



**MEET** 2015  
MULTIDISCIPLINARY EUROPEAN  
ENDOVASCULAR THERAPY

# BTK CLINICAL CASE

## When coronary devices could help?

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## Disclosure

Speaker name:

SAUGUET ANTOINE

I have the following potential conflicts of interest to report:

- Consulting
- Employment in industry
- Shareholder in a healthcare company
- Owner of a healthcare company
- Other(s)
- I do not have any potential conflict of interest



# Critical limb ischemia

male, F.M, 84 y.o.

## Risk factors

Hypertension

Dyslipidemia

68 kg / 176 cm

## Life style

Independently at home

No Cognitive Impairment

# Prior history

Chronic Non Active Hepatitis C infection due to previous blood transfusion

Chronic myeloproliferative disease : Hydroxyurea.

Medical regimen :

Atorvastatin 40 mg daily

Aspirin : 75 mg daily

Metformine : 1000 mg x 3 daily

Hydroxyurea : 500 mg x 2 daily

Morphinic Analgesia

# Clinical presentation



Right critical limb ischemia with trophic disorder on first toe  
Rutherford Stage 5

Probabilistic Antibiotic treatment : amoxicillin+ clavulanic acid



# Laboratory investigations

Hb = 13.2 g/dl

Platelets : 280000 / mm<sup>3</sup>

Glucose = 8.1 mmol/l

HbA1C = 7.5 %

Creatinine = 122 μmol/l

Creatinine clearance (MDRD) = 57 ml/min/m<sup>2</sup>

ProBNP = 350 pg/ml

C-Reactive Proteine = 65 mg/l

Local Bacteriologic samples : In Culture

# Non-invasive imaging measurements

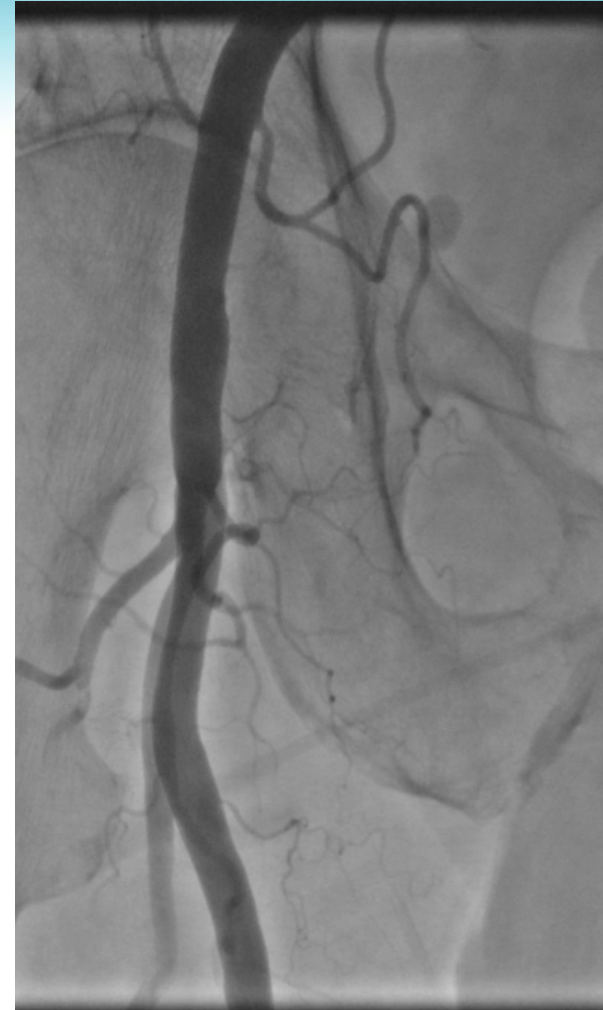
## Duplex Echo :

- ABI right : 0.5 (posterior tibial)
- ABI left : 0.8 (posterior tibial )
- No significant disease at ilio-femoral level
- Calcified BTK disease with occlusion of right Anterior tibial
- Impairment of duplex velocity in posterior tibial
- Right Internal carotid stenosis : 70%

# Baseline angiogram



**No aorto iliac disease**

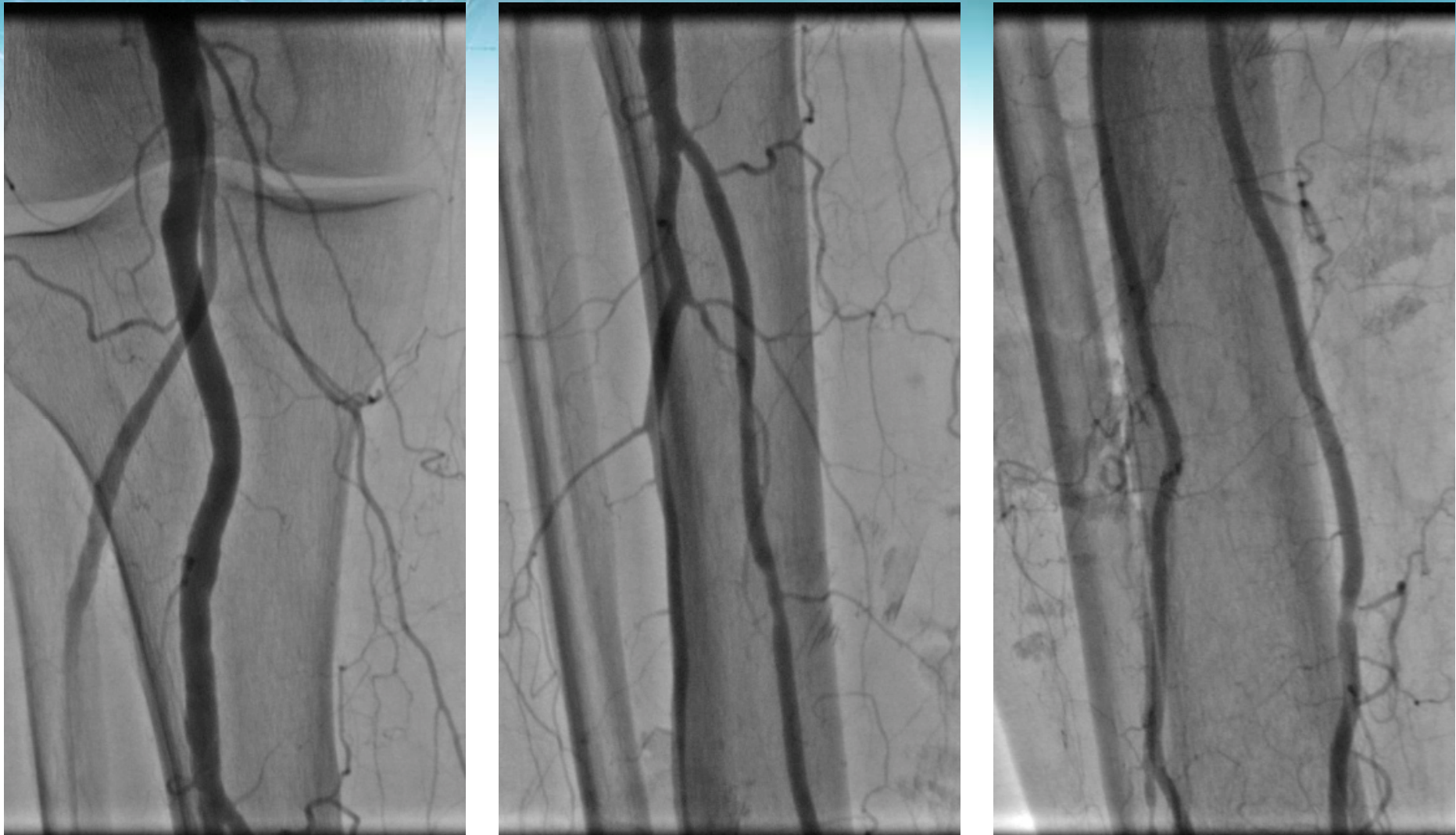


**Right common femoral**



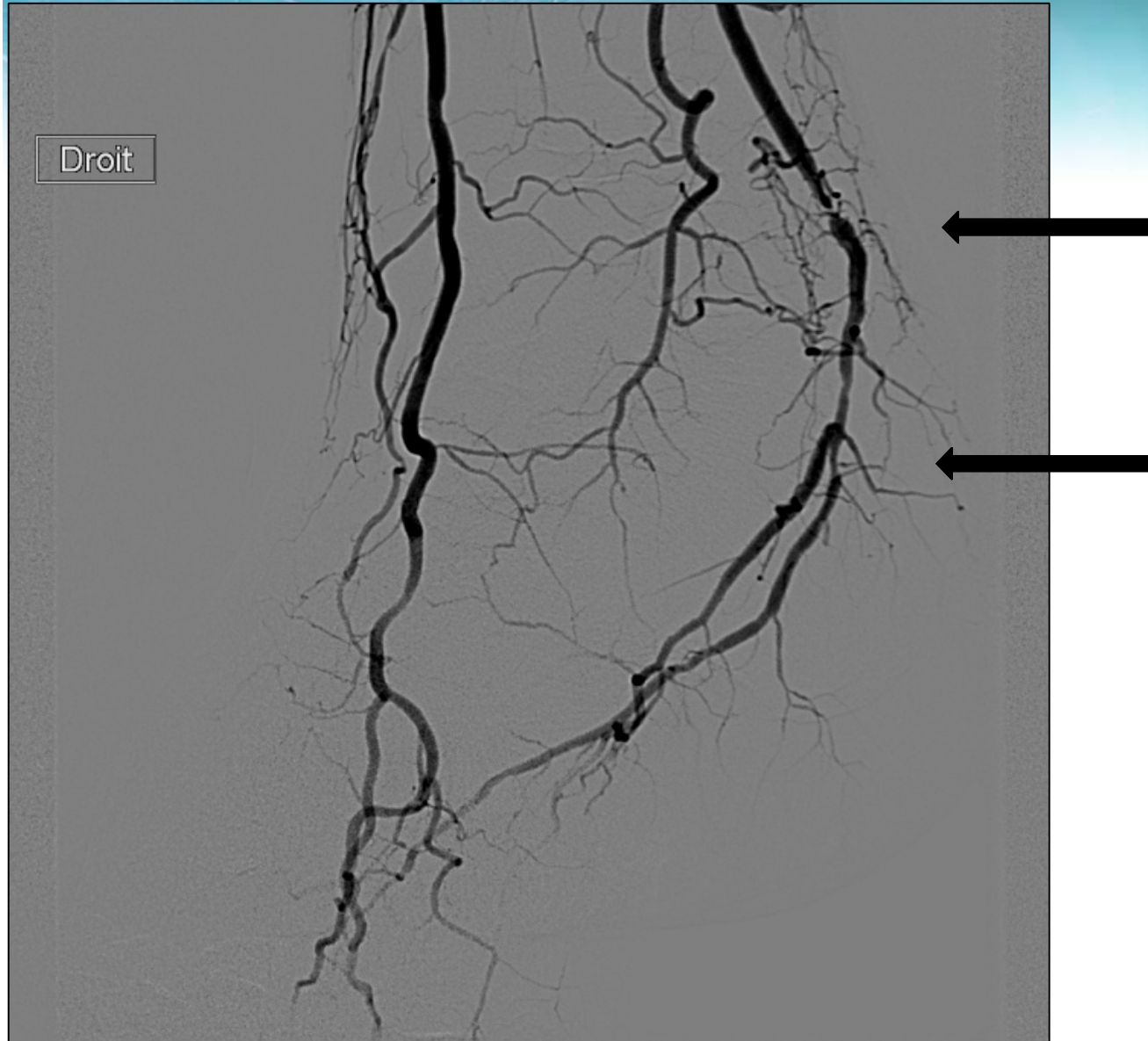
# Baseline angiogram

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**Anterior tibial long occlusion / Mild stenosis of the medium Posterior Tibial**

# Baseline angiogram



**Bifocal Distal  
tight stenosis of  
the  
posterior tibial**

# Key issues / Strategy

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CRITICAL LIMB ISCHEMIA WITH TROPHIC DISORDER

ANTERIOR AND POSTERIOR TIBIALS ANGIOSOM

PROPOSAL REVASCULARIZATION

Anterior tibial occlusion

Bi focal distal lesion on posterior tibial lesion

COMMON FEMORAL ANTEGRADE PUNCTION



# Proposal Equipment/Strategy

## **1. Antegrade approach Right Groin**

- 5F 10 cm introducer sheath
- 5F MP guiding catheter 90cm

## **2. Recanalize anterior tibial artery**

- 0.014 PILOT 200 300cm
- OTW Supporting balloon to increase support

## **3. Crossing posterior tibial lesions**

- 0.014 PT 2 300cm
- Plain balloon angioplasty 1.5 x 30mm

## **4. Closure device system Proglide 6F**

# BTK Angioplasty

- Modified cardiologist's techniques:
  - Guiding catheter (increased support, reduced contrast agent volume) 5-6F.
  - 0.014 inch (hydrophilic) guidewires
  - monorail & over-the-wire balloons
- Long introducer 25 or 35 cm length 4F:
  - 0.014 inch (hydrophilic) guidewires or 0.018
  - Supporting catheter

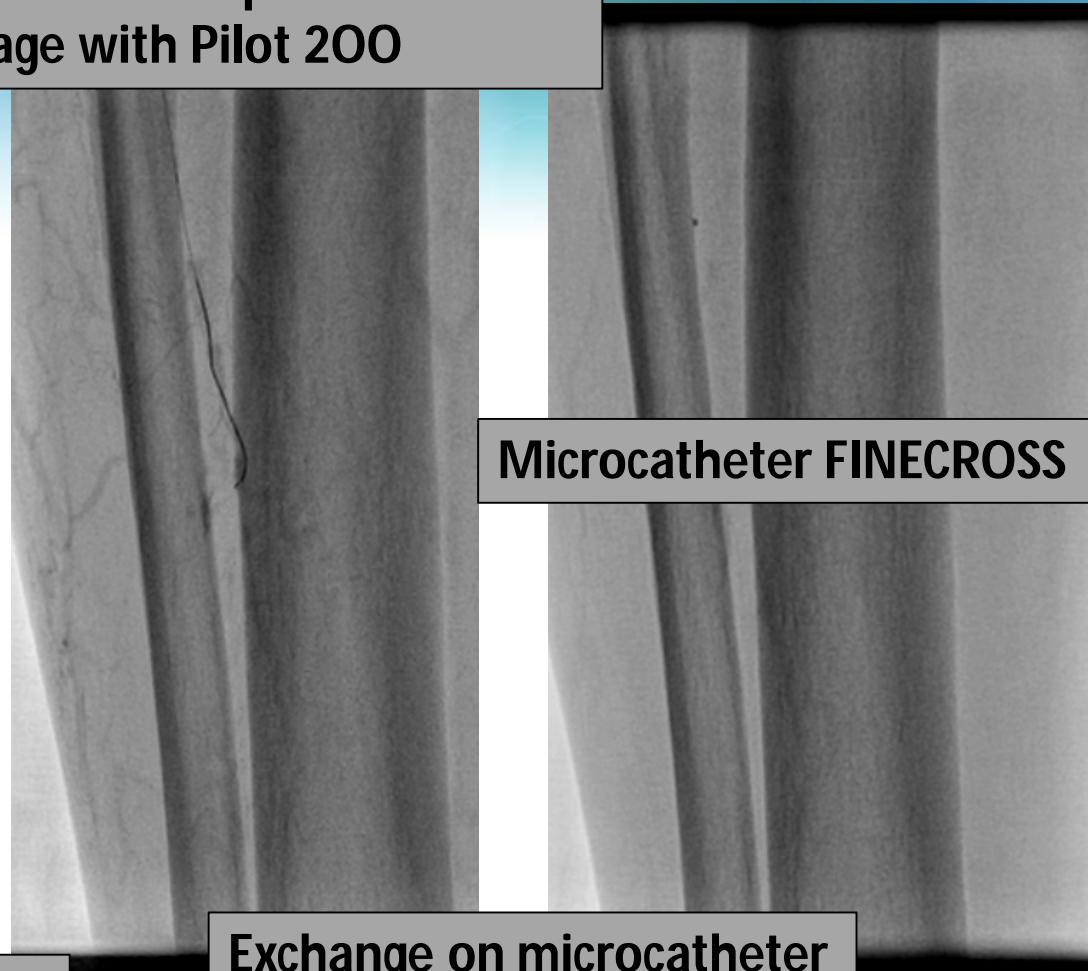




**Failure to attempt intraluminal passage with Pilot 200**



**Microcatheter FINECROSS**

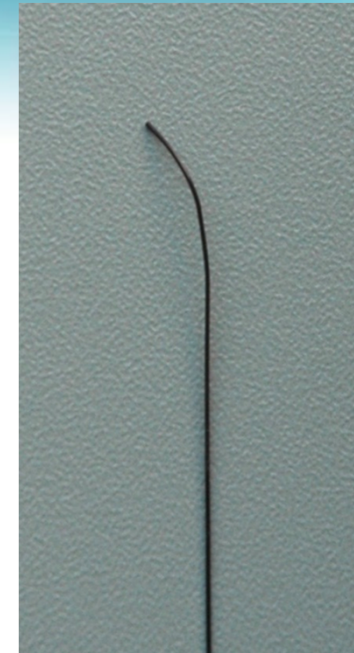


**MP 5F guiding catheter intubation on Anterior tibial to increase support**

**Exchange on microcatheter To Miracle 12 and Win 200**

## 0.014" Guidewires for BTK CTOs

- > 150 guidewires available in Europe
- Hydrophilic, polymer-coated, low tip-load
  - ✓ 0.014" PT2 (Boston Scientific)
  - ✓ 0.014 PILOT 150-200 (Abott)
- To attempt intraluminal passage
- Support by low-profile balloon or support-catheter
- Balloon first choice, support-catheters for difficult cases
- Distance of wire-tip to tip of the support catheter determines over stiffness of the guidewire



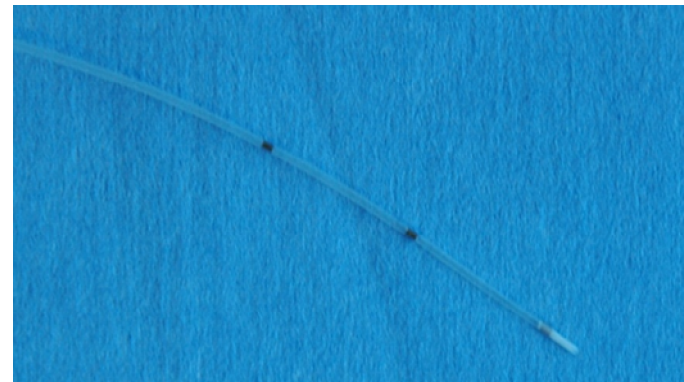
## 0.014" Guidewires for BTK CTOs

- If 0.014" first intention GW fails to cross due to calcification
- Switch to CTO-GW like
  - MiracleBroth 12 g (Asahi)
  - CTO-GW 18 g or 25 g (Cook)
  - Win 200 (Abott) Extra stiff tapered tip for lesion penetration

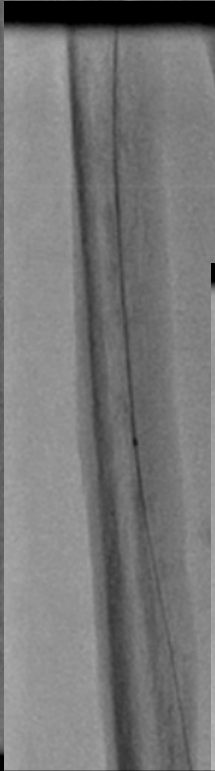
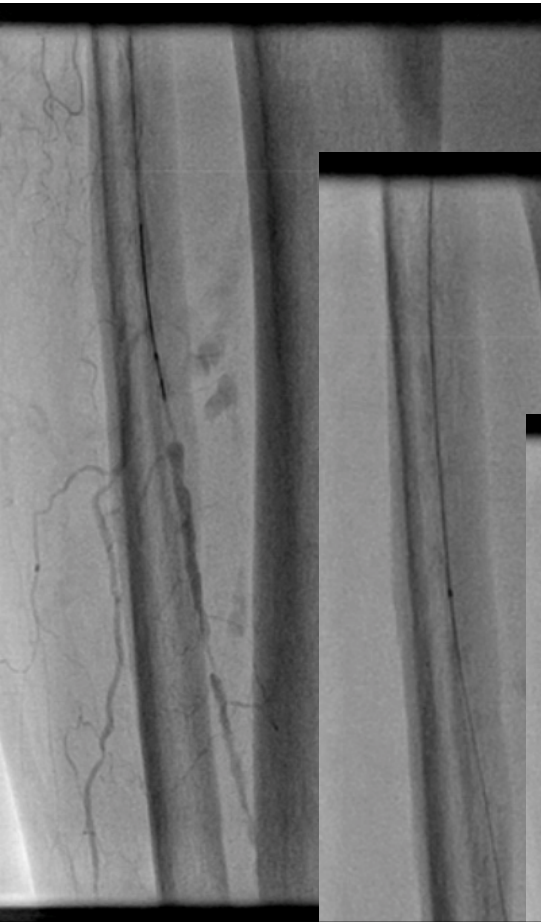
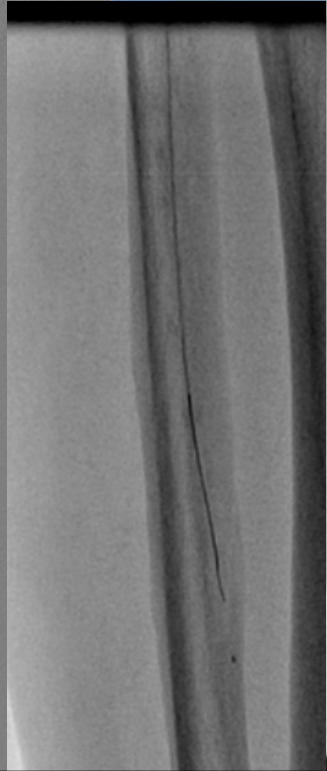
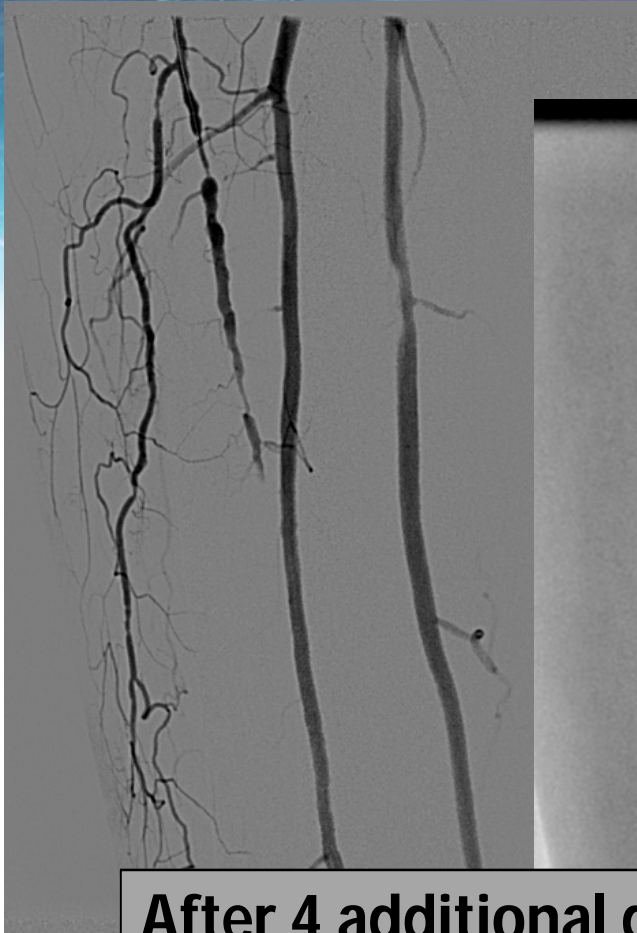


# Micro- or Support-Catheters

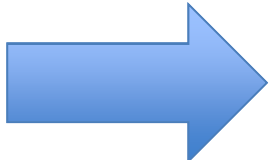
- Low-profile, stiff,
- Possibility to exchange from 0.014" to 0.018" GW
- QuickCross (Spectranetics)
- Finecross (Terumo) (0.014)
- CXI (Cook),  
braided, OD 2.6 French







**After 4 additional dedicated CTO Wires, predilatation  
Failure to attempt intraluminal recanalization**



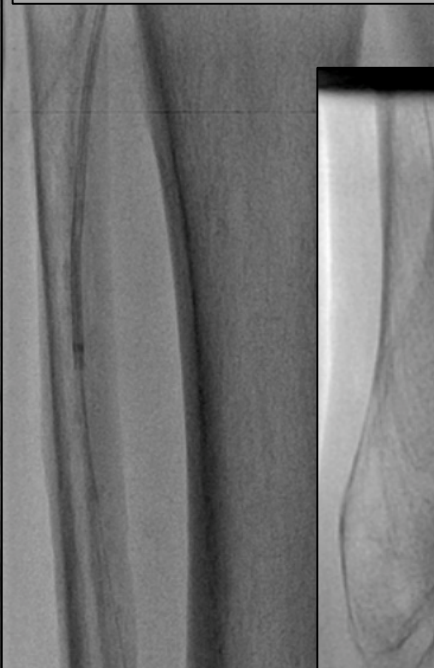
**CHOICE TO GO SUBINTIMALY**



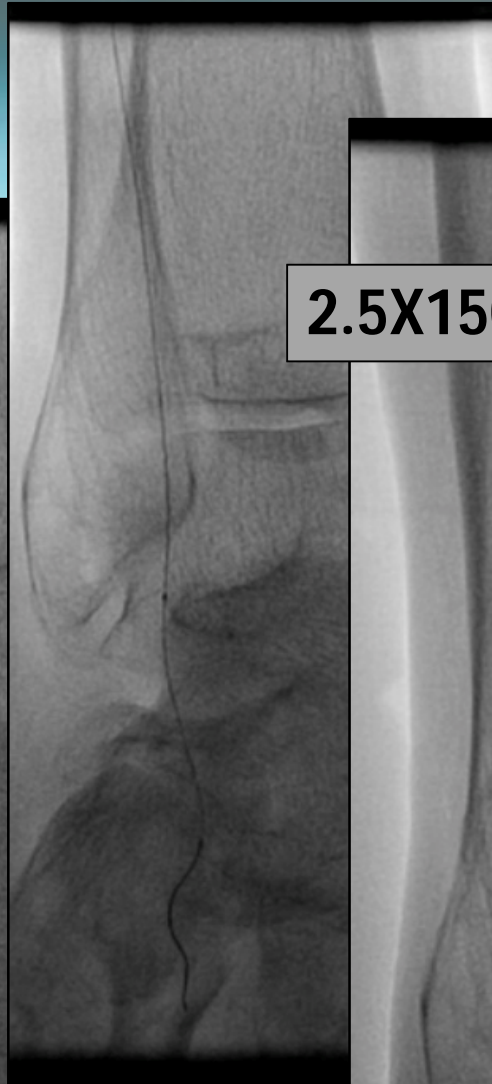
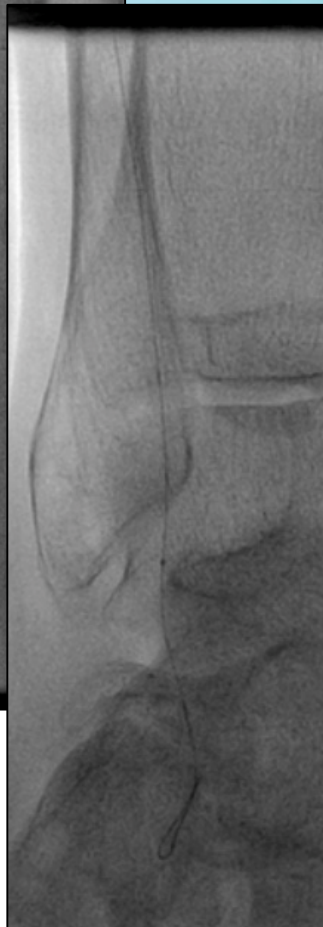




**Deep intubation with  
MP 5F GC**



**Failure to treat reentry site  
With long 2X120mm Balloon**



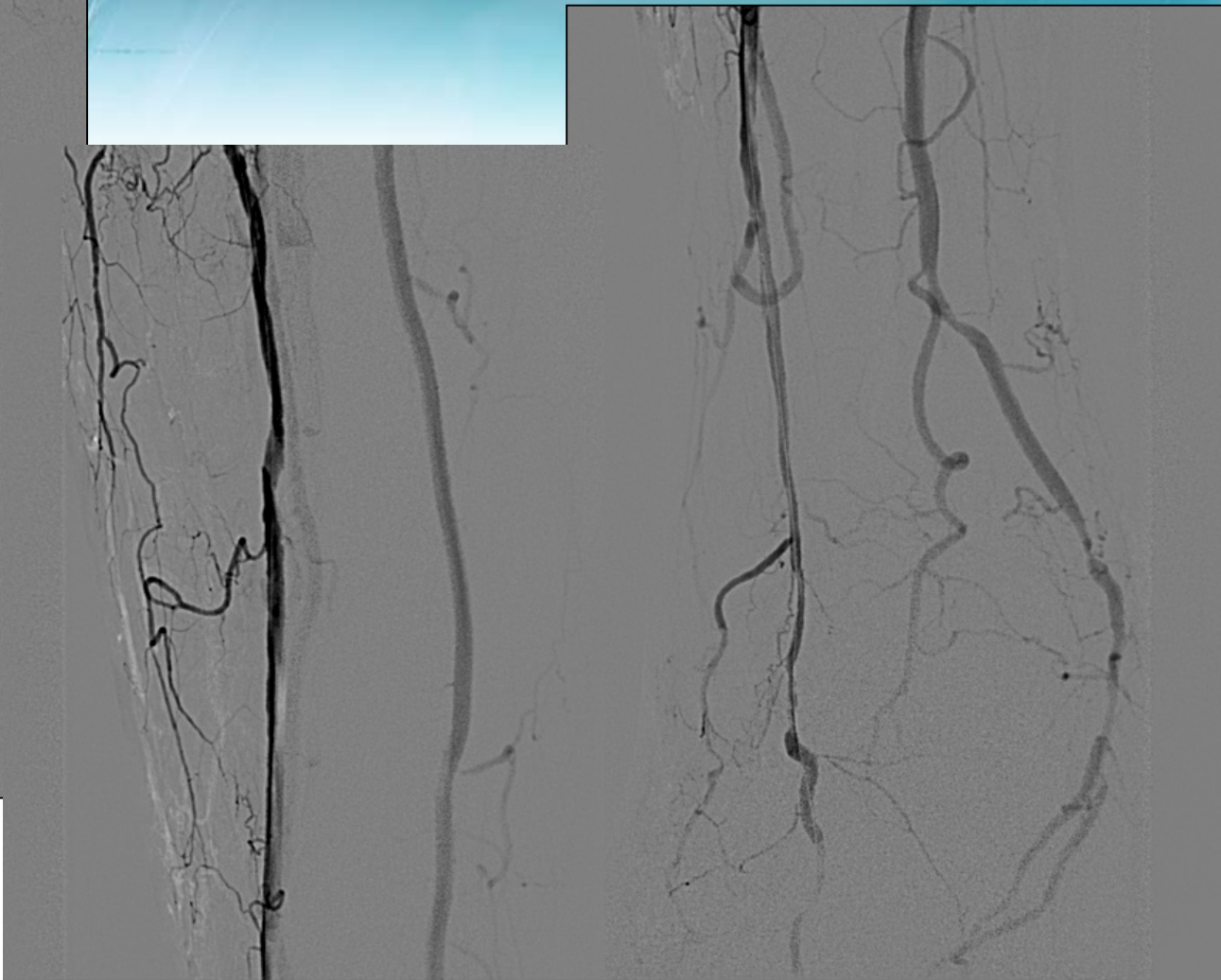
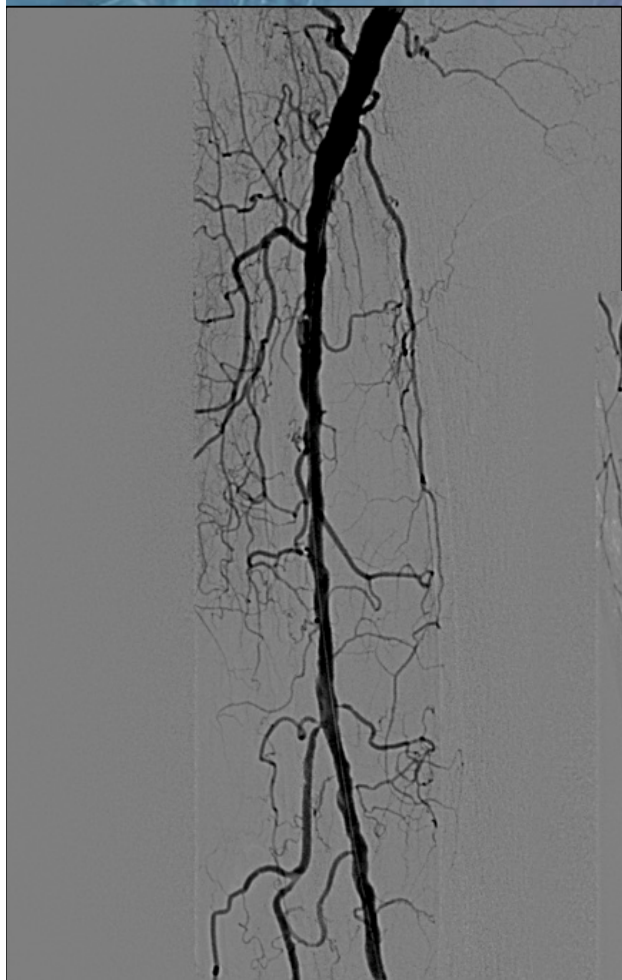
**2.5X150mm Balloon**



**Need 1.25X10mm CTO coronary balloon**



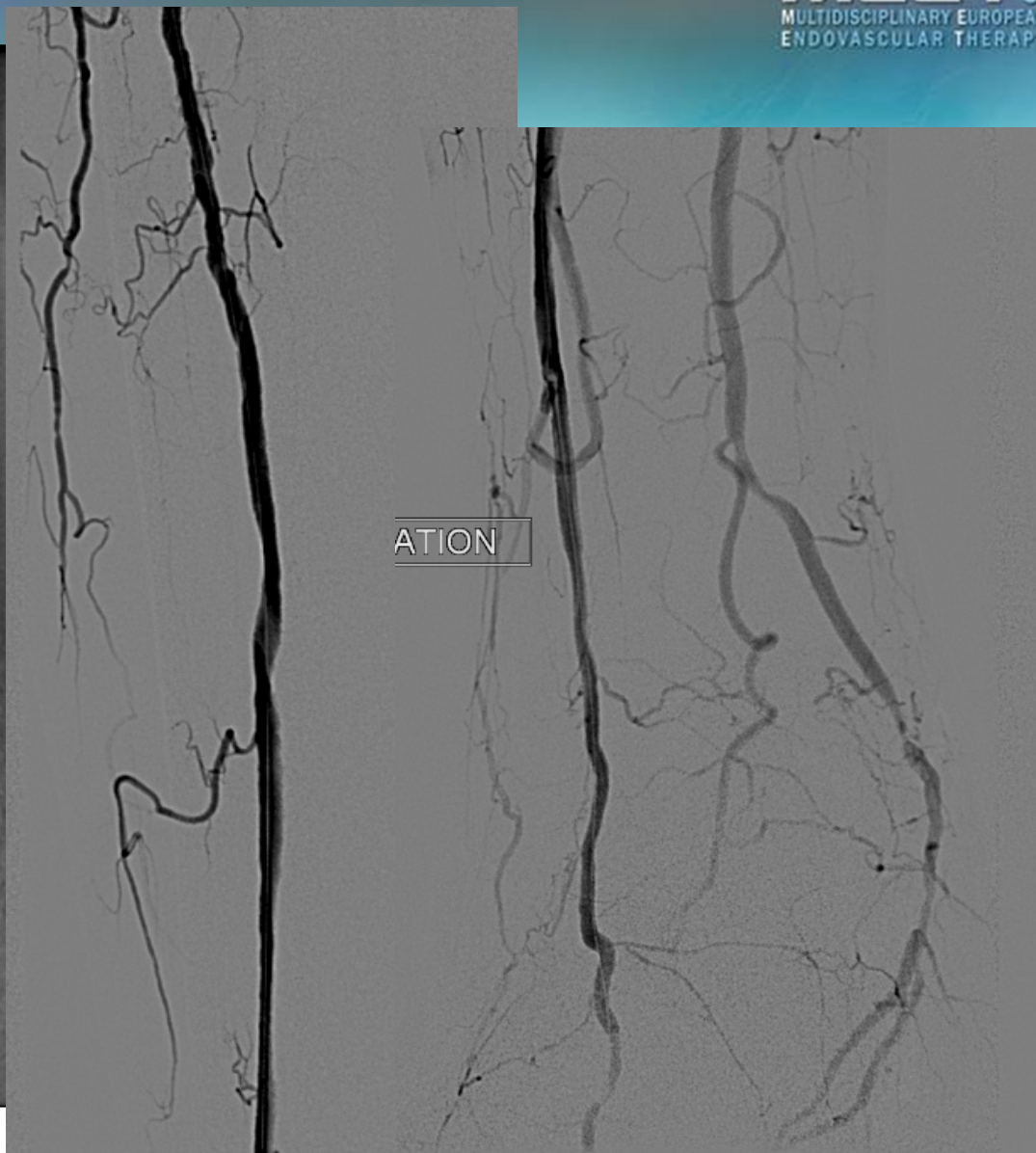
**INTERMEDIATE RESULT**



**INCOMPLETE RESULT ON SUBINTIMAL RECANALIZATION**

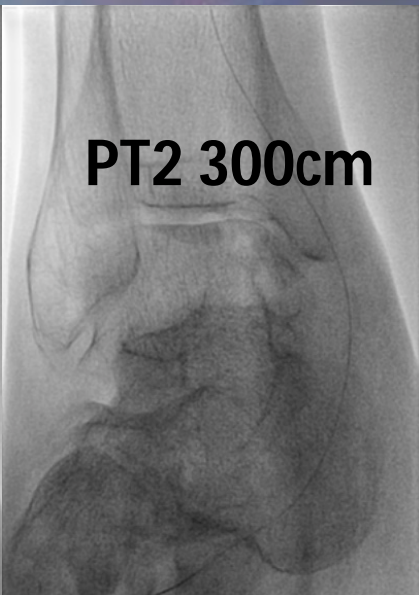


**OTW Balloon 3x150mm**



**FINAL RESULT ON ANTERIOR TIBIAL**

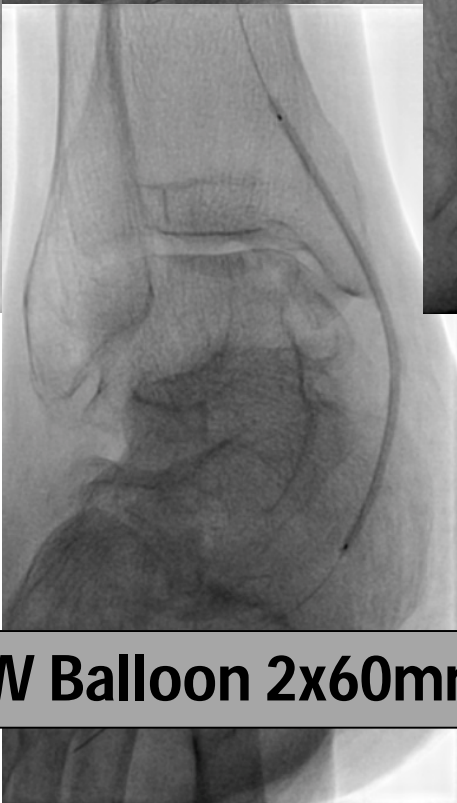




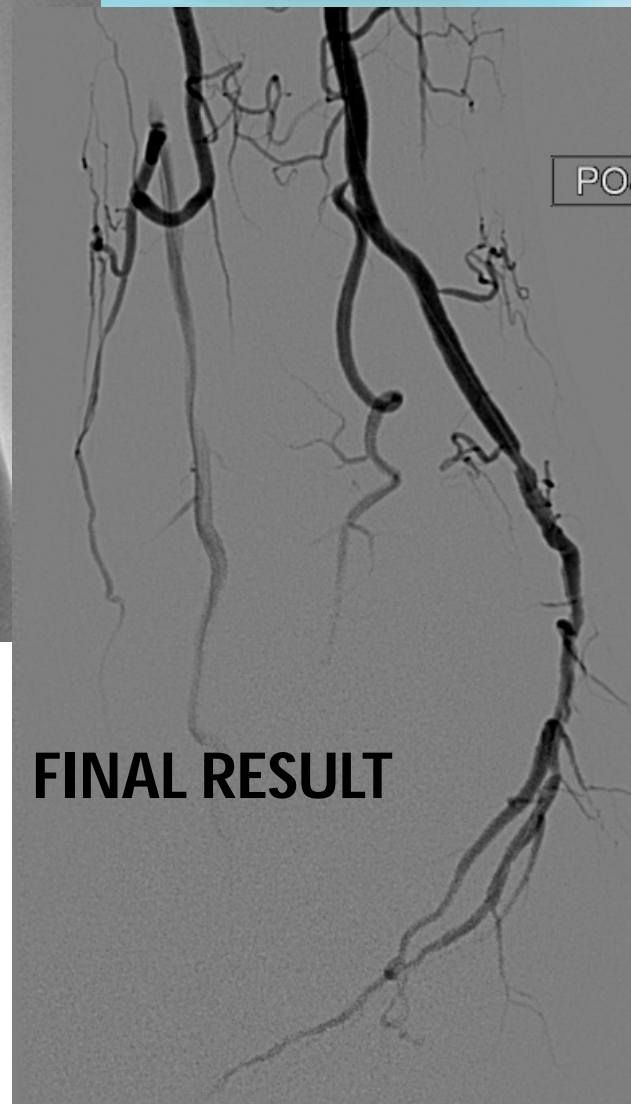
**PT2 300cm**



**OTW Balloon 3x40mm**



**OTW Balloon 2x60mm**



**FINAL RESULT**

# TAKE HOME MESSAGE

- Modified cardiologist's techniques or long introducer increase support
- Regular 0.014 wire or dedicated CTO coronary wires with supporting balloon or micro catheter increase ability to stay intraluminal
- Attempt sub intimal recanalization if failed intraluminal strategy
- Sometimes coronary ballon could help to cross CTO
- Last step retrograde access