



CONGRESSO

ROMA, 25 - 27 Giugno 2026

SEDE DEI LAVORI

A. Roma Lifestyle Hotel
Via Giorgio Zoega 59, Roma

Approccio anterogrado:
quale tecnica per quale
lesione

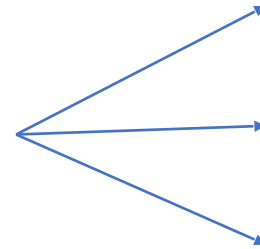
Drssa Daniela Benedetto
Policlinico Universitario
Tor Vergata Roma

The Lineup

1. Planning of CTO approach

2. Hybrid Algorithm

3. Antegrade approach



Guidewires

Microcath and
Cath Extension

Imaging

Good Angiogram...

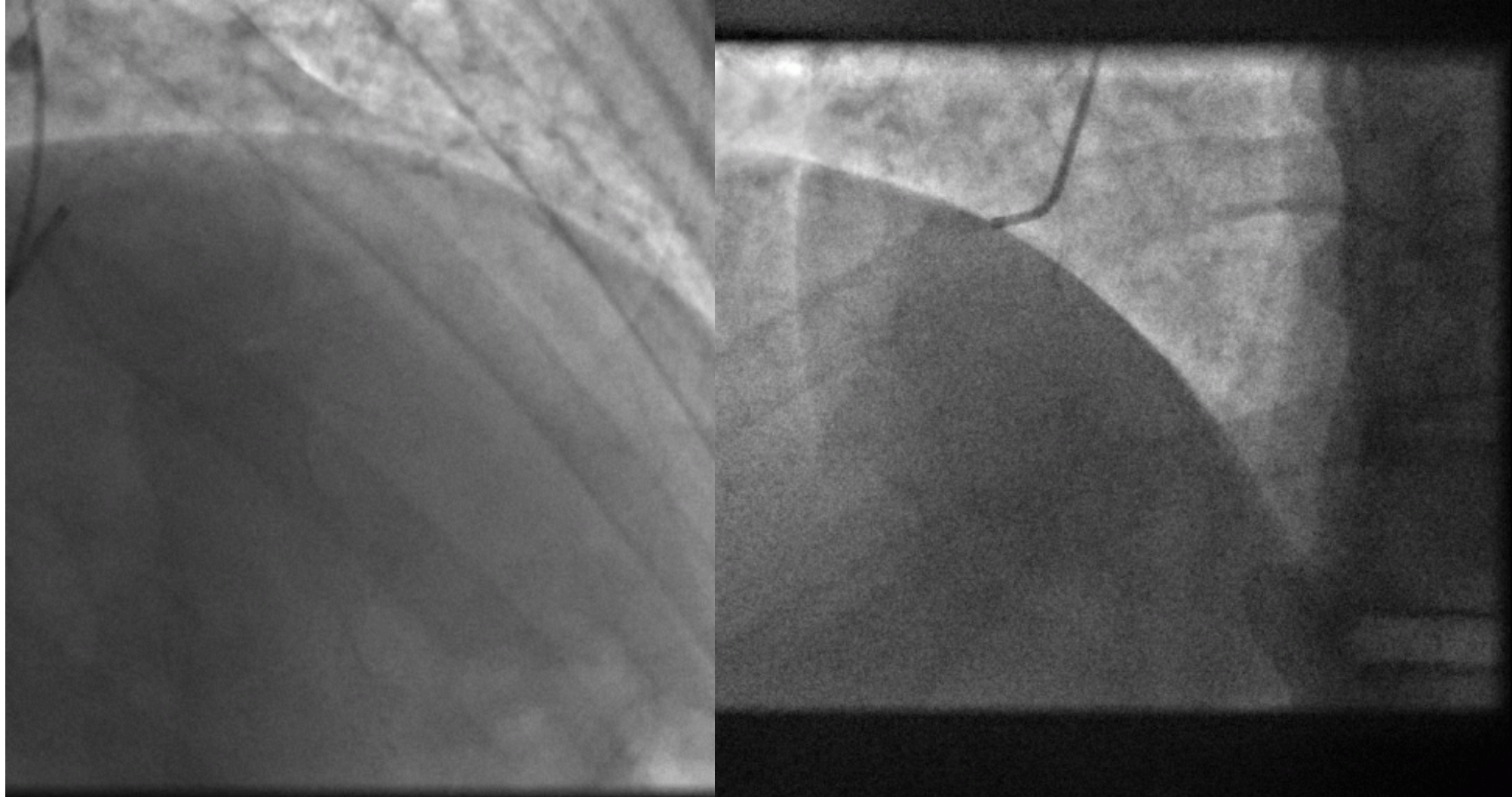
- ✓ **Powerful and Long injection**
- ✓ **Good projections**
- ✓ **Large field**
- ✓ **No panning**

... to obtain

- ✓ **Optimal view of the distal CTO vessel**
- ✓ **Optimal view of the donor vessel**
- ✓ **Good views of the collaterals
(different projections)**
- ✓ **Several views of the occluded vessel**
- ✓ **At least 1 same view for both vessel**

IMPORTANCE of DUAL ANGIOGRAPHY

Prox LAD CTO



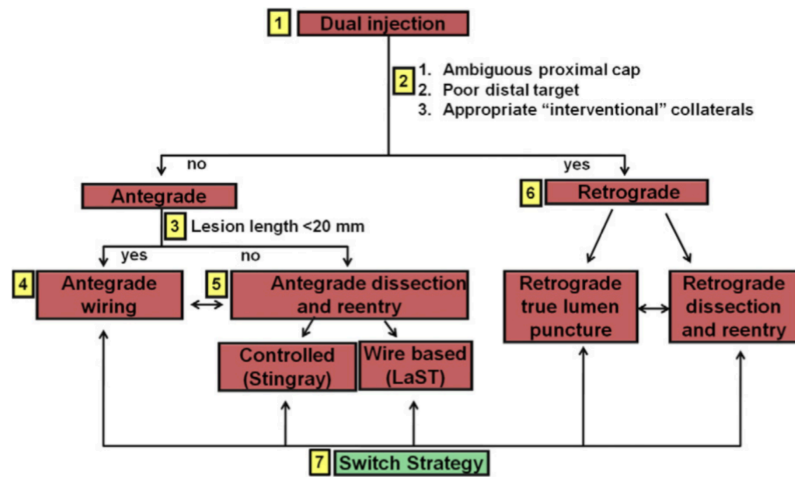
**When dual injection
is performed...**





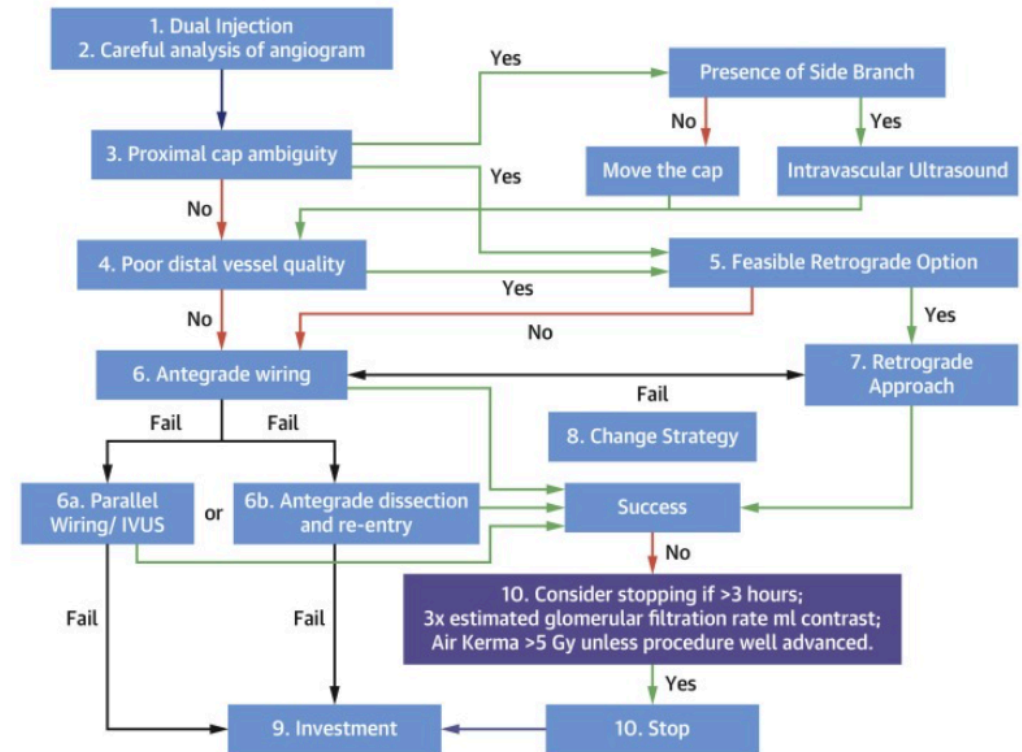
CTO-PCI: current approach

Anatomy going to dictate our interventional strategy



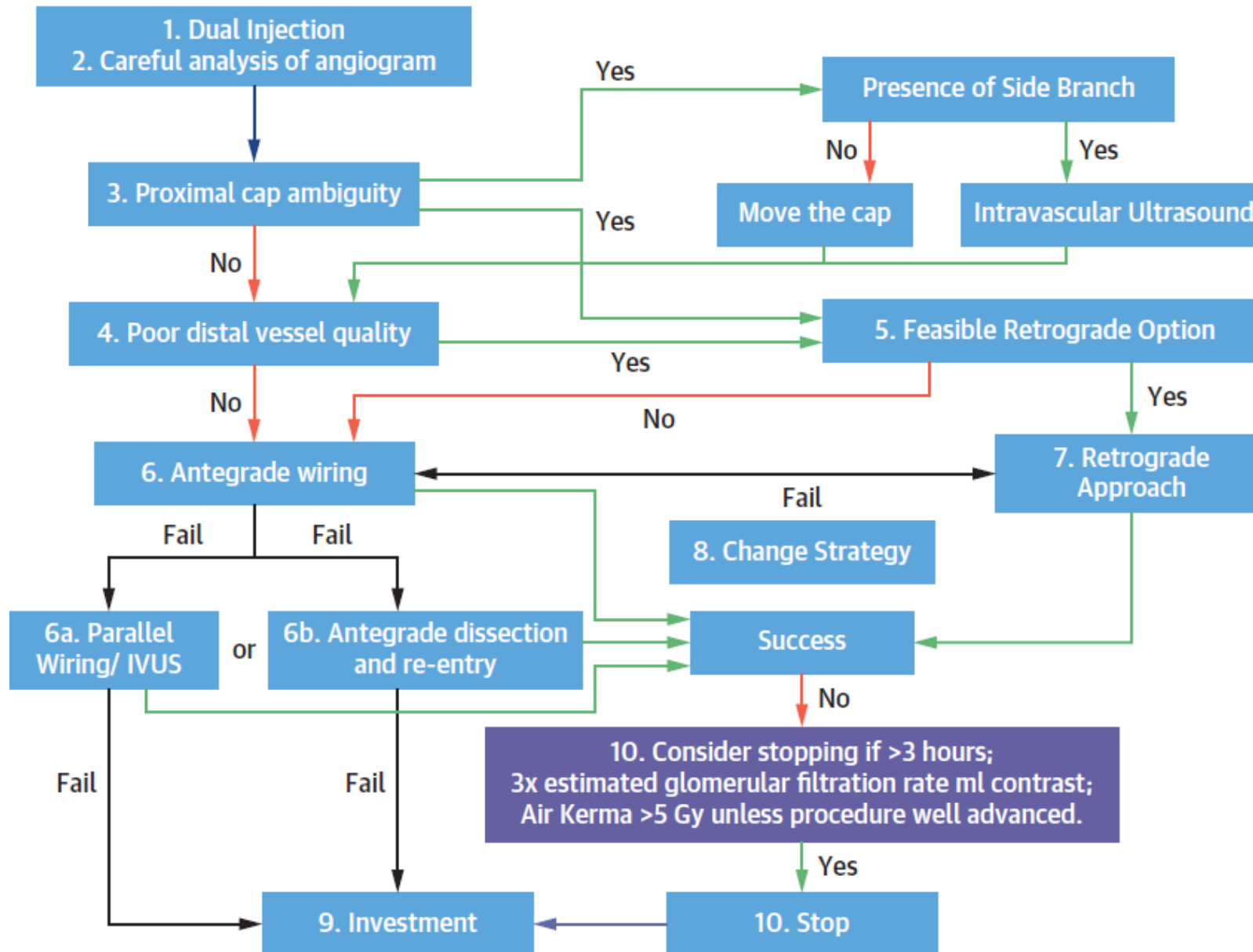
Hybrid CTO Algorithm -2012

CENTRAL ILLUSTRATION: The Global Chronic Total Occlusion Crossing Algorithm



Wu, E.B. et al. J Am Coll Cardiol. 2021;78(8):840-853.

- The authors of these regional algorithms from 50 countries have collaborated in developing a global CTO crossing algorithm.
- 10 Steps



Wu , Brilakis 2021

GLOBAL ALGORITHM

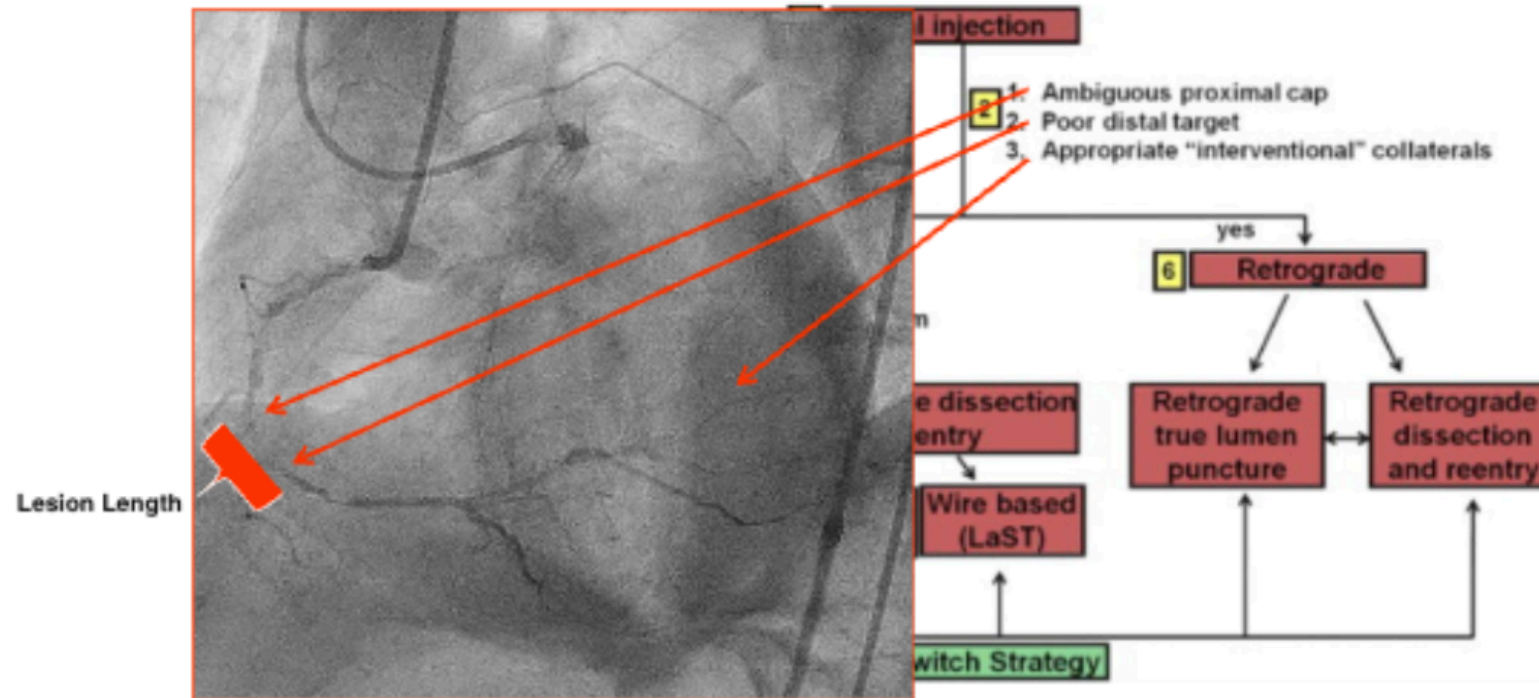
Antegrade

vs

Retrograde CTO PCI

Outdated concept !!!

Evaluating the Angiogram – Anatomic Features



Proximal Cap: →

% of Ambiguity

Length →

>20 mm

Distal Landing Zone →

Healthy (?)

Interventional Collaterals →

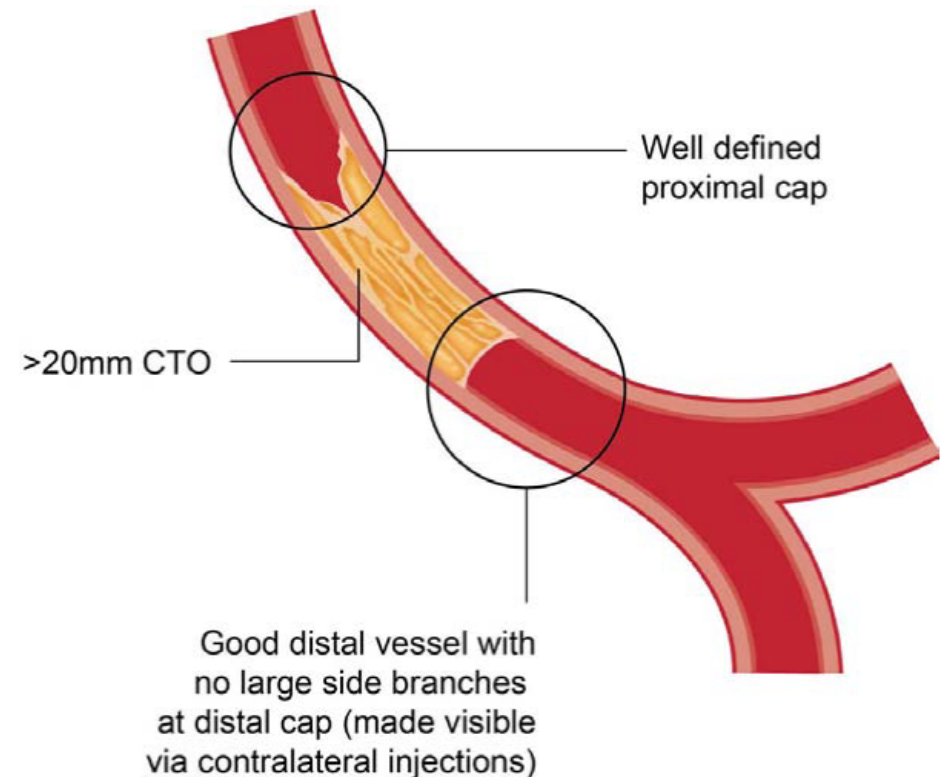
septal - epicardial

Antegrade wiring (AW)

AW is a technique where a guidewire penetrates the proximal cap of the CTO and aims to remain intraplaque before entering the distal true lumen.

AW is most likely to be successful when:

1. Clear proximal cap
2. CTO lesion length <20mm
3. Clear distal landing



Antegrade wiring (AW)

Lumen to Lumen

- AWE - Prox cap entry with Loose Tissue tracking and exiting the distal cap intra luminal

In case of inadvertent subintimal wire passage

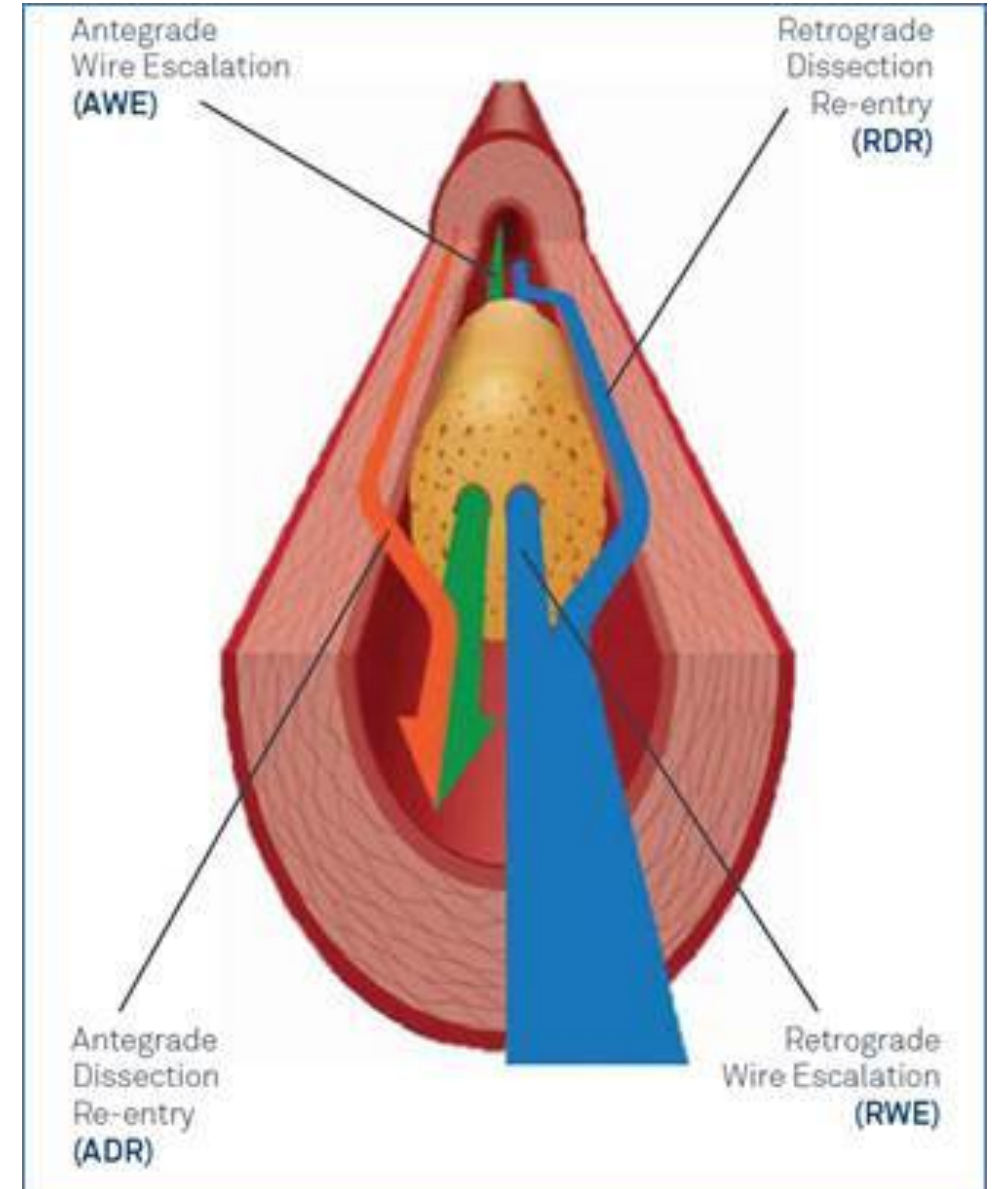
- Parallel wire with dual lumen micro catheter

Flush Occlusion with SB

- IVUS guided entry and step down

Blunt cap

- Knuckle wire with ADR using Stingray



Antegrade Wire Selection



Wire Category	Wire Role	Examples
Sliding	Intra or Extra plaque soft tissue and/or micro-channel tracking Passive selection to path of least resistance	Fielder XT-A (1g) Gladius Mongo (3g) Pilot 200 (4g) / Raider (4g)
Steerable	Fibrocalcific hard plaque tracking Intra plaque Active wire control (deflection & rotation)	Gaia Next Series (2, 4, 6g)
Penetration	Cap puncture $\pm$ IVUS guidance	Warrior (14g) Astatto (20g)

- Multiple wires can be used in **parallel** in case of failure of initial crossing
- Parallel wiring can be facilitated by **DLMC**

Antegrade Wiring

Most Broadly Applied Crossing Strategy in CTO PCI

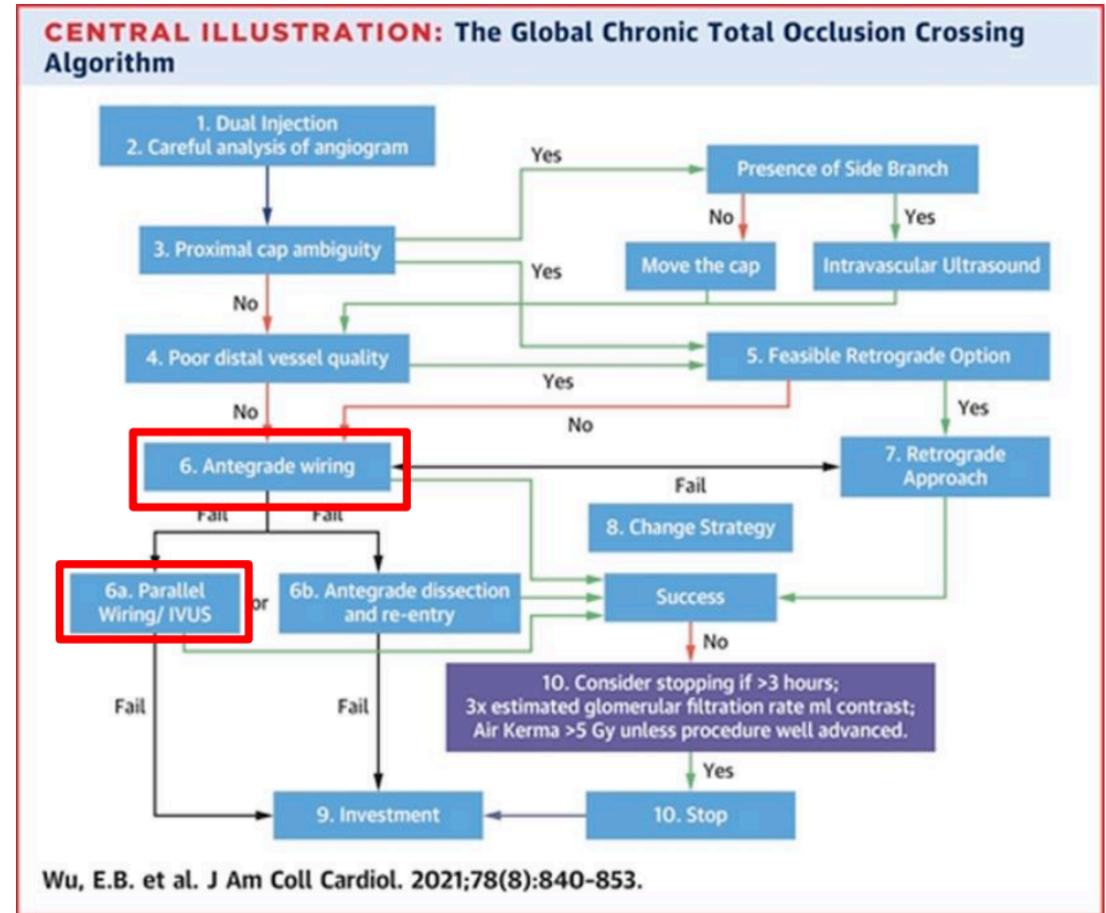
Parallel wiring useful for novice as well as expert PCI/CTO operators

Routinely use

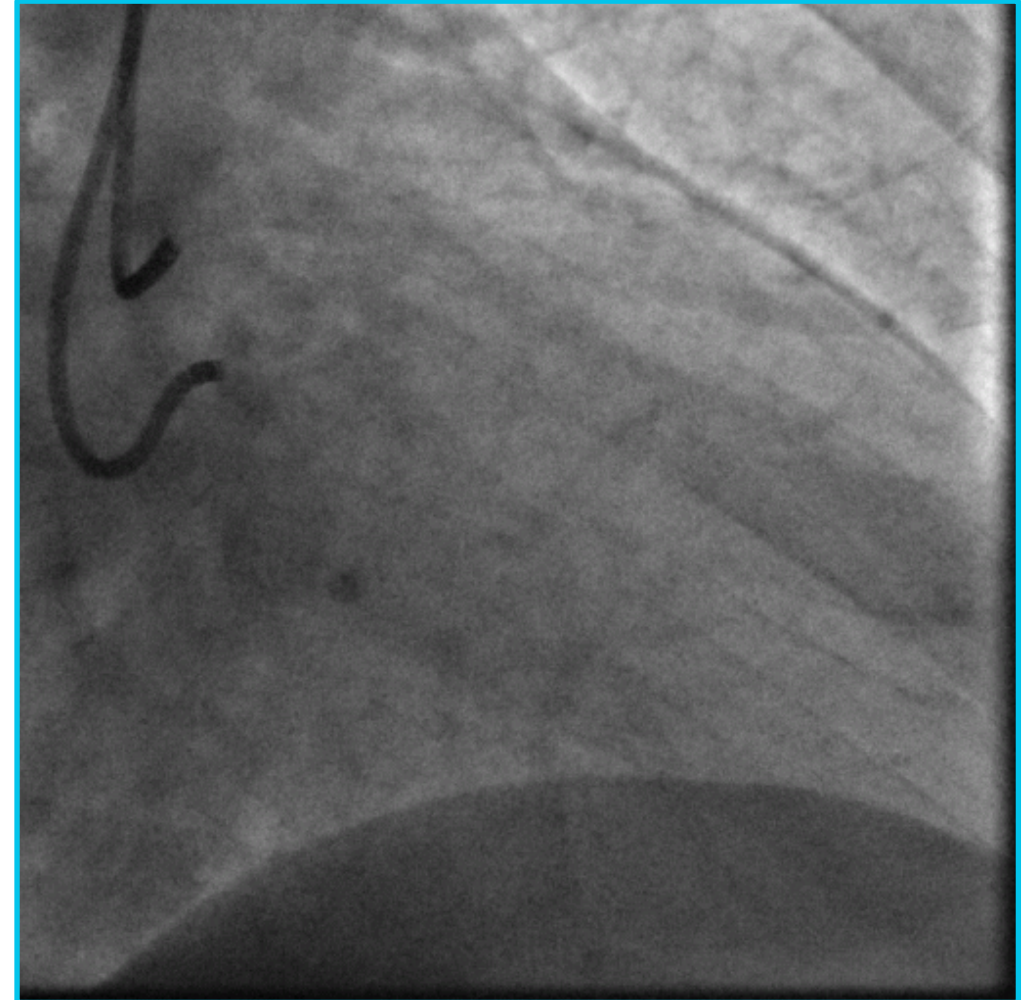
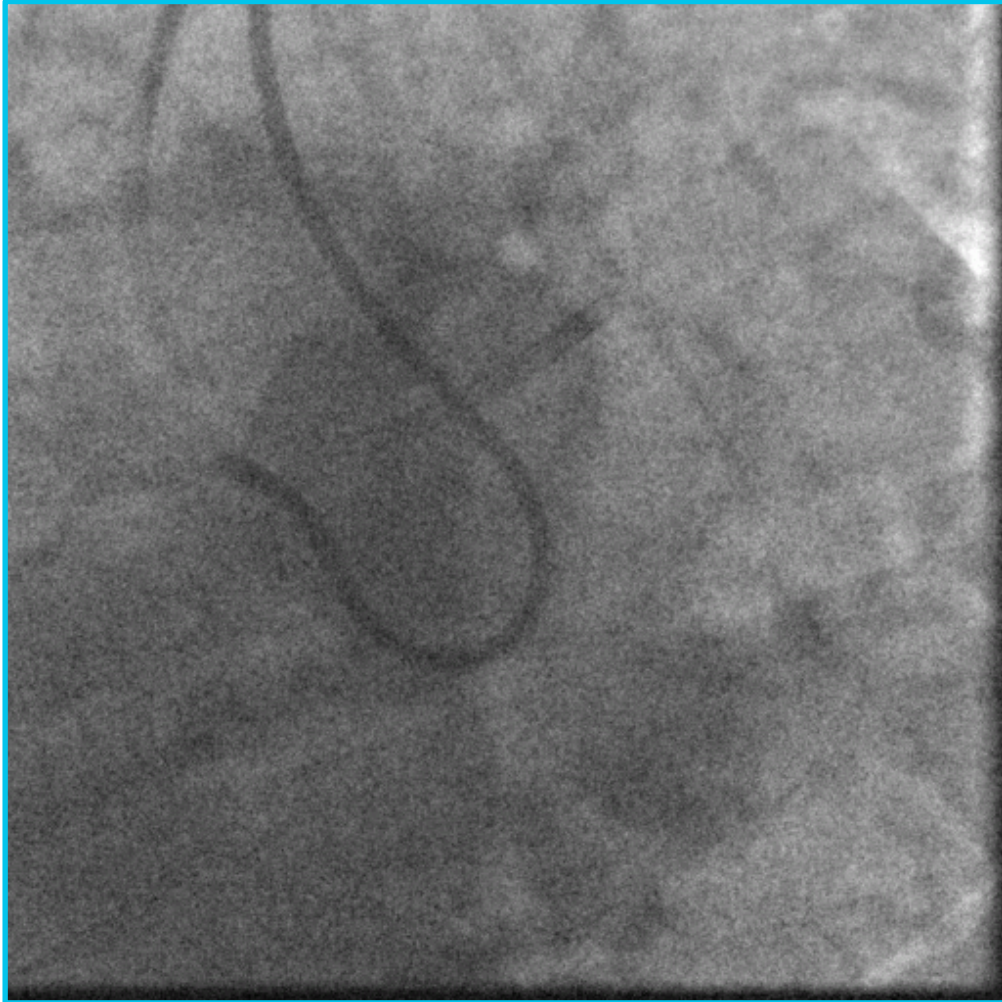
- “buddy wire” to improve guiding support and device delivery
- Straighten tortuosity to select side branch
- Plaque modification

CTO PCI

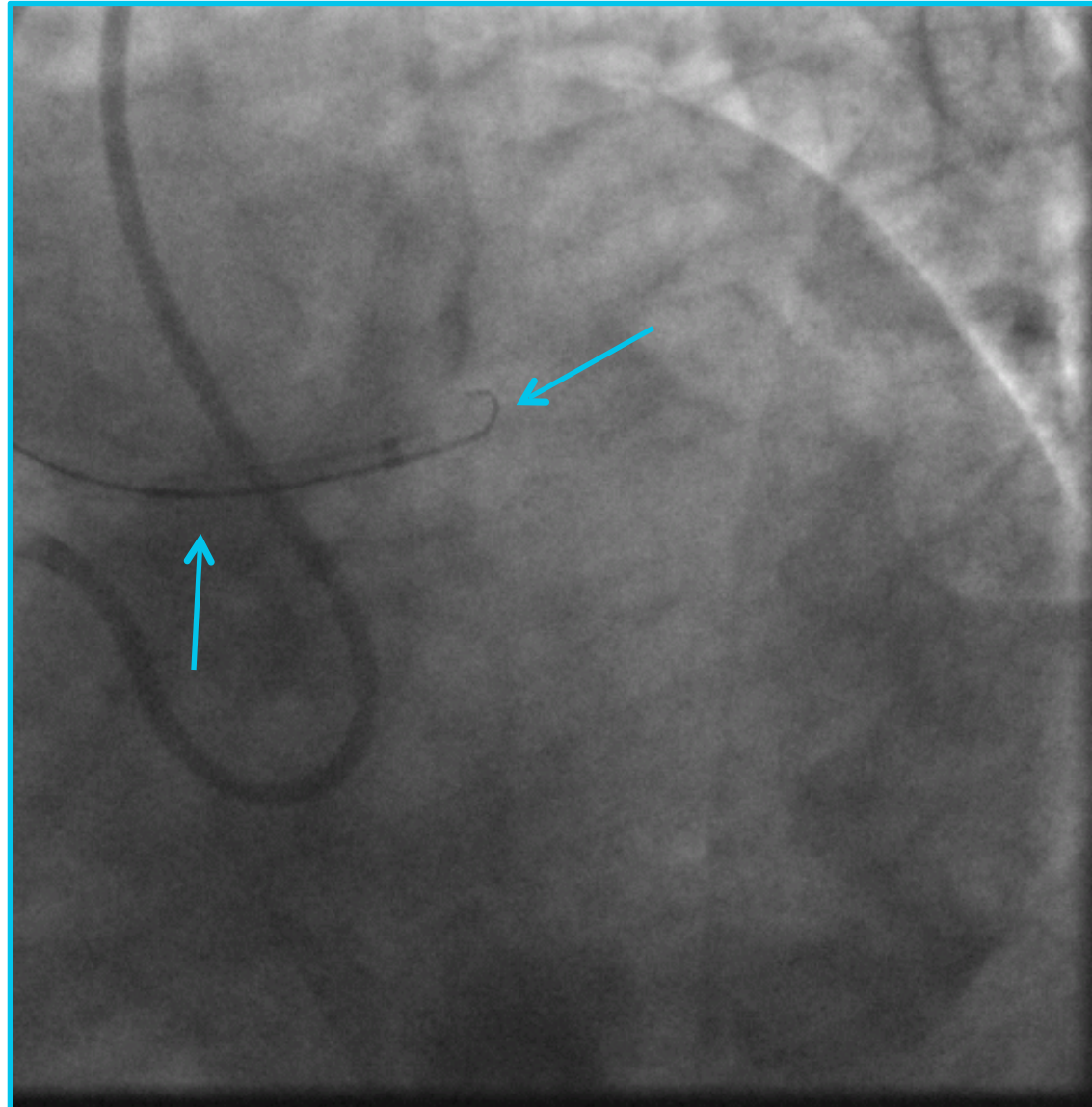
- Improve antegrade wiring success
- Technical success can be enhanced with MC, DLMC, and IVUS



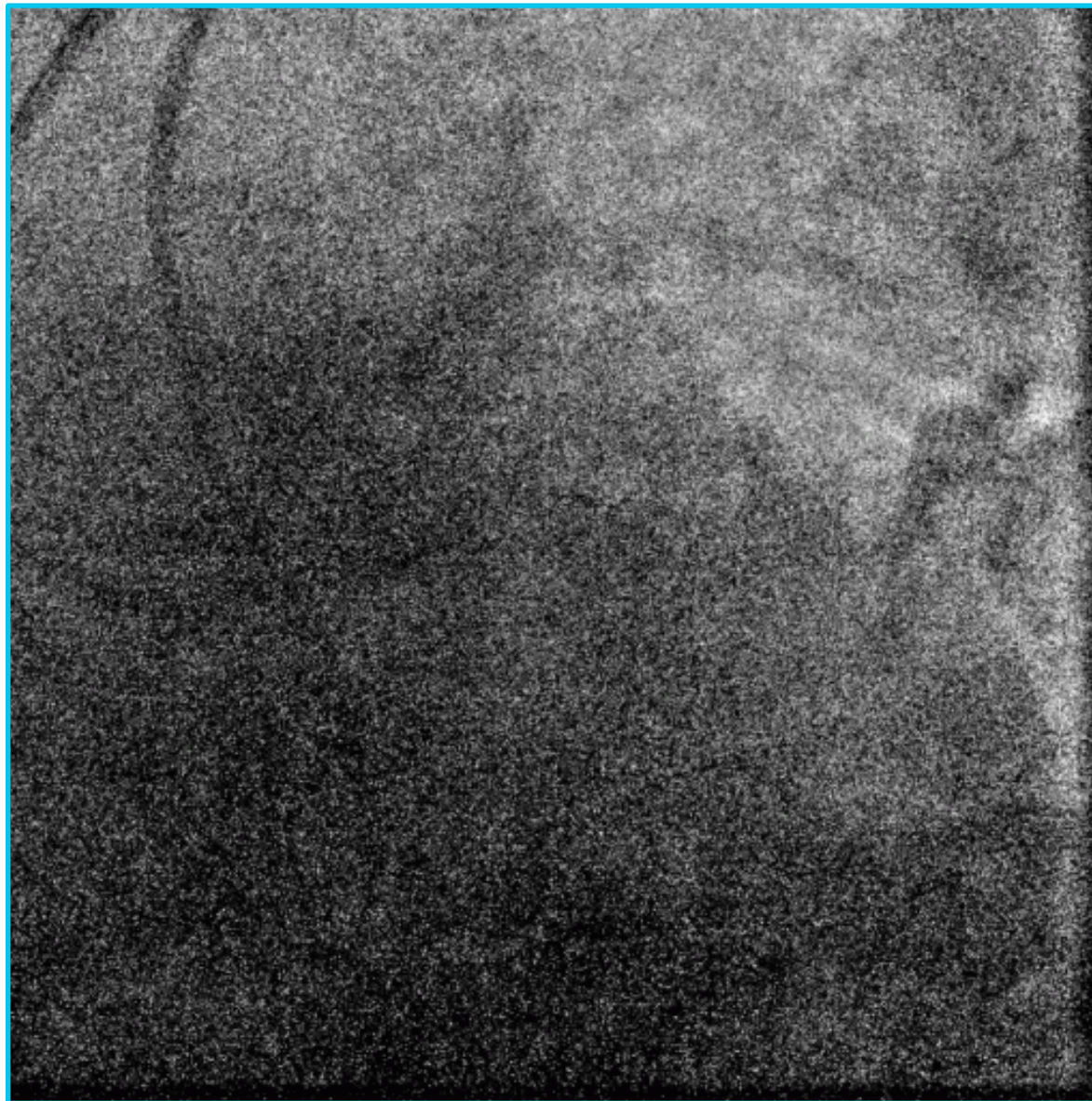
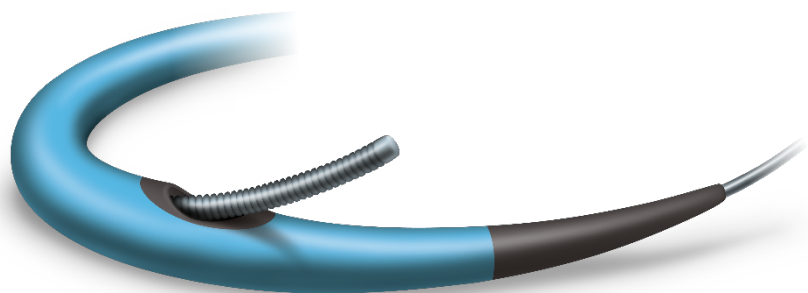
The importance of Dual Lumen



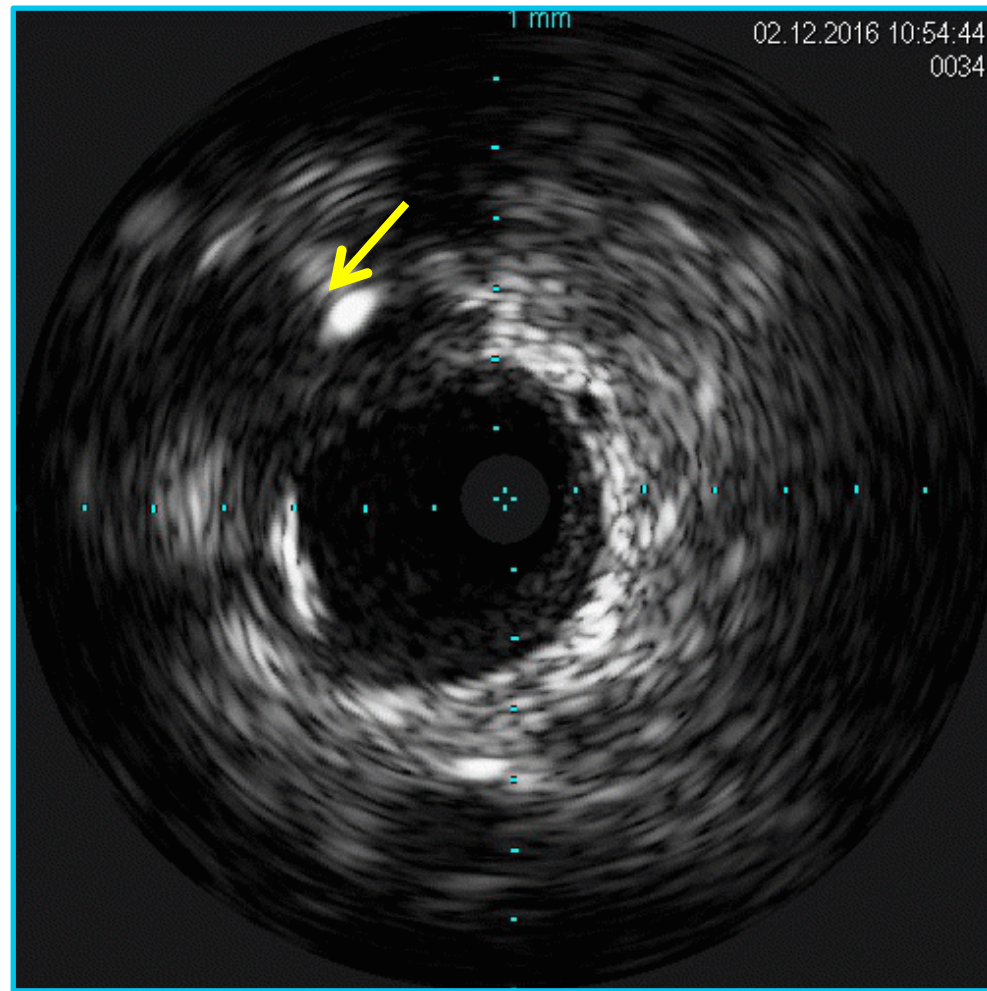
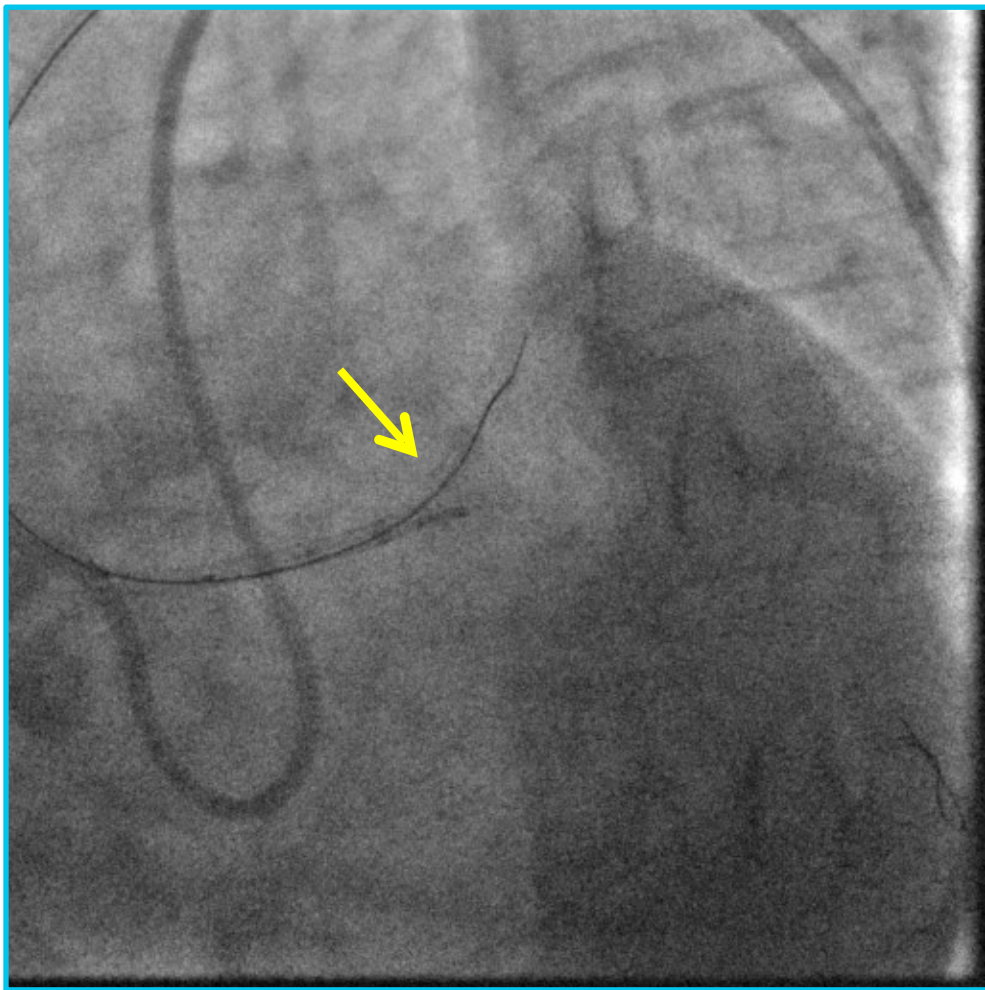
Unsuccessful antegrade puncture with single lumen MC



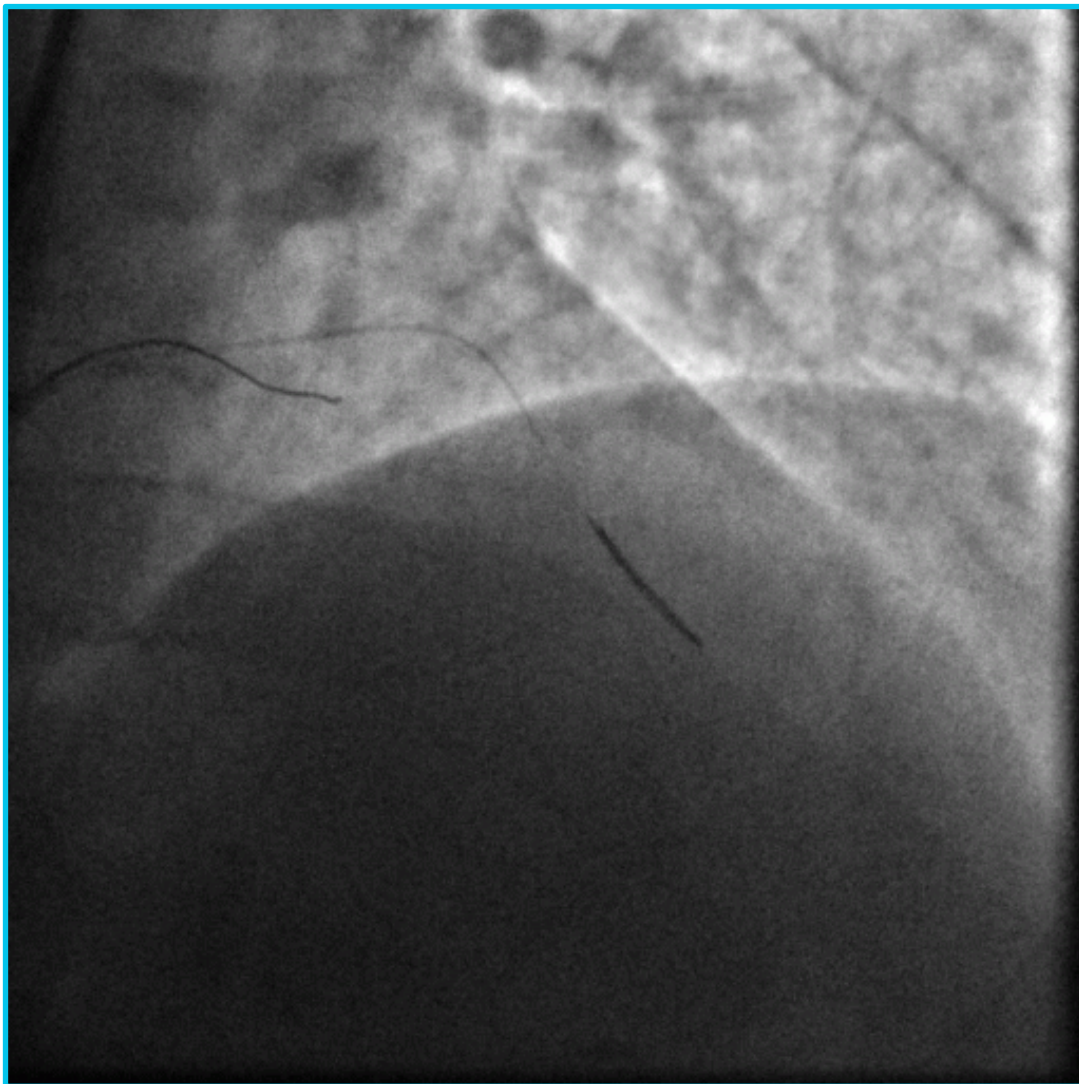
Dual Lumen To facilitate LAD penetration



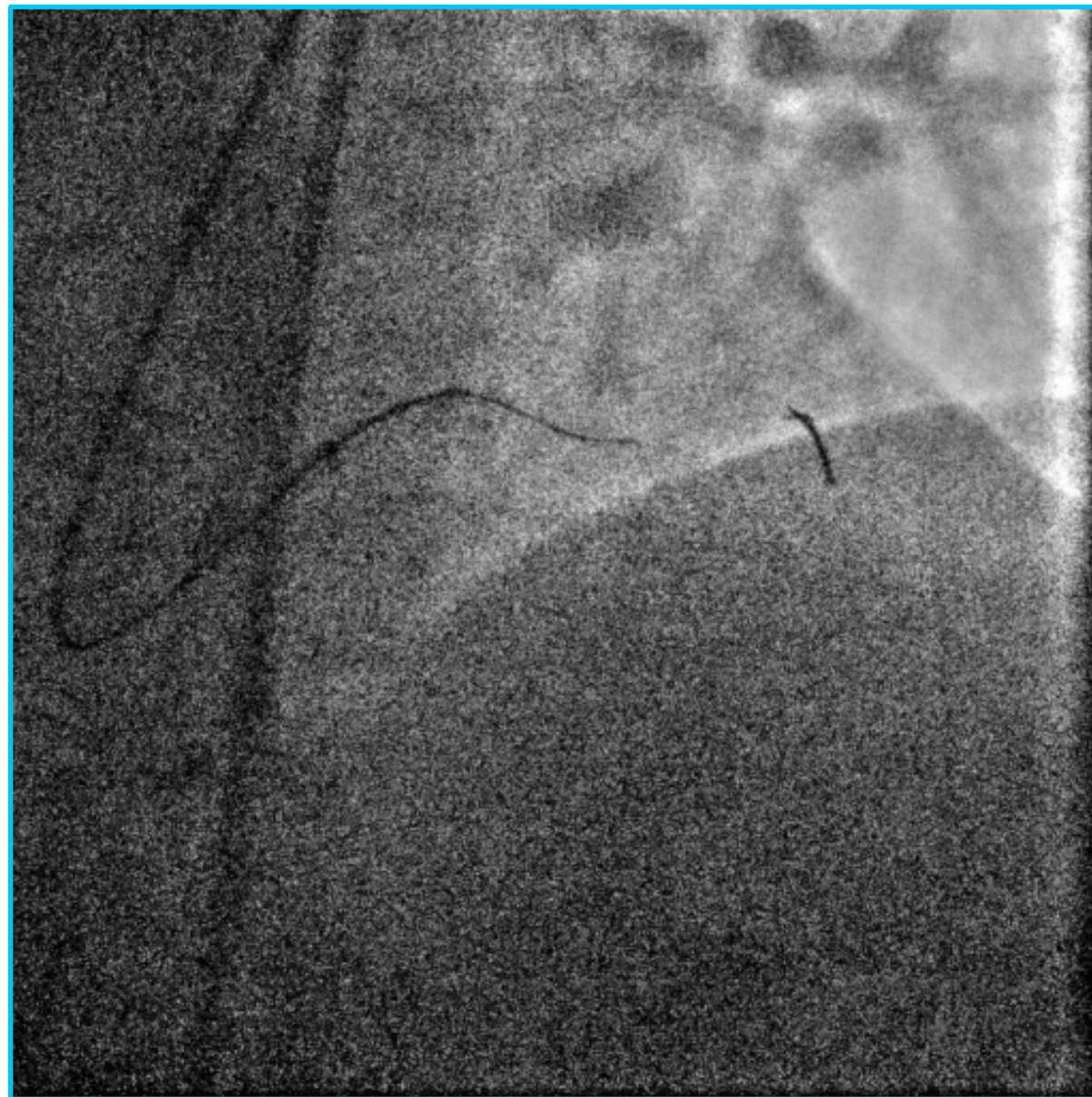
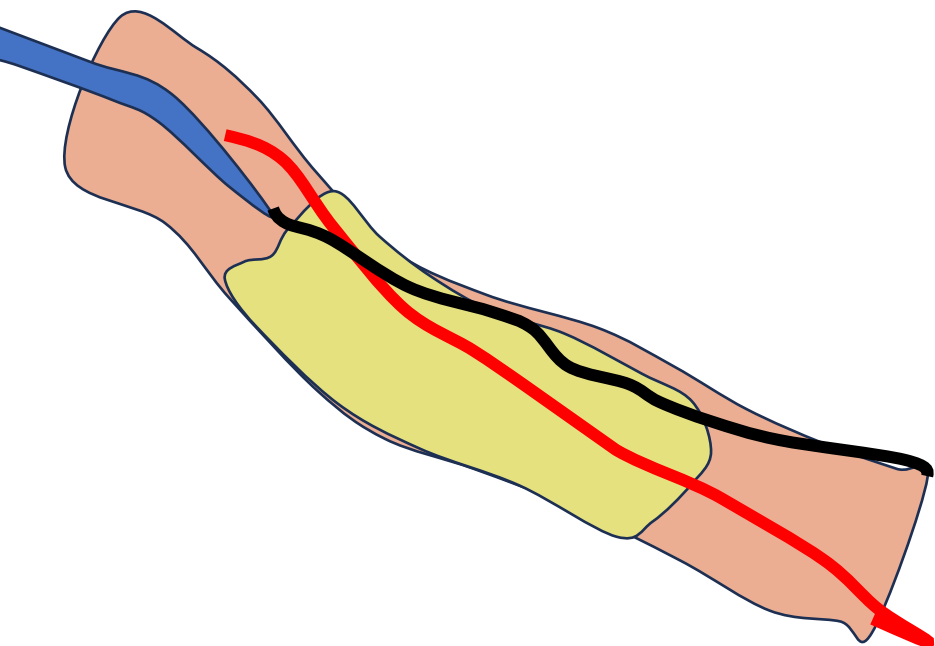
Check with IVUS probe...



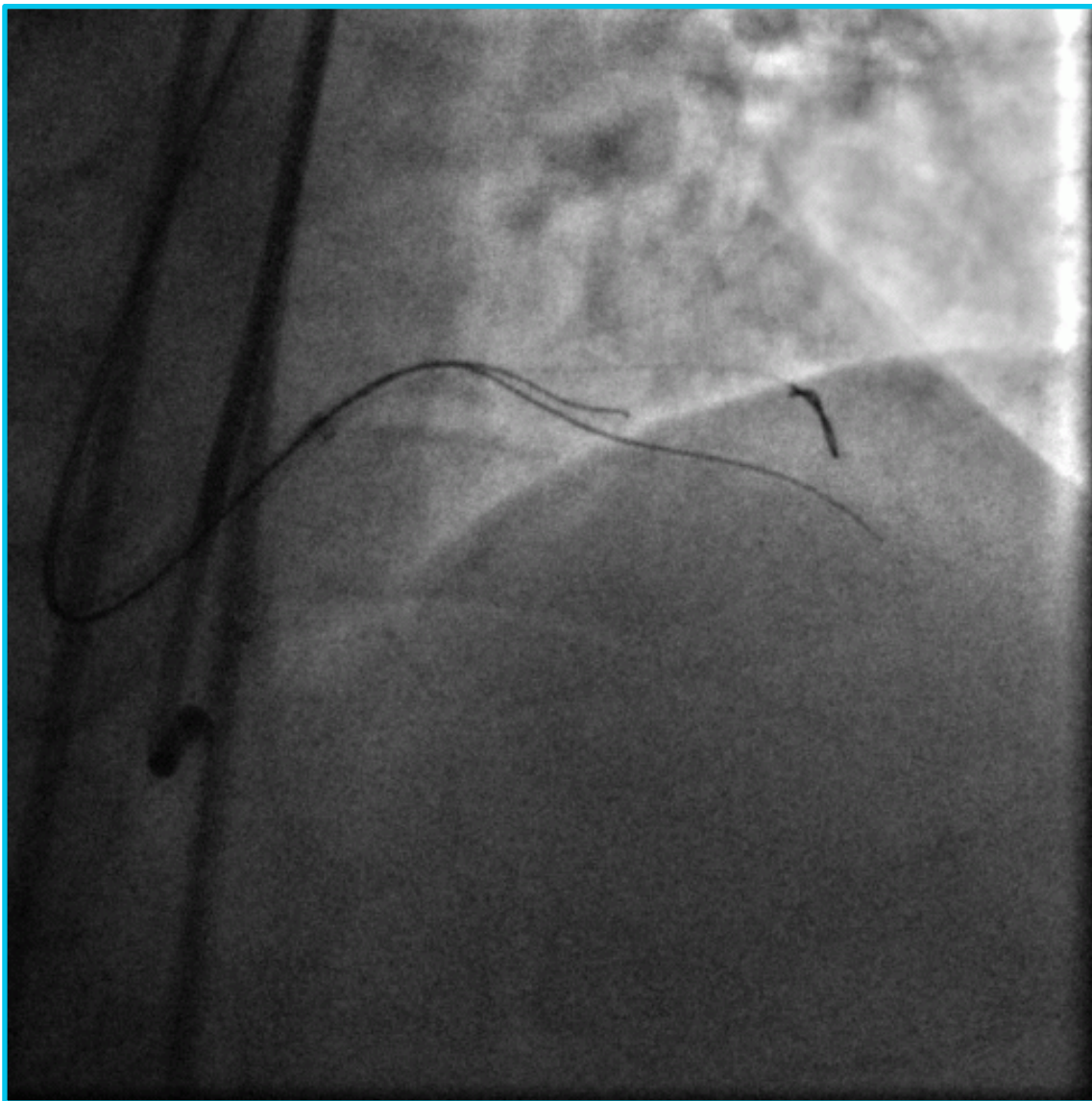
GAIA™ 2nd wire subintimal



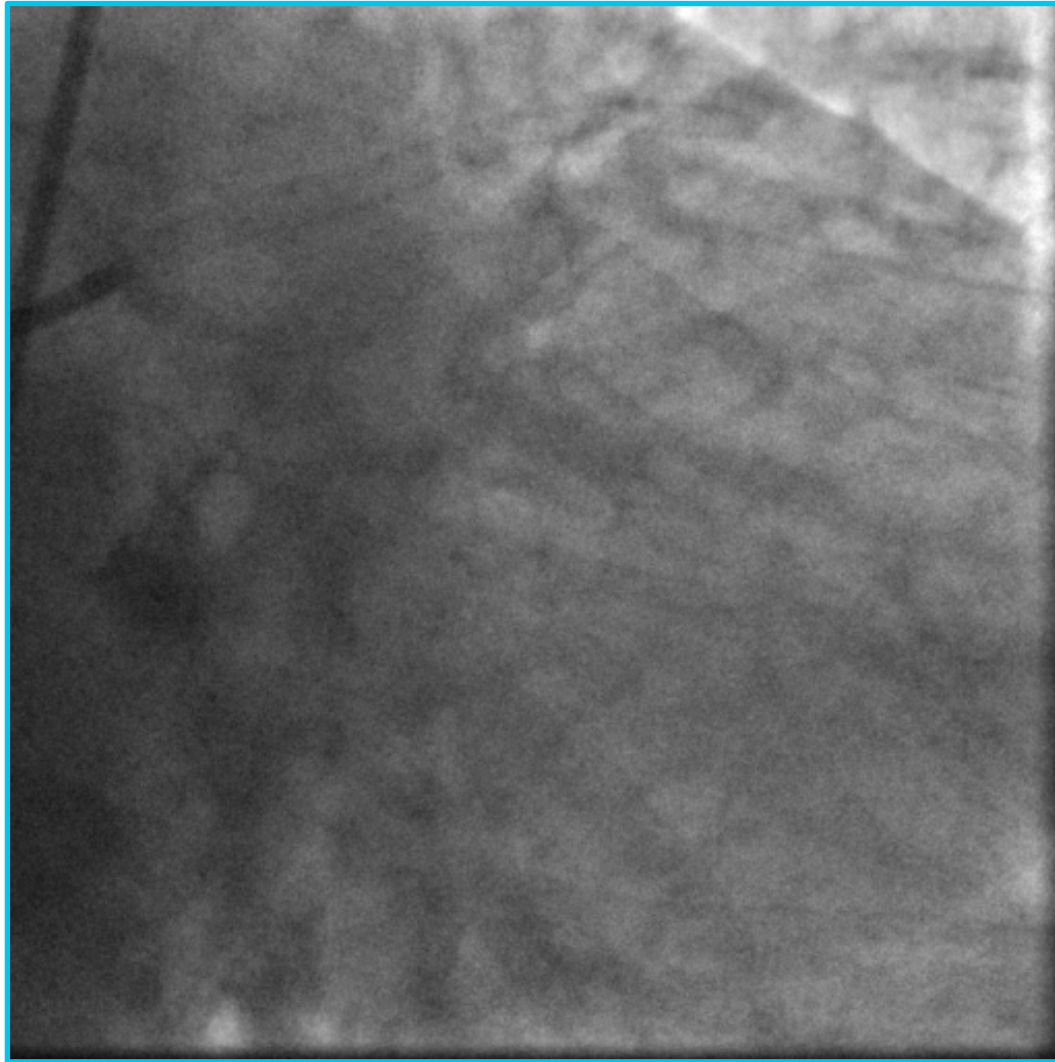
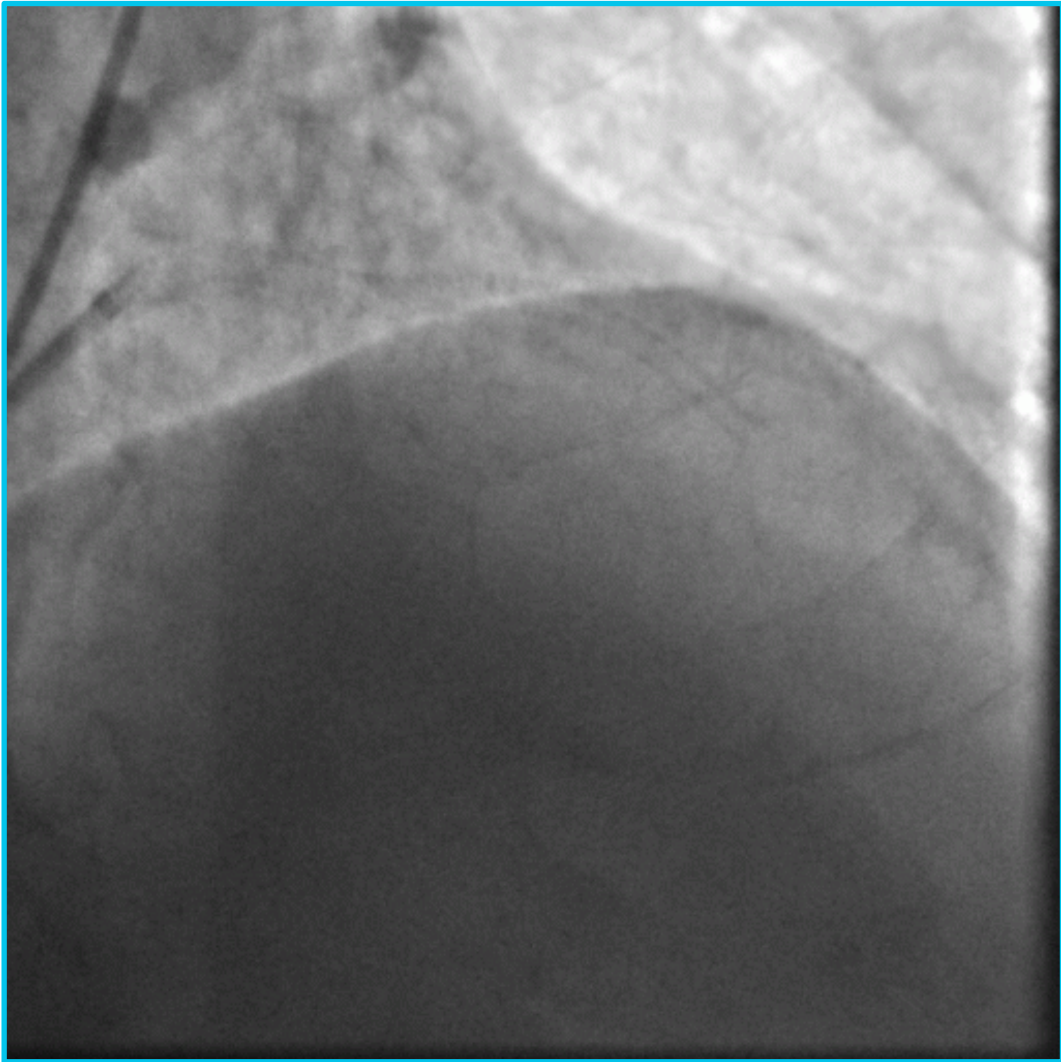
GAIA™ 3rd wire...



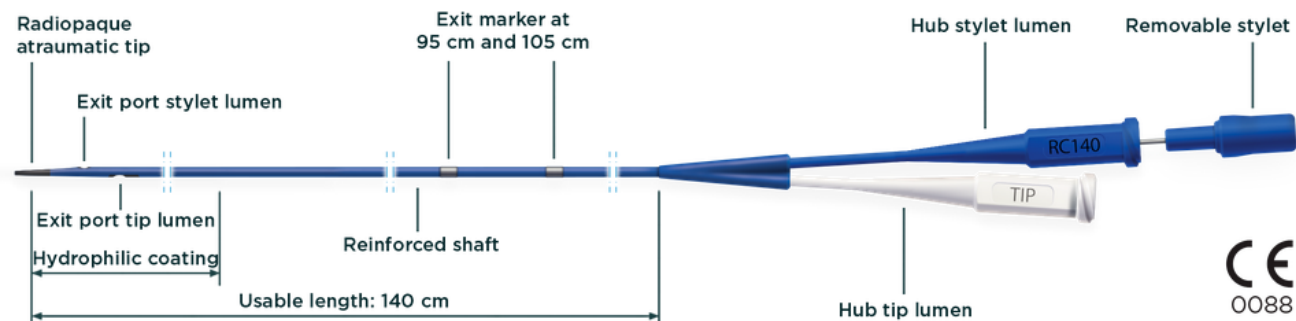
... Successful



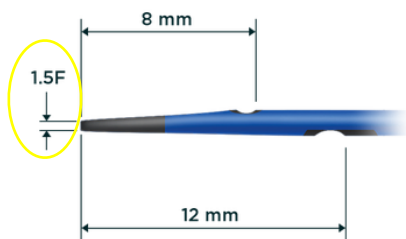
Final result



Versatile Frontline Support in Complex PCI

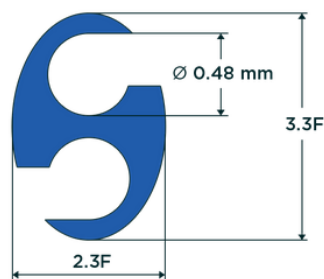


SOFT RADIOPAQUE TIP & EXIT PORT MARKERS



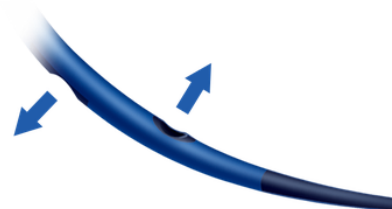
TRUE DISTAL END VISIBILITY

OVAL DISTAL SHAFT

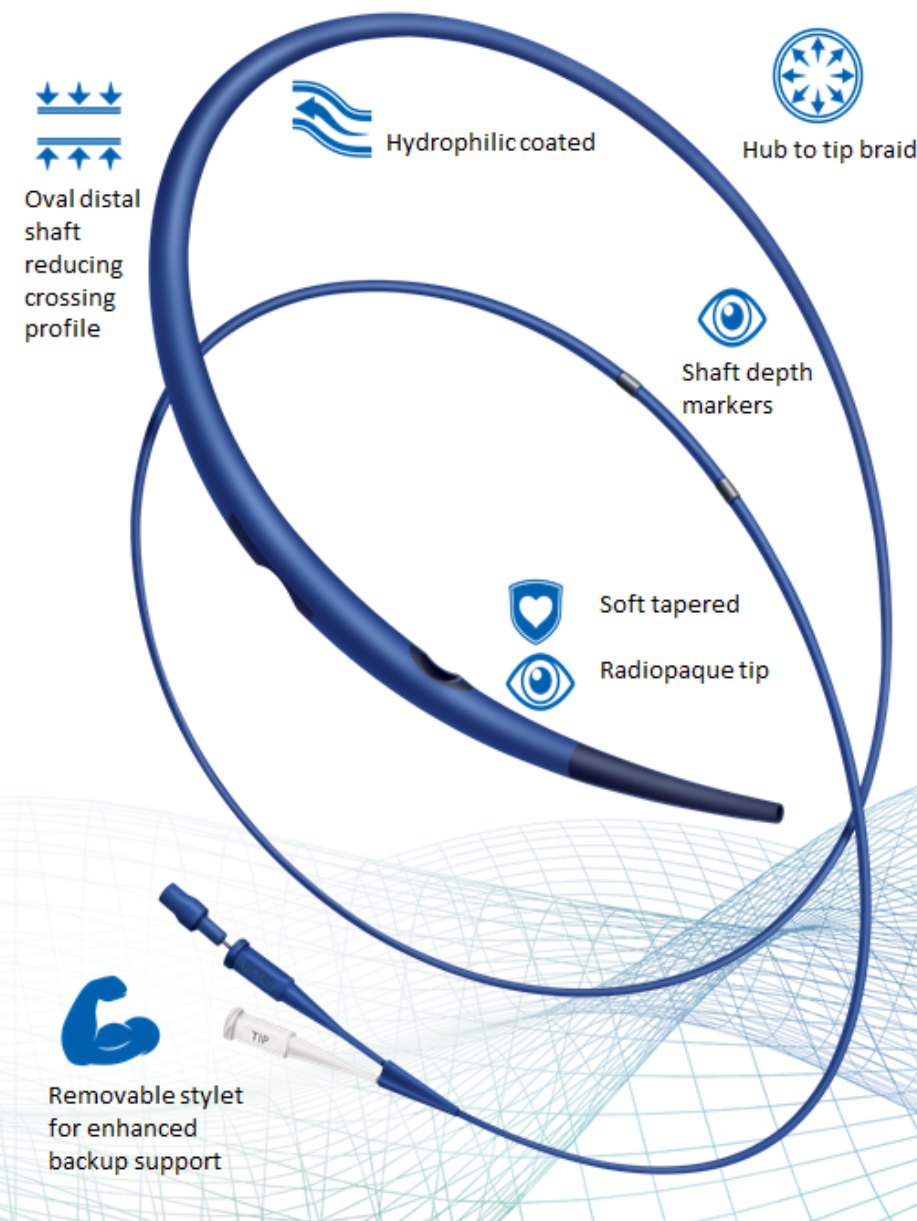


MINIMIZES PROFILE
IMPROVES TRACKABILITY

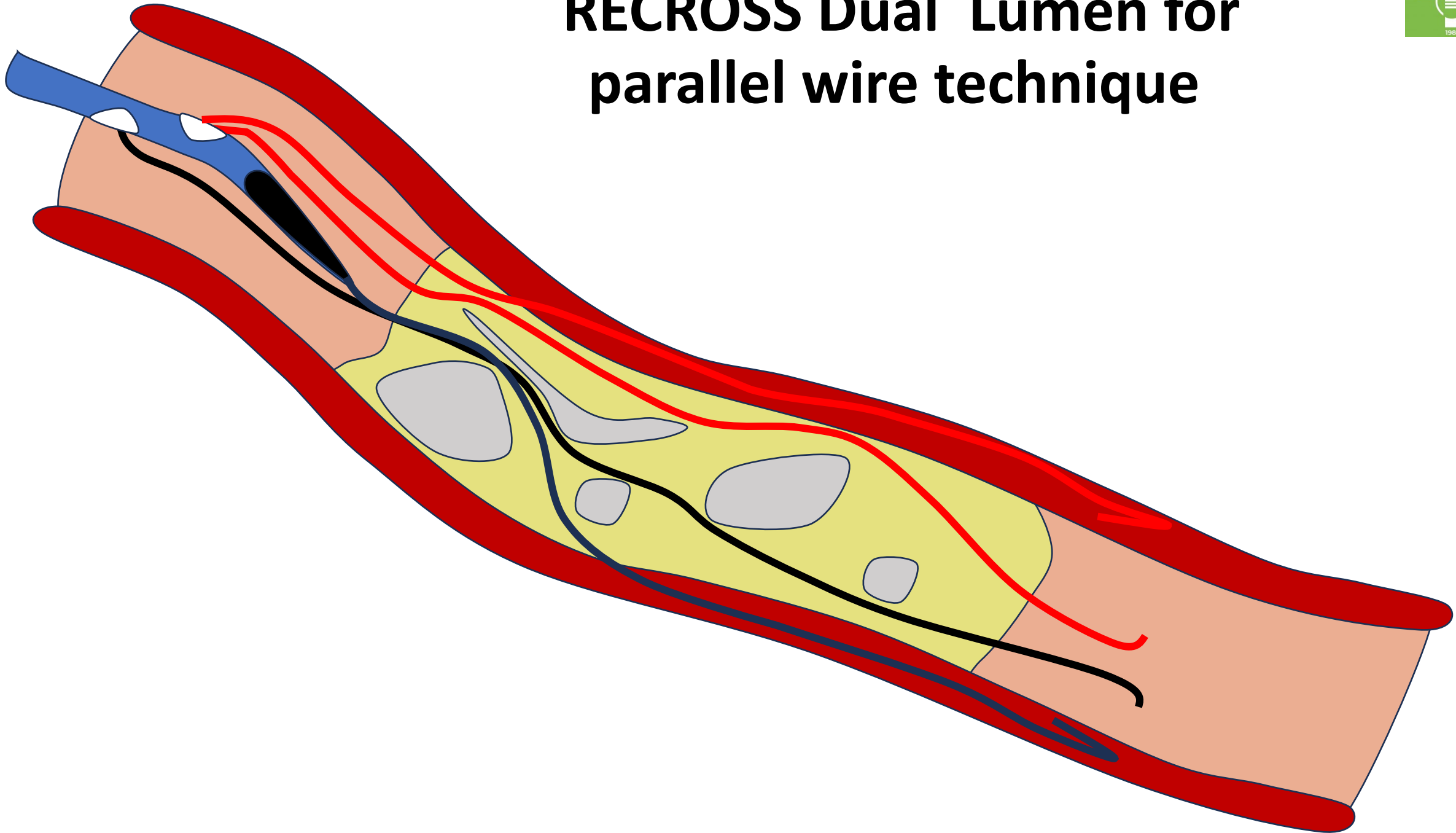
2 PROXIMAL EXIT PORTS
IN OPPOSITE DIRECTIONS

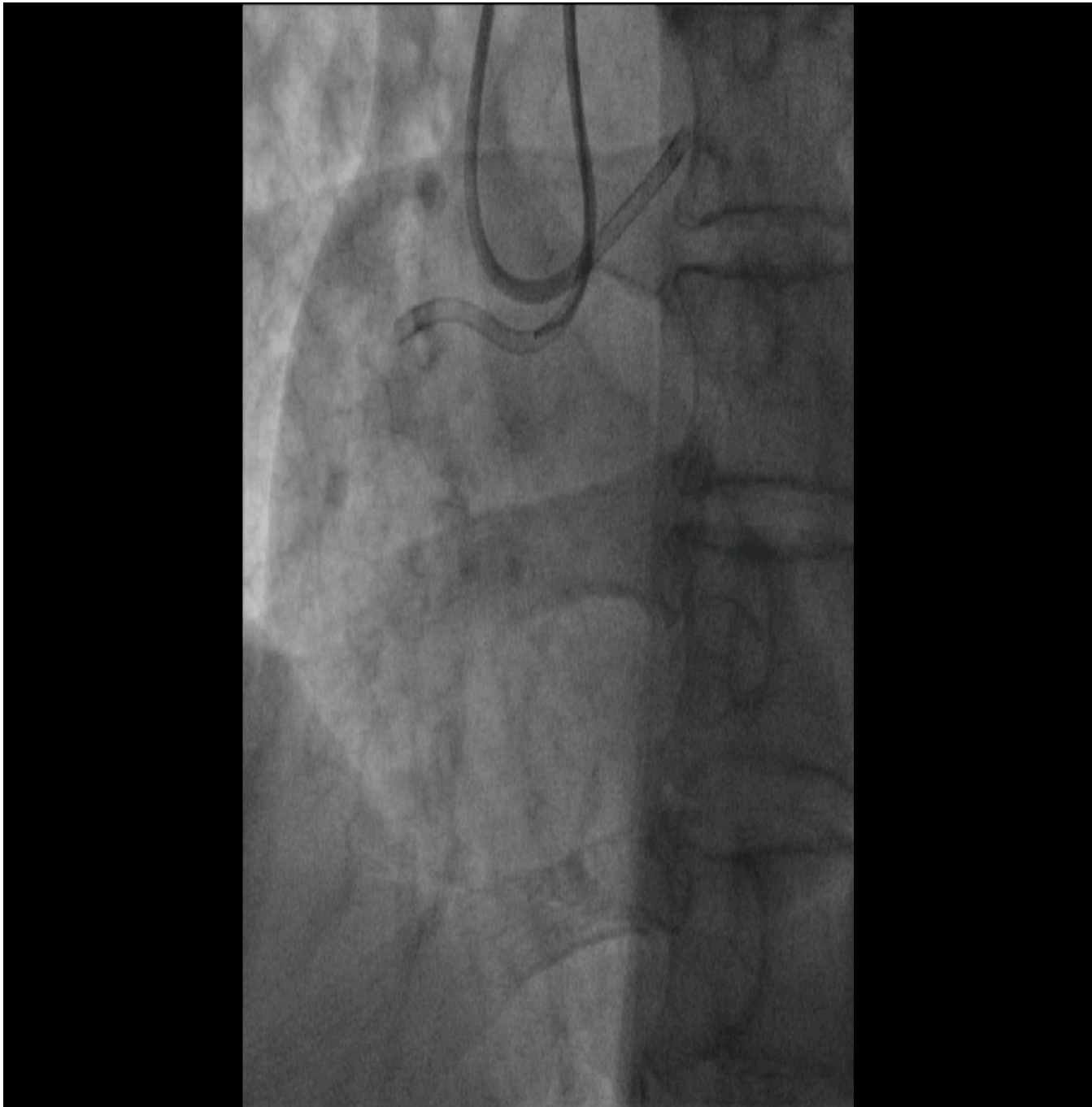


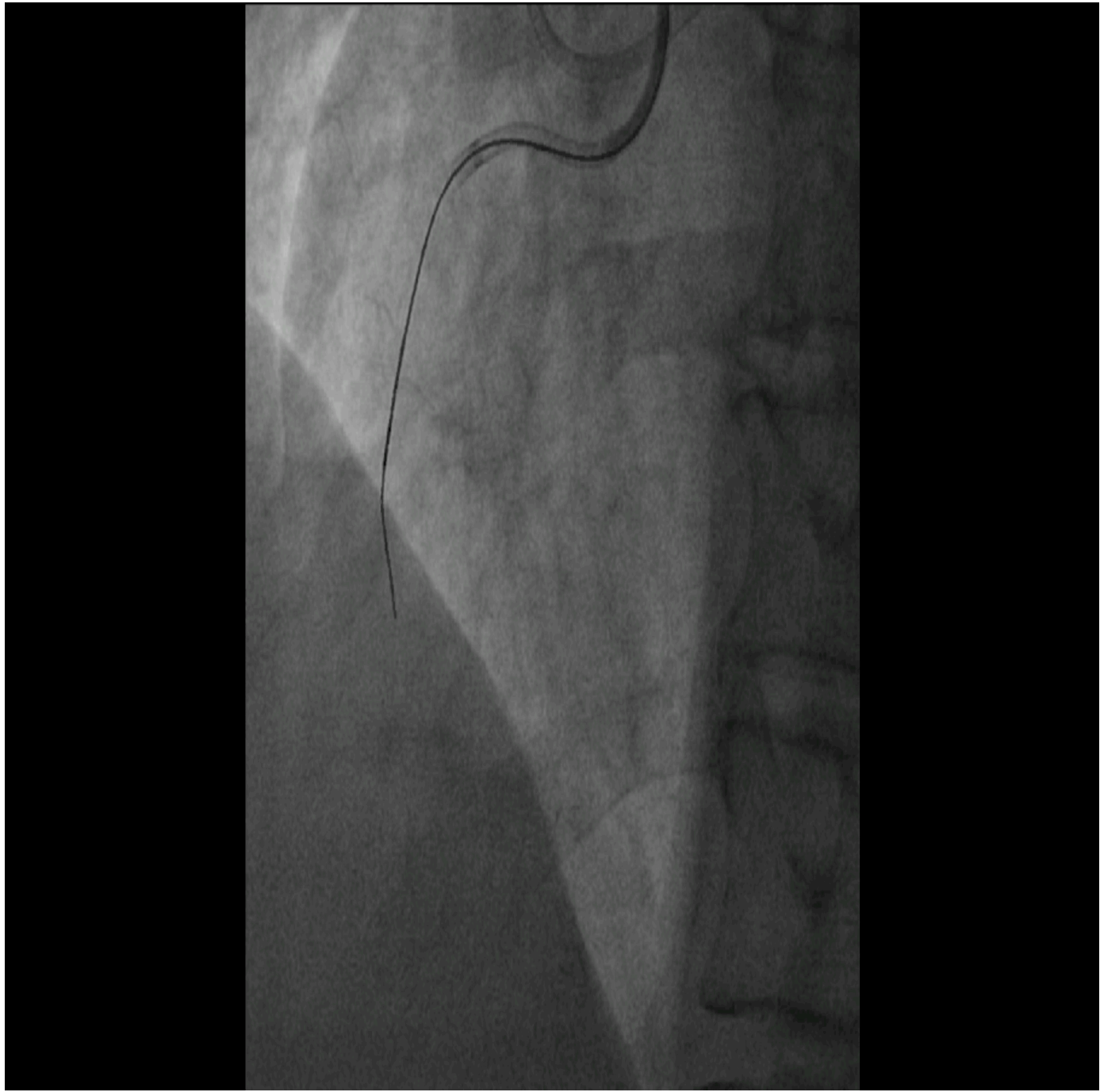
UNIQUE GUIDEWIRE
REDIRECTION POSSIBILITIES

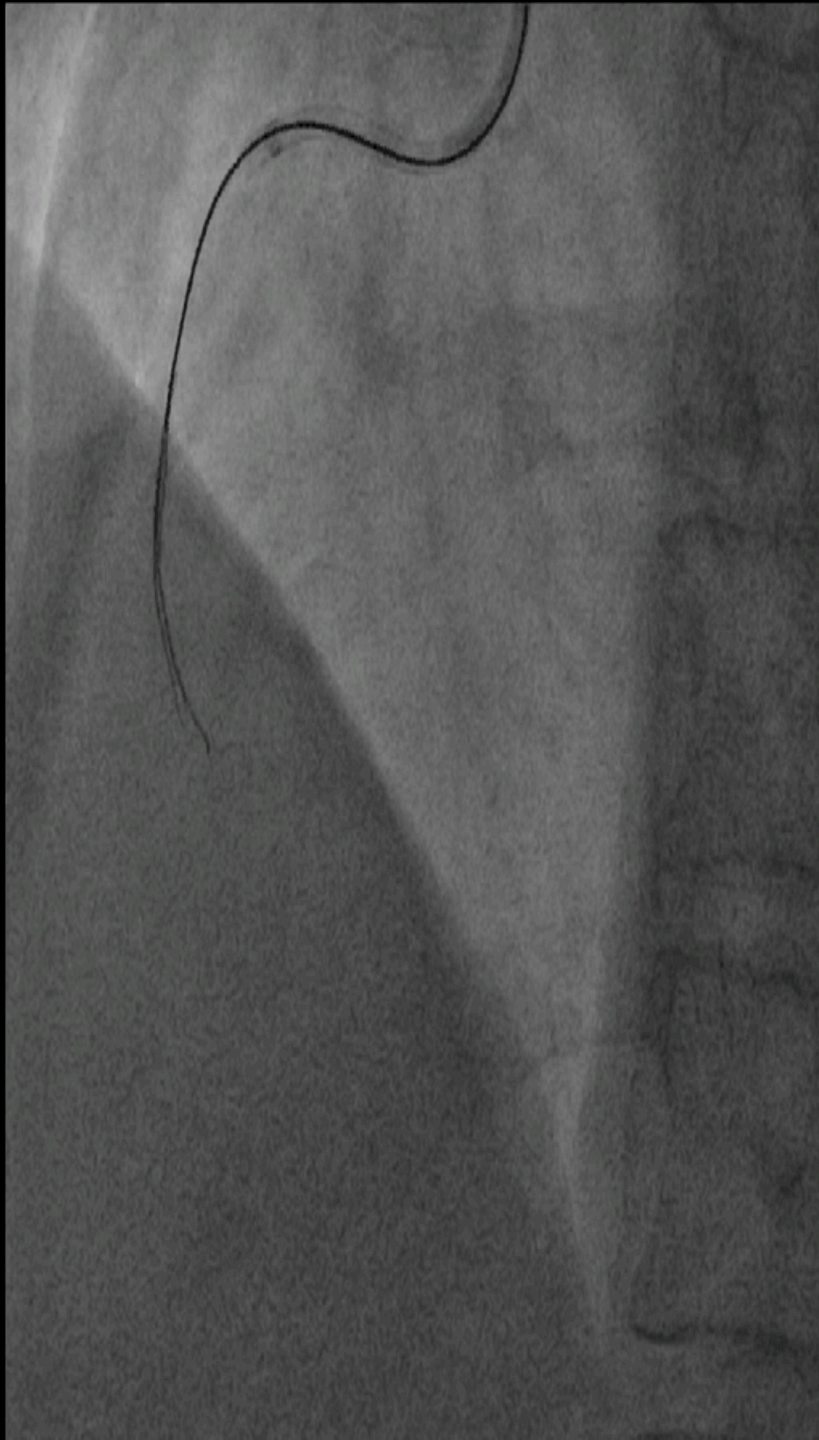


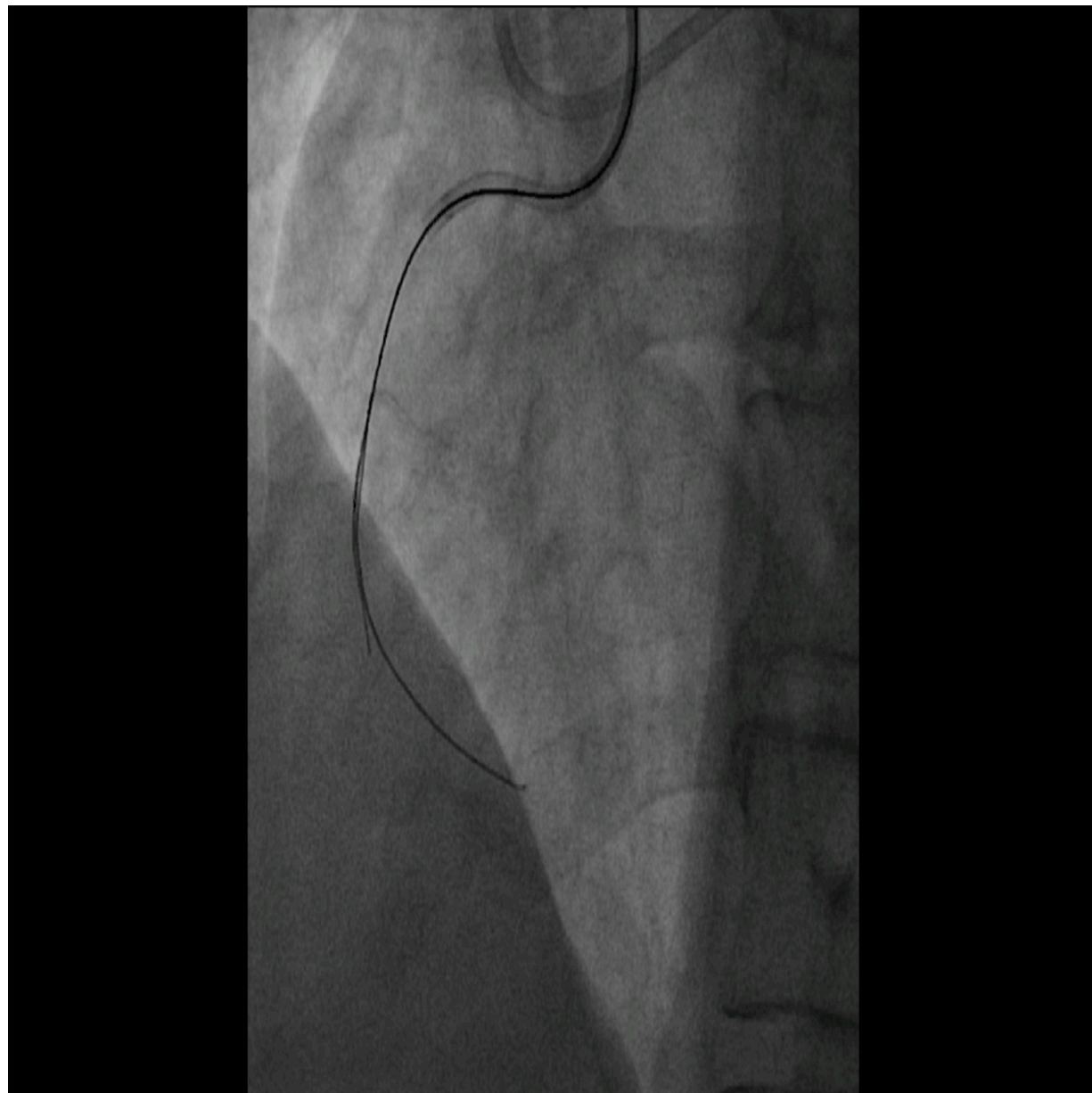
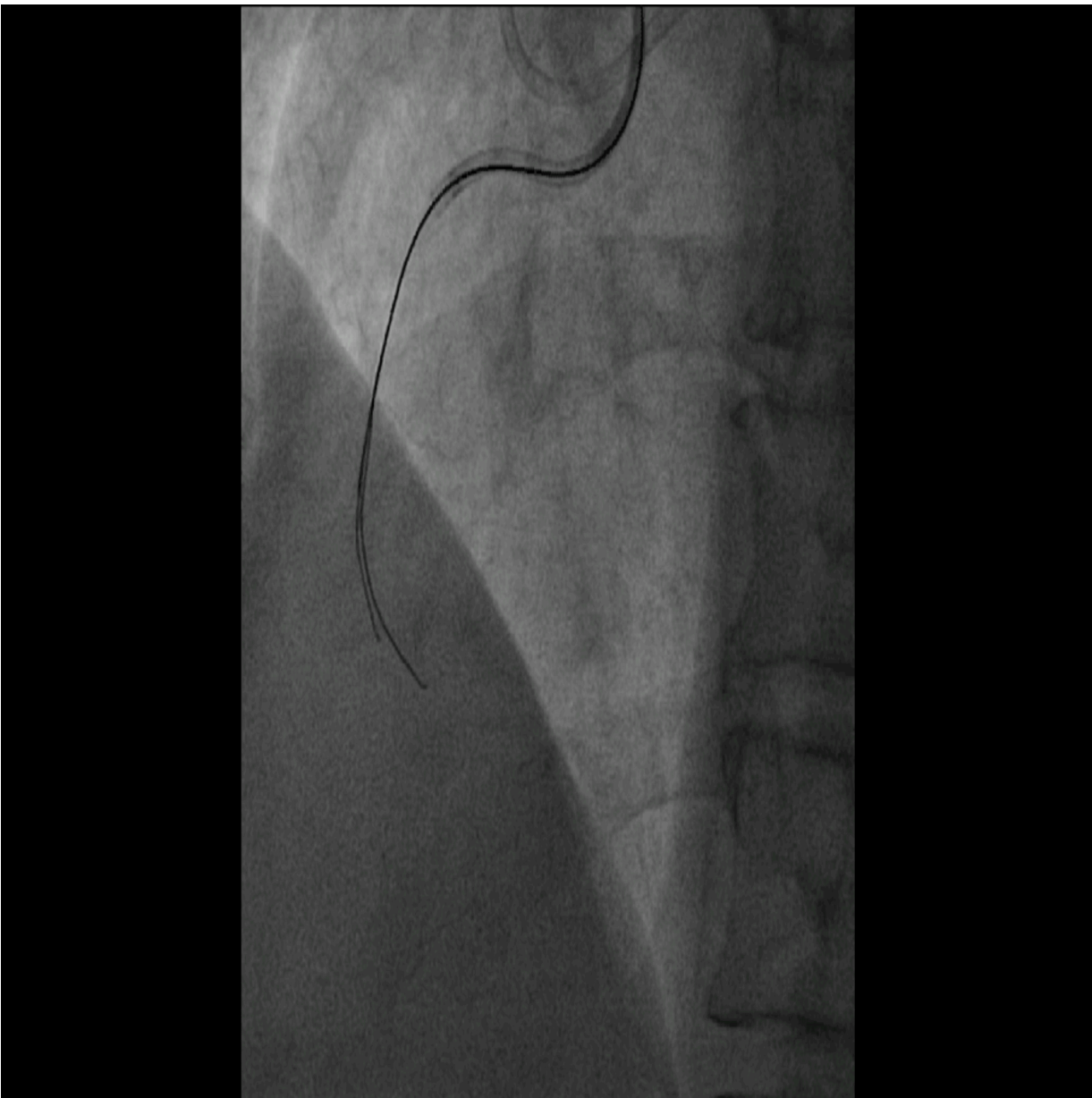
RECROSS Dual Lumen for parallel wire technique



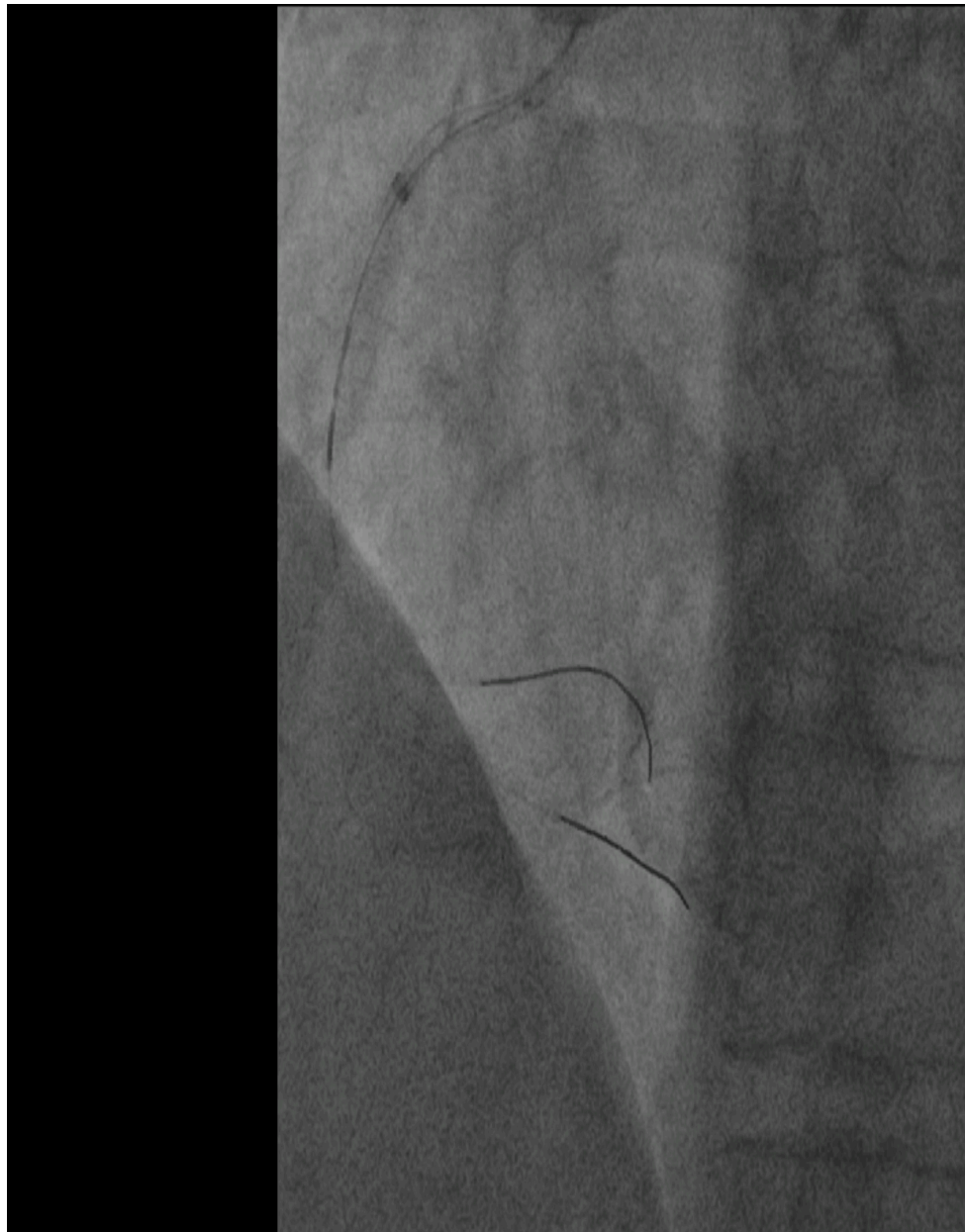








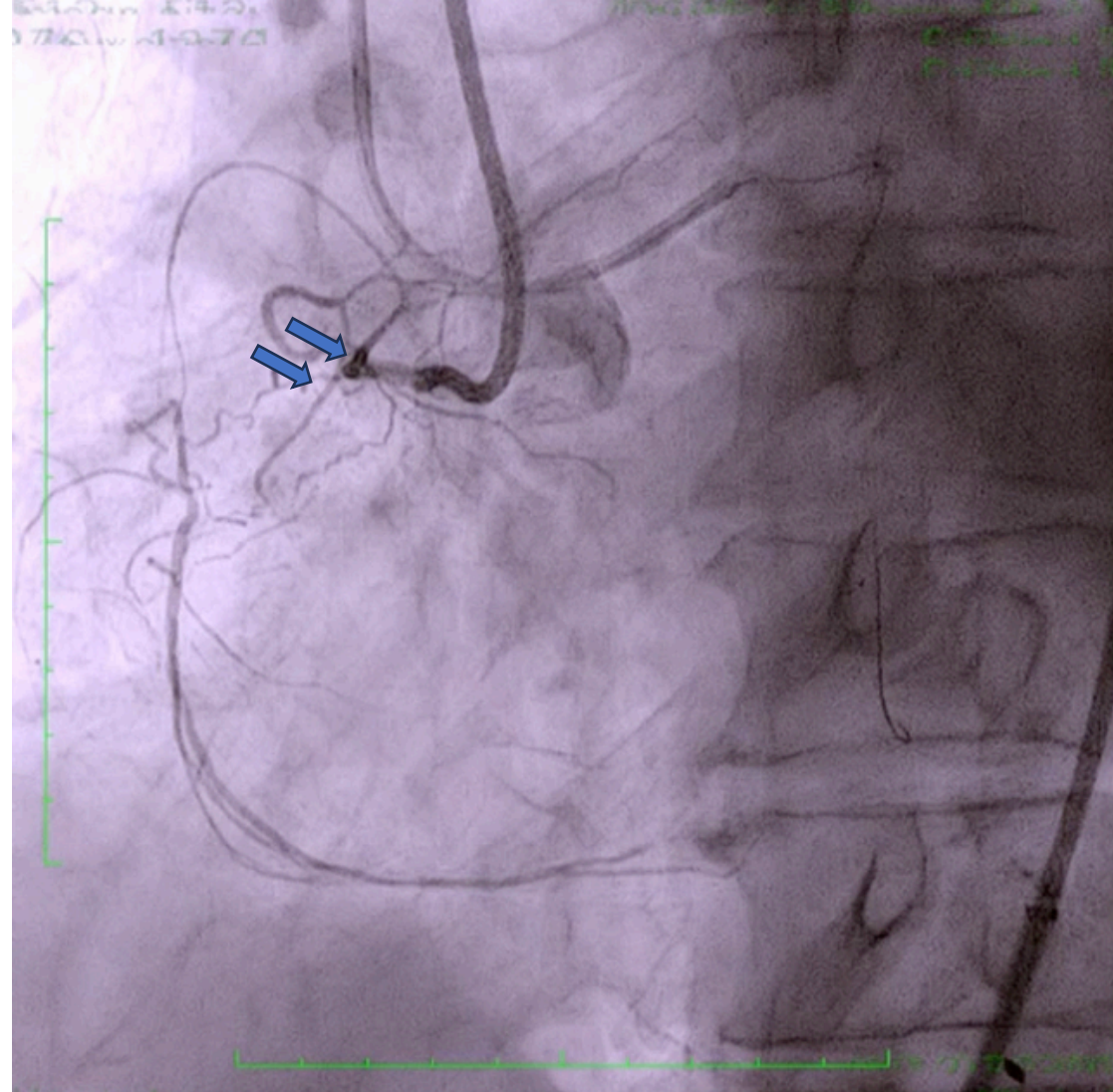
Recross and Switch with workhorse wire in both branches



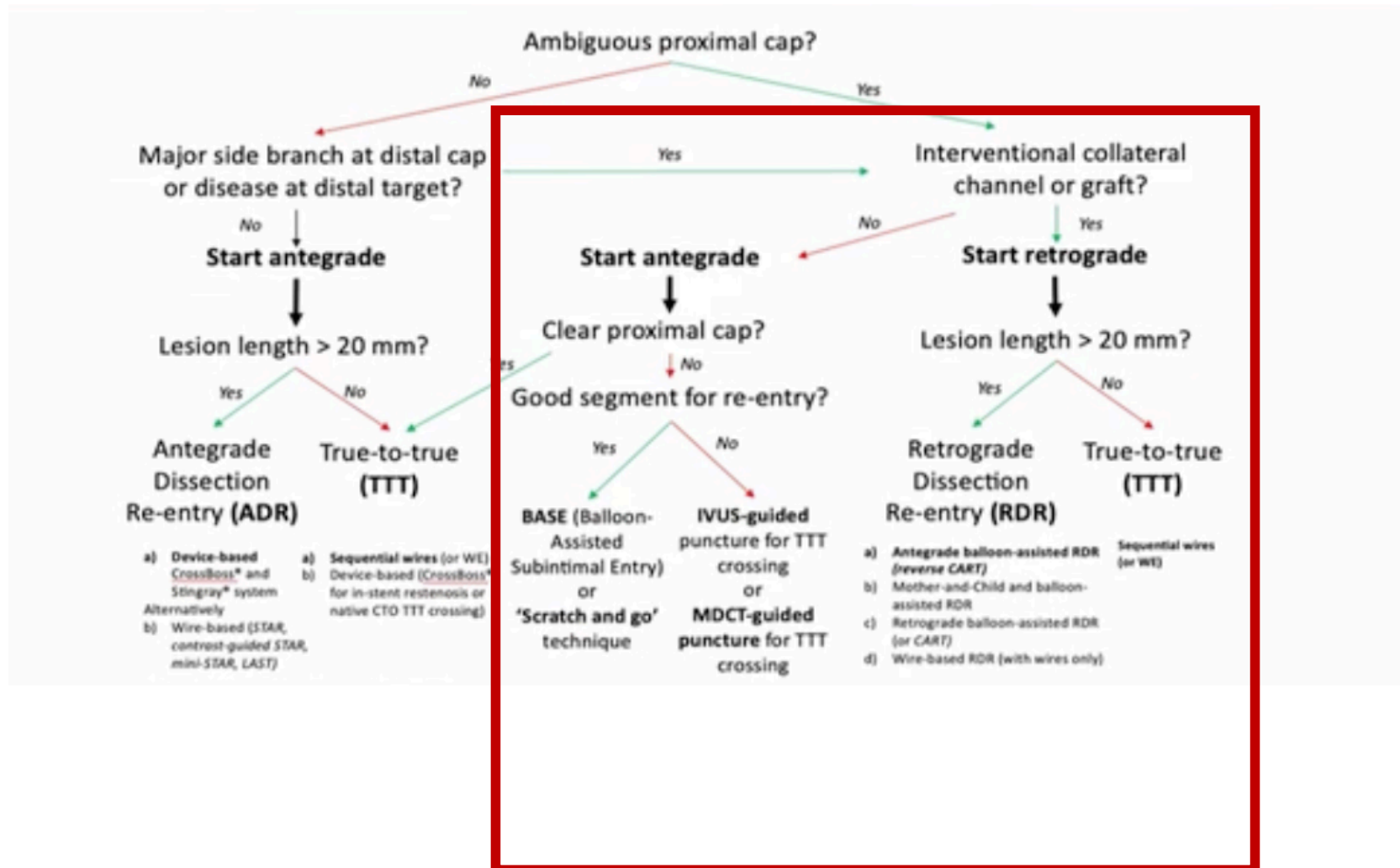
FINAL RESULT



- # Ambiguous Prox Cap

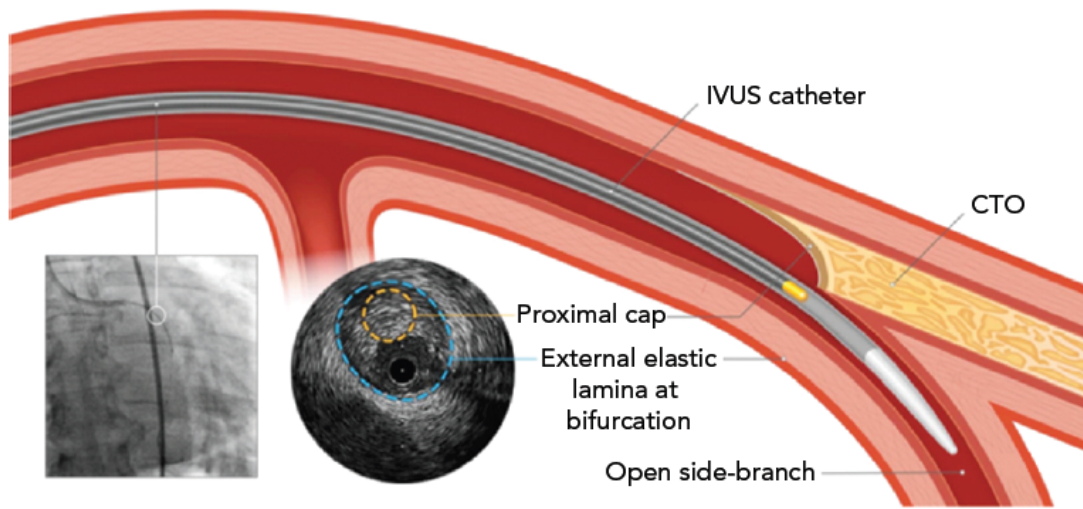


• Ambiguous Prox Cap

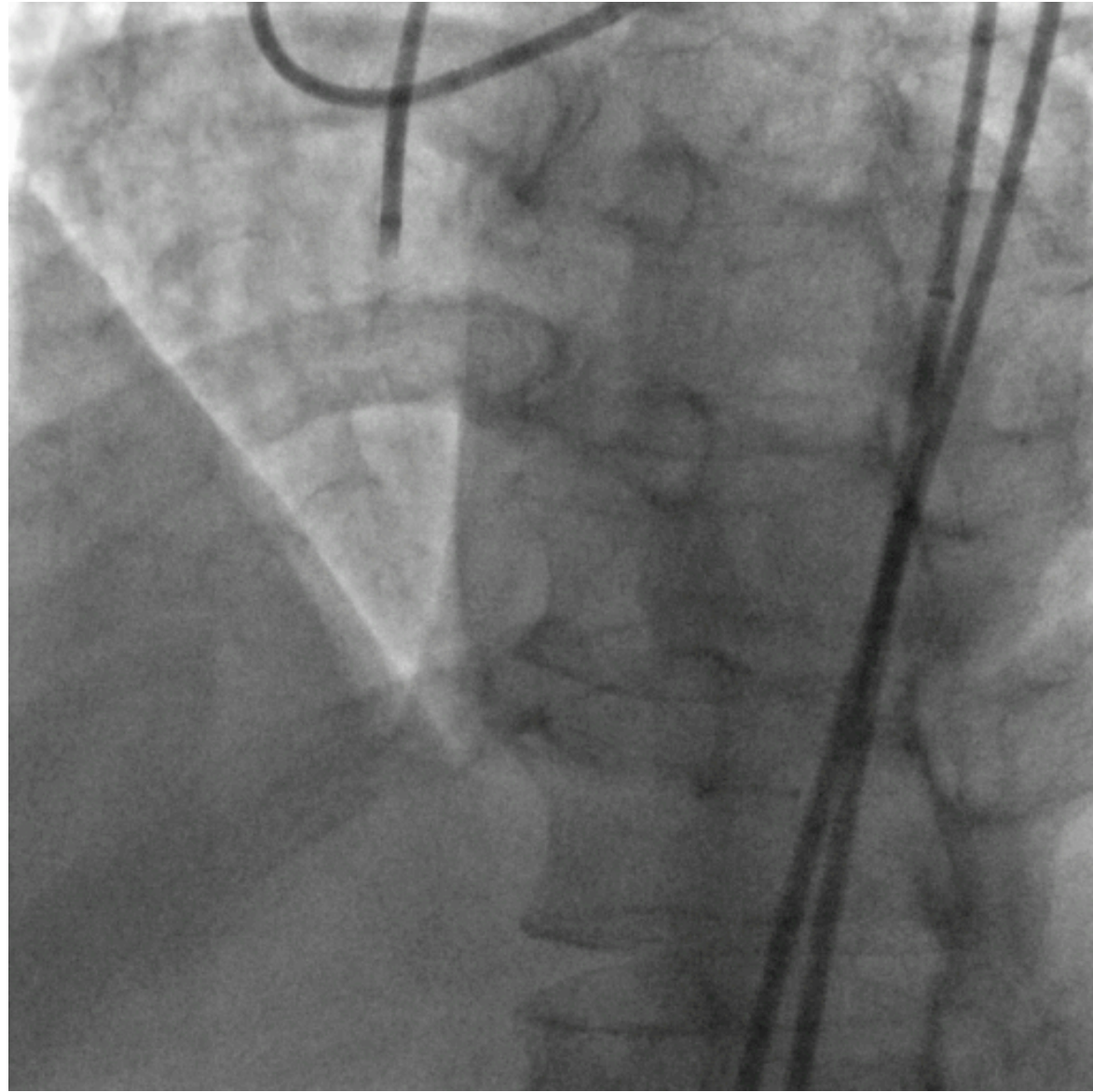
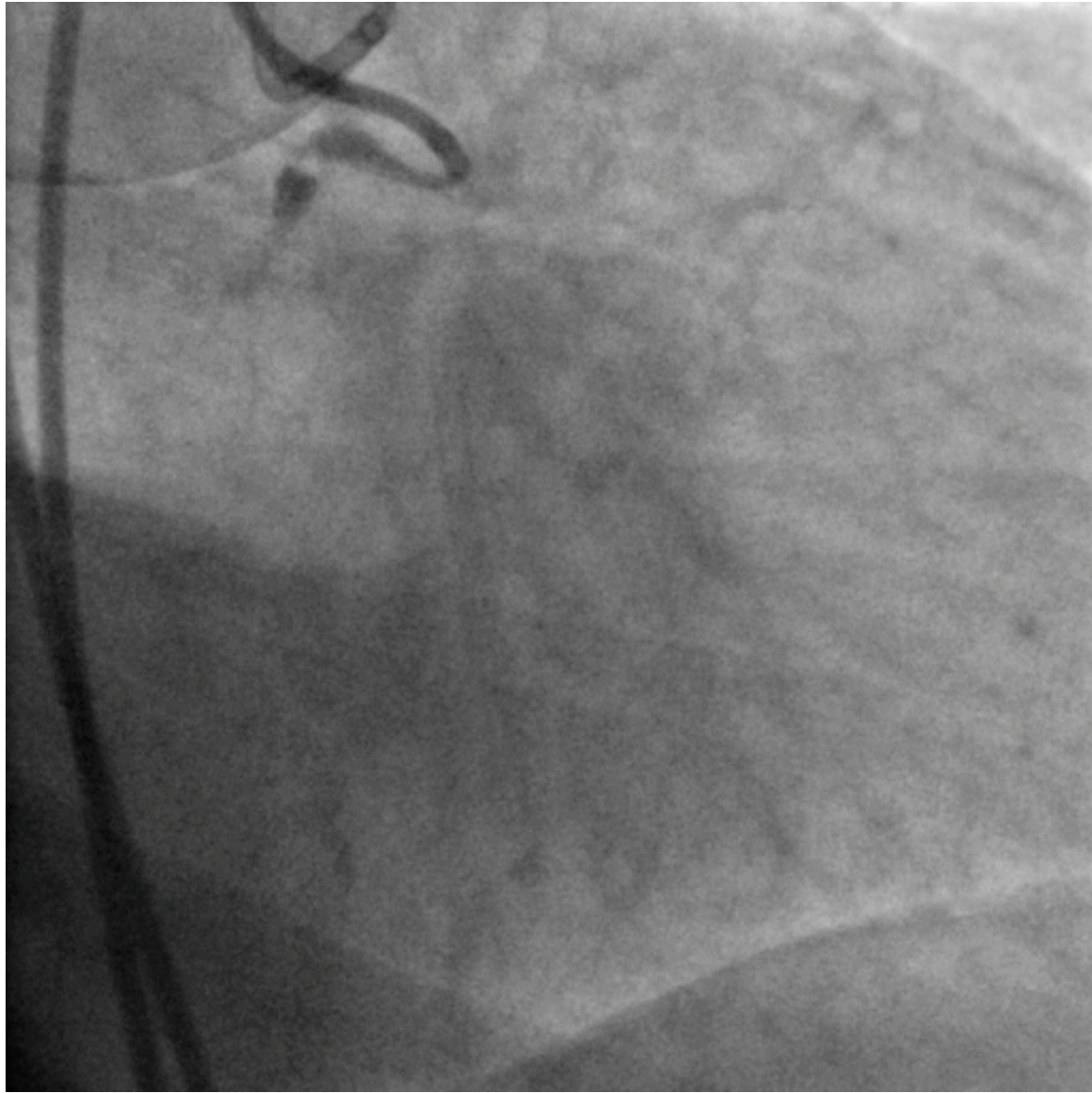


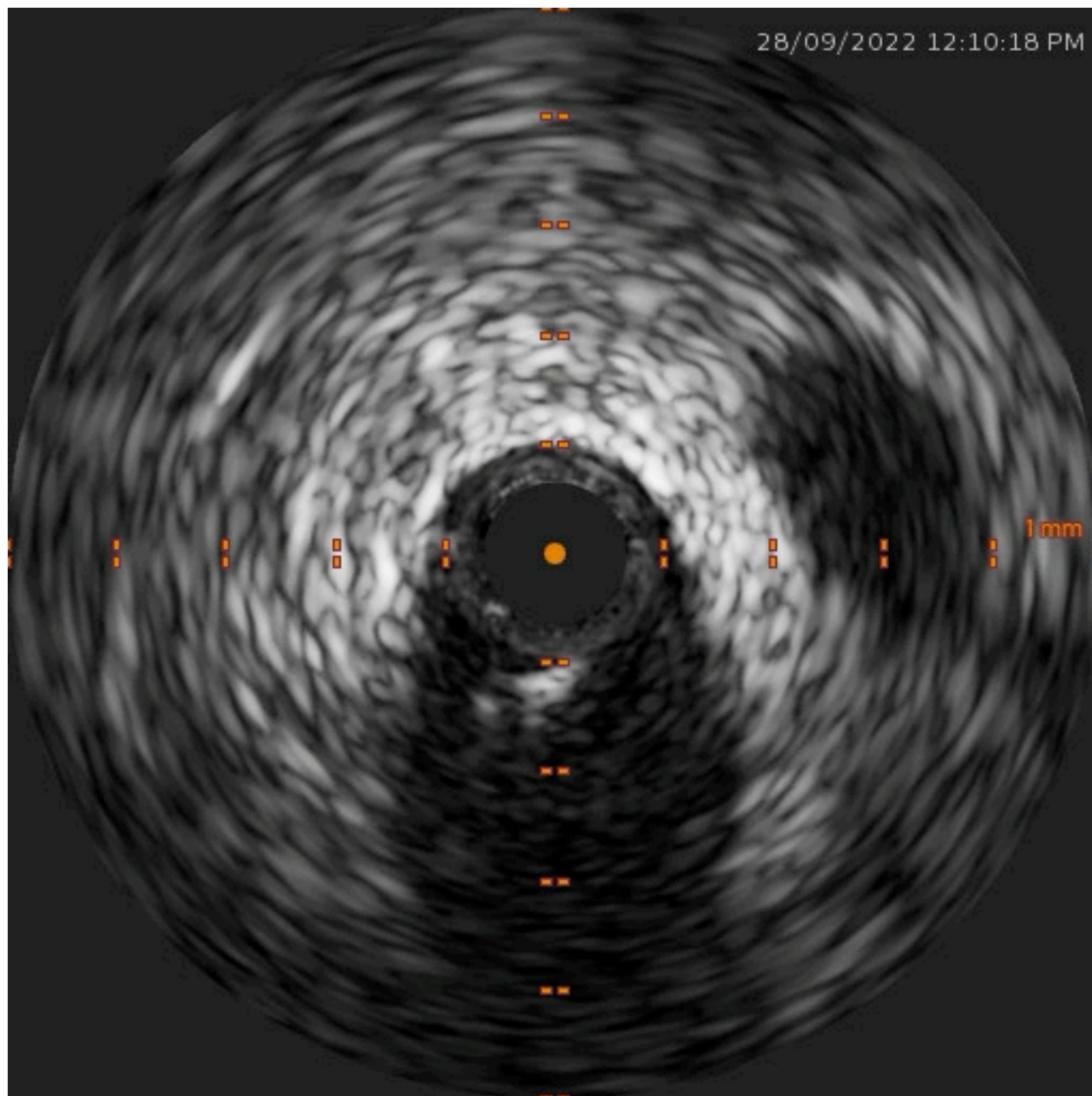
Identify a CTO entry point by IVUS

- Pull back and push forward with the IVUS catheter around the proximal cap
- Keep the IVUS transducer in that position
- Using the chosen wire supported by microcatheter, advance the wire tip to the proper location
- Torque the wire in the right direction and make several quick pushes with the wire to penetrate the lesion



A side-branch at the proximal cap can be used to deliver an IVUS catheter which can reveal the location of the proximal cap.





IVUS guided puncture

