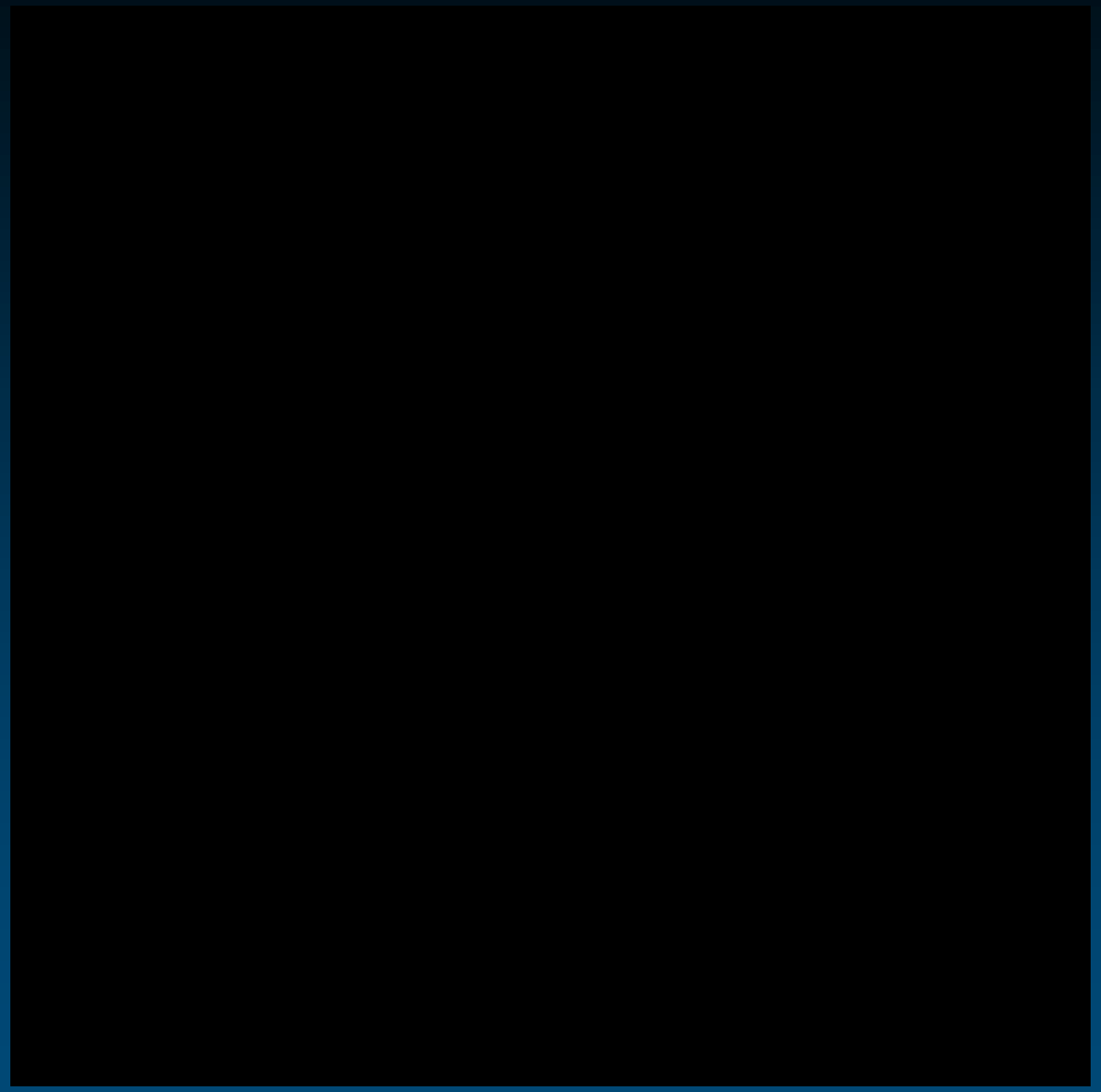
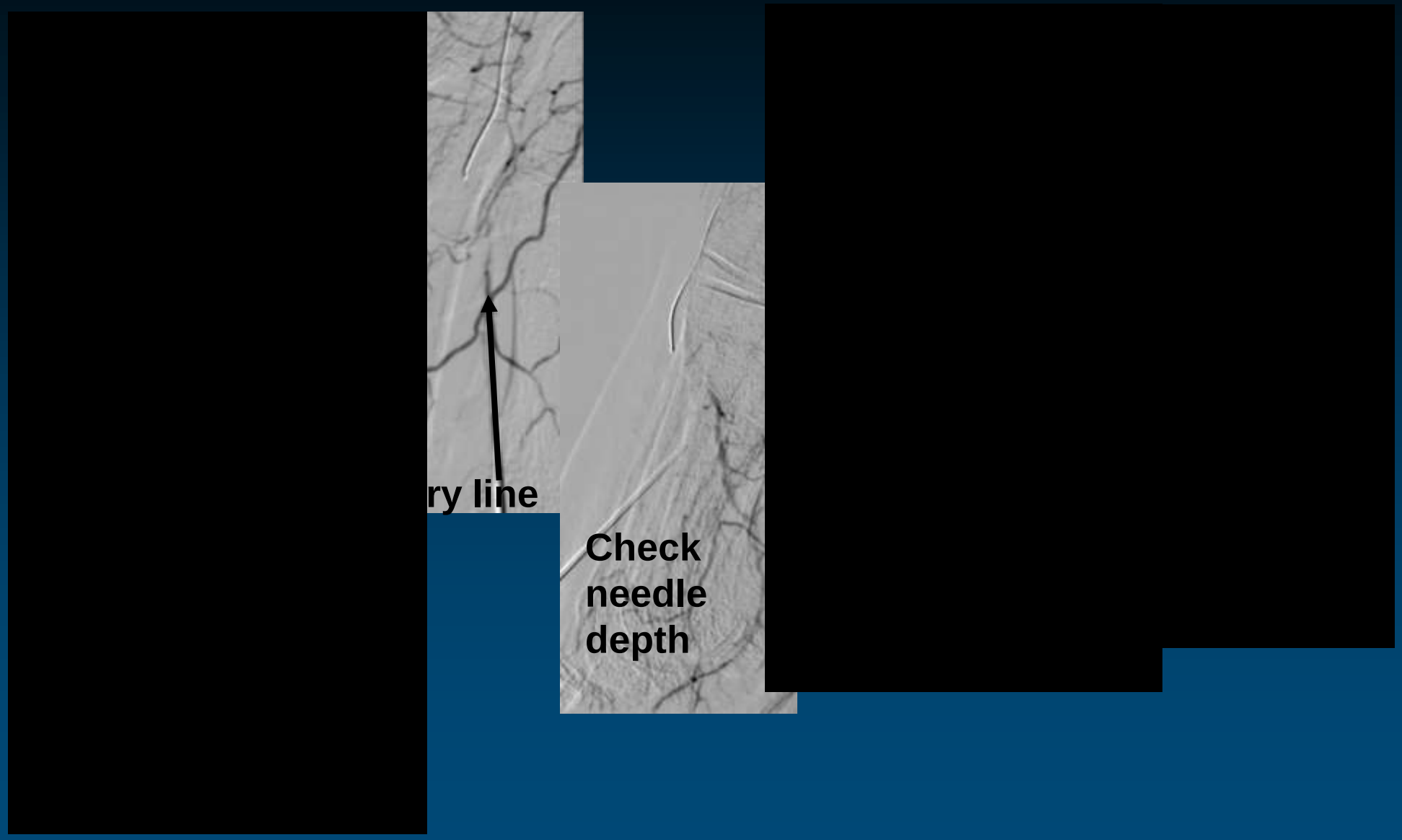
What do we do now?



Transmetatarsal access could be an option



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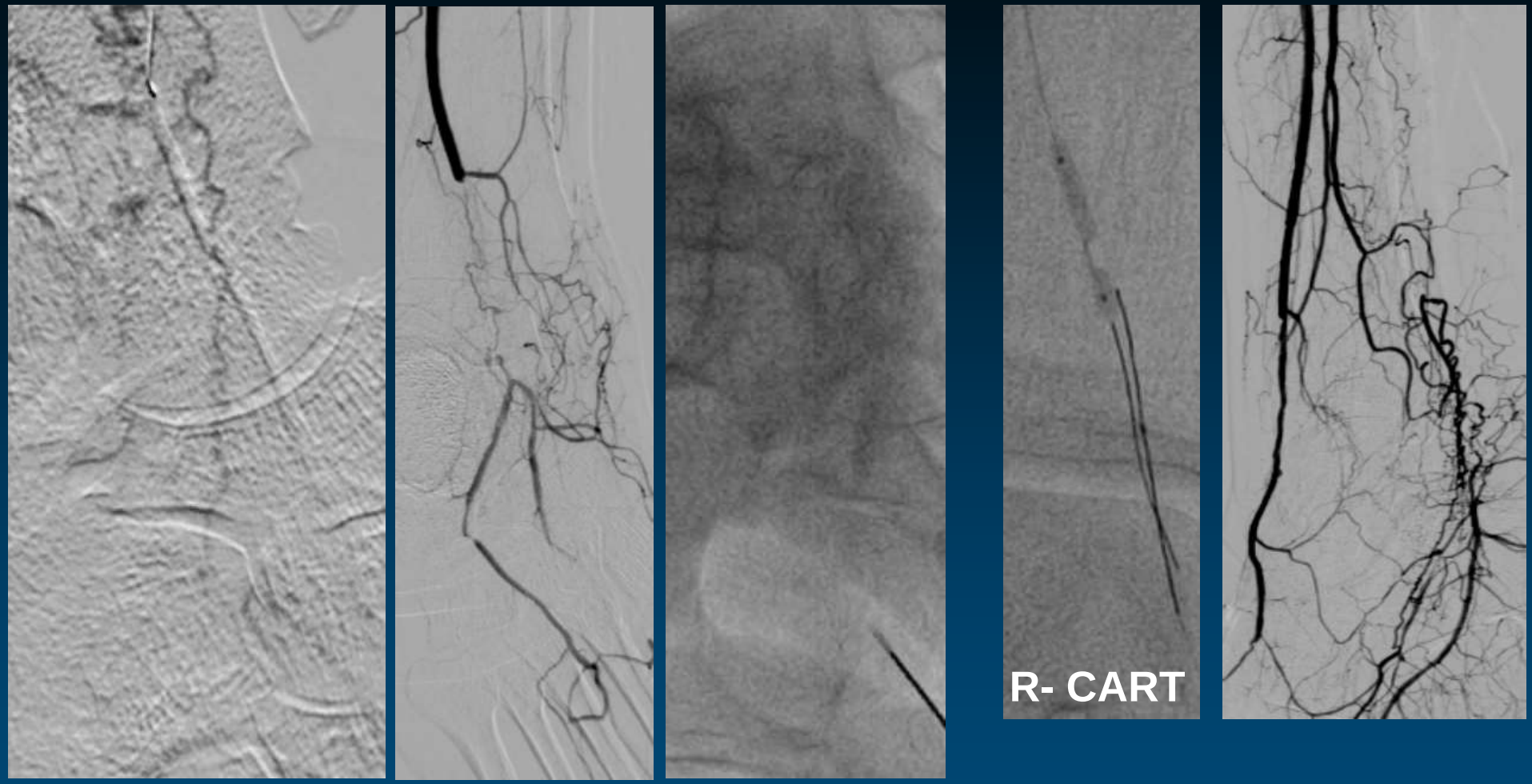
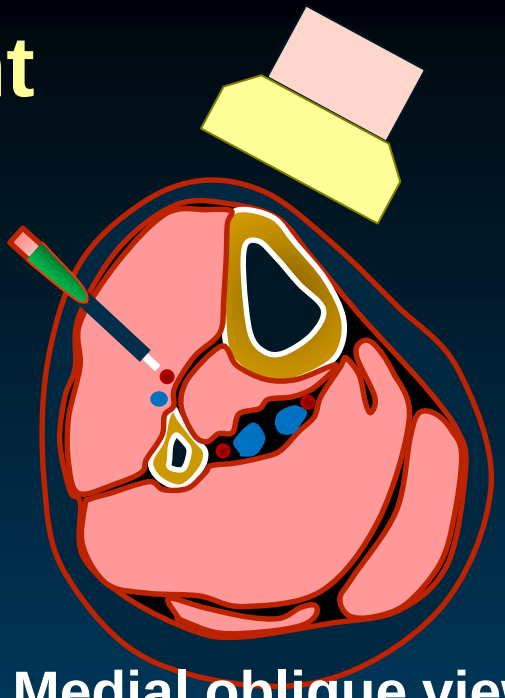
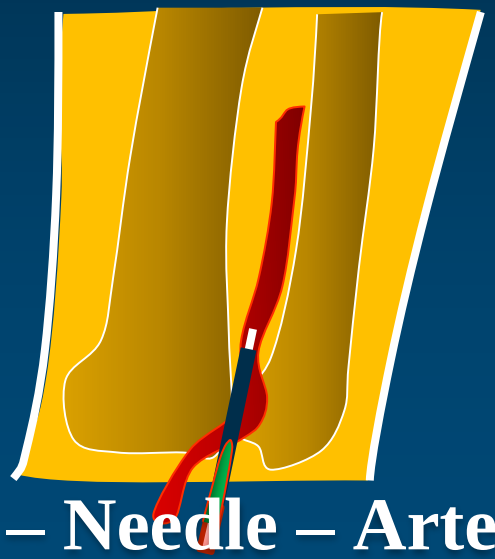


The alignment

Lateral oblique view



Medial oblique view

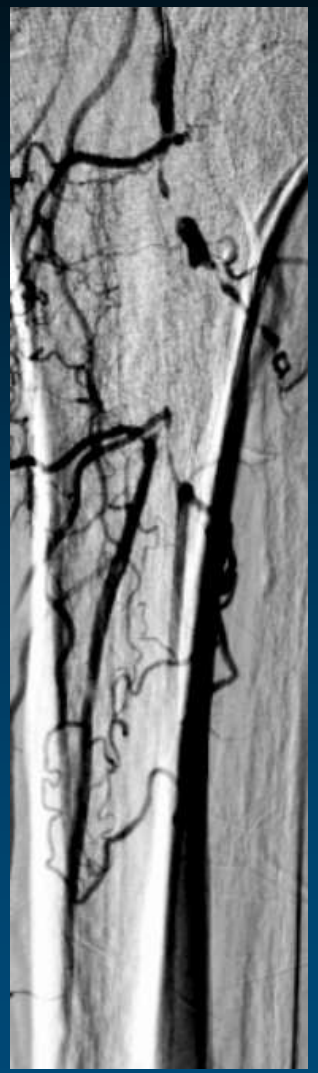
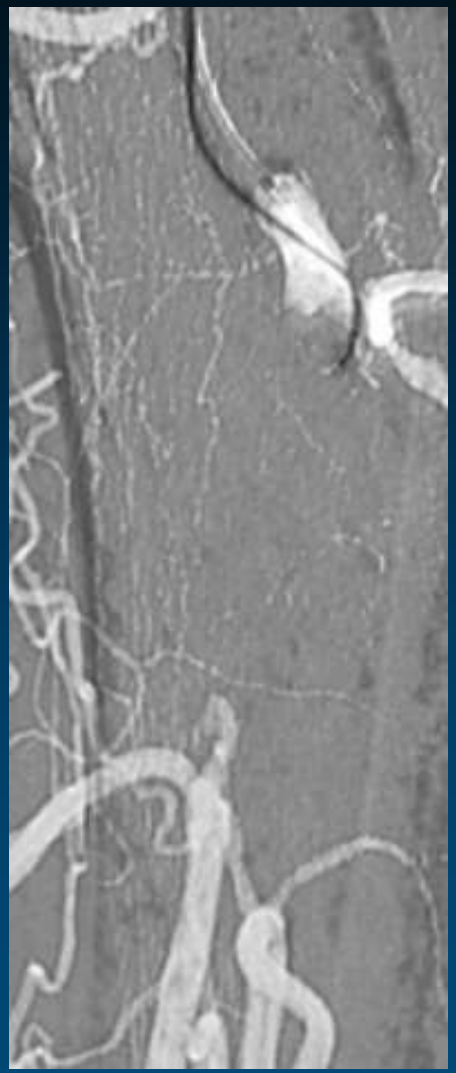


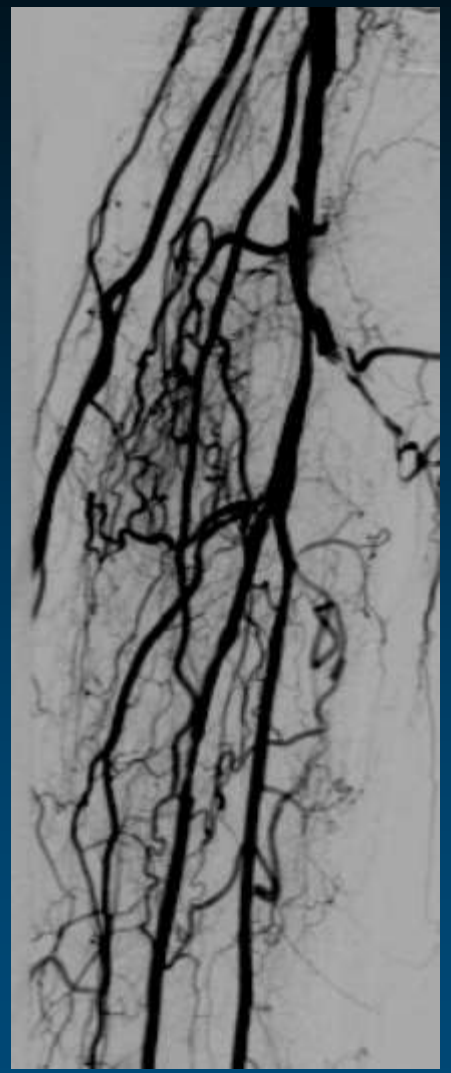
Tube – Needle – Artery
in a single line

Estimate the depth at
60-90°

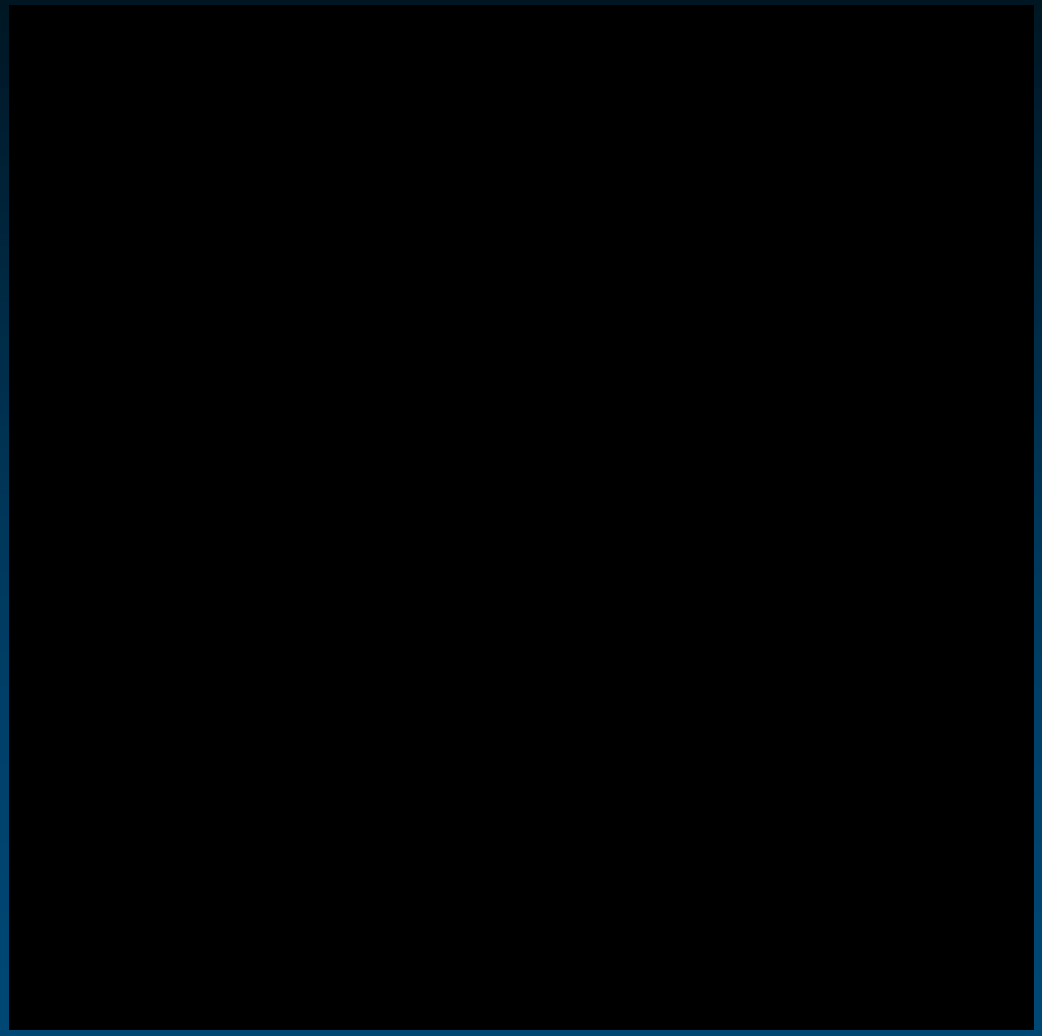
Penetration of artery

Contrast Pinching



Life is not that easy



Factors Making It Difficult to Puncture Metatarsal Arteries

- Small vessel size
- Short landing zone
- Prone to spasm
- Branches and collaterals in the vicinity
- Tortuosity

Difficult Targeting

Uncertainty of wire progress

The Last Resort

- Blind digging of the pedal-plantar loop
- Trans-collateral angioplasty

Case (M/56)

- 2 packs/day smoker
- Unhealed right 1st toe gangrene for 5 months

  - developed after toenail extraction

Occluded all BTK arteries / Invisible distal landing

- Ipsilateral antegrade approach, 6 Fr Ansel sheath

Armada XT 1.5x20mm & 0.014” Gladius

Occluded all BTK arteries / Invisible distal landing

- Blind digging of the pedal-plantar loop




Occluded all BTK arteries / Invisible distal landing

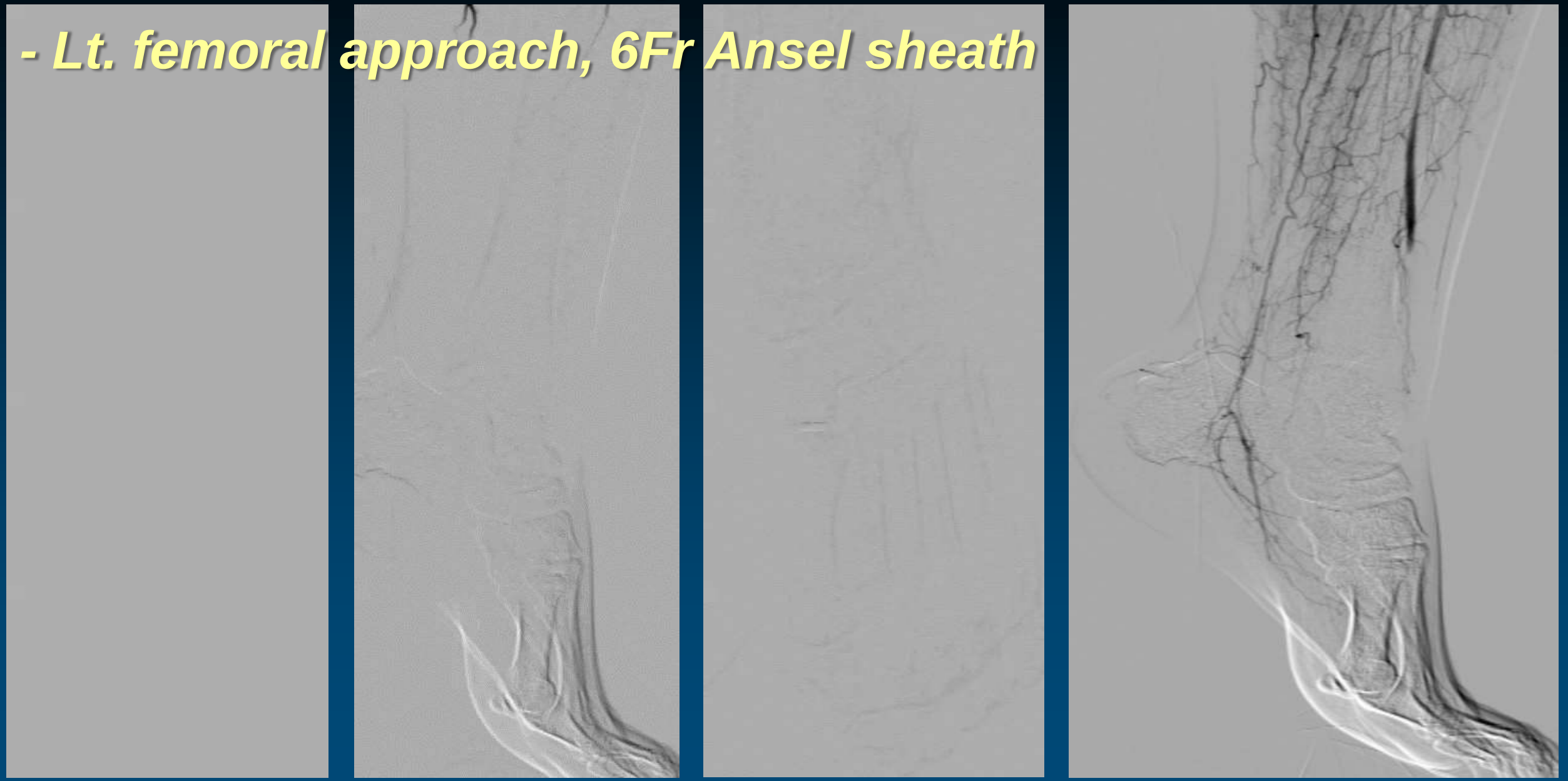
- Final Angiogram

Case (F/34)

- 1PY Ex-smoker, smoking cessation 1YA
- Left 2nd toe gangrene and intractable pain for 1month

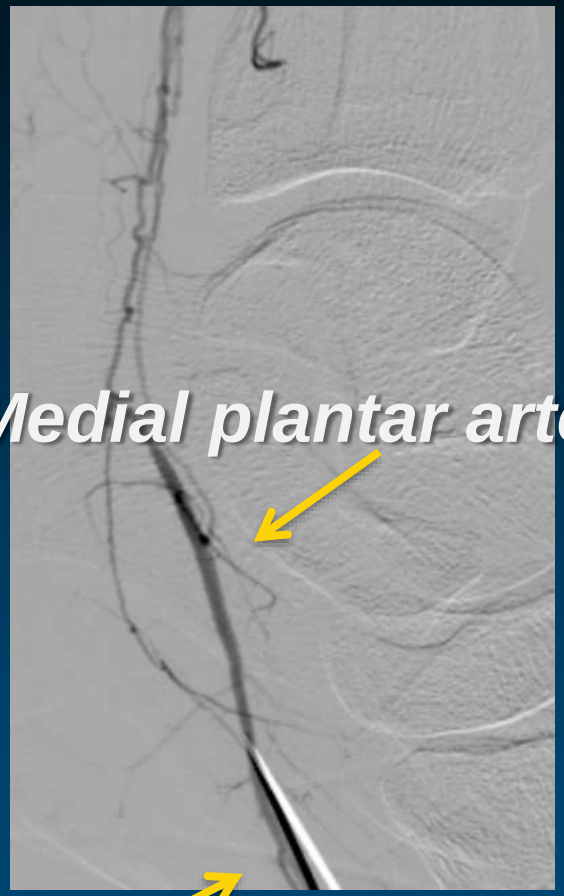
No landing zone except for the medial plantar artery

- Lt. femoral approach, 6Fr Ansel sheath



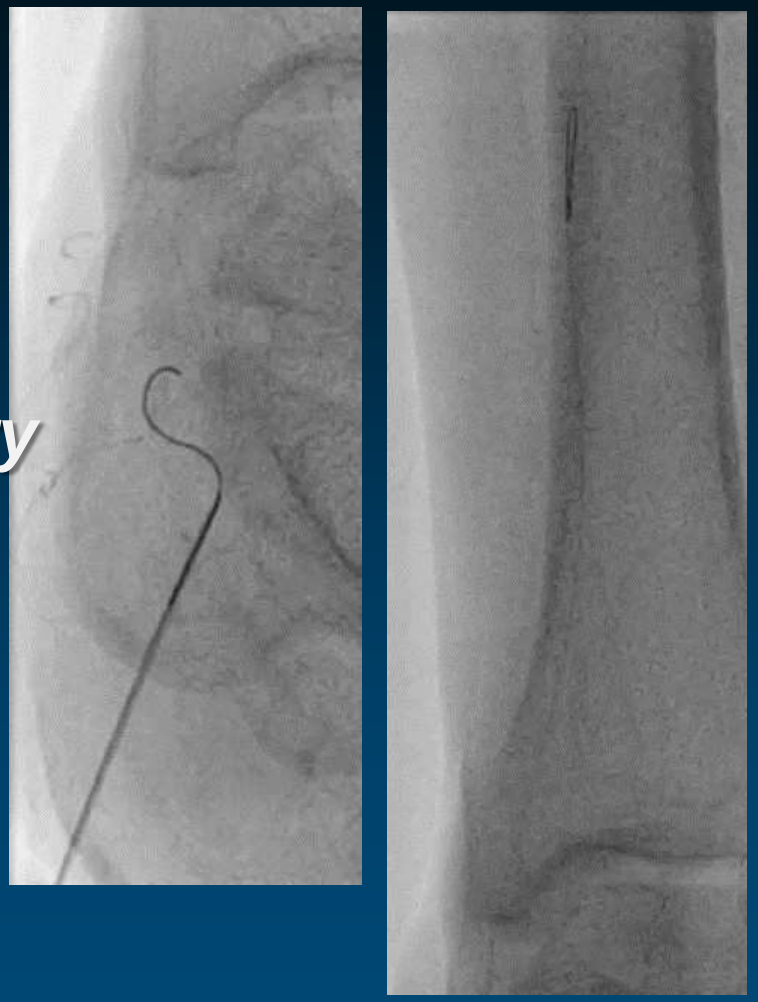
Retrograde approach for PTA long CTO

- Retrograde access via medial plantar artery

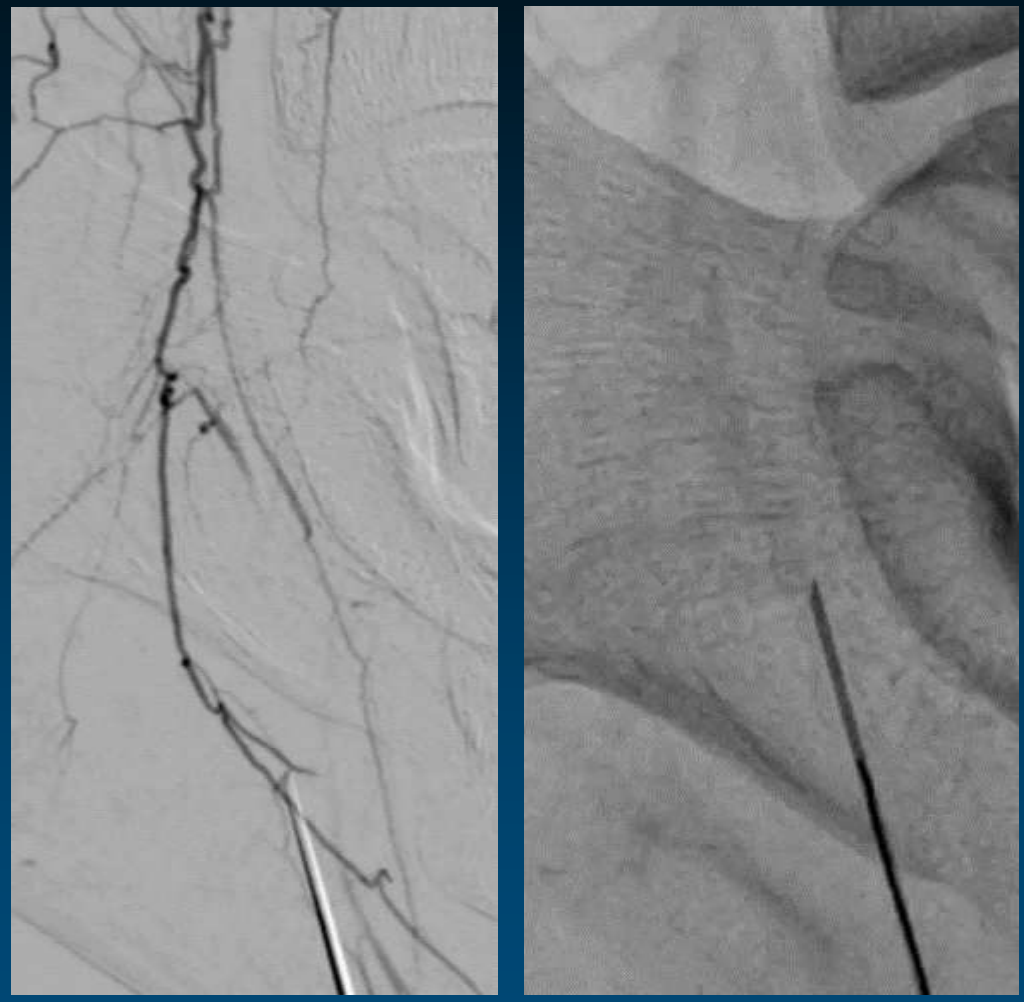


Medial plantar artery

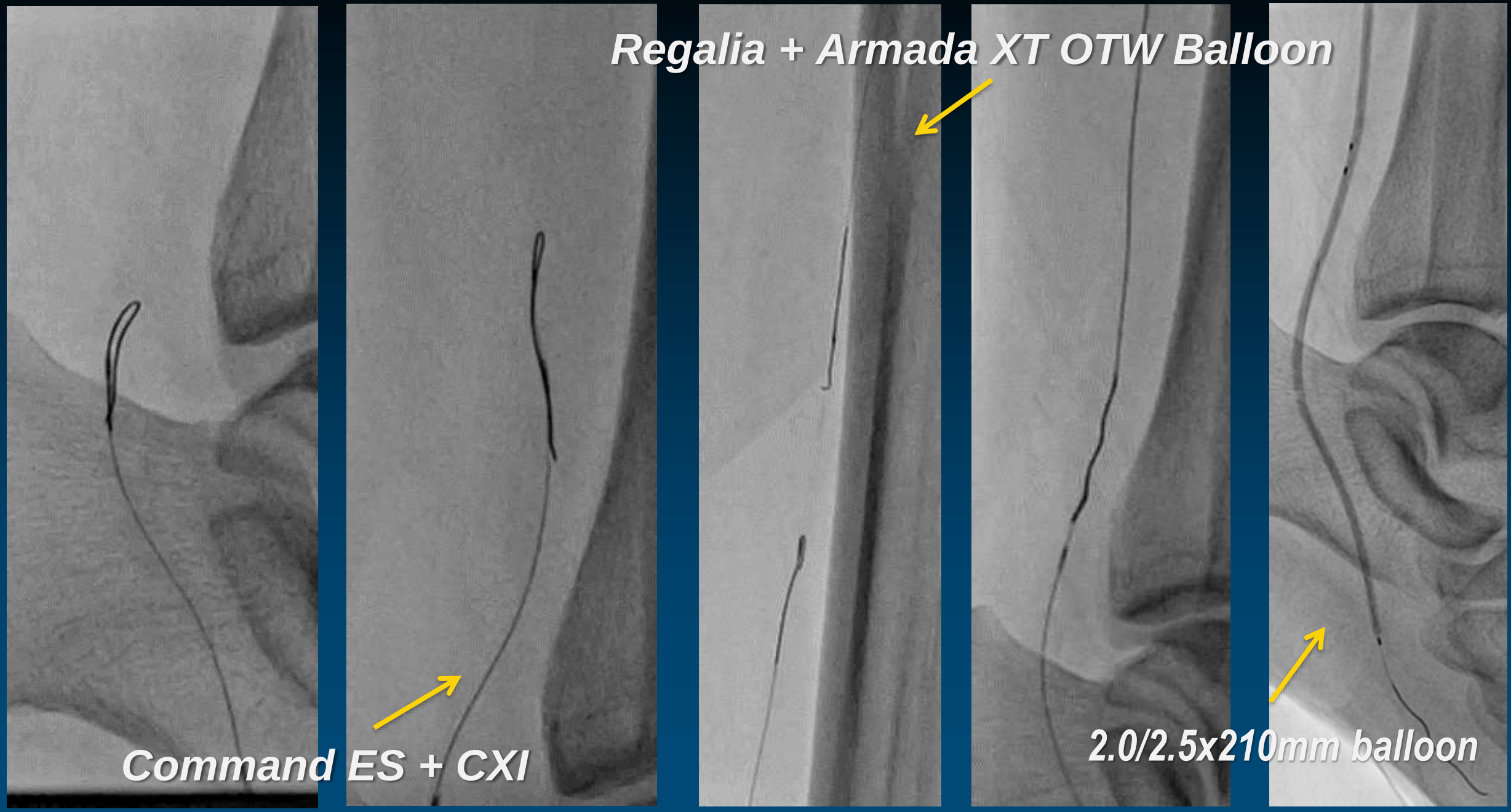
7cm, 21G needle



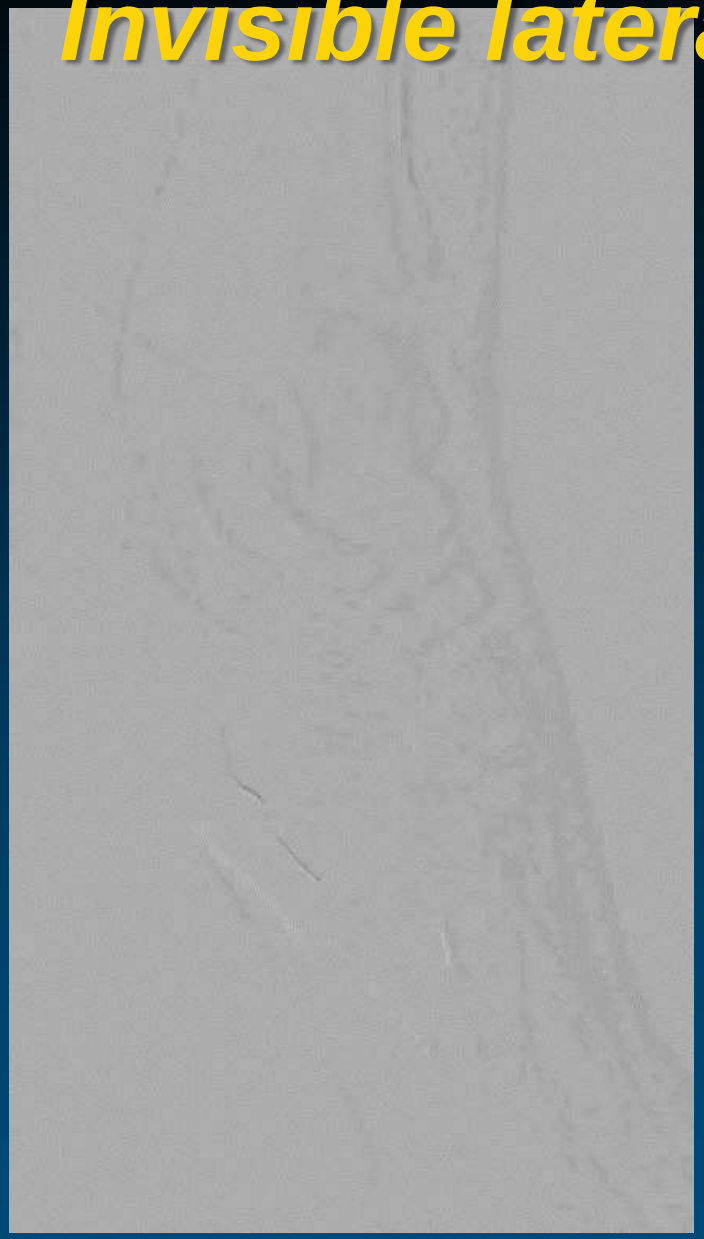
Venous advancement

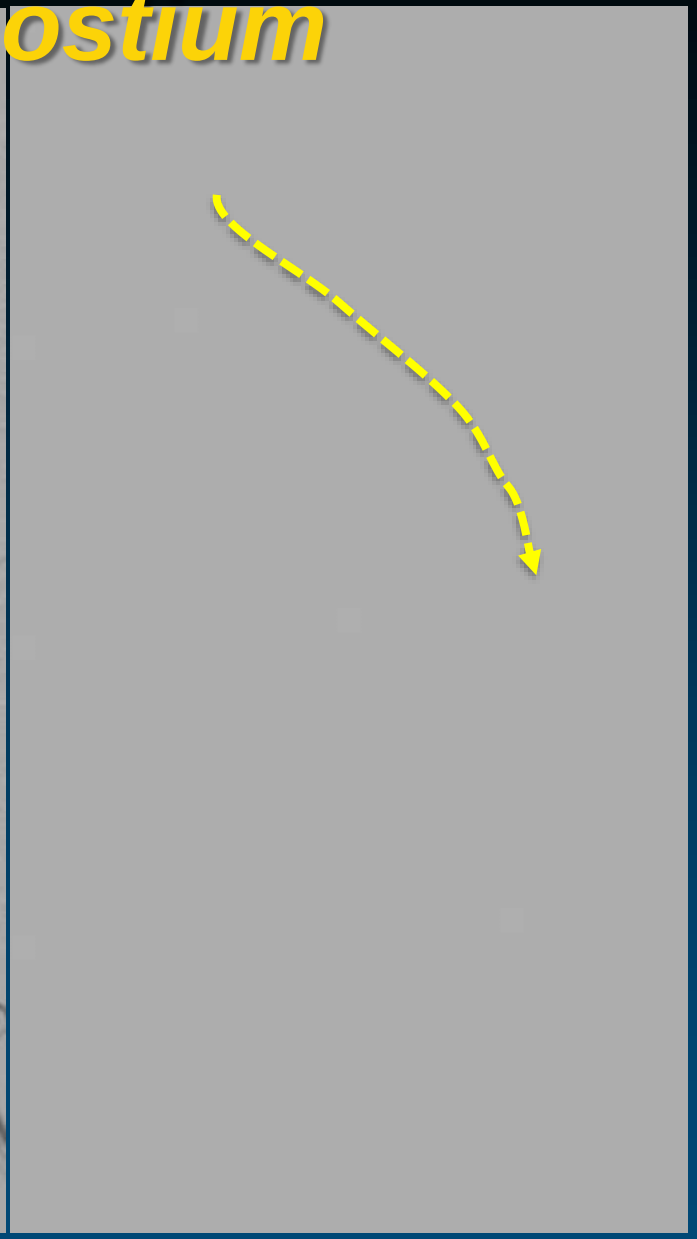


Spasm & scanty plantar filling
→ DSA guidance needing


Regalia + Armada XT OTW Balloon
Command ES + CXI
2.0/2.5x210mm balloon

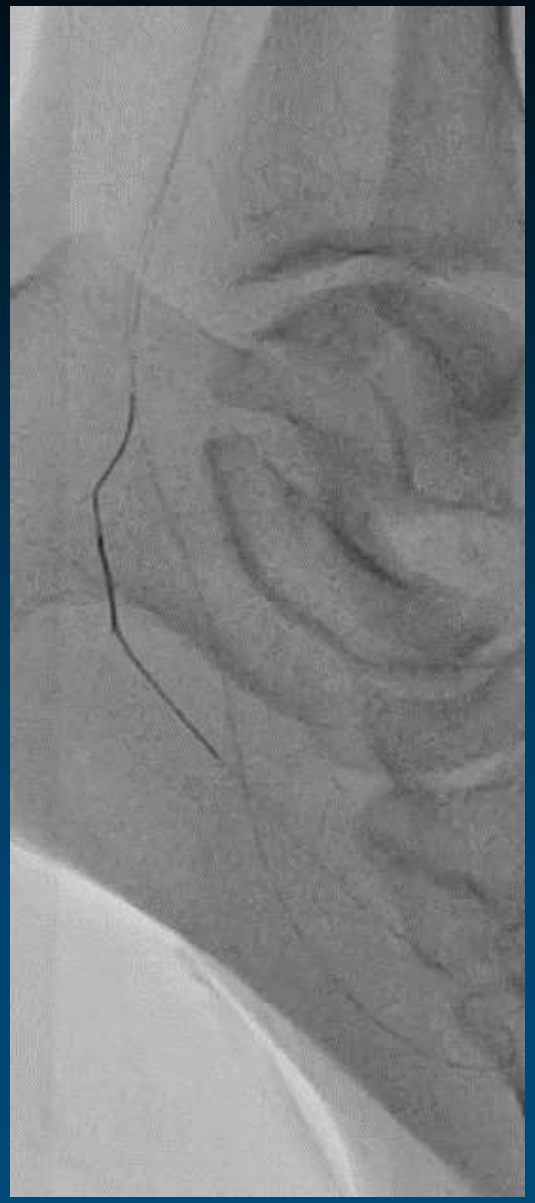
Invisible lateral plantar ostium



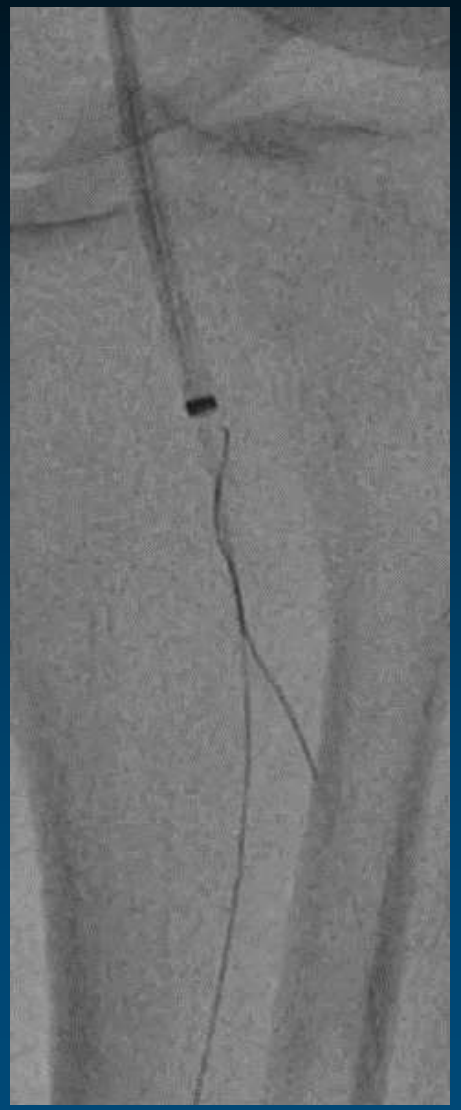


Pedal-plantar loop access







Final angiogram

2 weeks later

Case (M/73)

- DM
- HTN
- Gangrene involving Rt 2nd and 3rd toes

Transmetatarsal access

Trans-collateral angioplasty

Conclusions

- Transmetatarsal access could be an option for CTO involving the dorsalis pedis artery.
- Transmetatarsal access is performed in the same way as other distal puncture procedures.
- However, for several reasons, it is difficult to perform and has a quite low success rate.
- Therefore, interventionists should get used to blind digging of the pedal-plantar loop or trans-collateral angioplasty, in case of failure of transmetatarsal access.