Fielder XT: Initial and Professional Use for CTO

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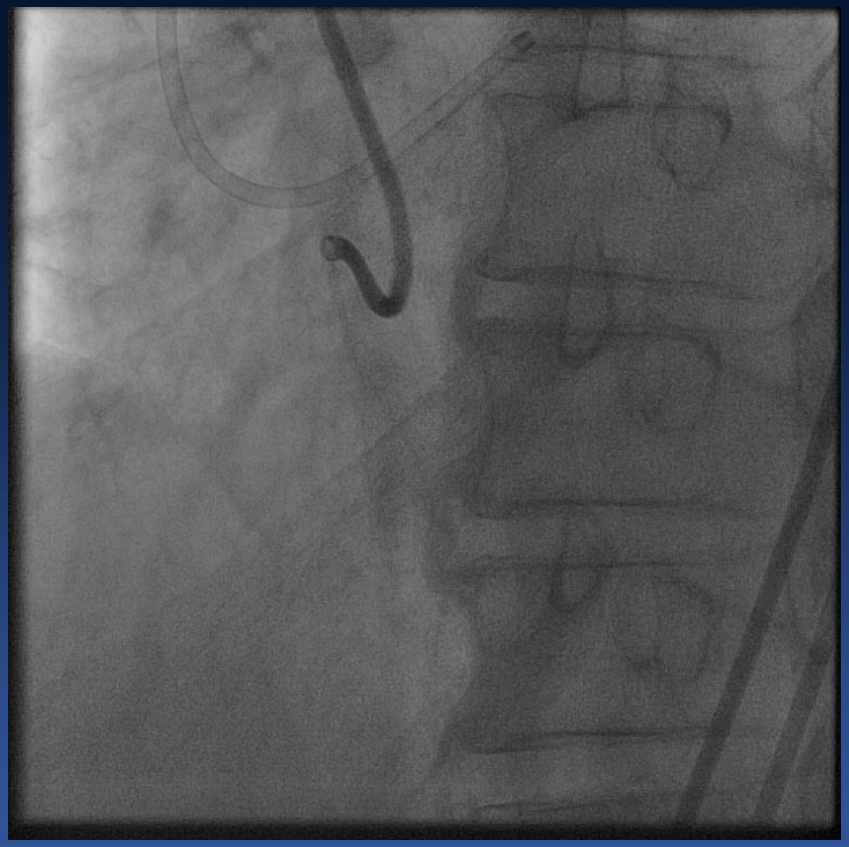
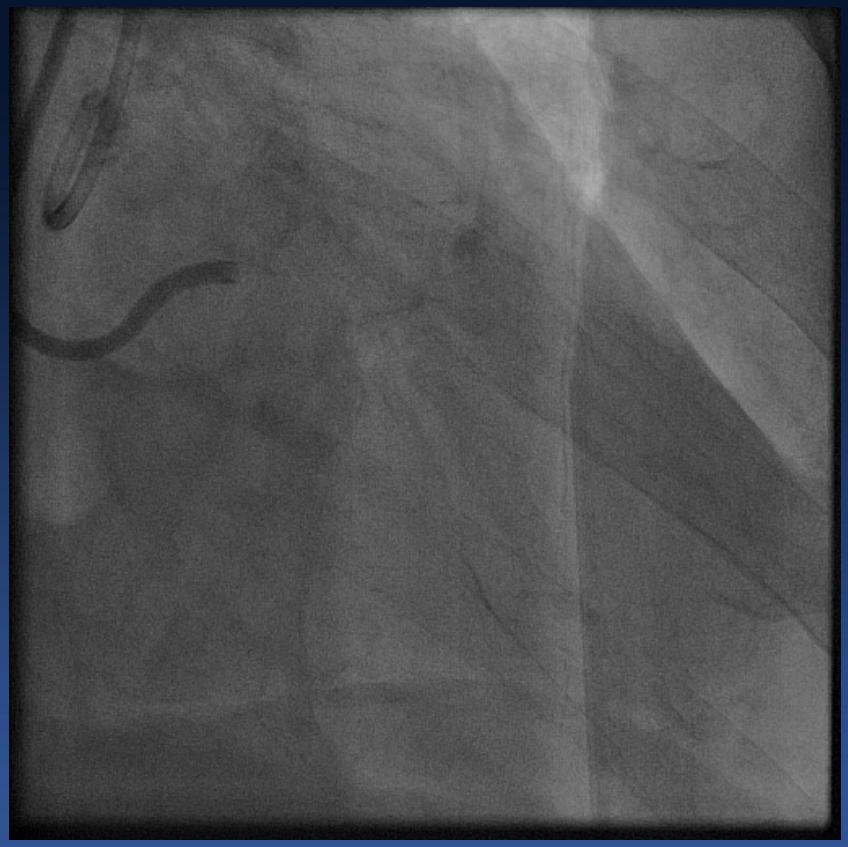
Plastic-Jacket Hydrophilic Guidewires

- Non-tapered-tip
  Choice-PT / PT2 (Boston)
  Pilot (Abbott)
  Fielder / Fielder-FC (ASAHI)

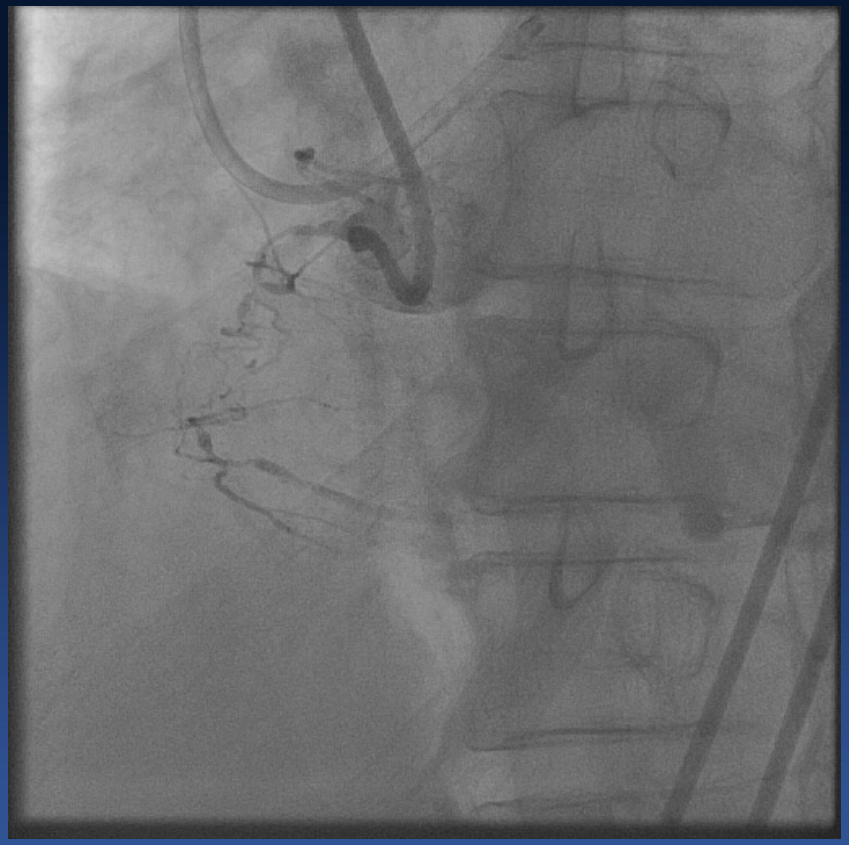
- Tapering-tip
  Fielder-XT (ASAHI) : tip = 0.009
  Fielder-XT-R (ASAHI) : tip = 0.010

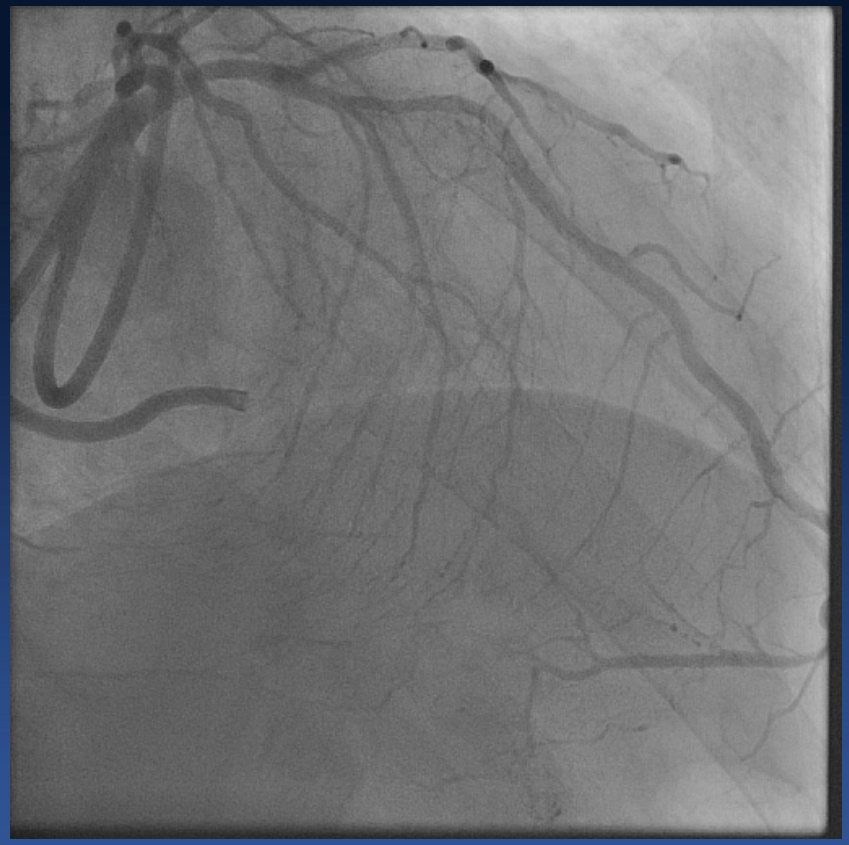
Case I
: RCA CTO



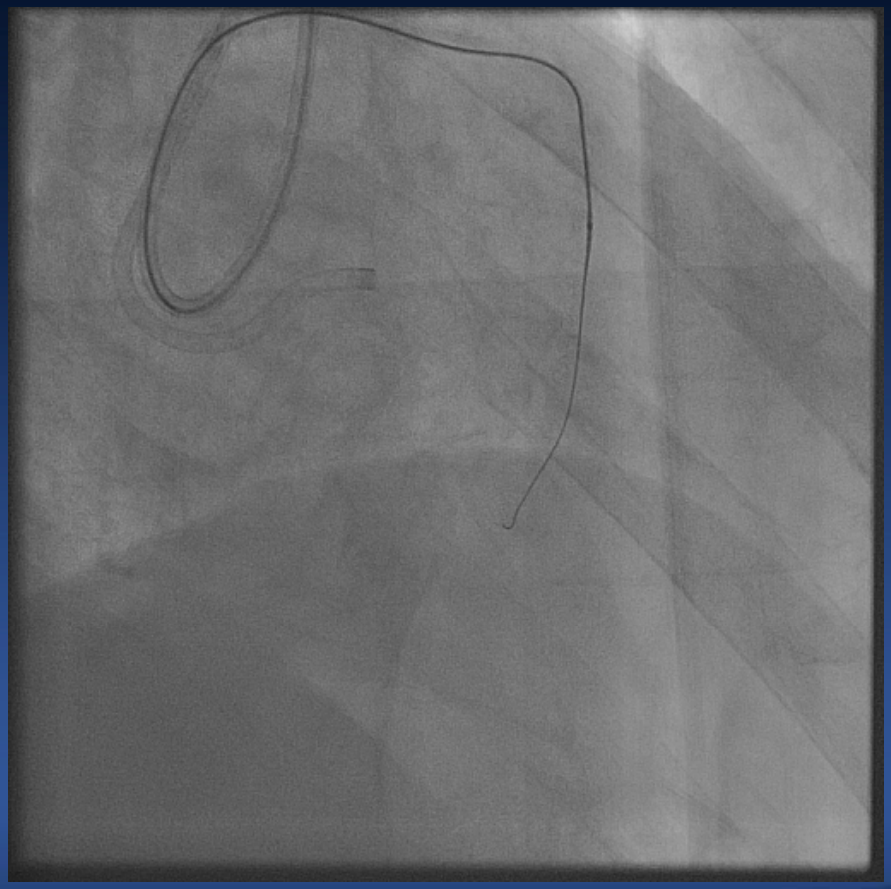


Which route ?

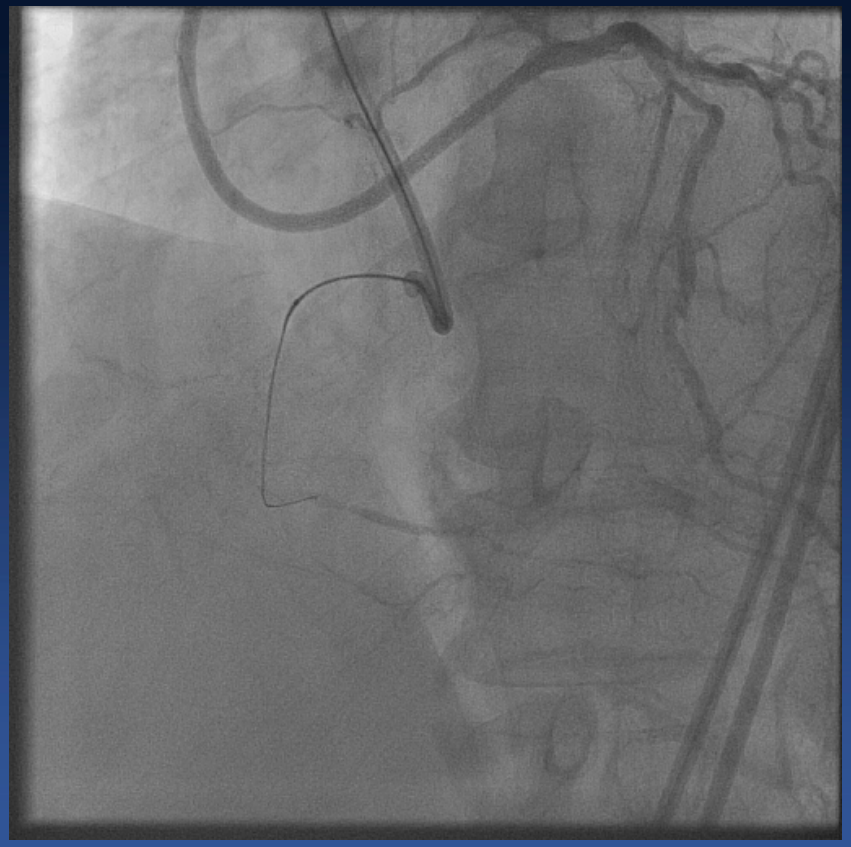


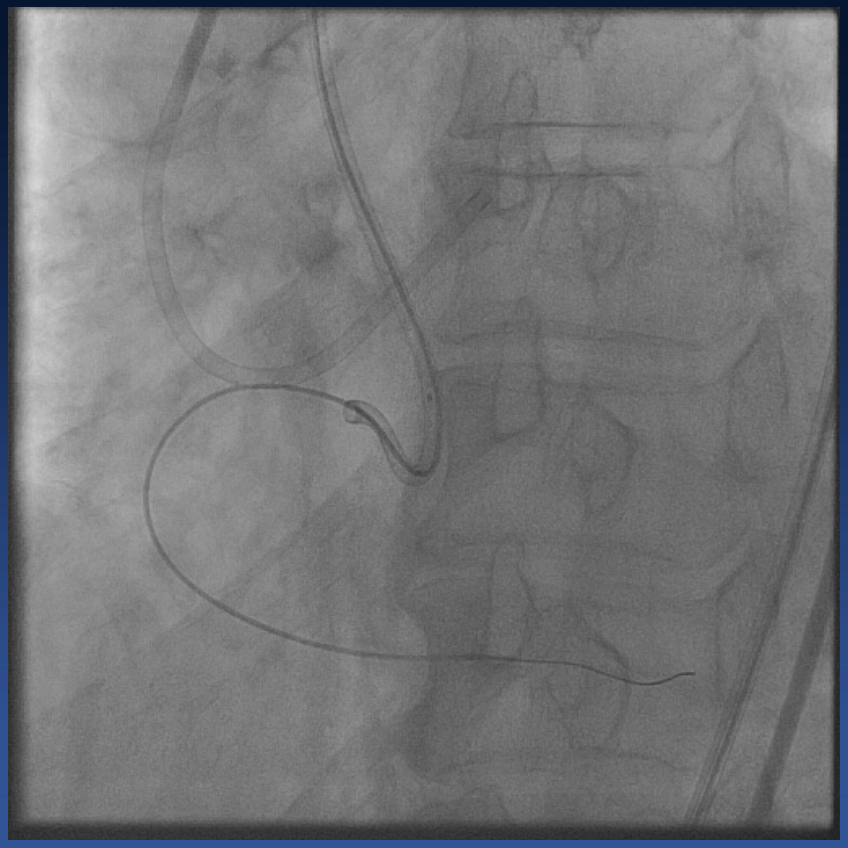


Retrograde approach Fielder FC/Fielder XT : failed

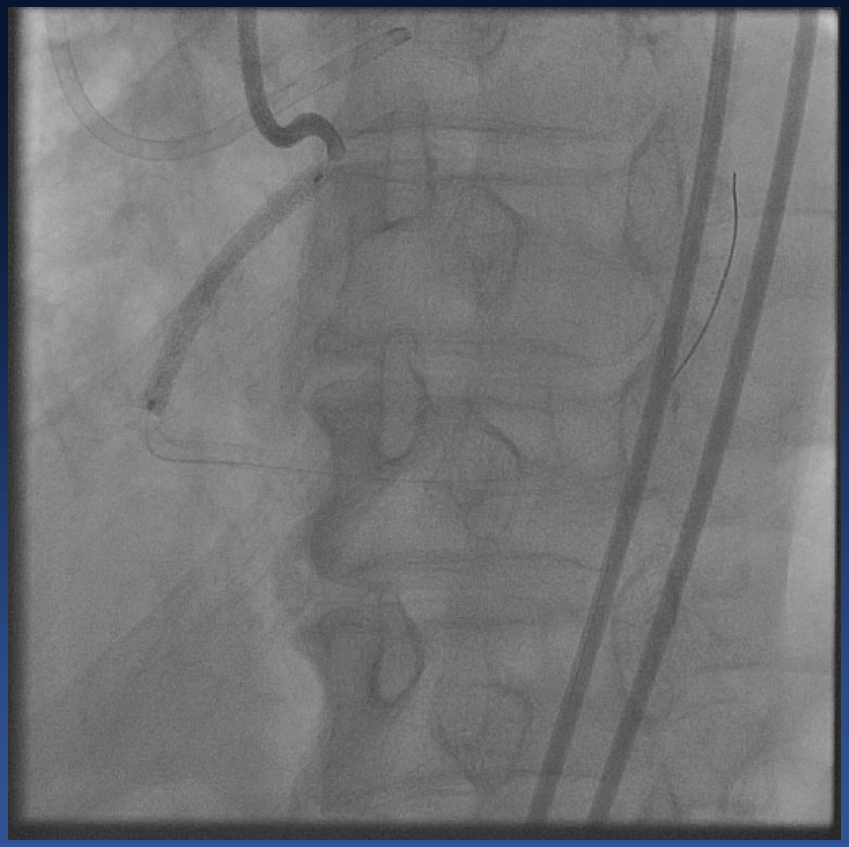


Antegrade approach
Fielder XT

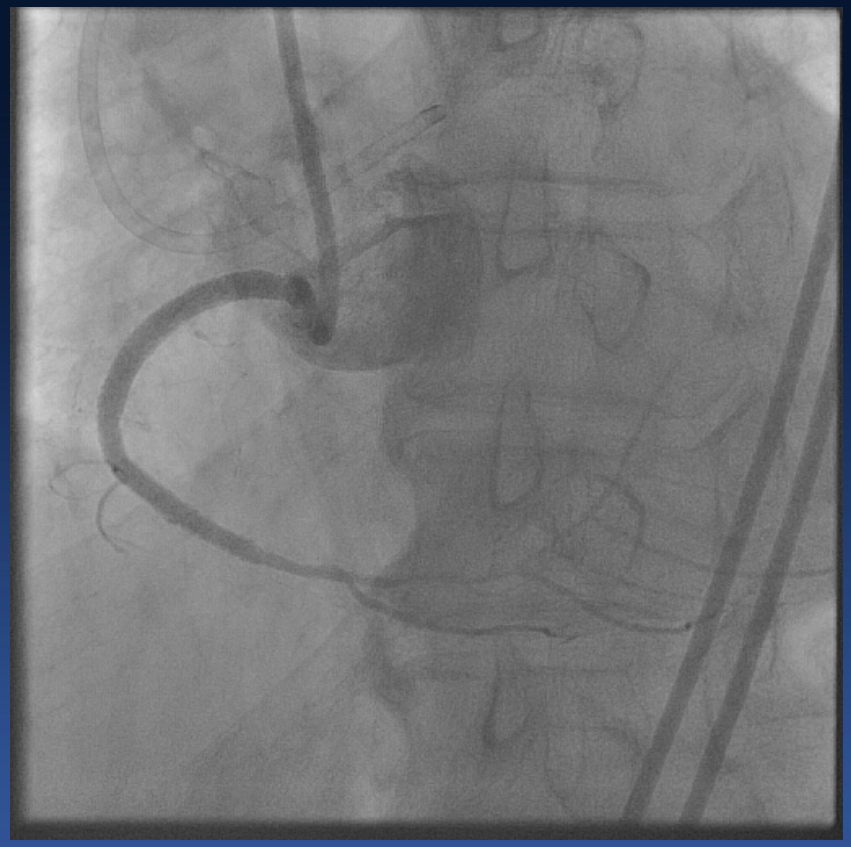




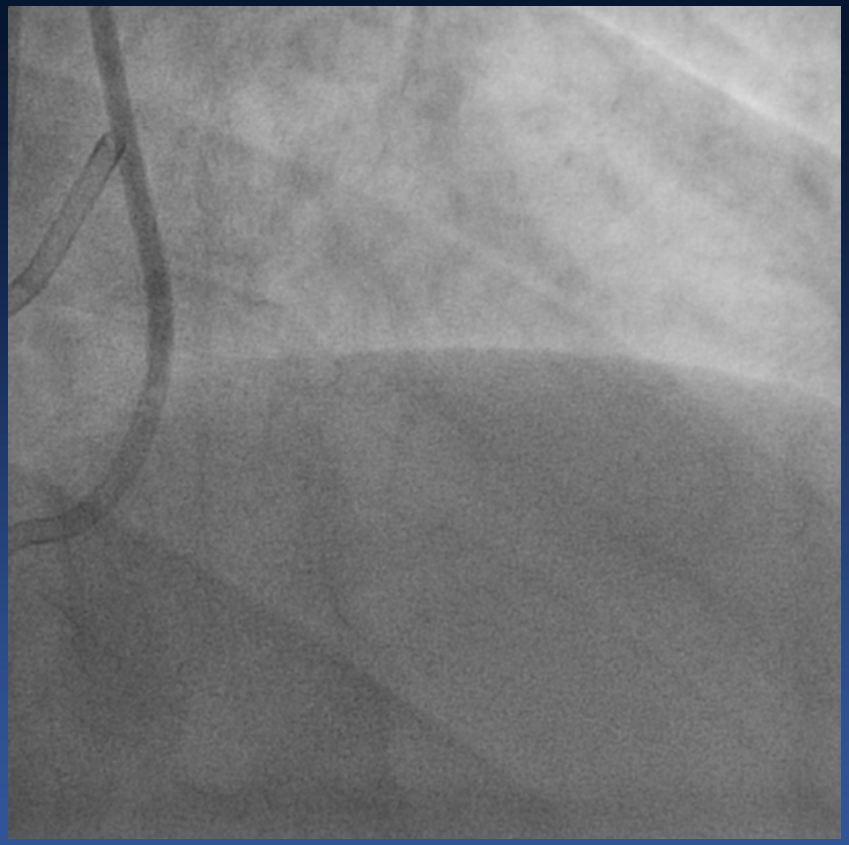
Stenting

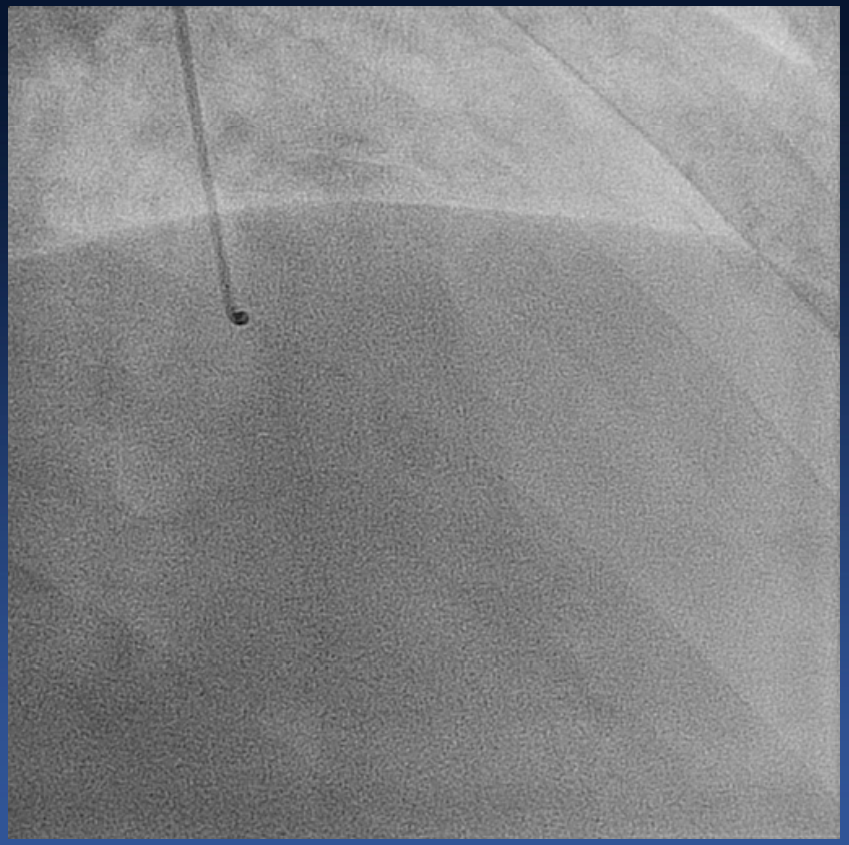


Final Result

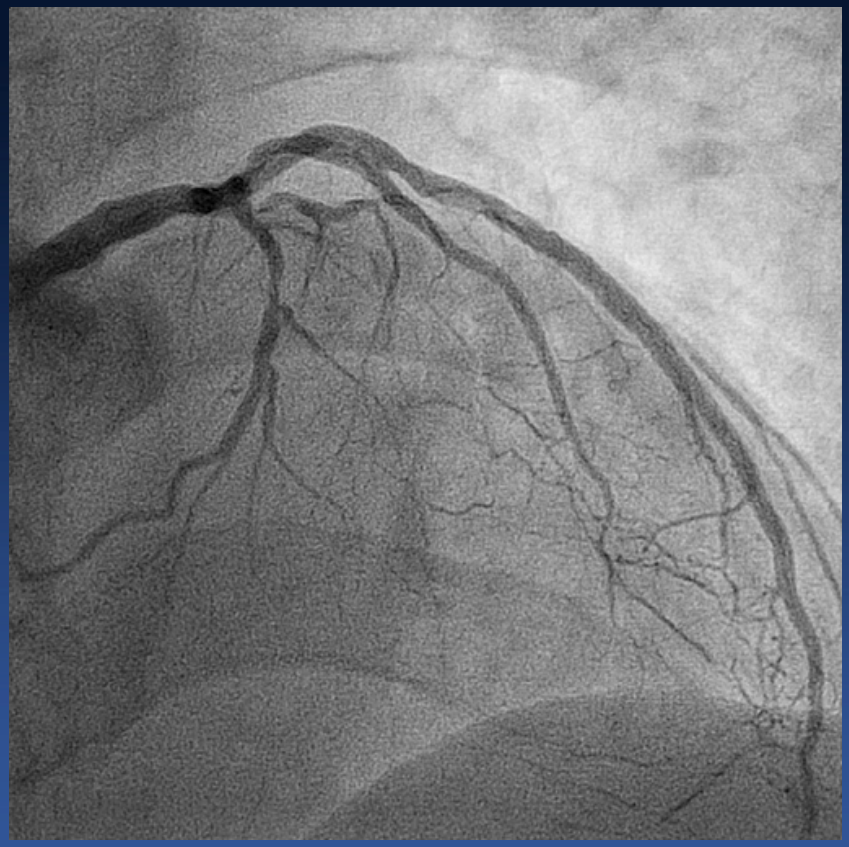


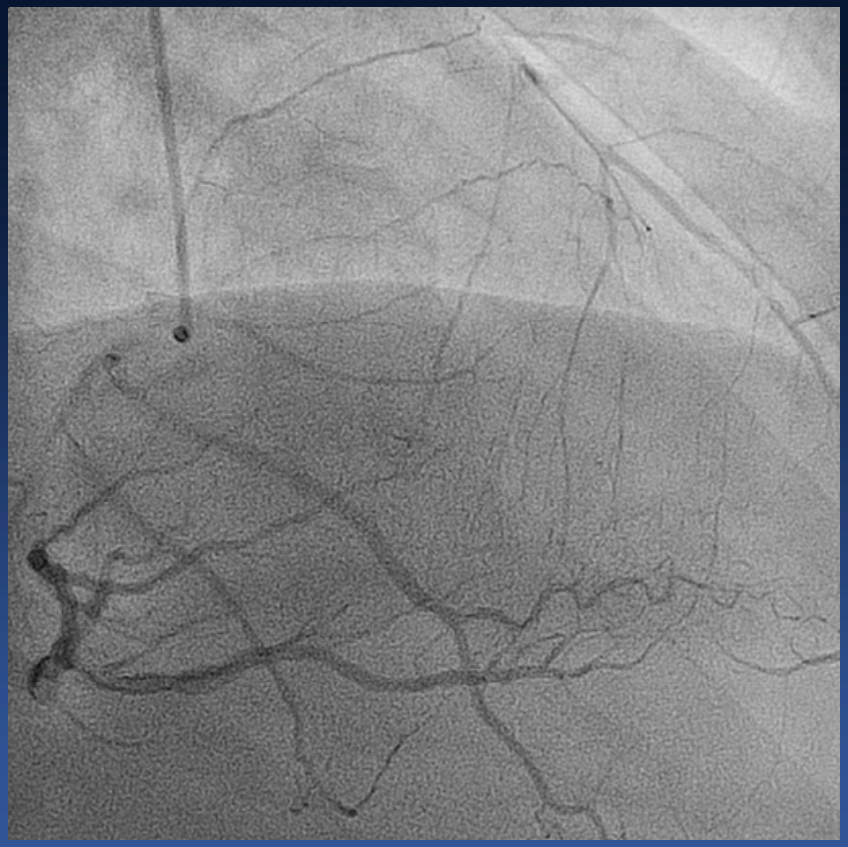
Case II
: LAD CTO



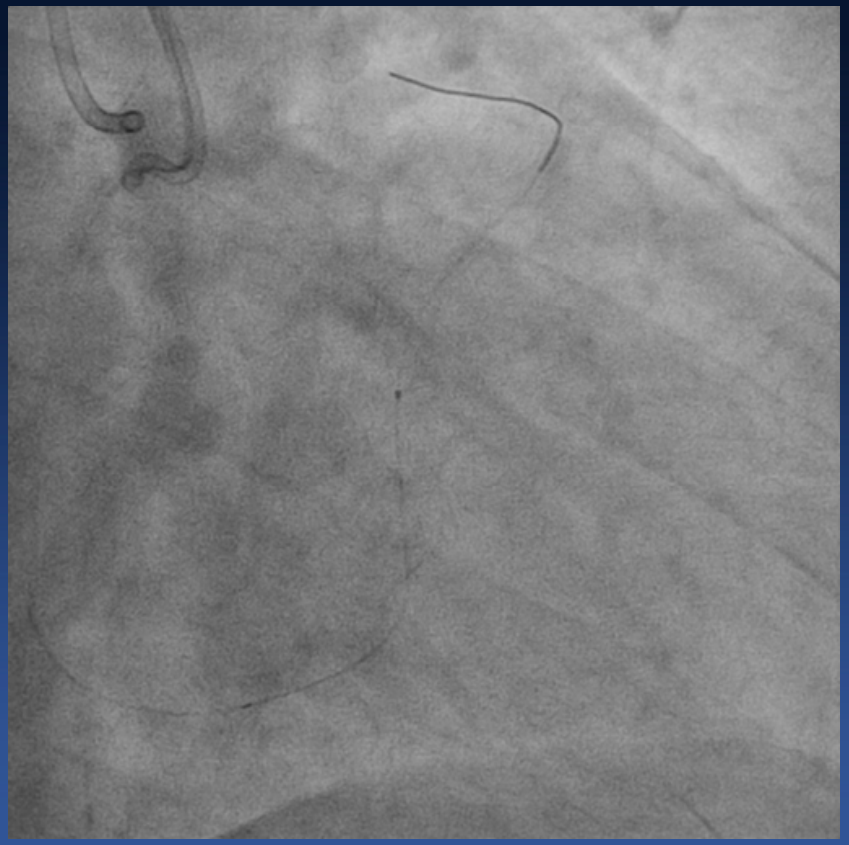


Which route ?

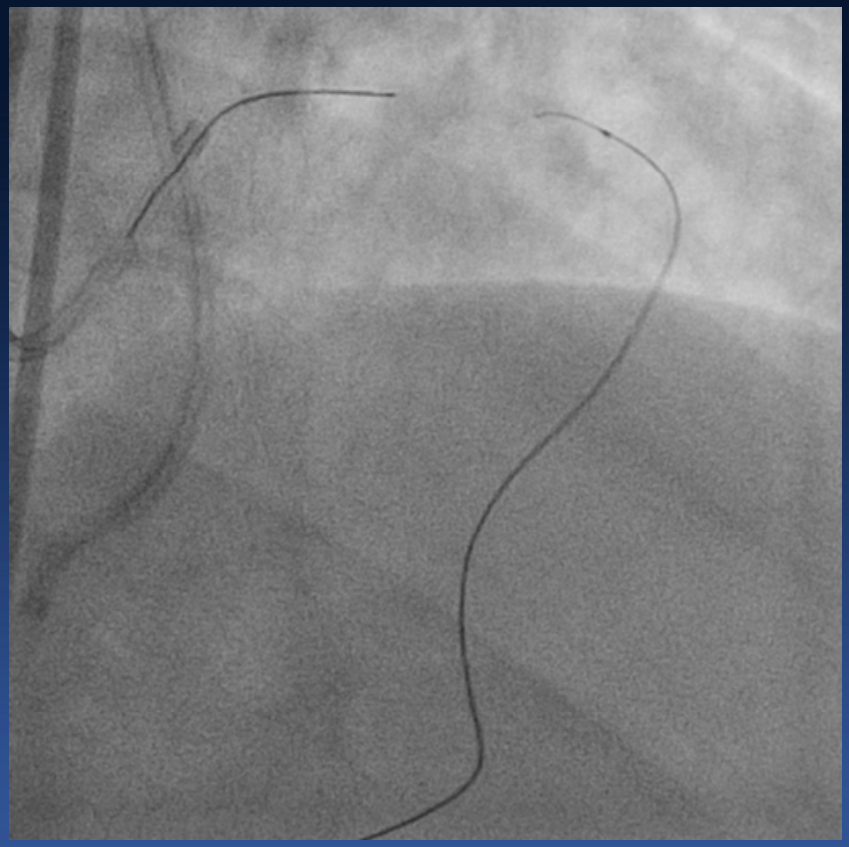


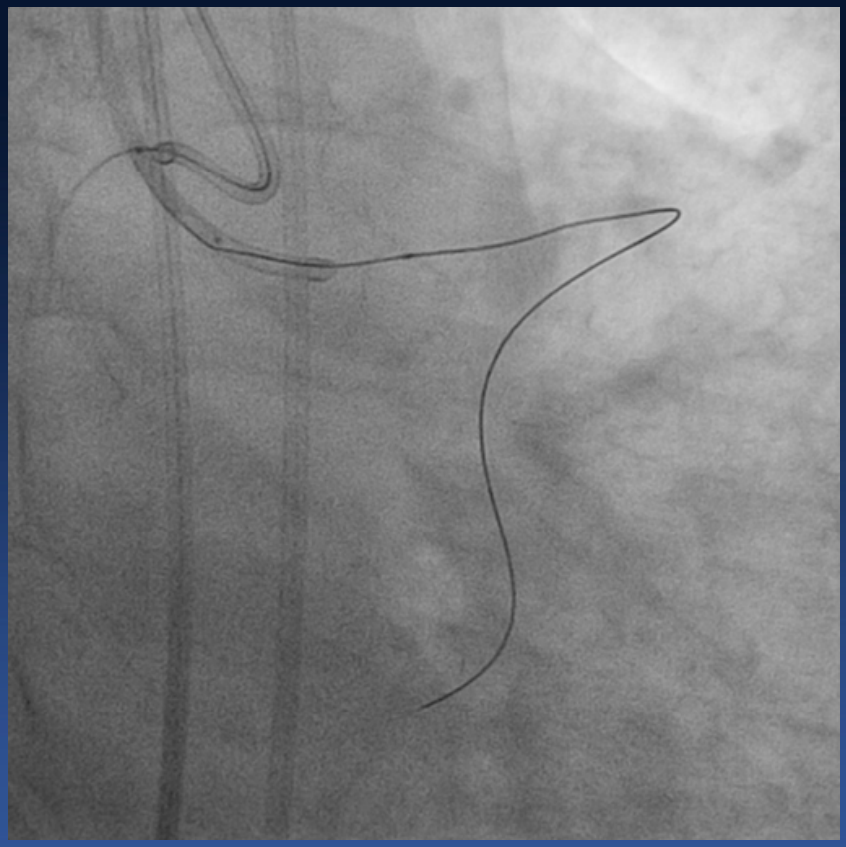


Retrograde approach
Fielder FC & Fielder XT

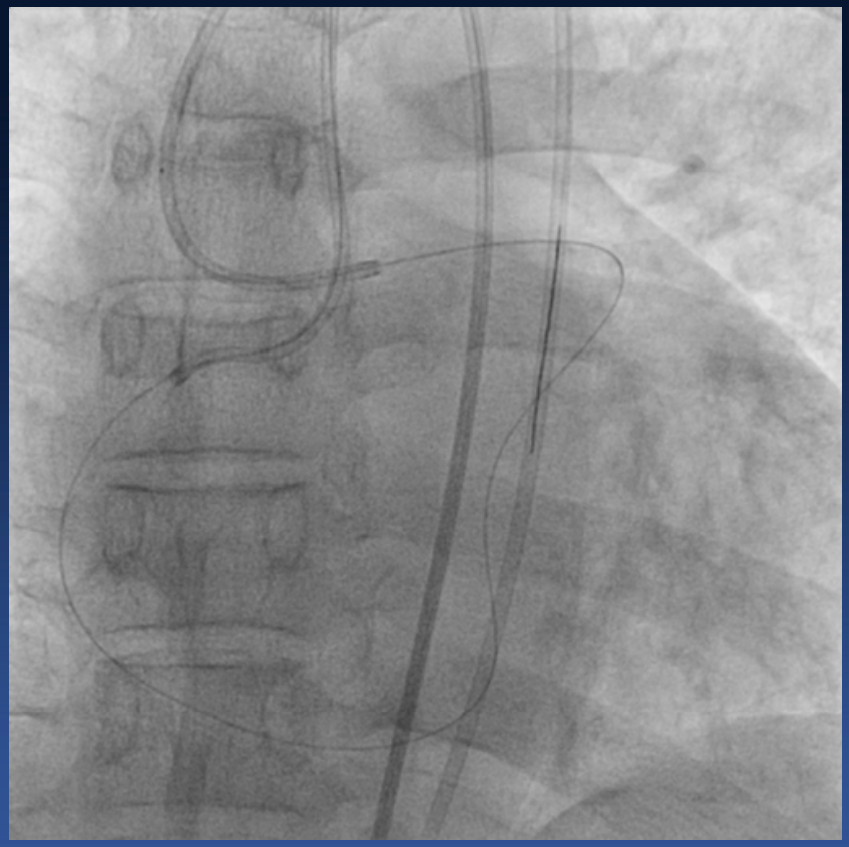


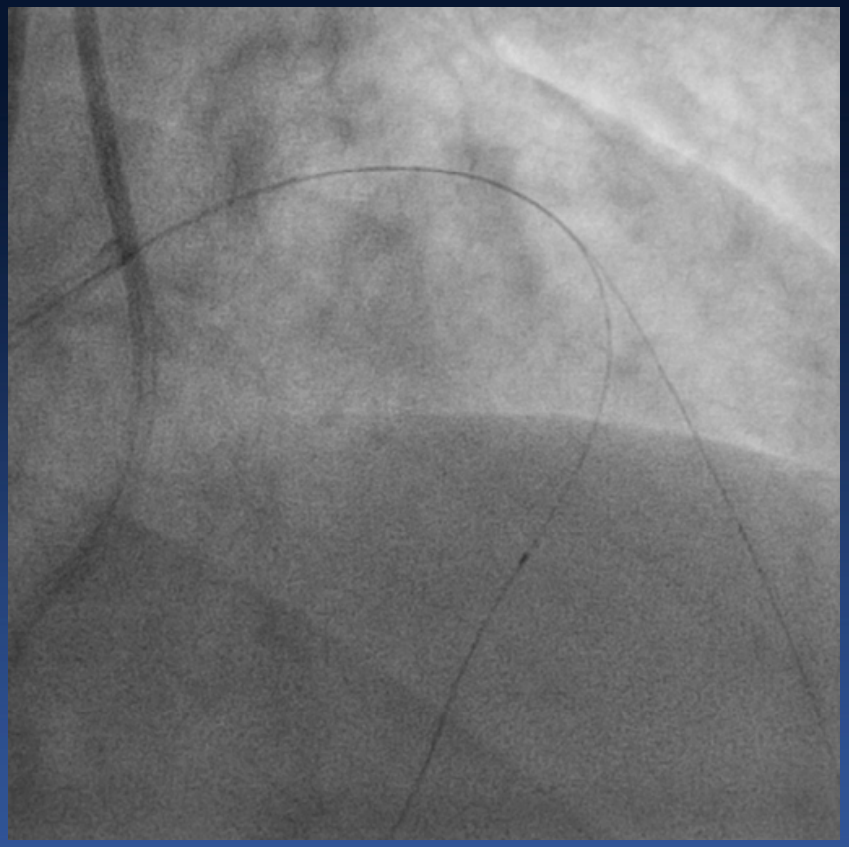
Retrograde wire advance
Fielder XT



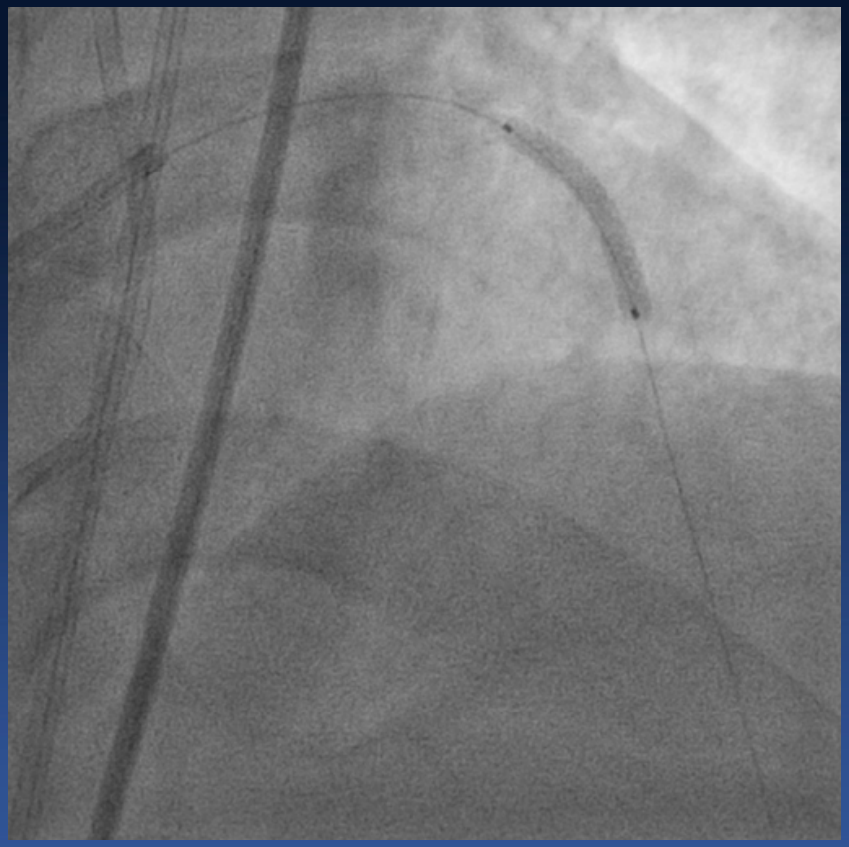


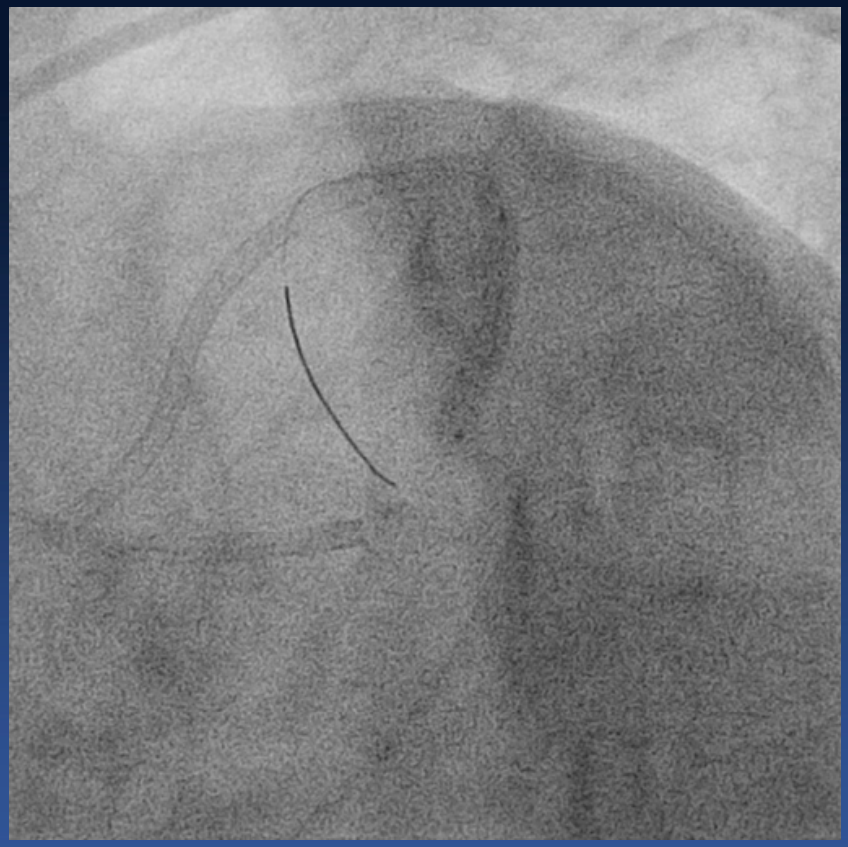
Retrograde wire externalization with long-wire Antegrade wiring to the distal LAD





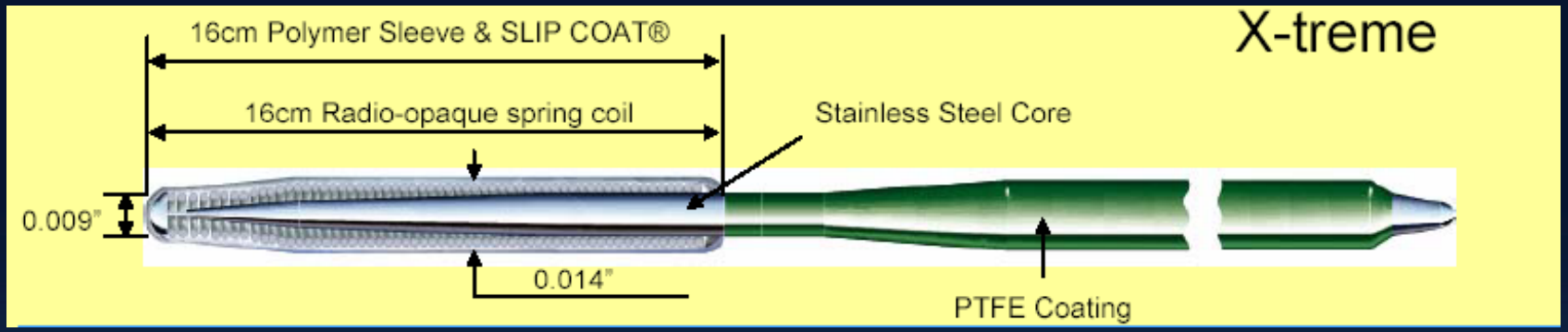
Stenting





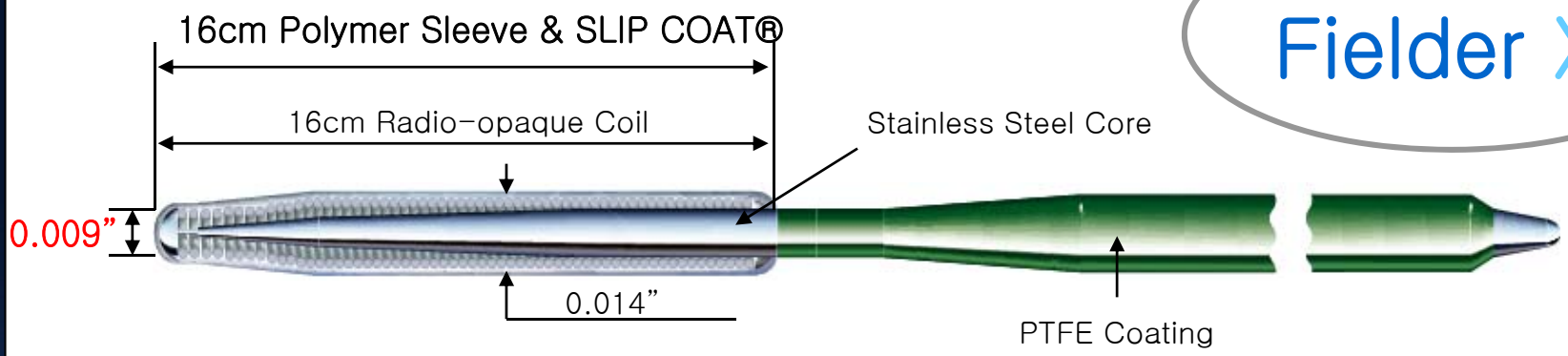
Final Result

Fielder XT

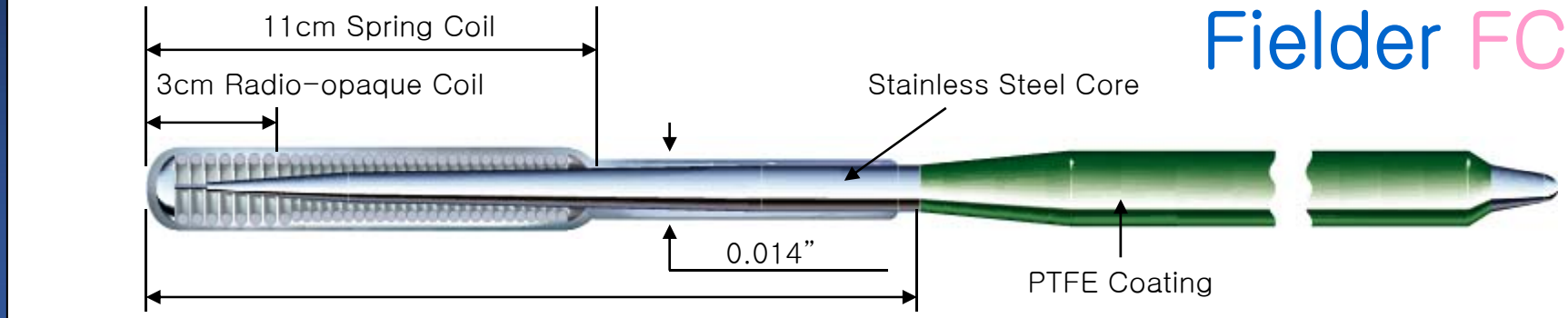


- Hydrophilic coated tapered tip wire
- Tapered tip is nice for finding microchannel or fine collateral
- Tip load = 0.8 g

Fielder XT

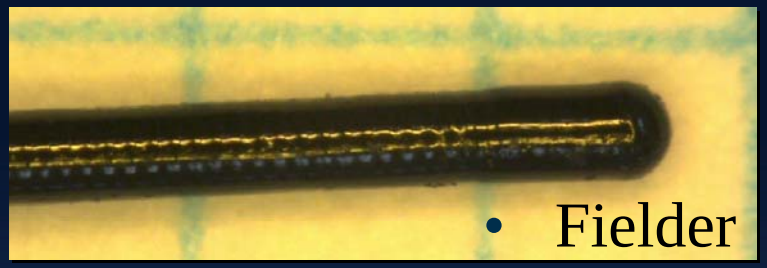


Fielder FC

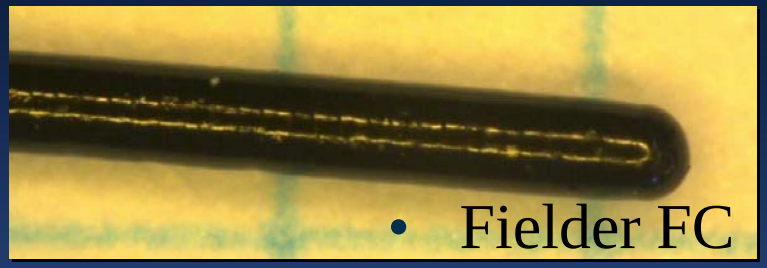


Fielder XT enables precise tip shaping due to its short soldering tip.

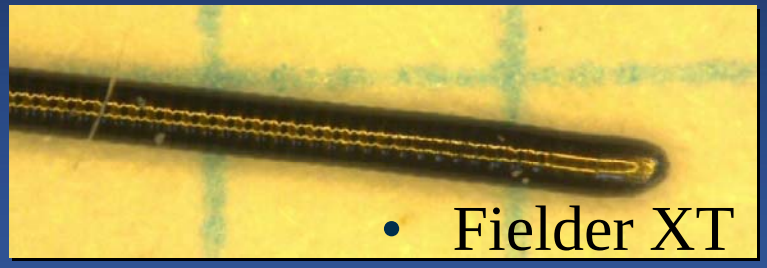
Before Shaping



- Fielder

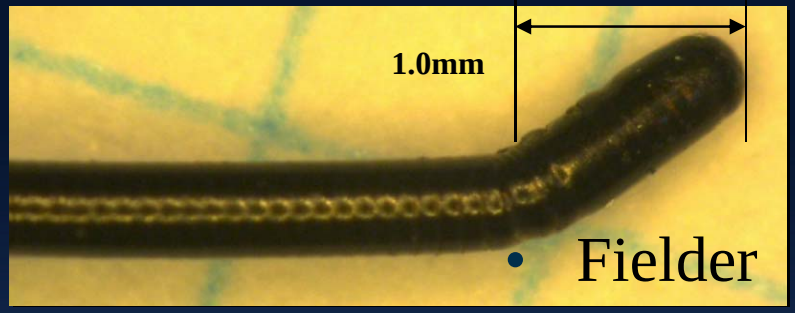


- Fielder FC

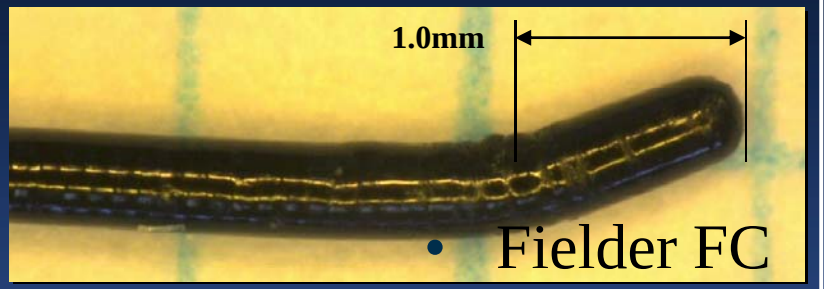


- Fielder XT

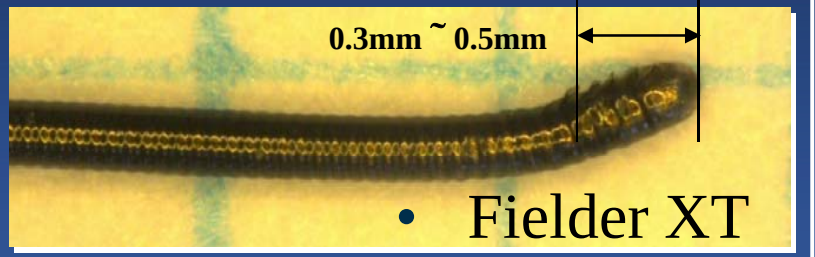
After Shaping



- Fielder

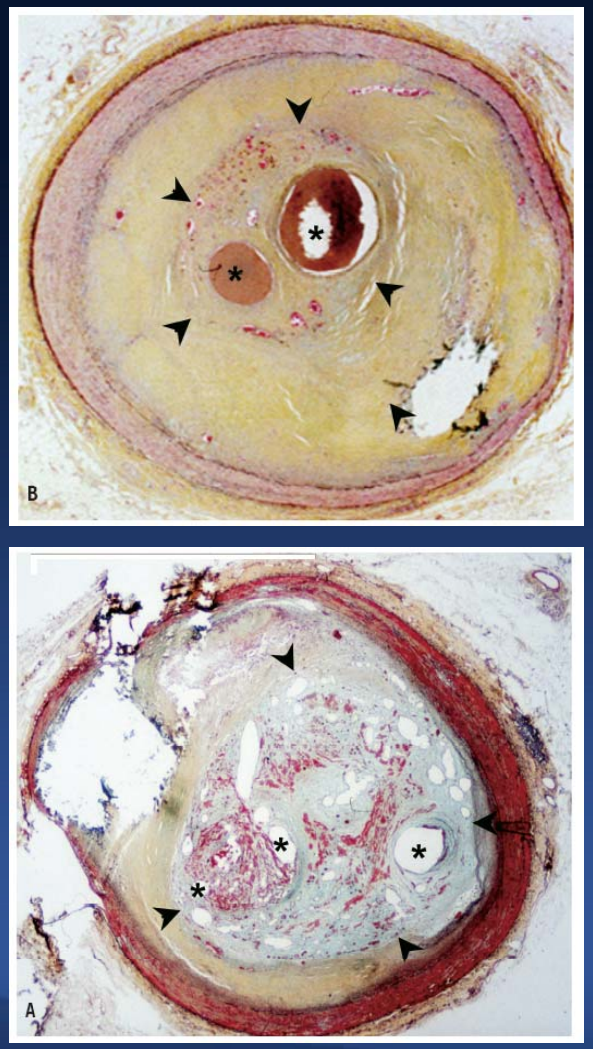


- Fielder FC



- Fielder XT

Microvessels



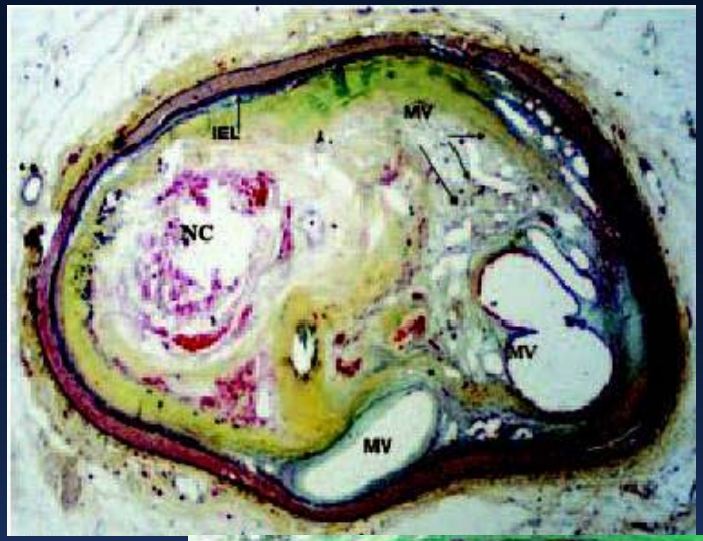
The size is usually from 100-200 to 500 μm
(0.014 wire is 360 μm)

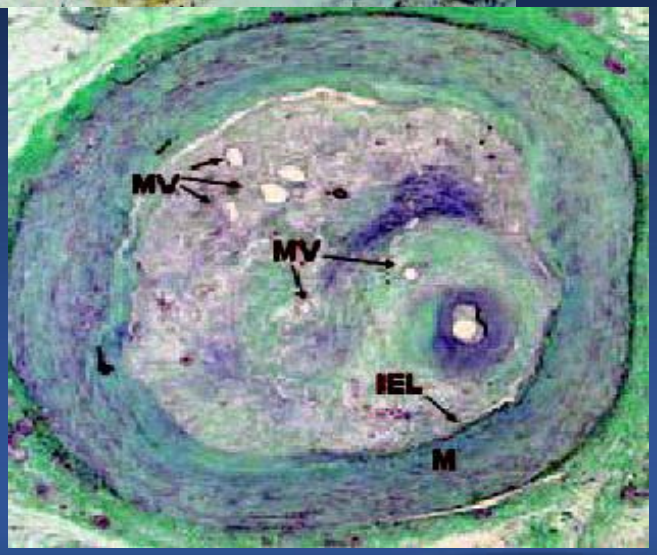
Micro-CT of a 24-week old CTO (rabbit)

Microvessel as a Pathway

CTO created by:

- Ruptured Plaque
- Thrombus
- Replacement of clot and cholesterol esters
- Deposition of collagen and calcium deposits
- Tissue most resistent at ends of CTO (fibrous caps)



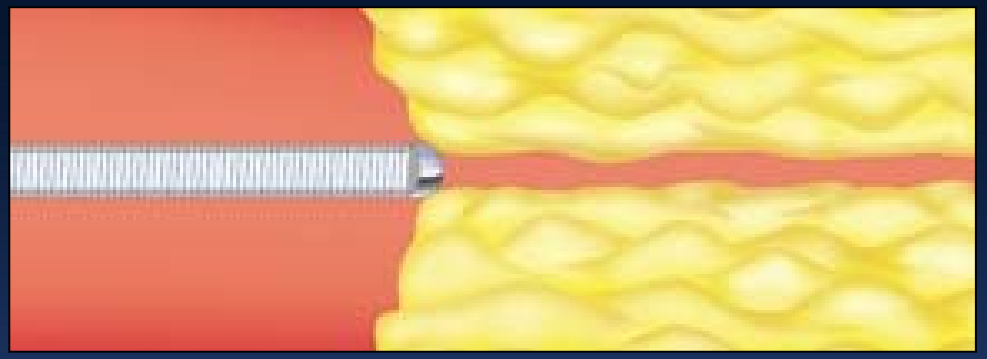


Strauss et al J Intervent Cardiol 2005

Big Tips Are for Waiters!

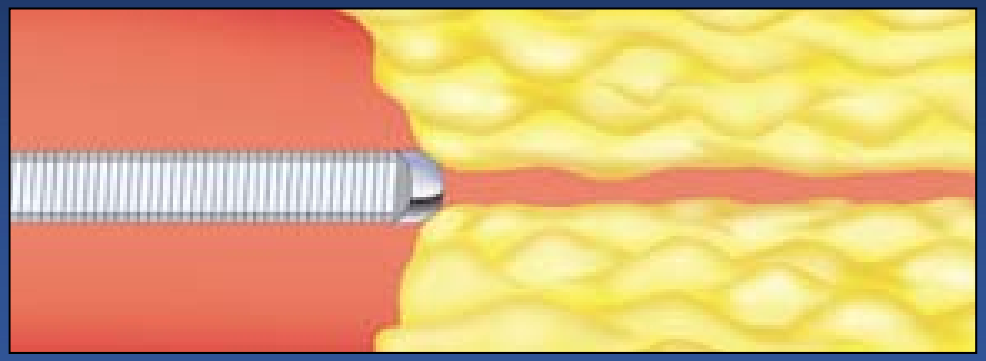
Microchannels: Key for crossing…

0.009” tip



0.007” microchannel

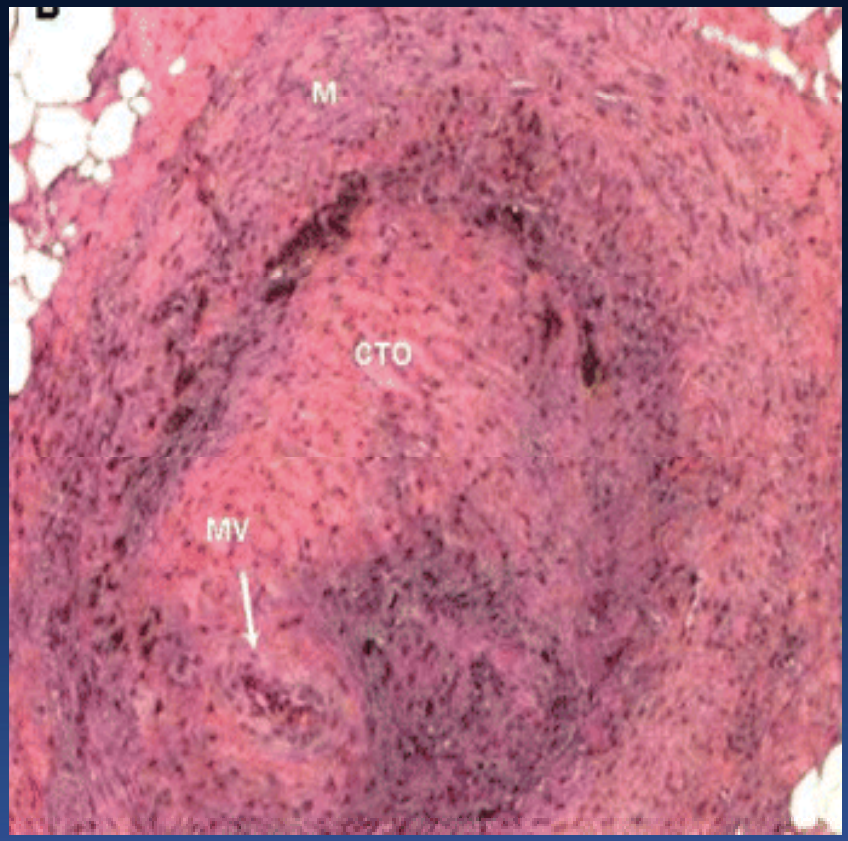
0.014” tip



0.007” microchannel

Microvessels :

Pathways for Successful Guidewire Crossing?



16-week-old CTO that failed guidewire crossing.
Few small microvessels present, dense collagen in extracellular matrix

Strauss et al J Intervent Cardiol 2005

The Spectrum of Lumen Morphology in CTO: Clinical Challenges

Proteoglycan-rich

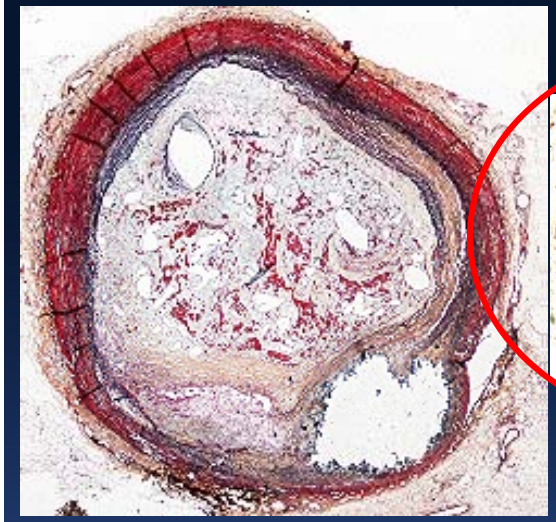
Fibrotic plaque: Negative

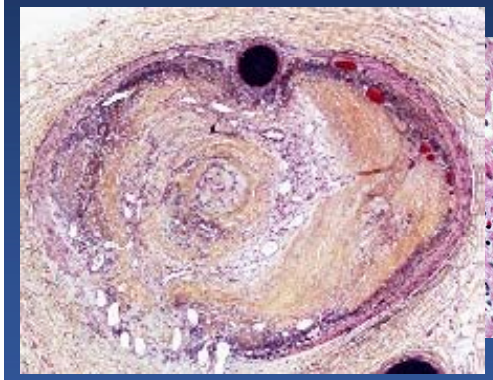
Large recanalization channels

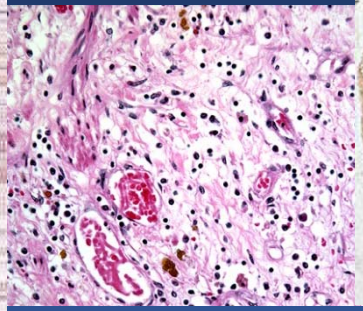
Small recanalization channels

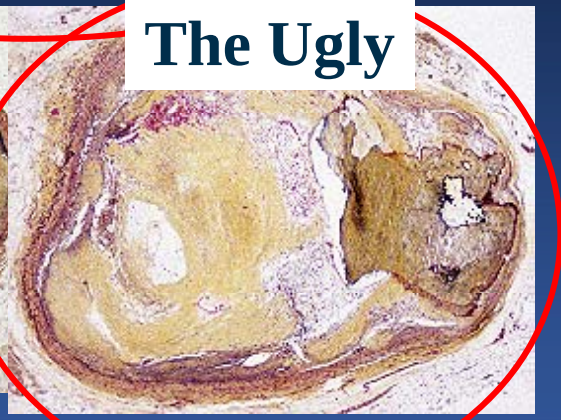
The Bad

The Good









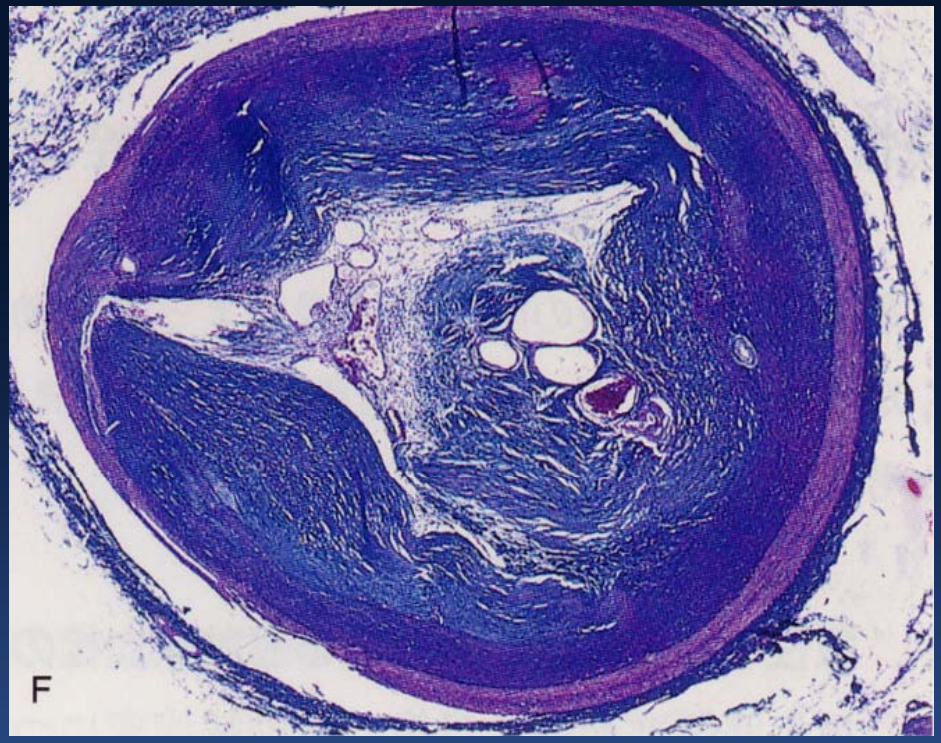
The Ugly

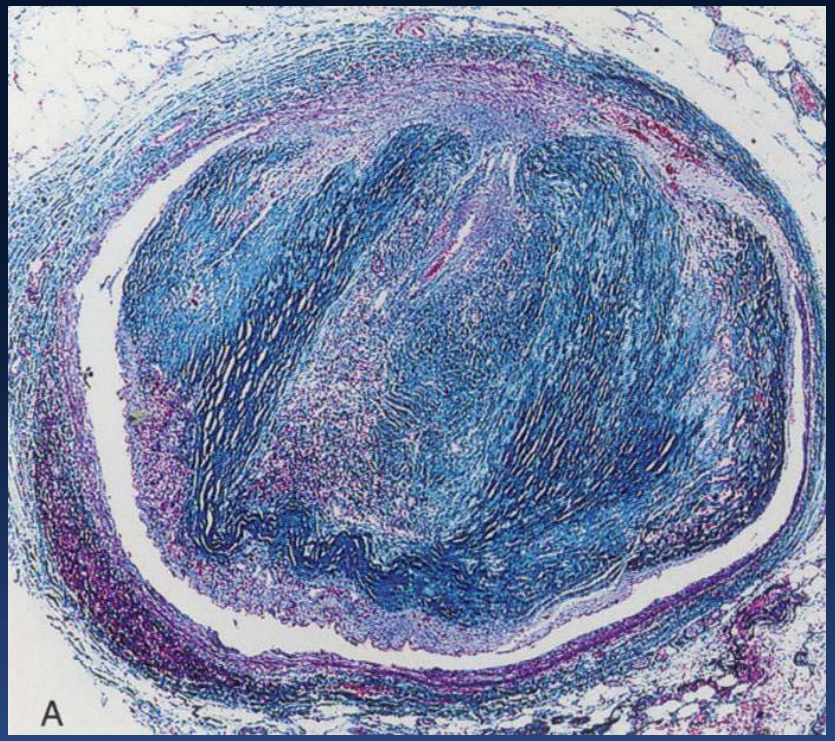
Inflammation

Necrotic core

Calcification

CTO Pathology



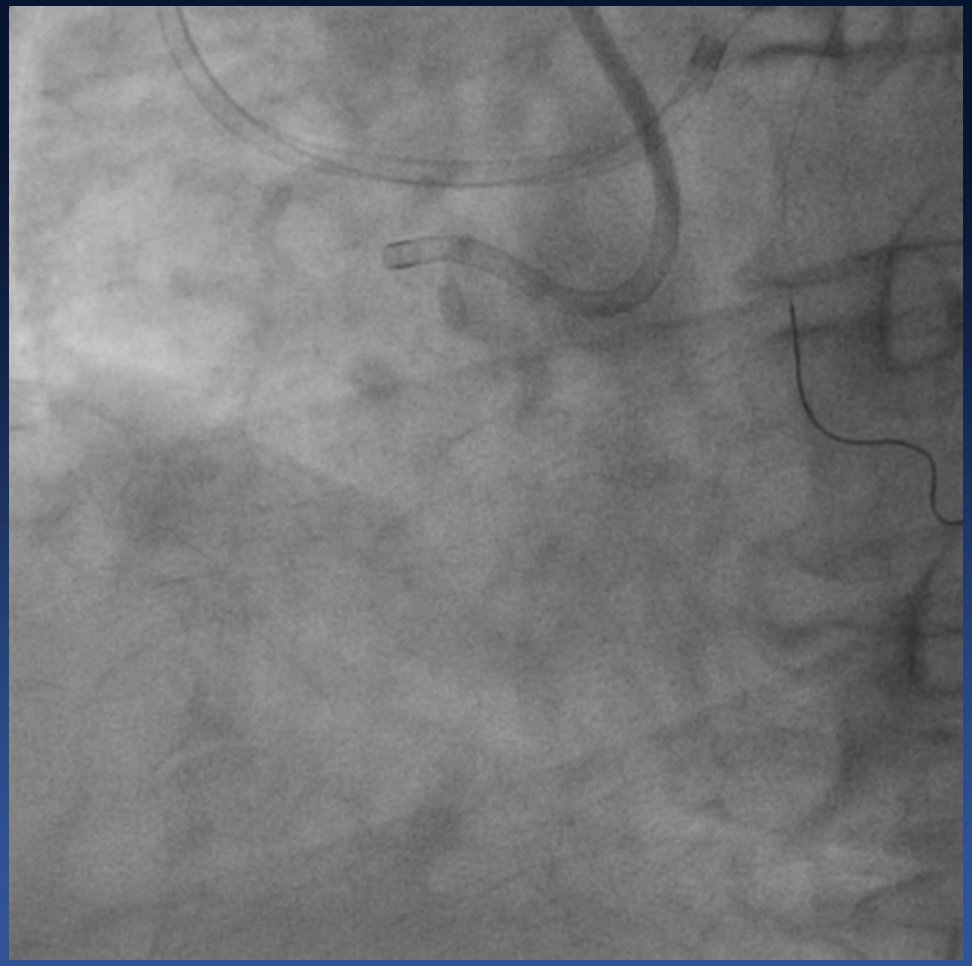


Micro-channels (present in up to 80%)
increase success

Homogenous hard plaque
lower success rates

J Am Coll Cardiol. 1997;29:955-63.

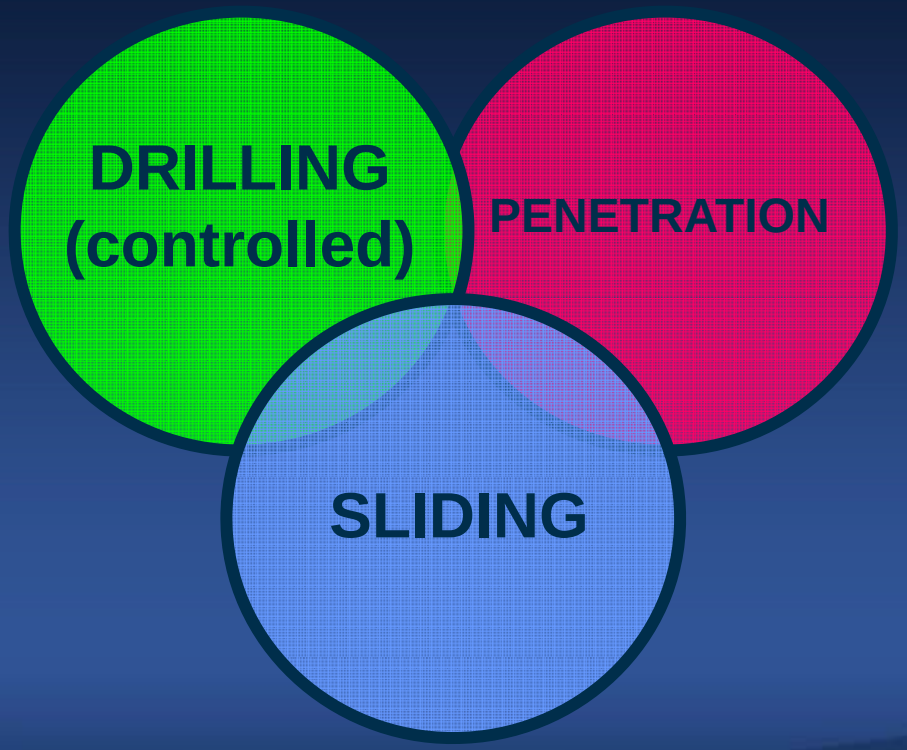
Microchannel



Angiographic microchannels are visible in 30-50% CTOs

Suitable GideWires selection

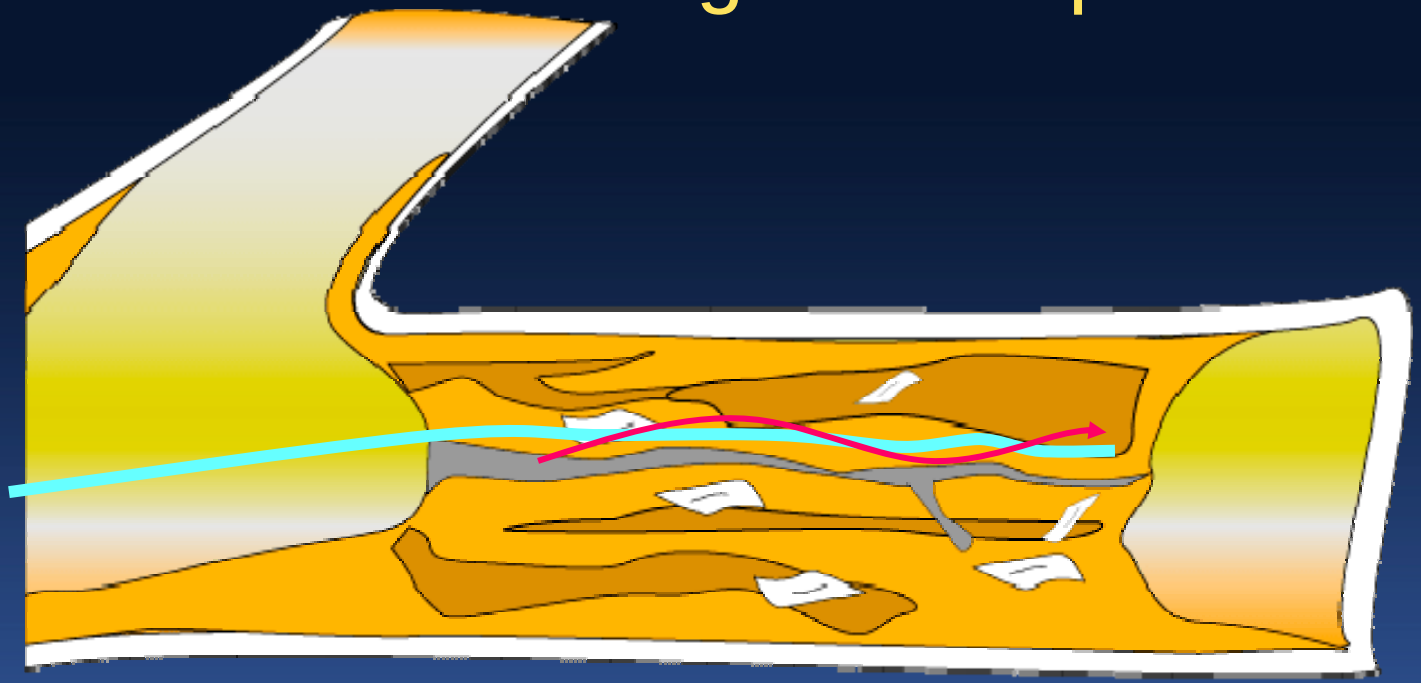
Current step-up GW strategy for Antegrade CTO-PCI



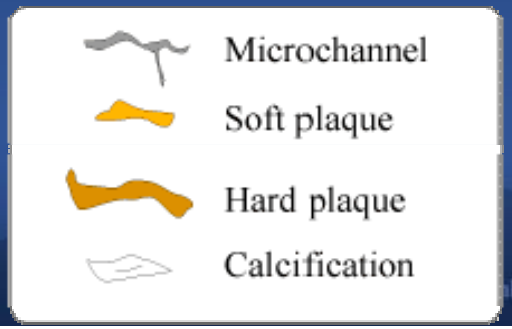
Suitable GWs selection

Guidewire for Sliding technique

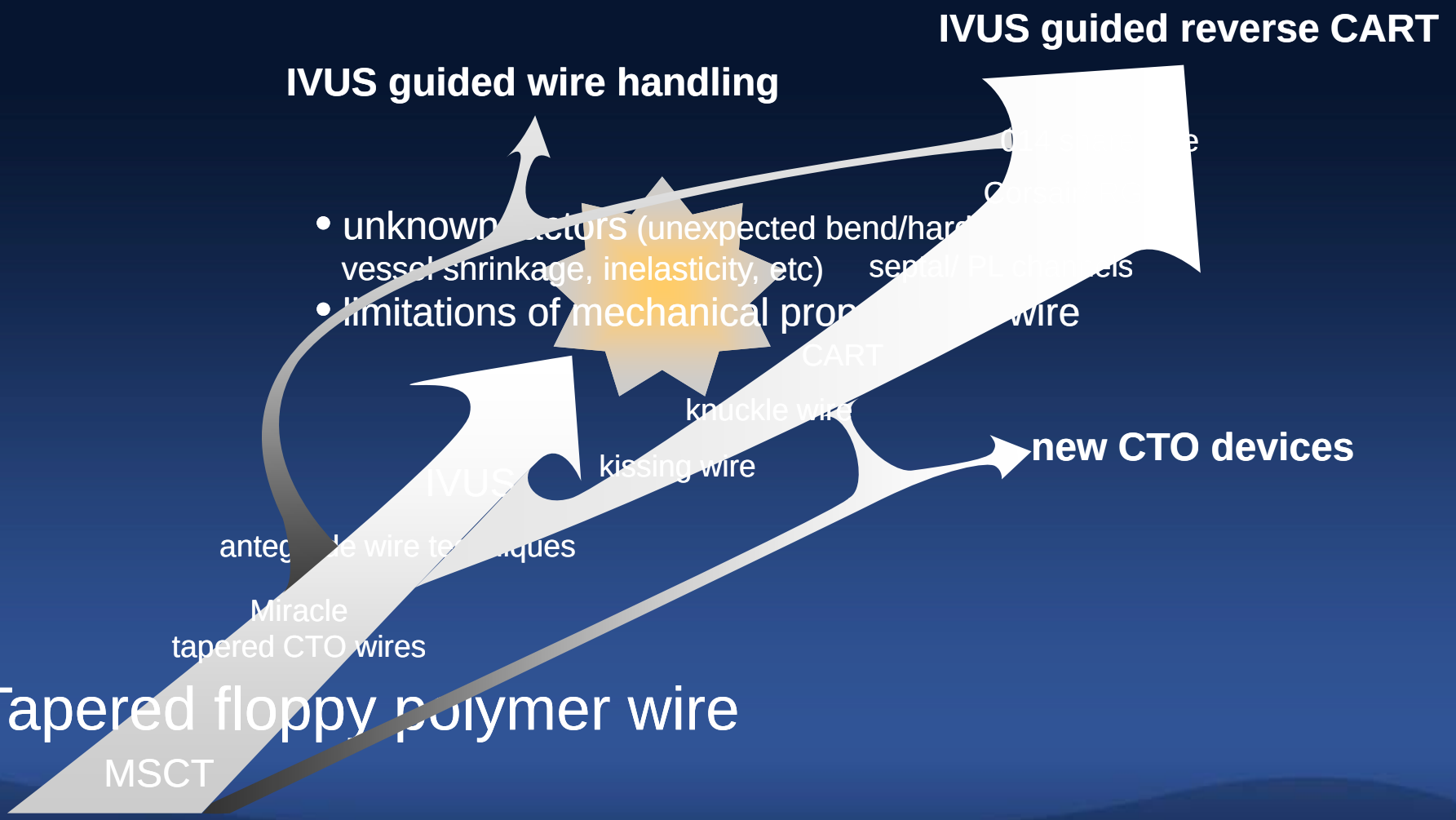
SLIDING



Low profile to cross microchannels or loose tissue
High lubricity intra-lesion
Soft tip; will not puncture hard plaque or adventitia



Roadmap to CTOs



Tapered Tip Soft wires

- They can easily enter into non-visible microchannels because of their small diameters and lower friction resistance.
- They can rarely damage or induce intimal dissection because of their lower tip stiffness
- Tapered tip soft wire is optimal first-line strategy in CTO PCI