

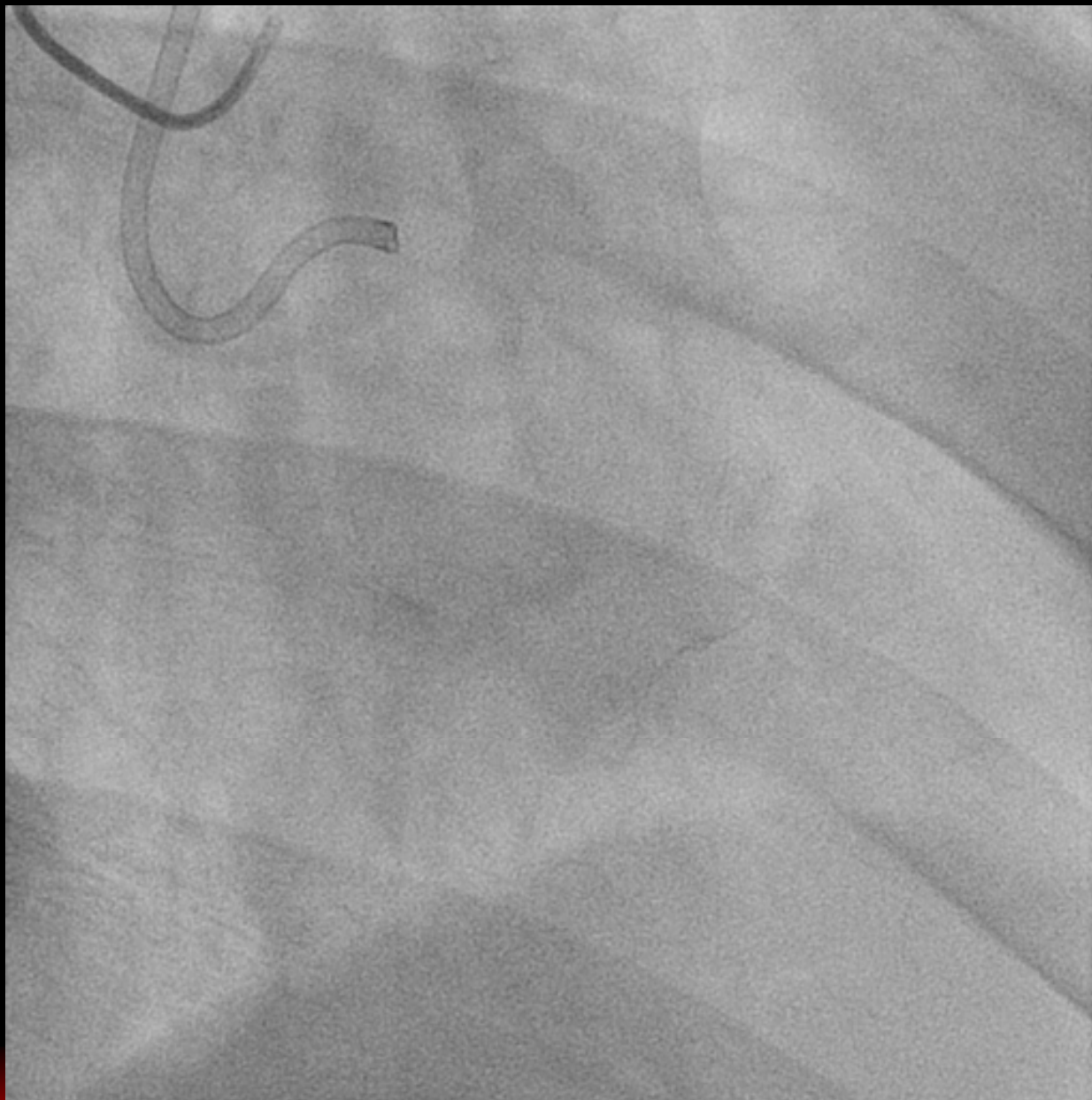
When I am stuck in the CTO Path, How Can I Solve the Problem?

Toyohashi Heart Center
Yasushi Asakura M.D.



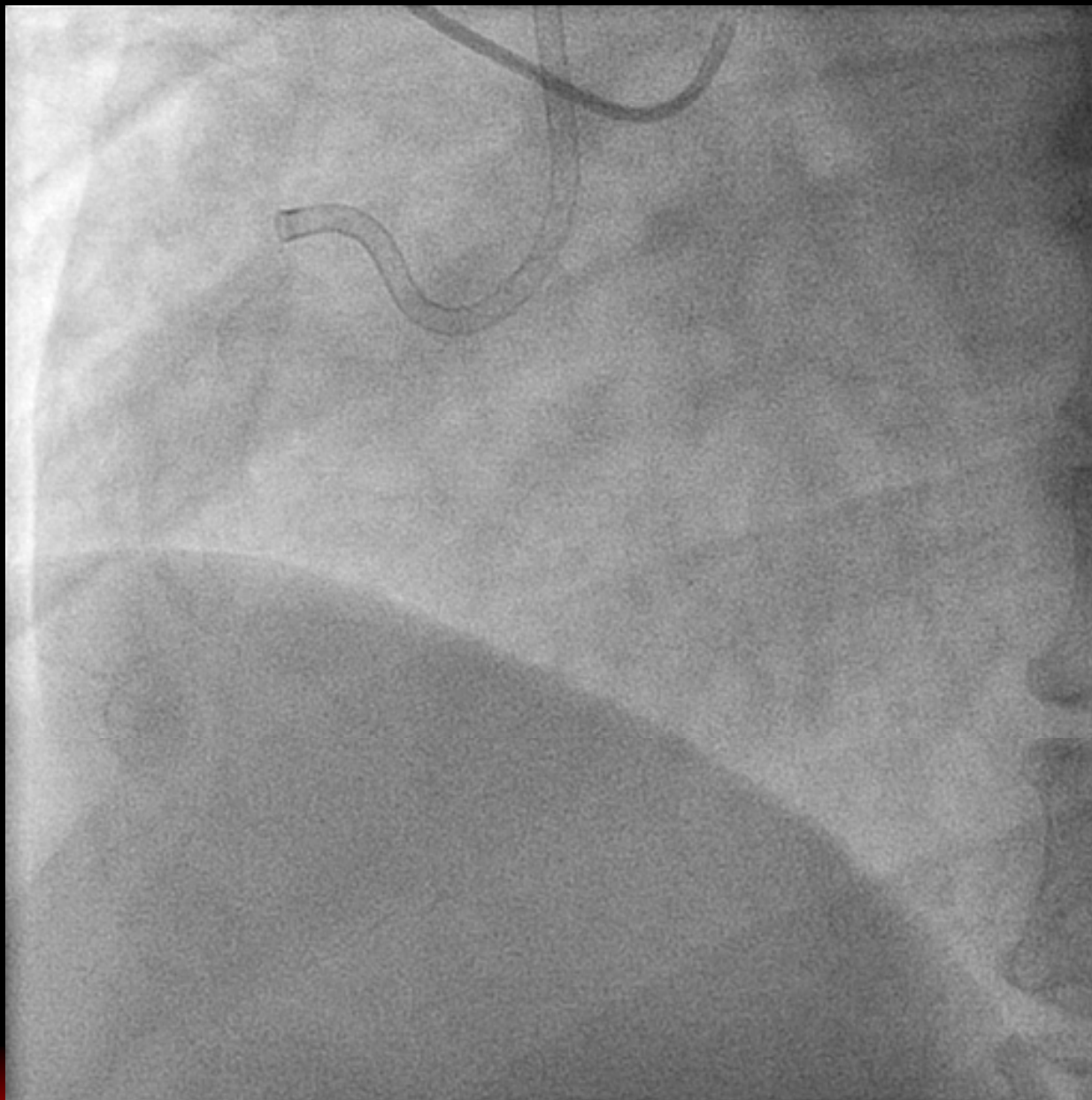


Case RCA



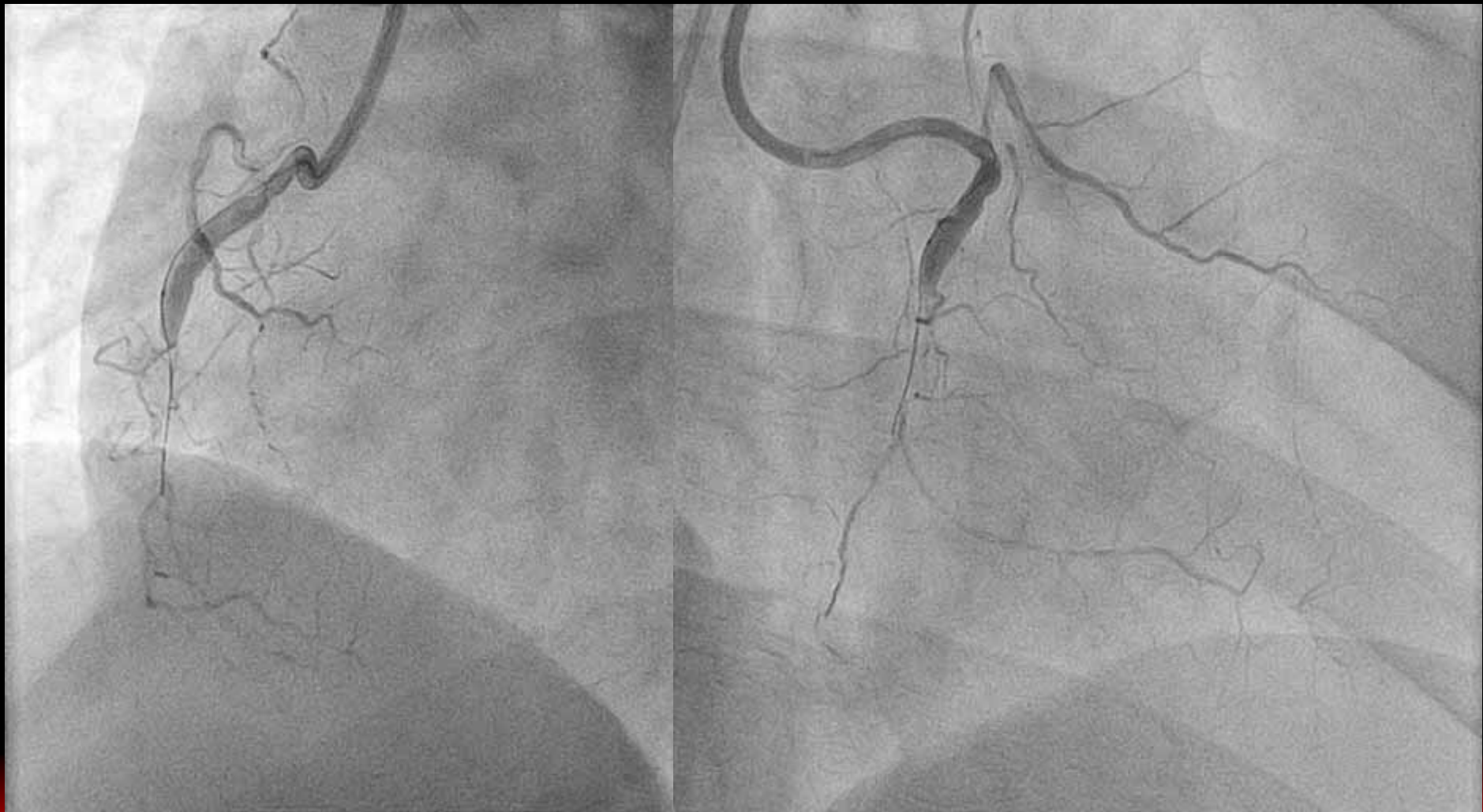


LAO





PCI





Step by Step Approach

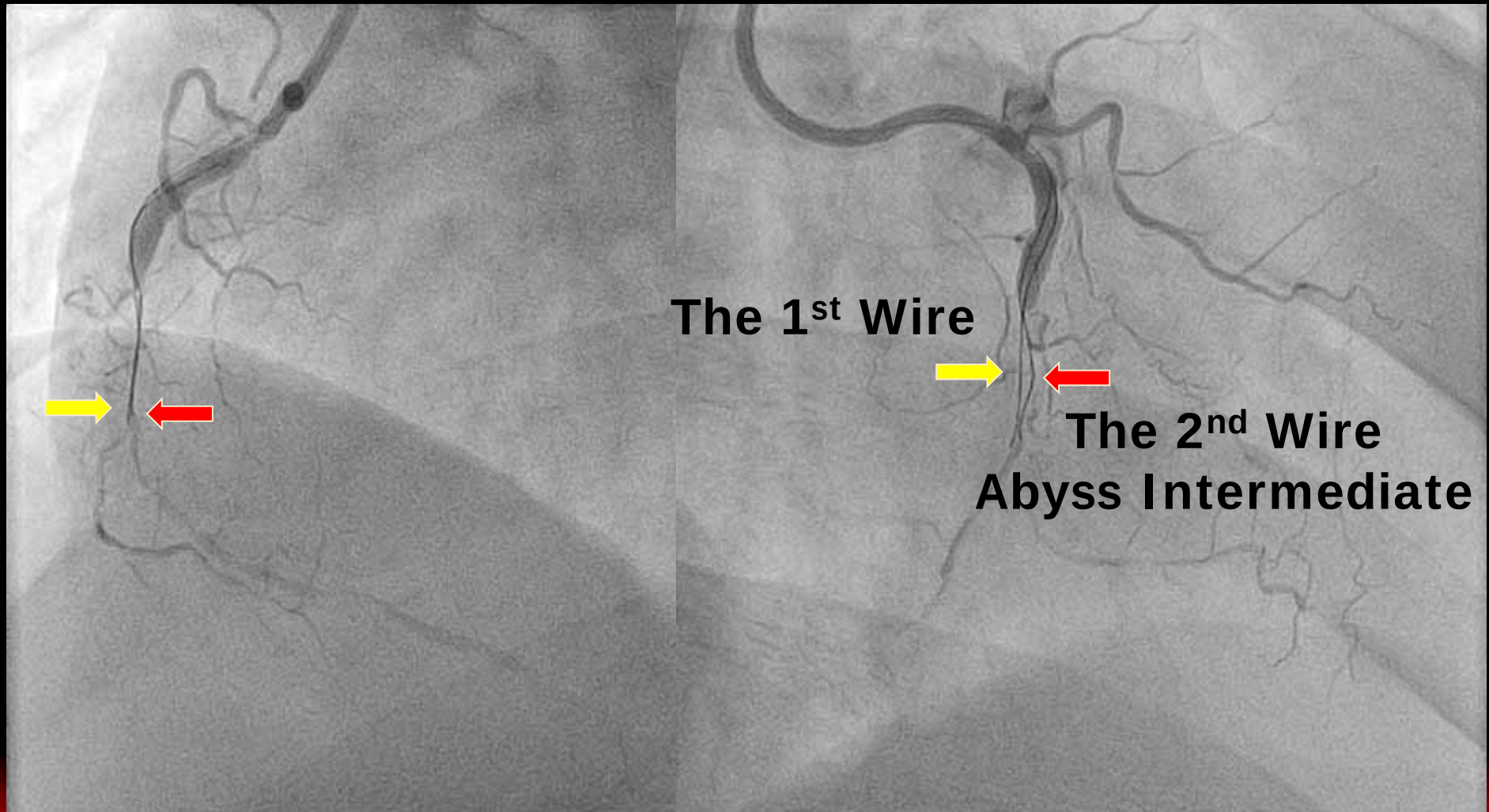
**Antegrade Approach
with Single Wire**



Parallel Wire Technique

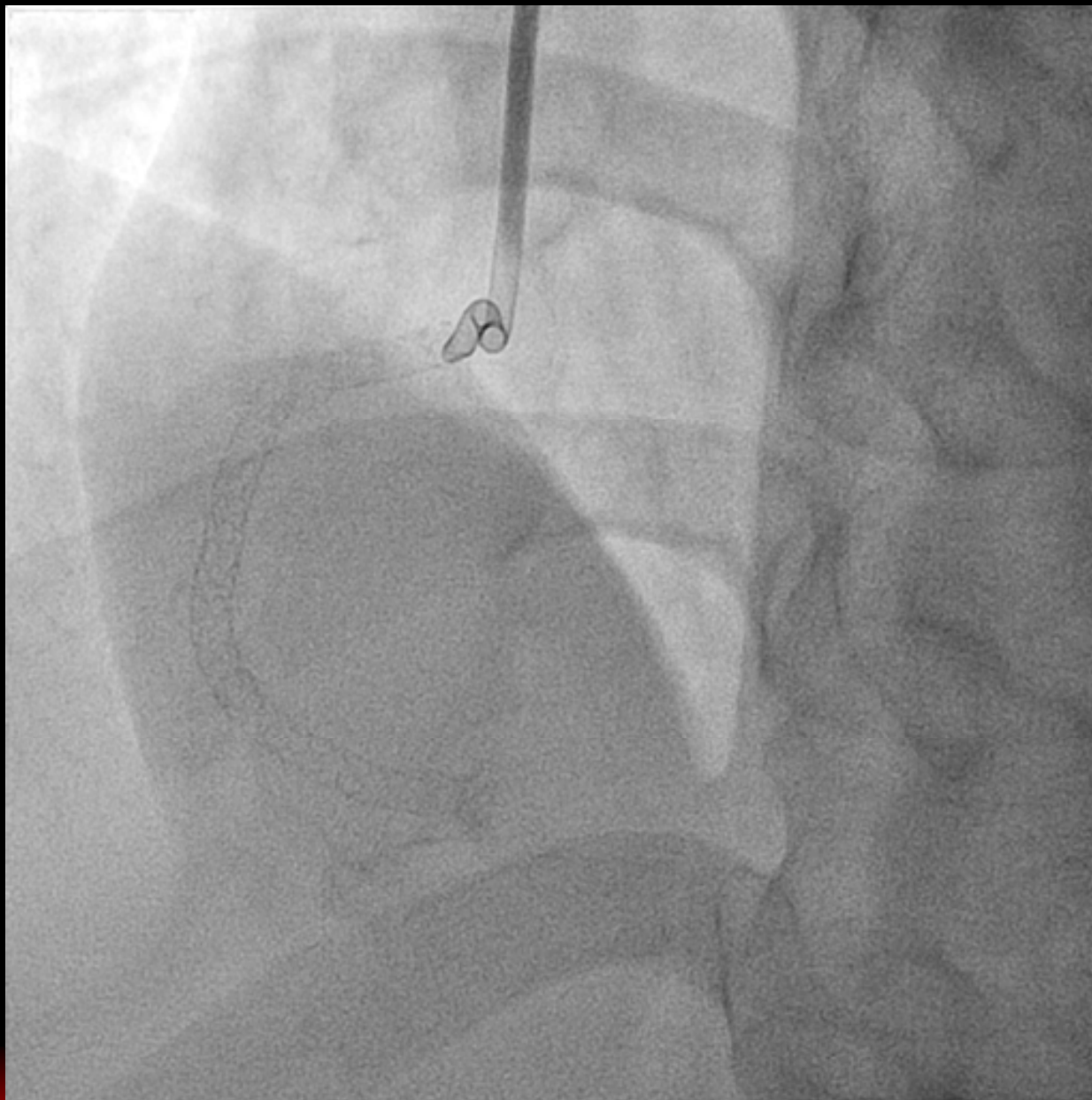


Parallel Wire Technique





Final





Step by Step Approach

**Antegrade Approach
with Single Wire**



Parallel Wire Technique



Retrograde Approach



Retrograde Approach

Retrograde Wiring



Kissing Wire Technique



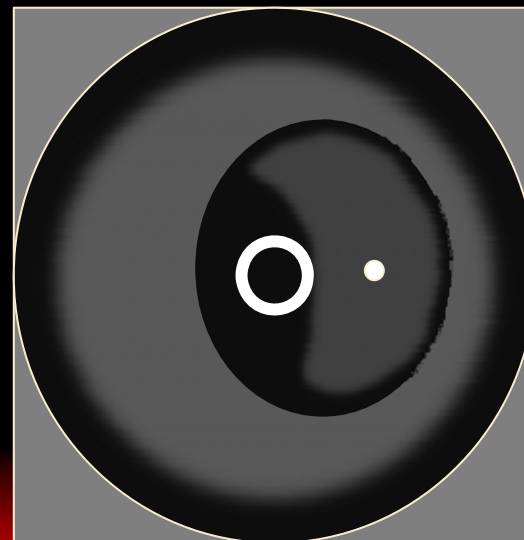
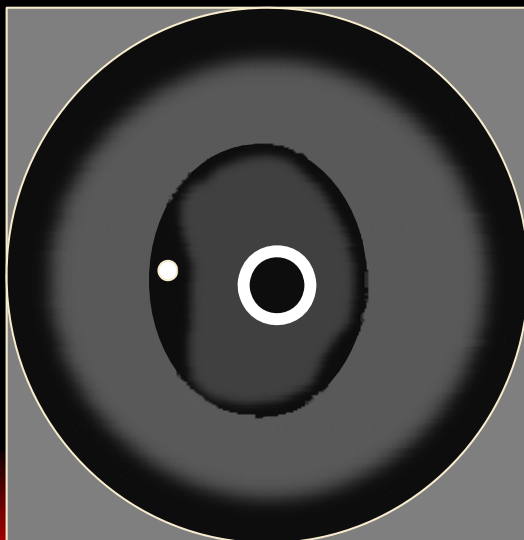
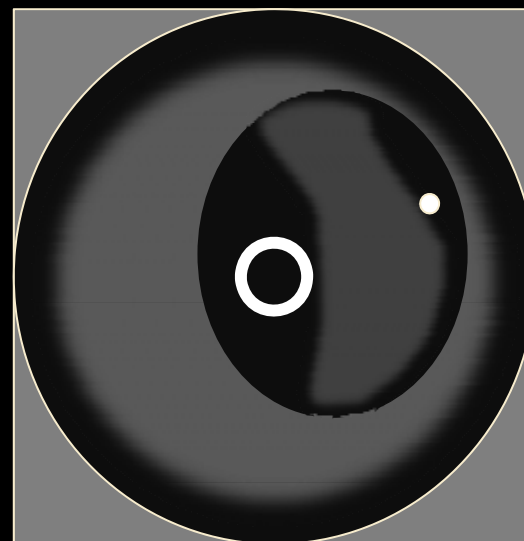
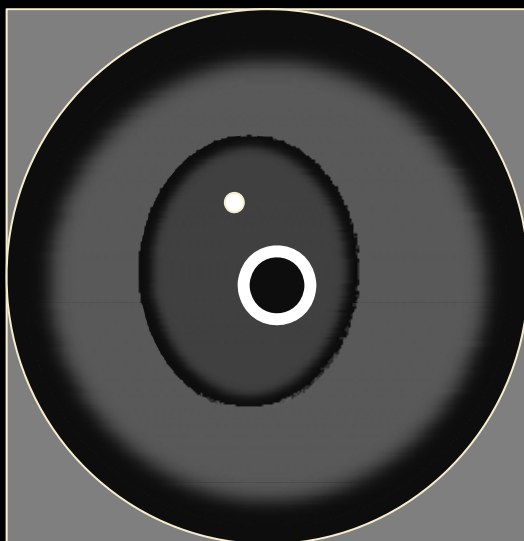
IVUS Guided Wiring



Reverse CART

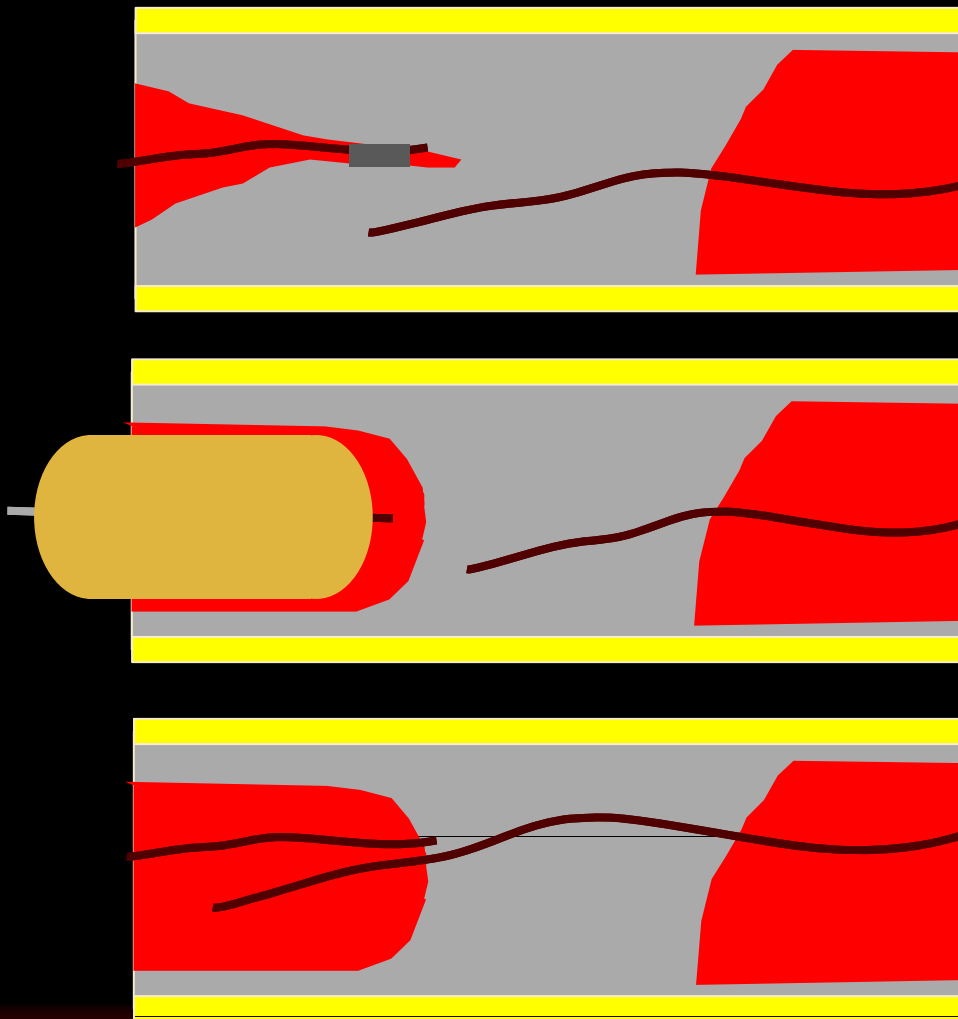
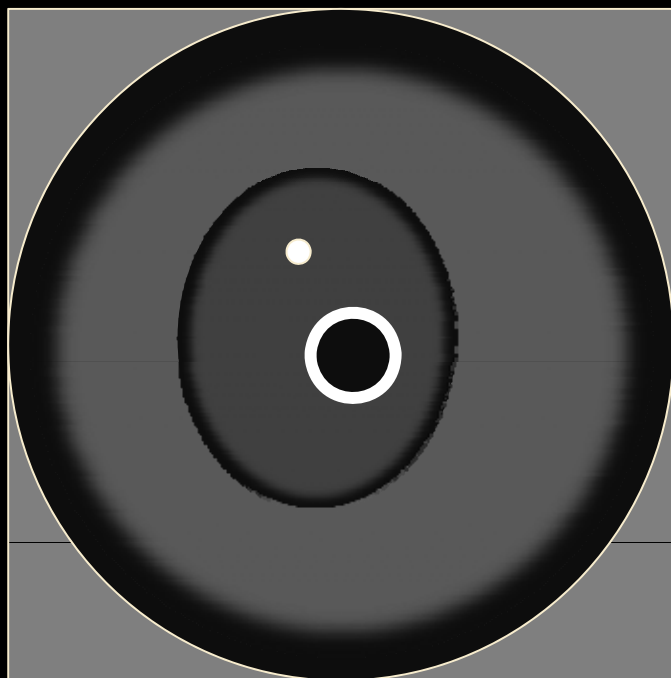


IVUS Findings



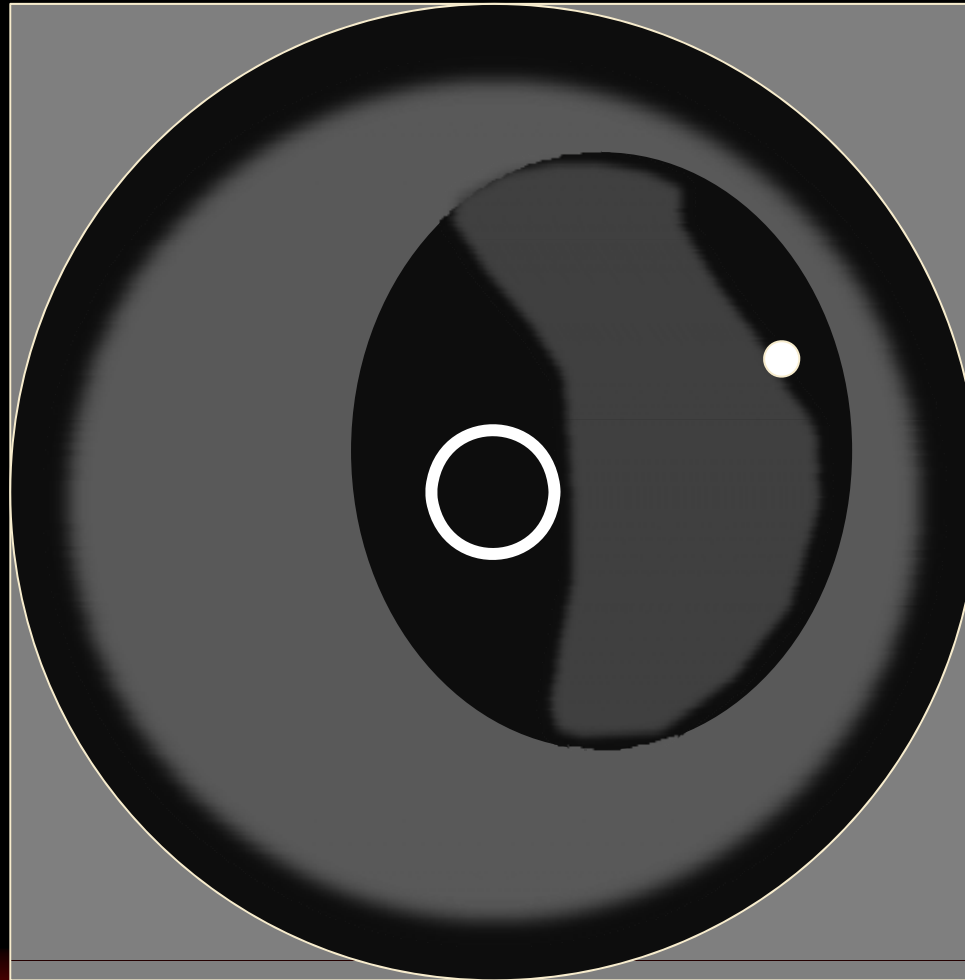


Both Wires in Intima





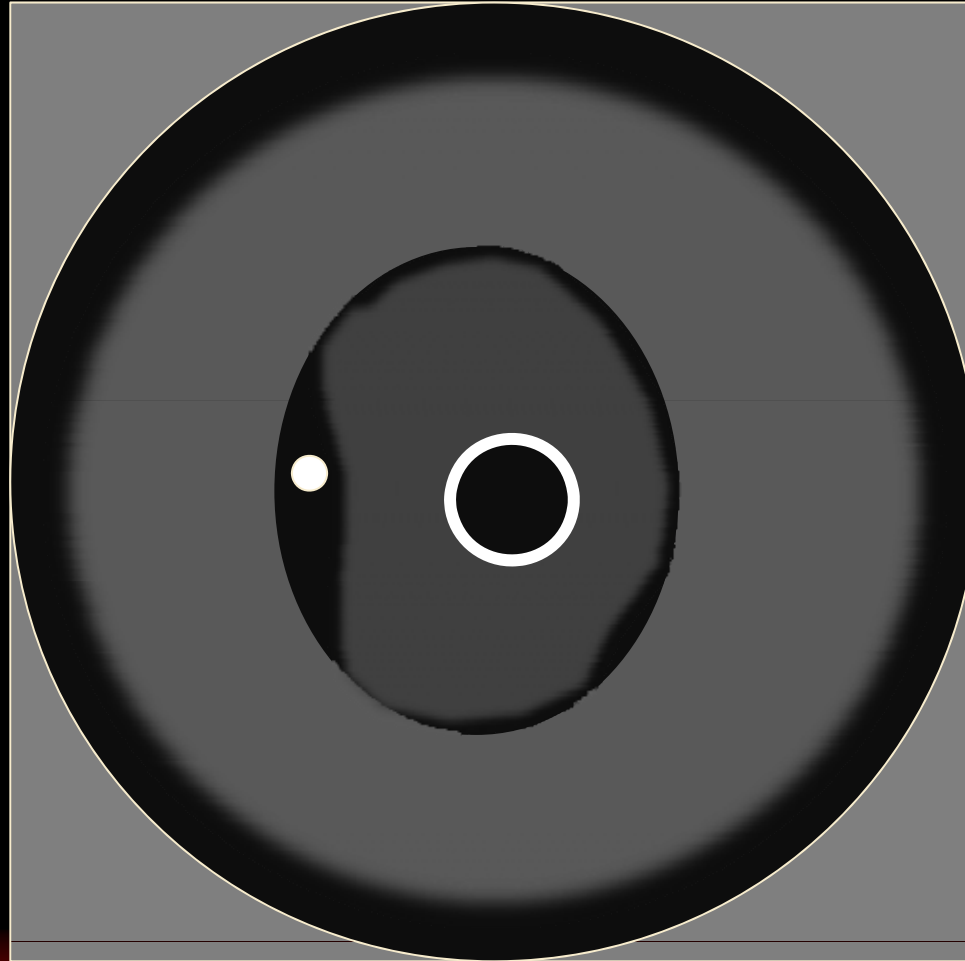
Both Wires in Sub-Intima





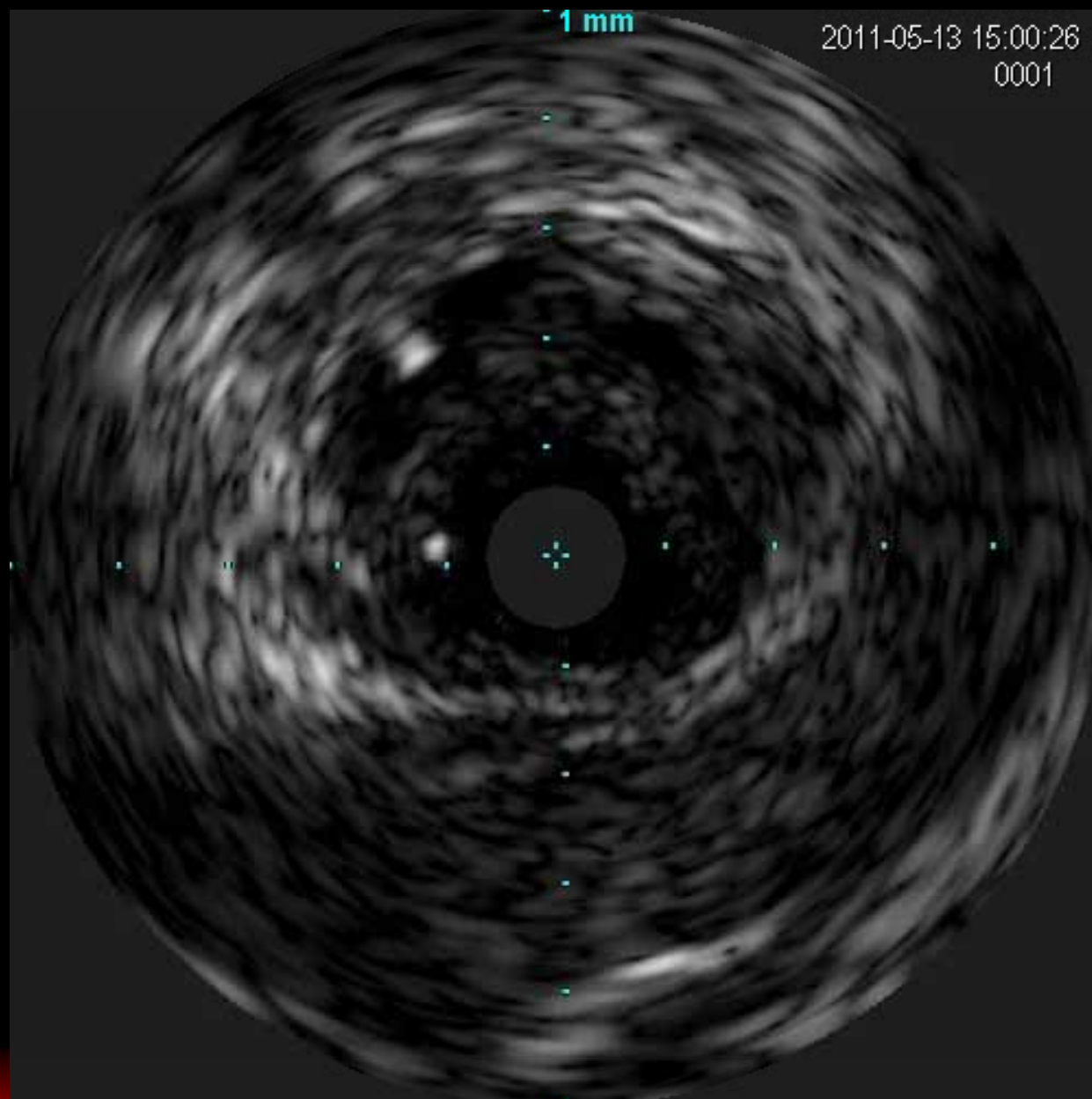
Antegrade Wire in Intima

Retrograde Wire in Sub-Intima





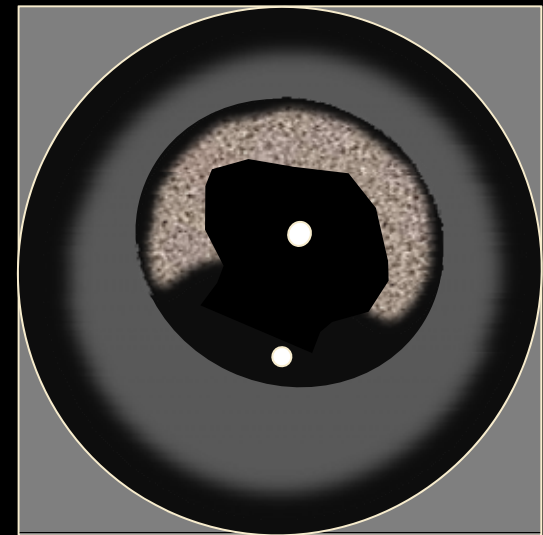
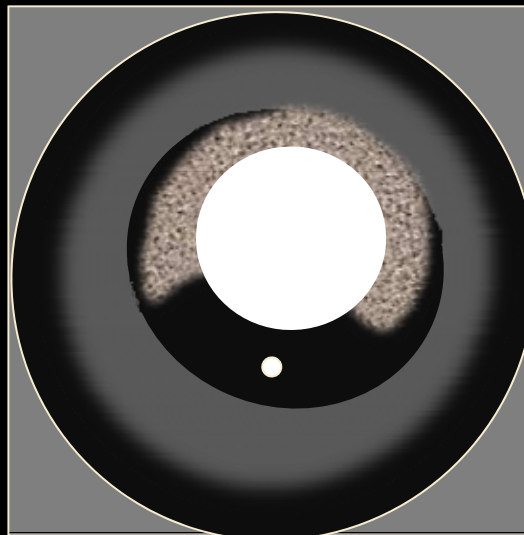
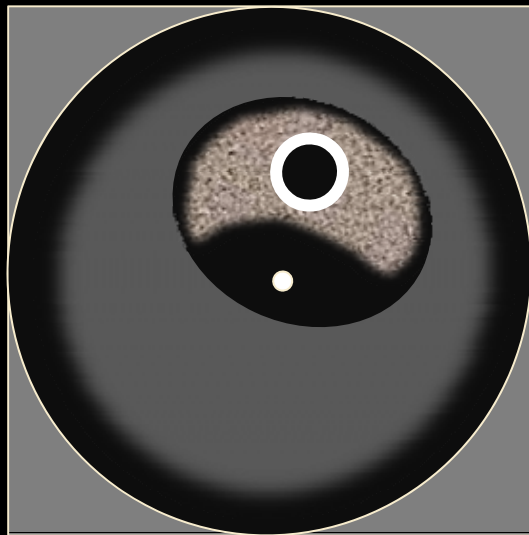
IVUS





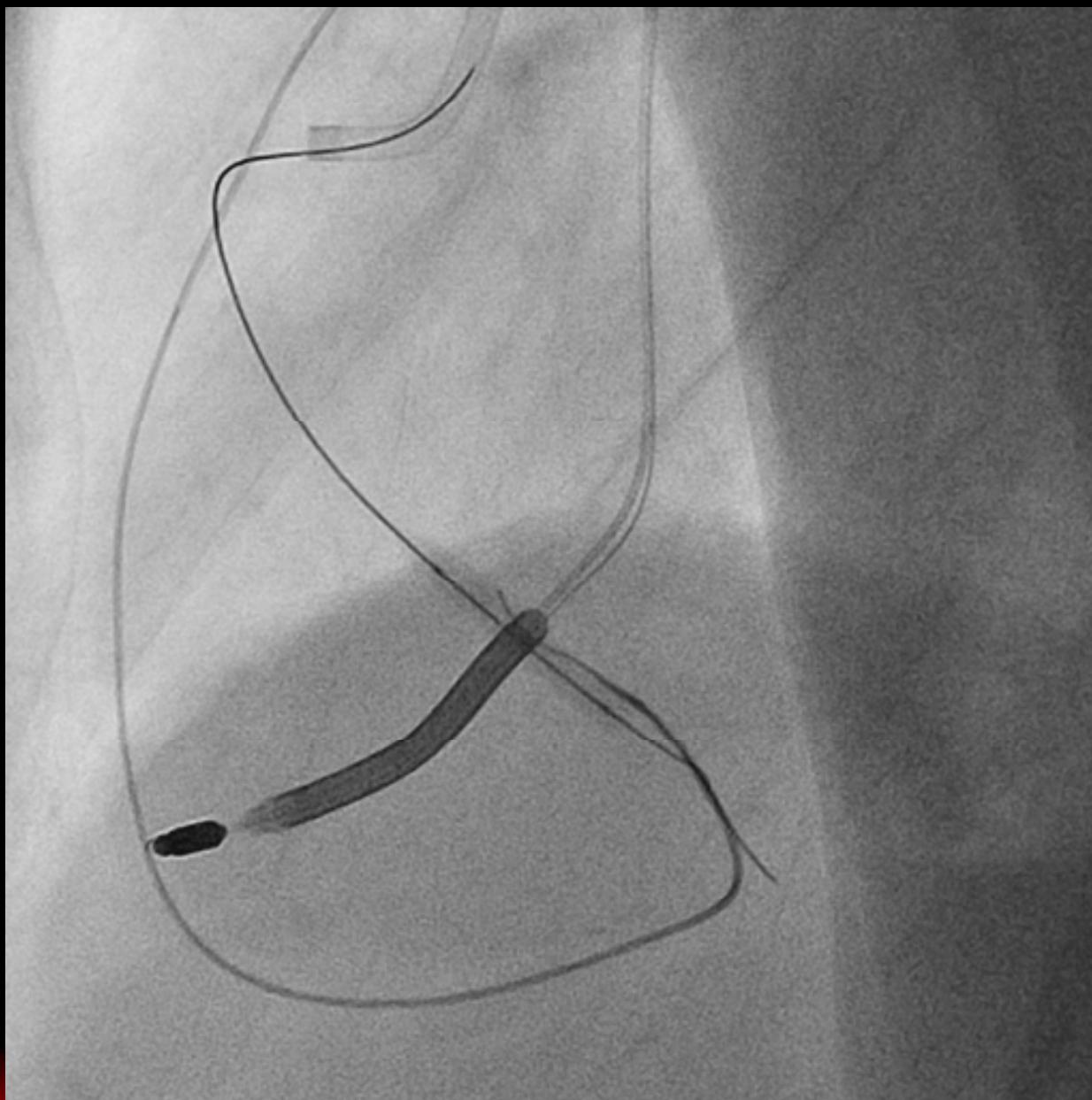
Antegrade Wire in Intima

Retrograde Wire in Sub-Intima



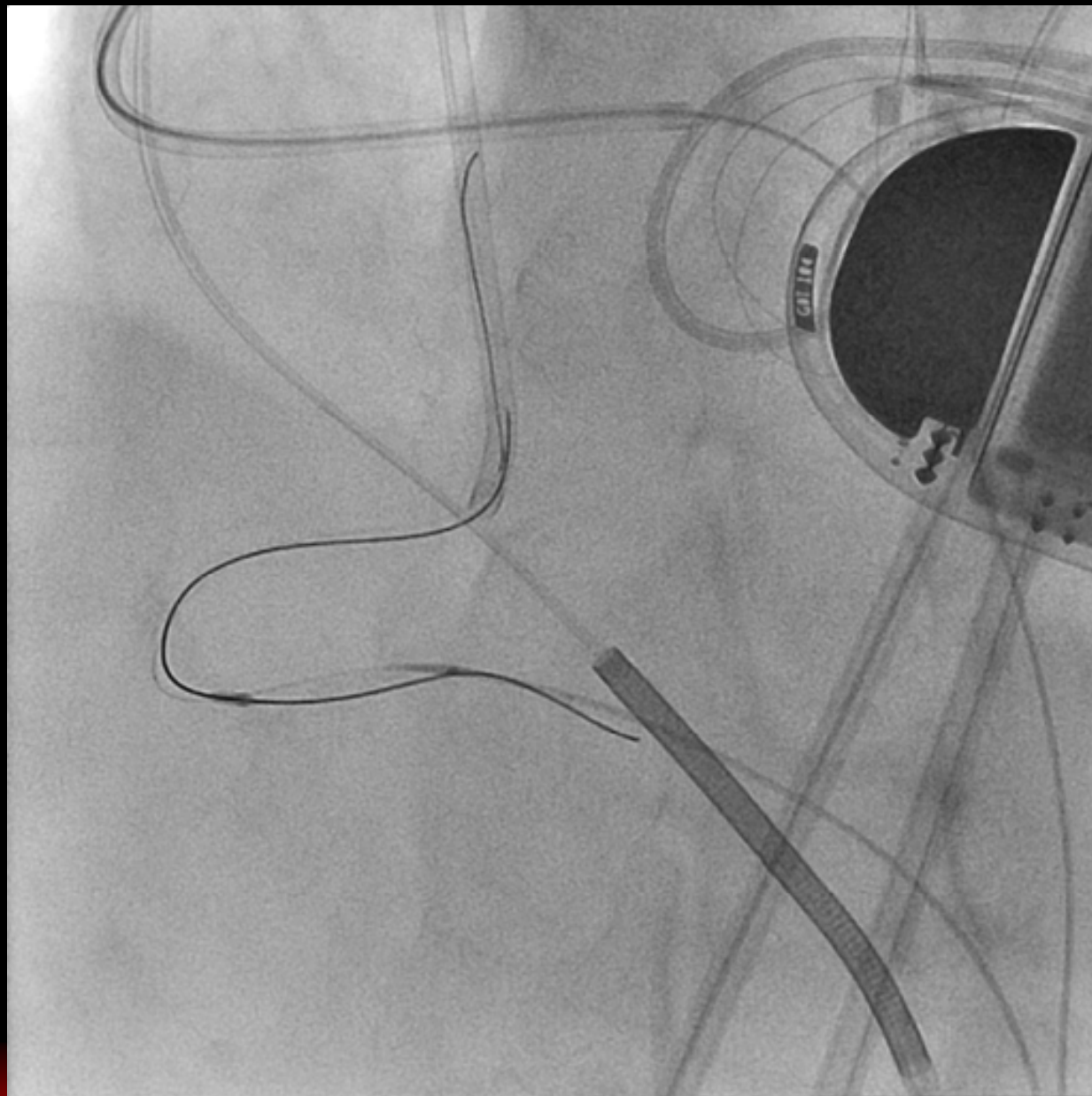


Balloon



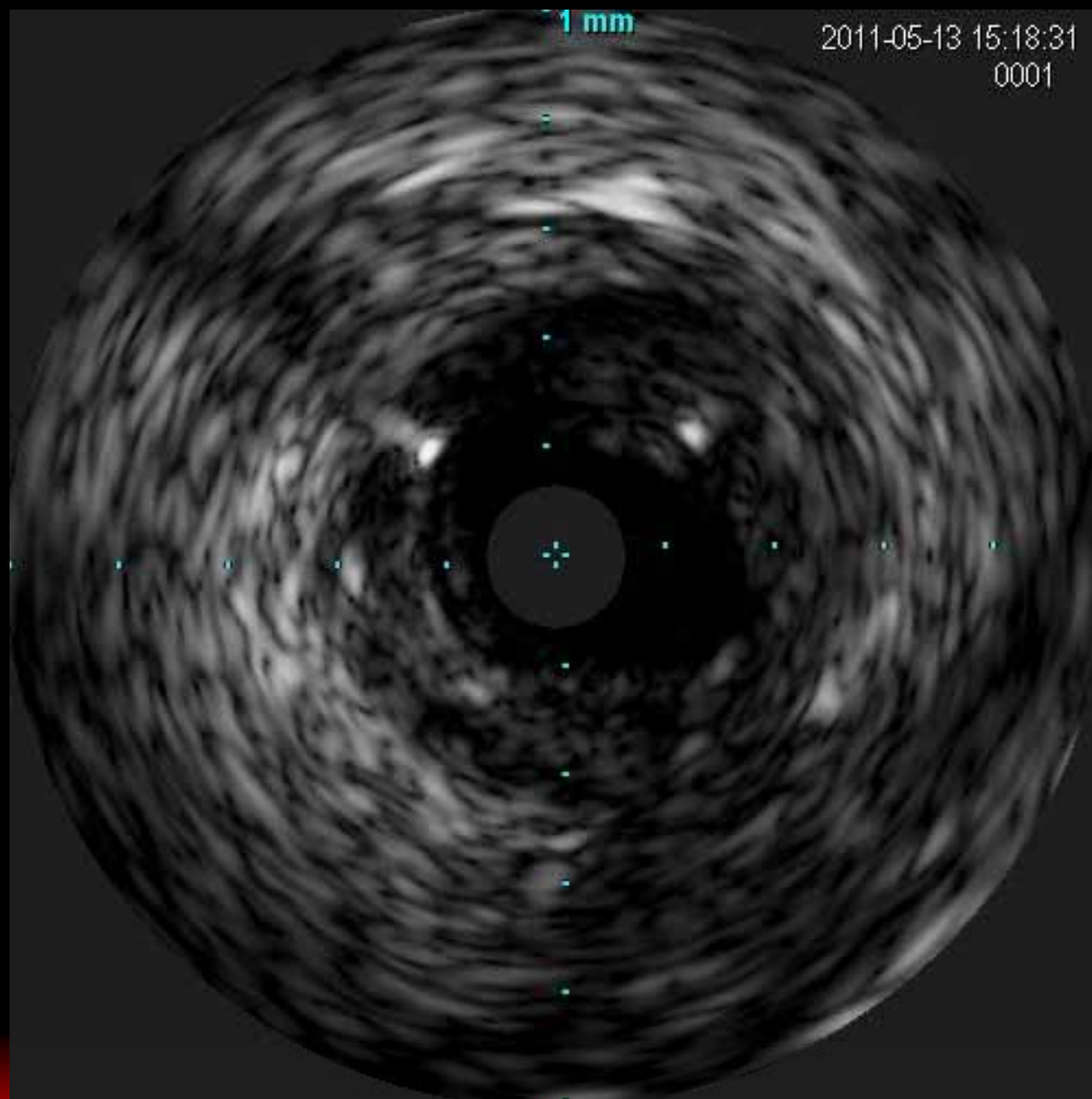


Retrograde Wiring





IVUS



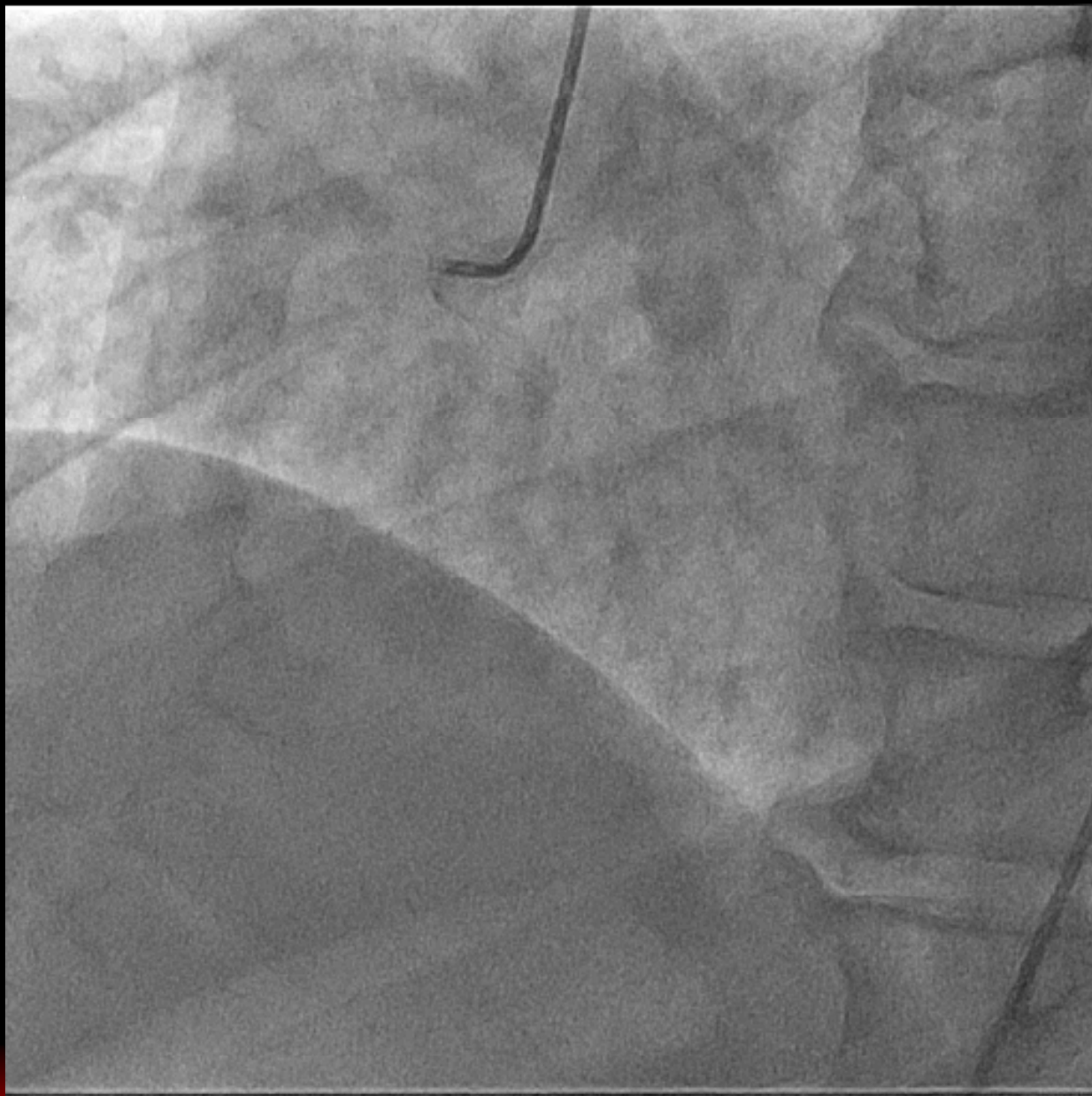


Antegrade Wire in Sub-Intima Retrograde Wire in Intima



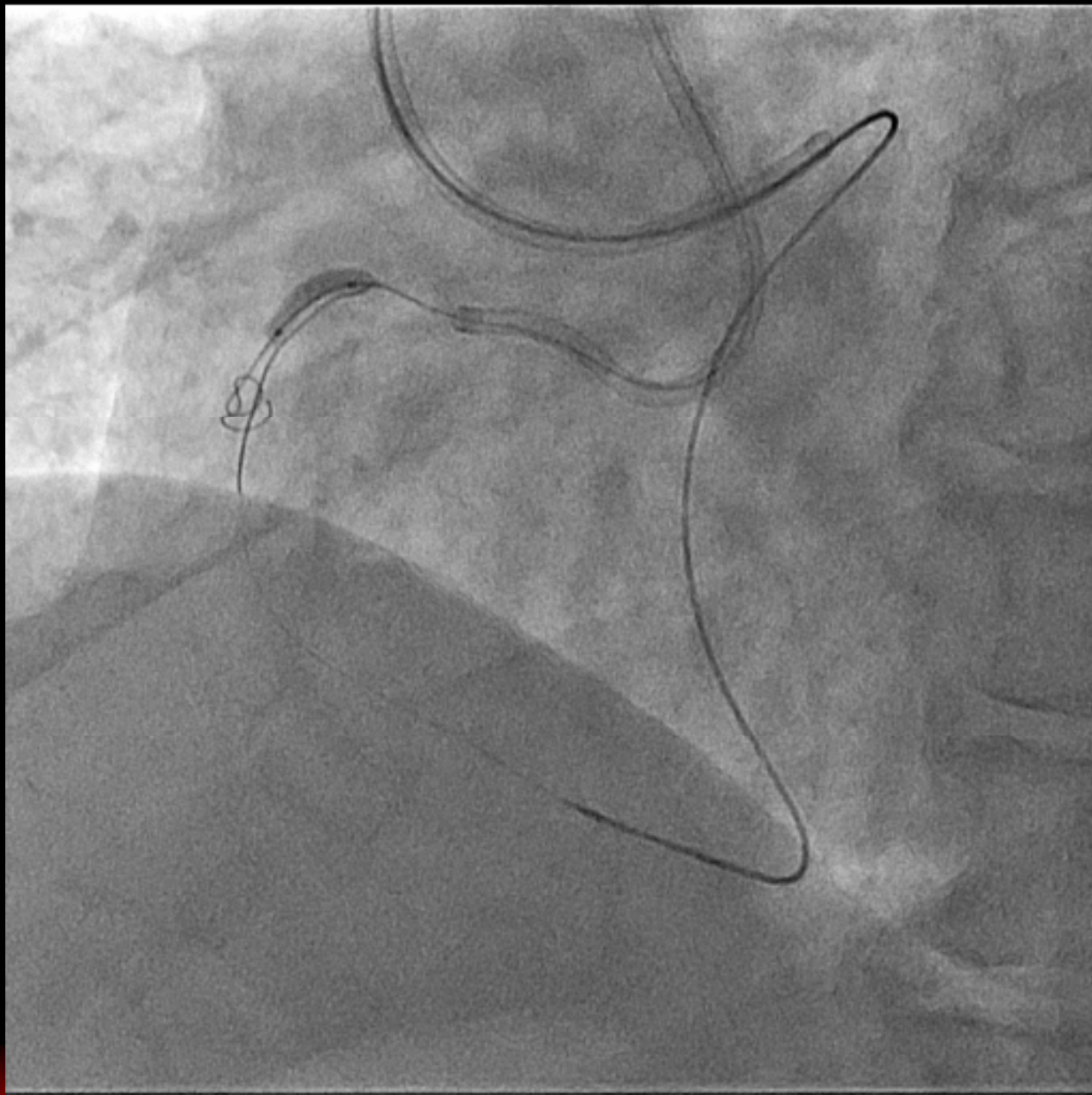


Case RAO



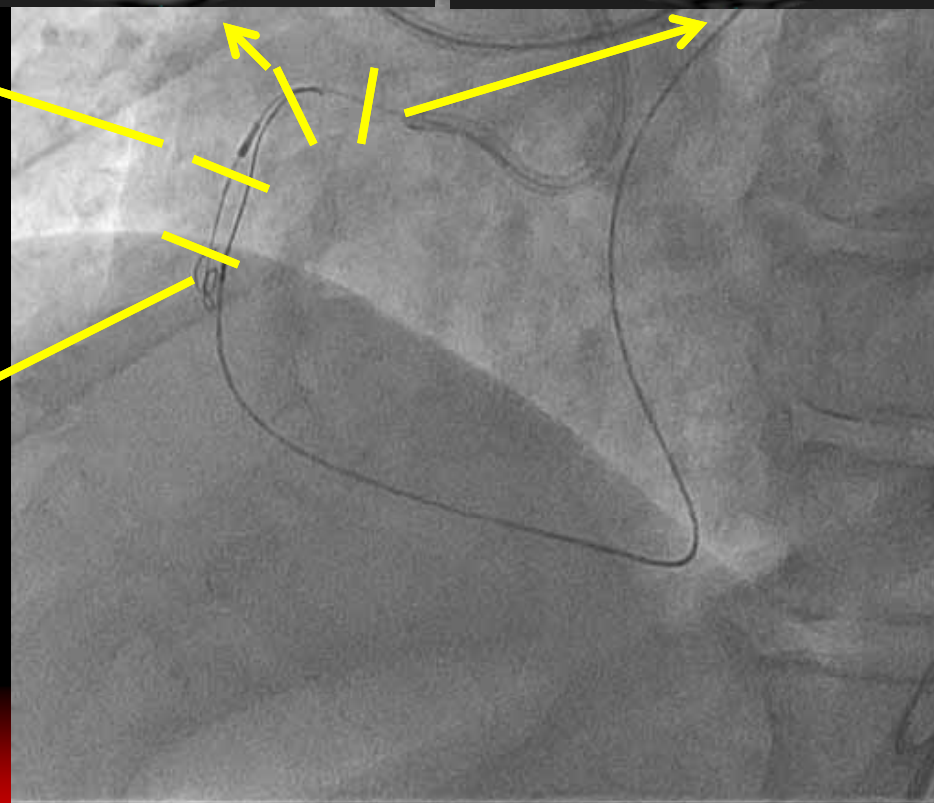
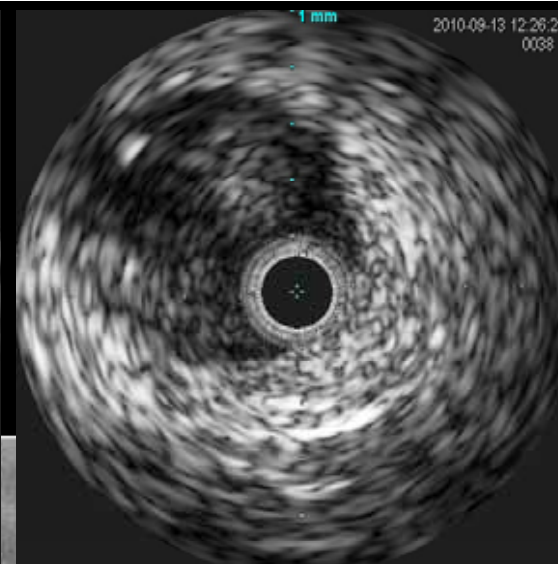
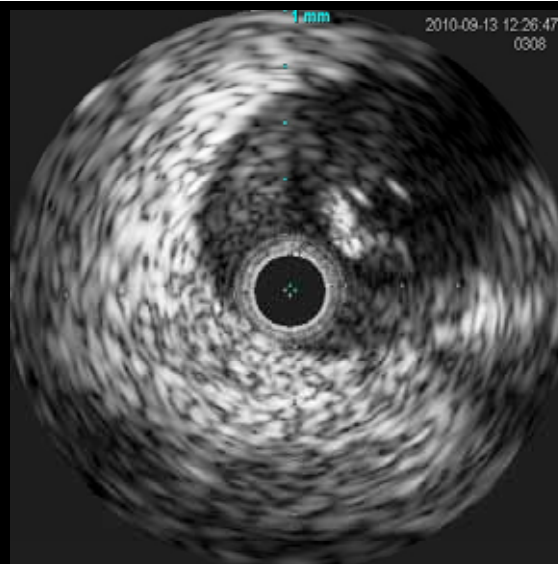
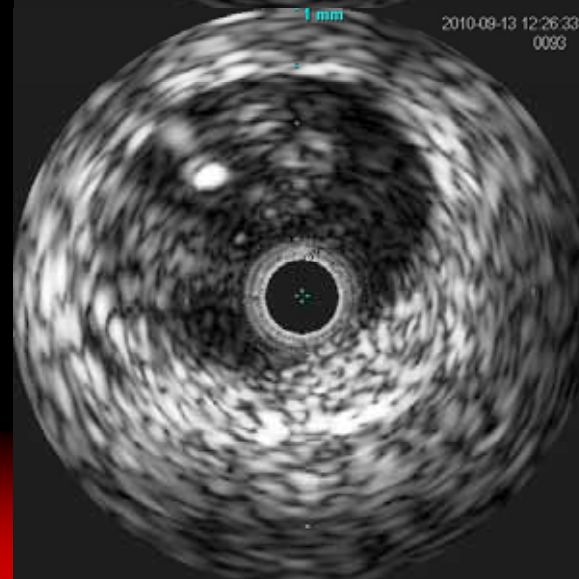
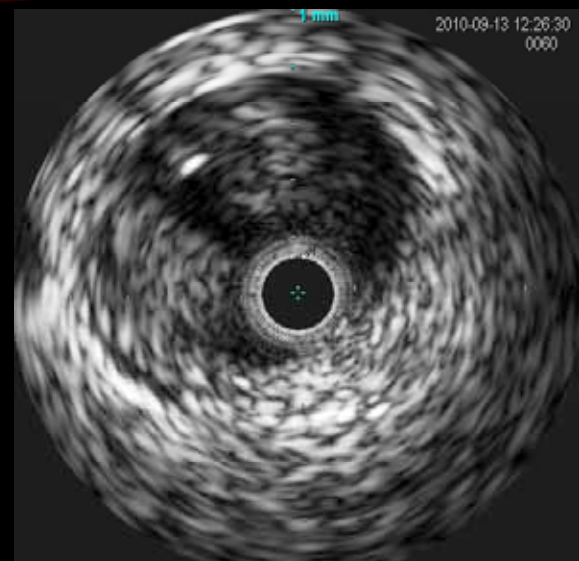


Retrograde Approach



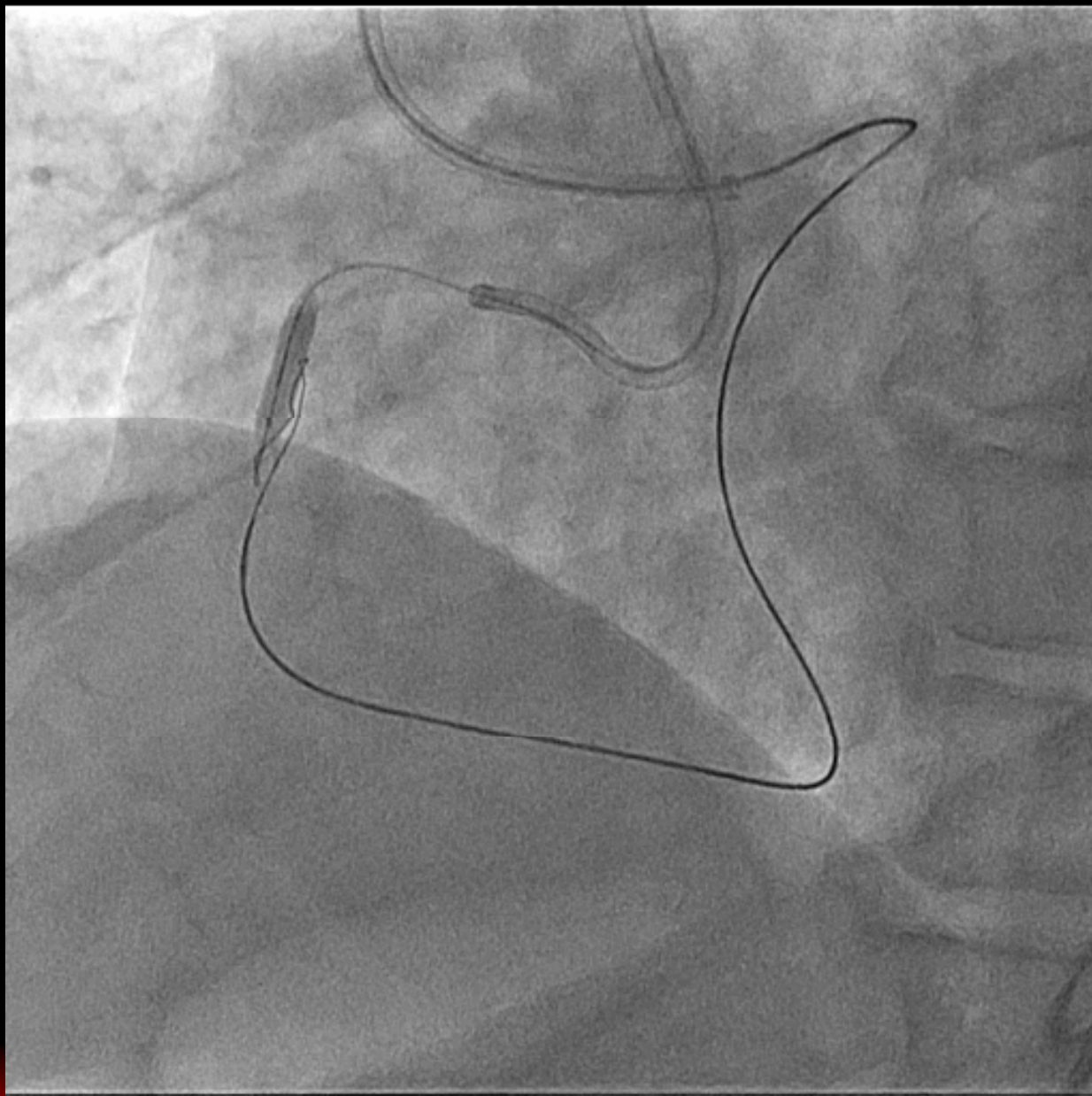


IVUS



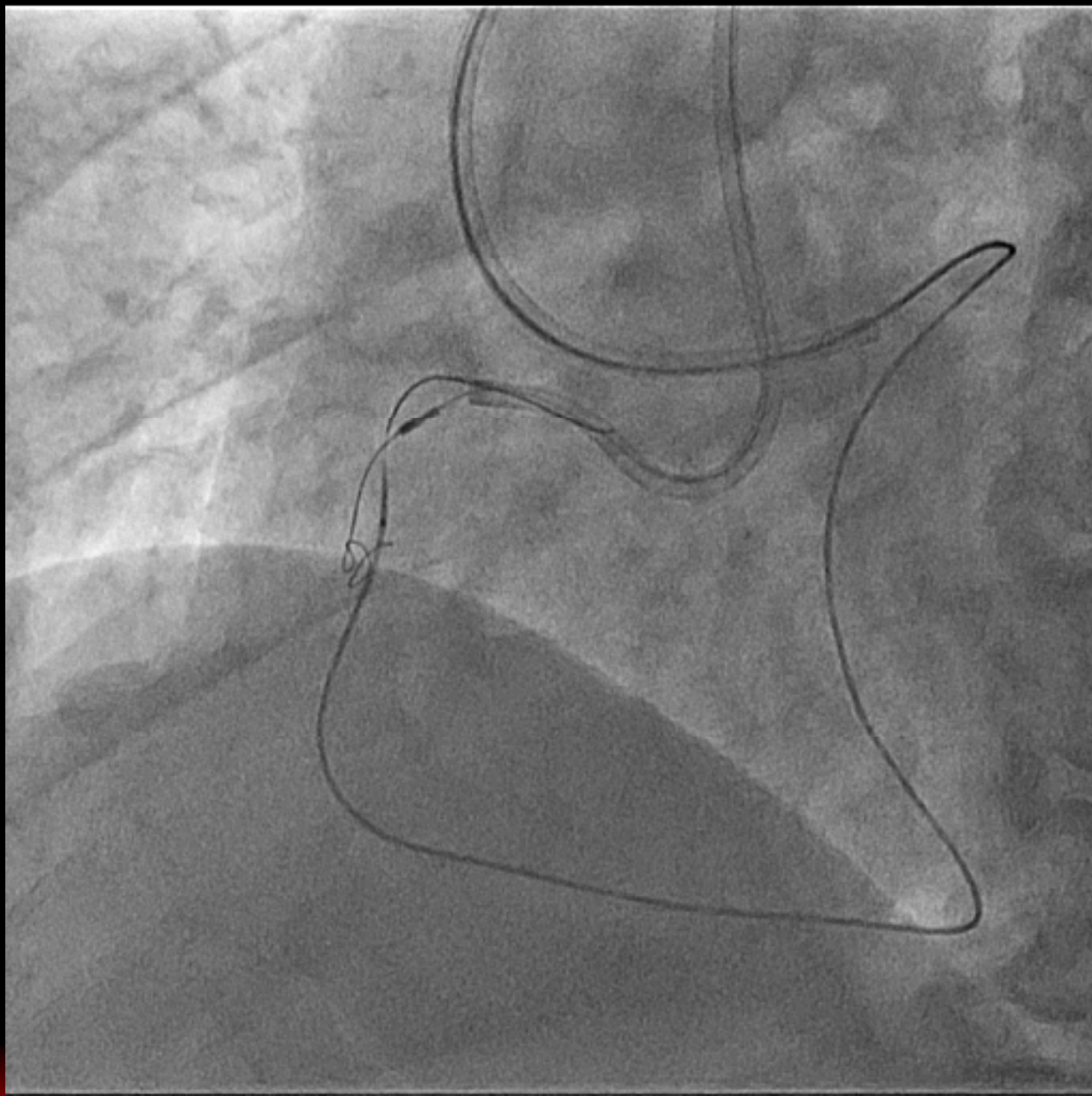


4.0mm Balloon



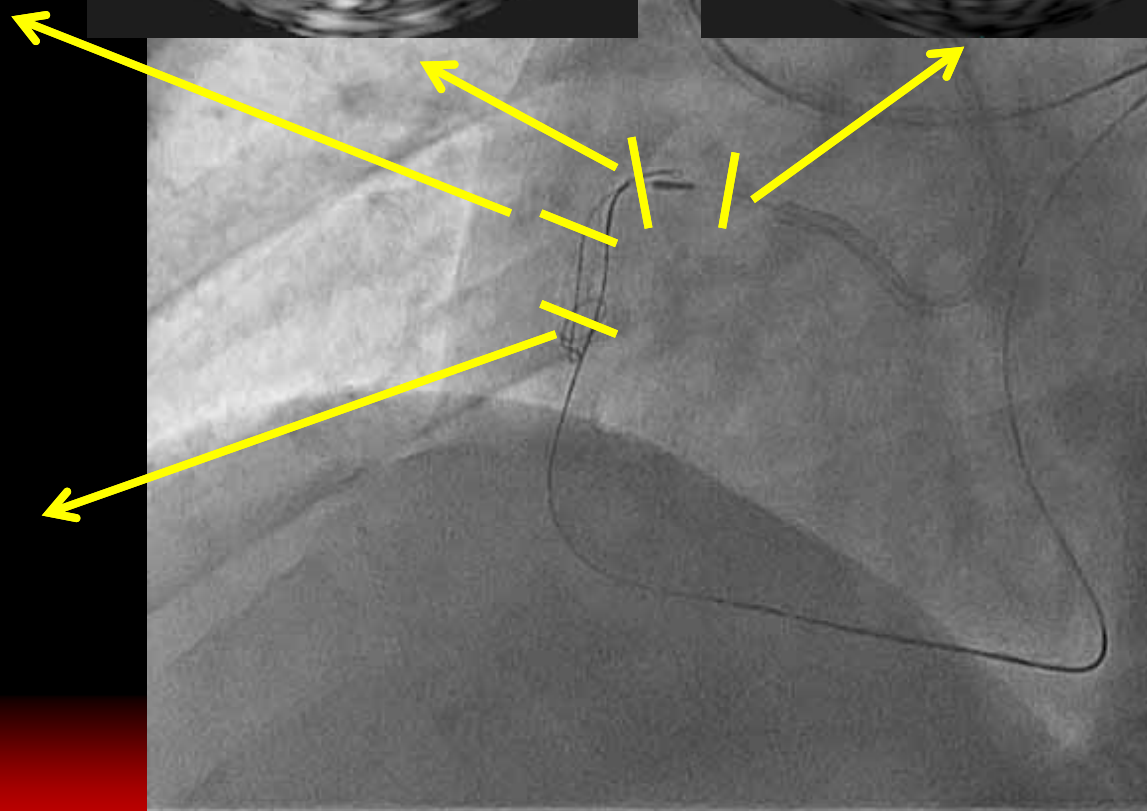
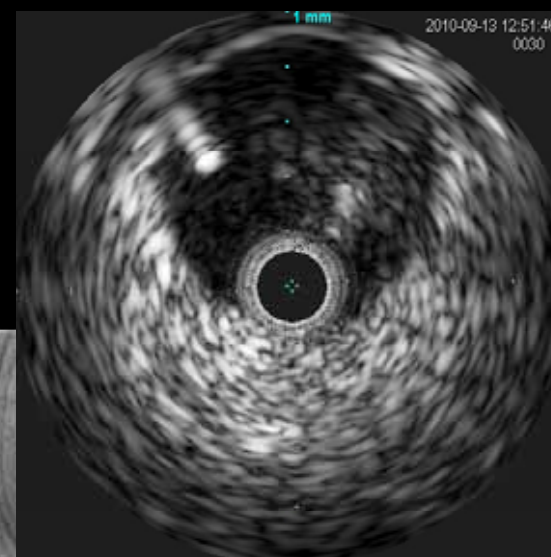
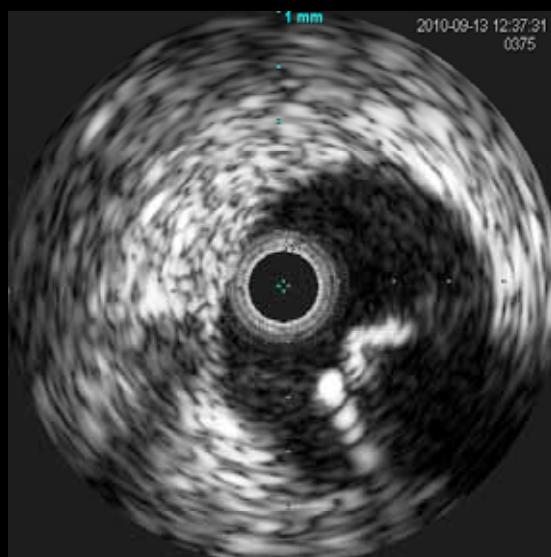
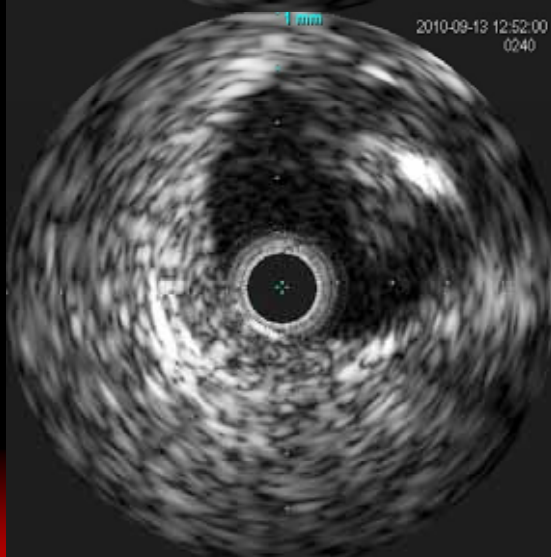
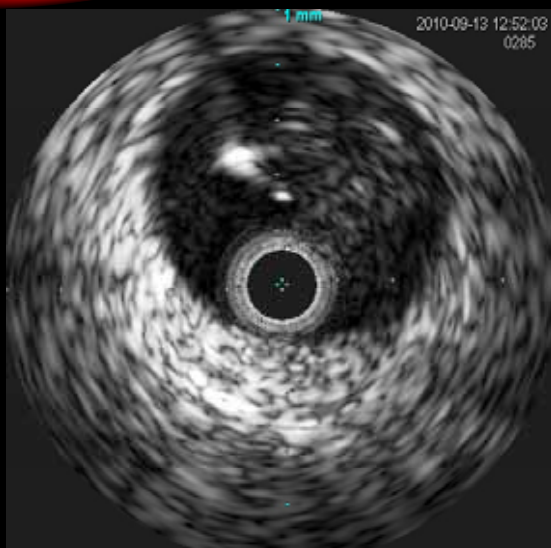


Retrograde Wiring



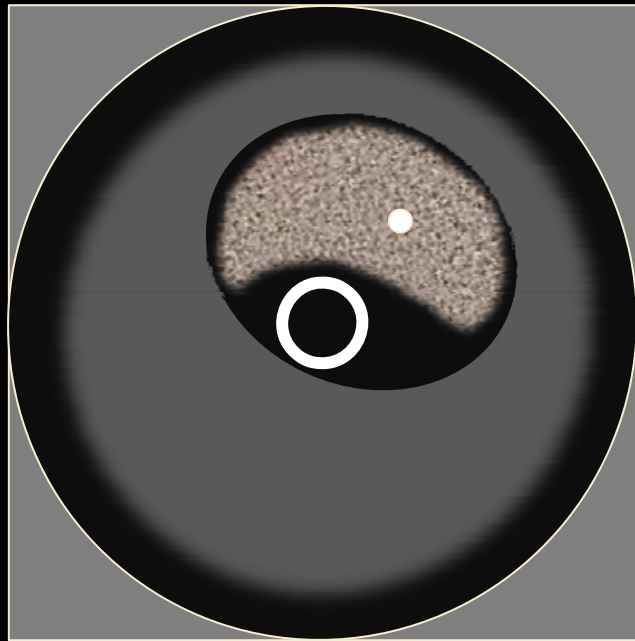


IVUS





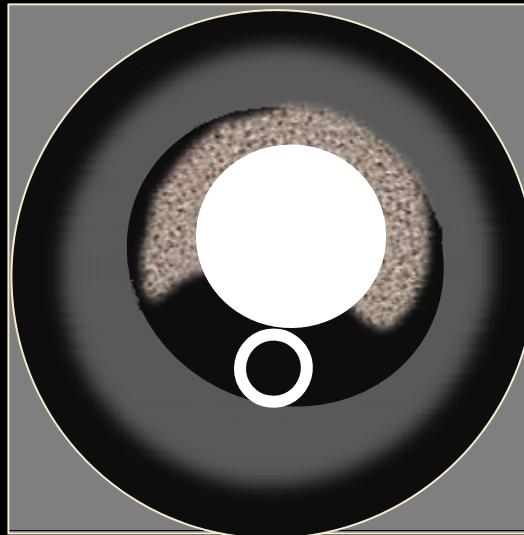
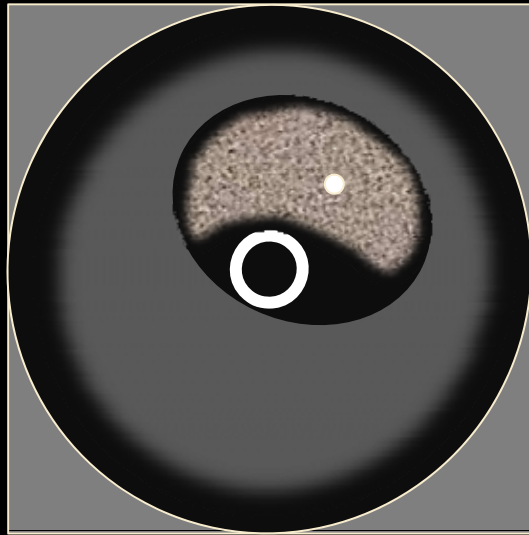
How to Make Connection?



1. R-CART

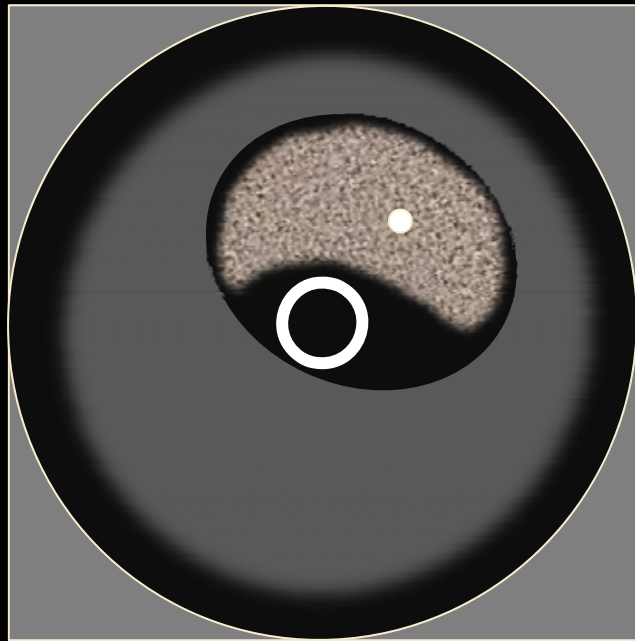


Antegrade Wire in Sub-Intima Retrograde Wire in Intima





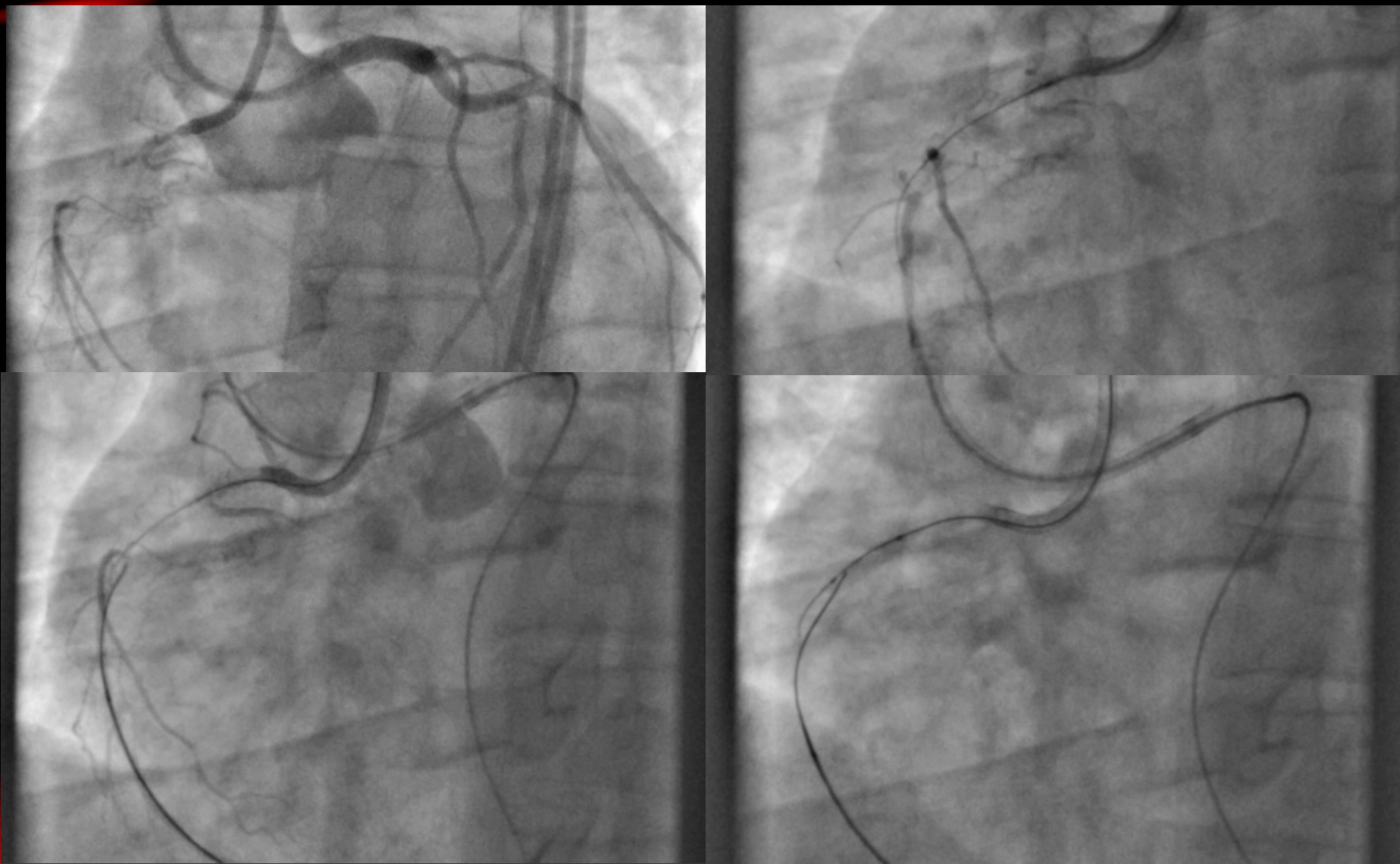
How to Make Connection?



1. R-CART
2. CART
3. Knuckle Wire
4. Wire Penetration

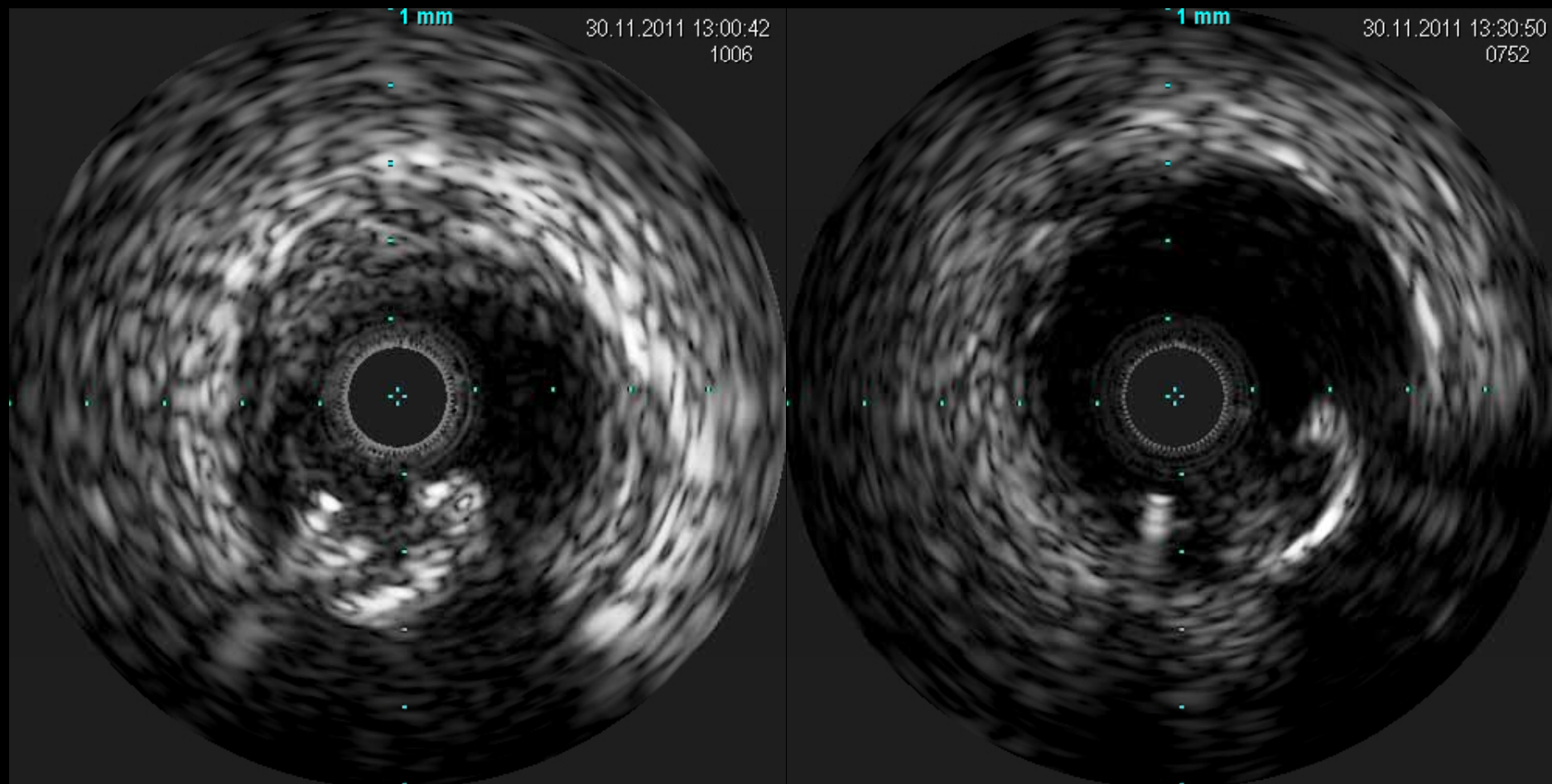


Case



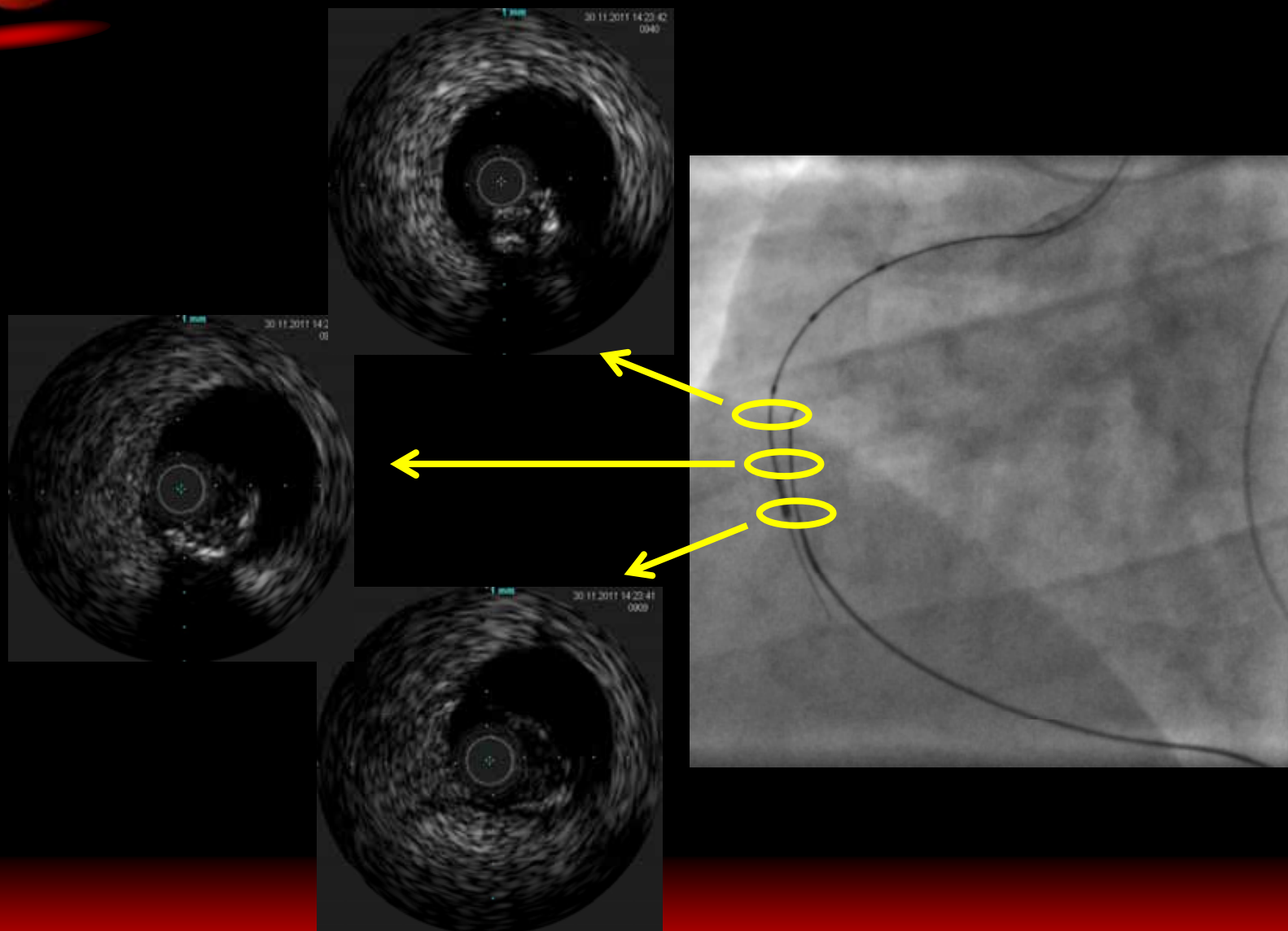


Reverse CART



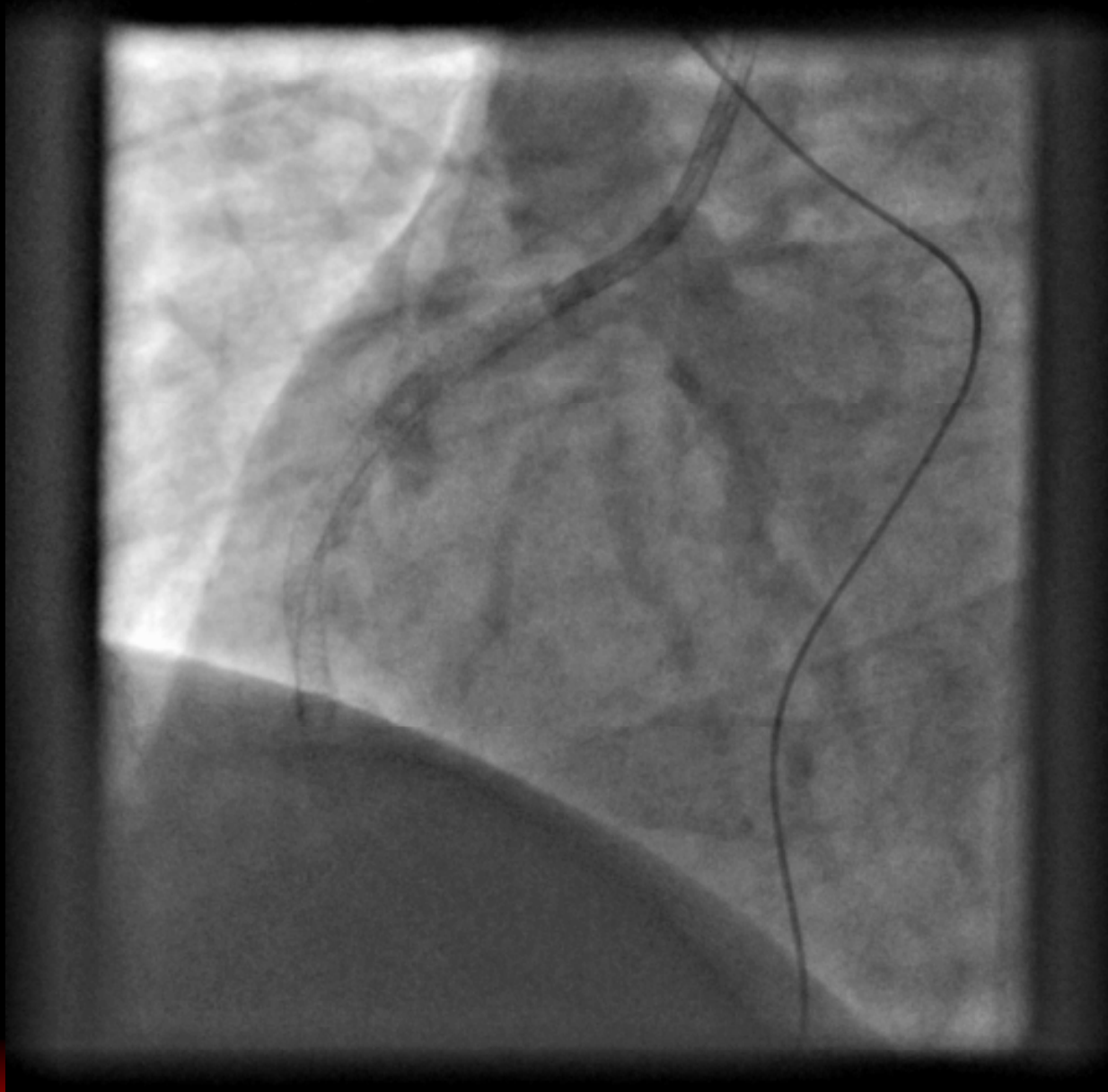


Penetration Using Confianza Pro 12





Final





Step by Step Approach

**Antegrade Approach
with Single Wire**



Parallel Wire Technique



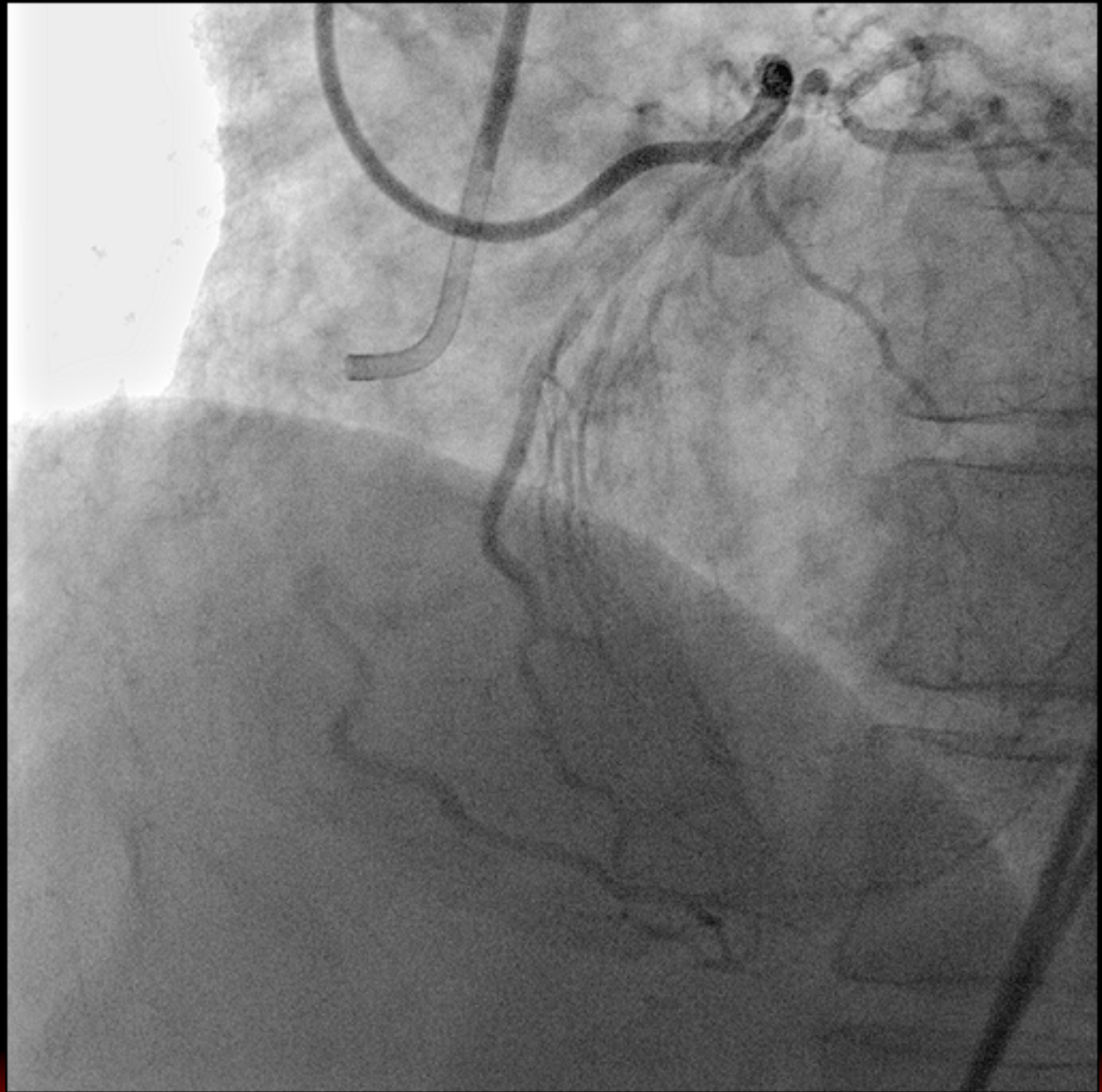
Retrograde Approach



IVUS Guided Wiring

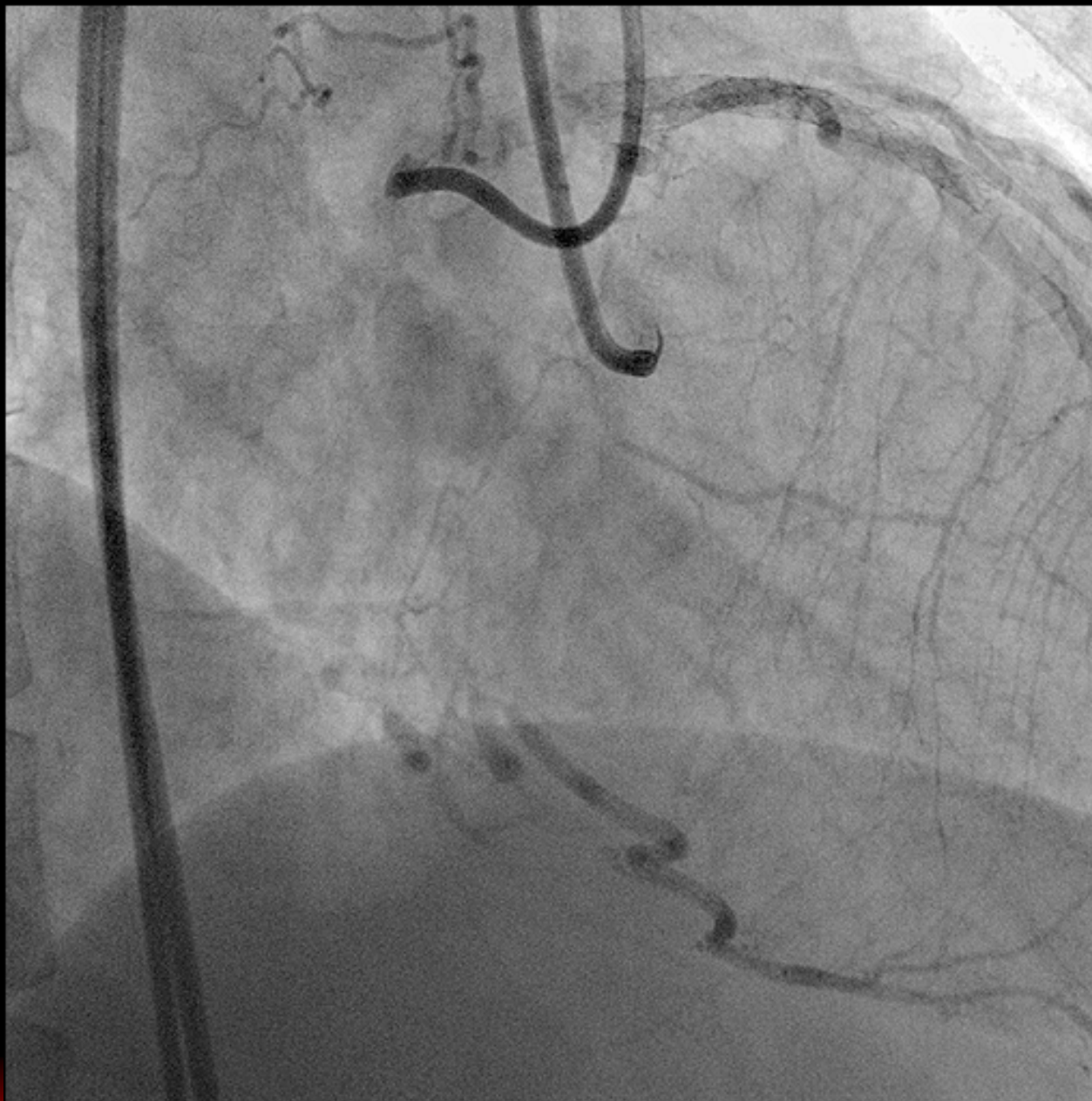


Case



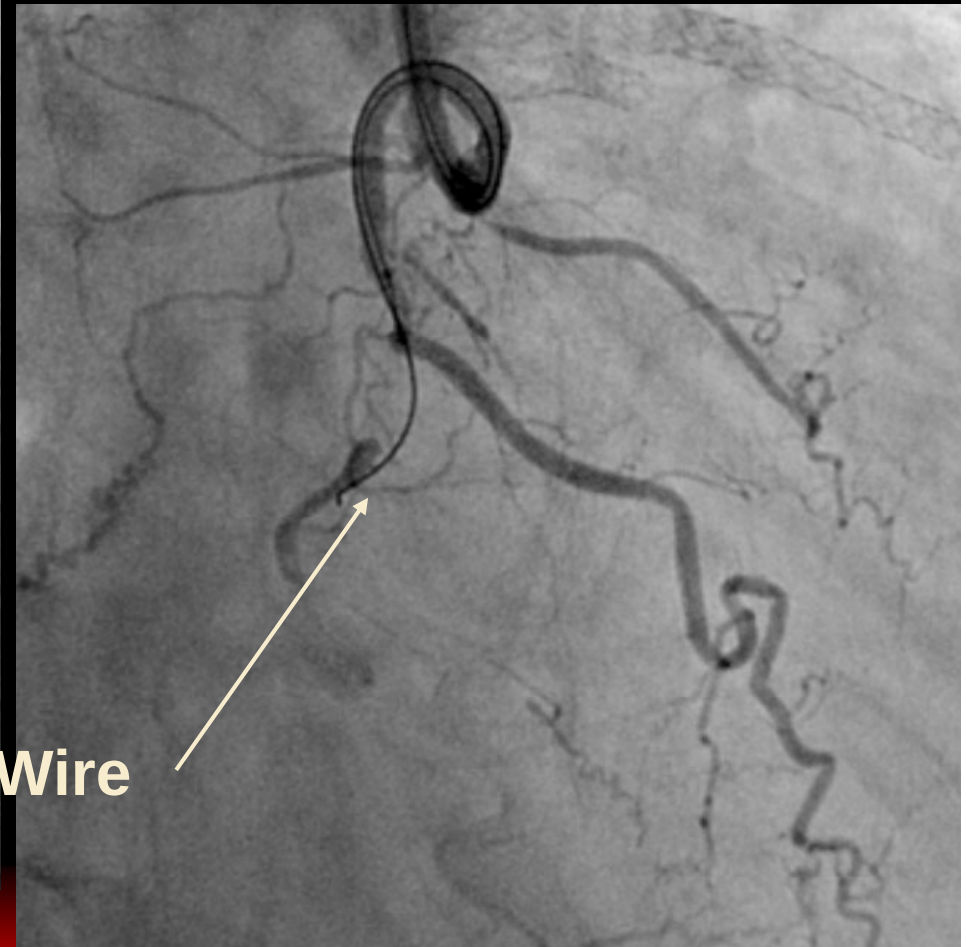
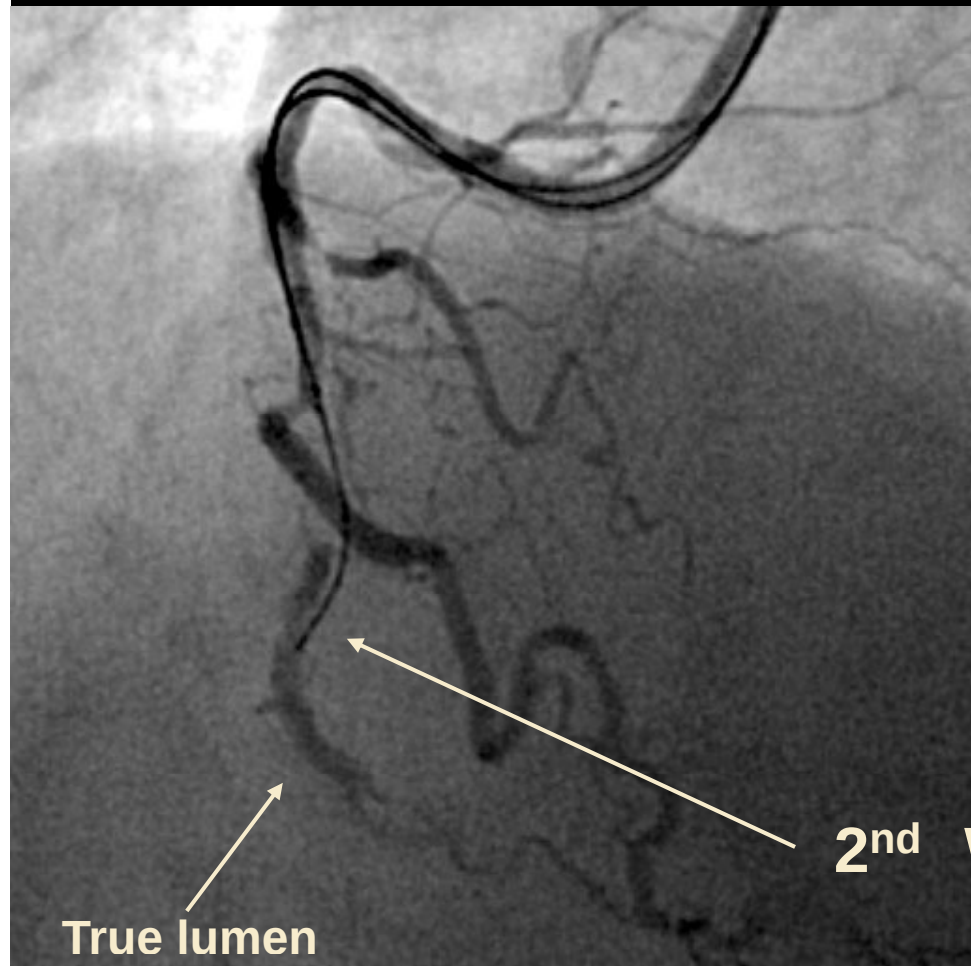


RAO view



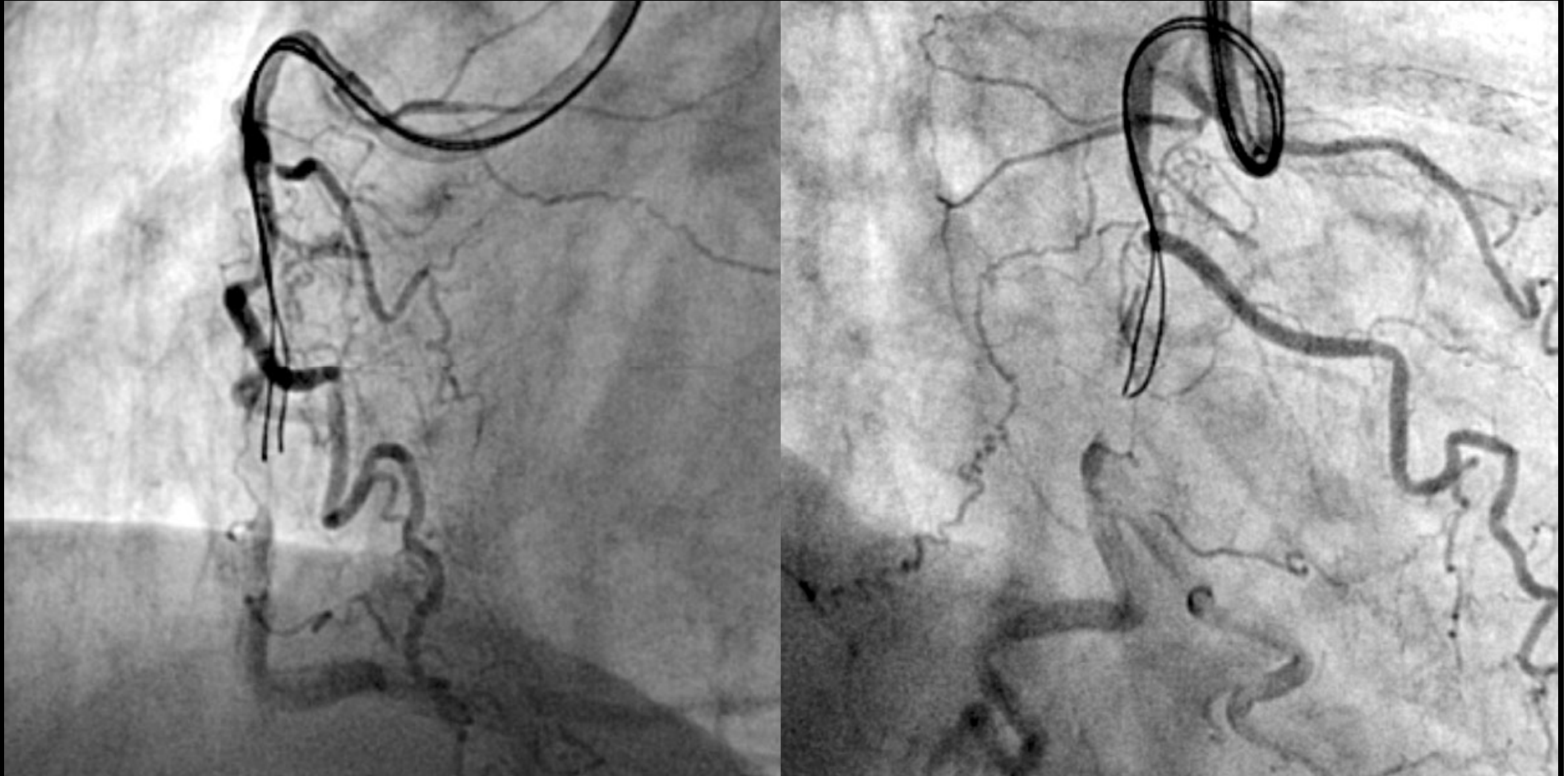


Failure to cross



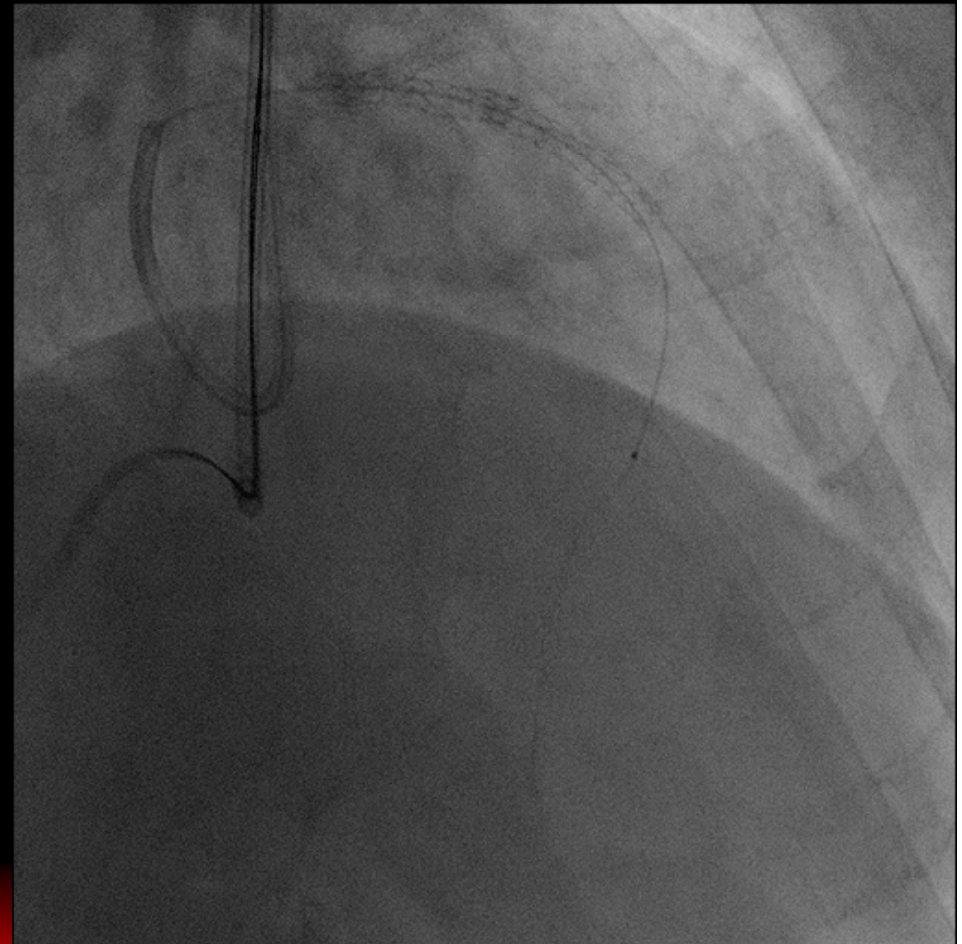
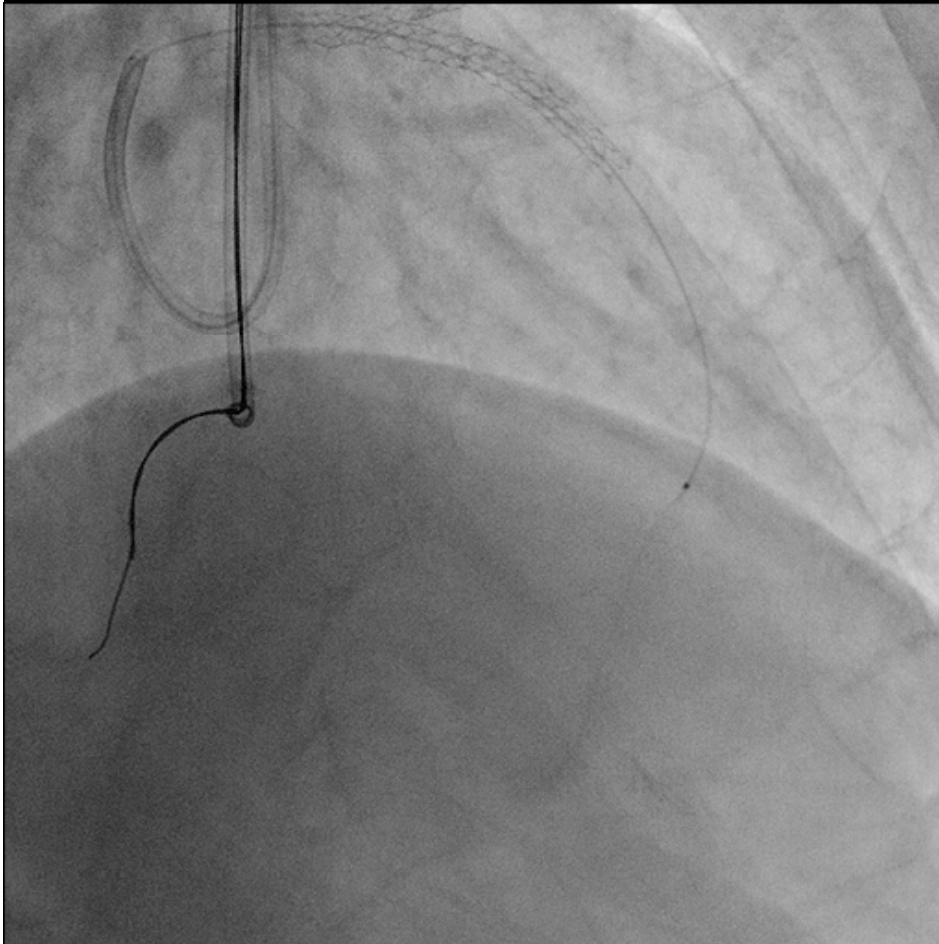


Parallel Wire Technique



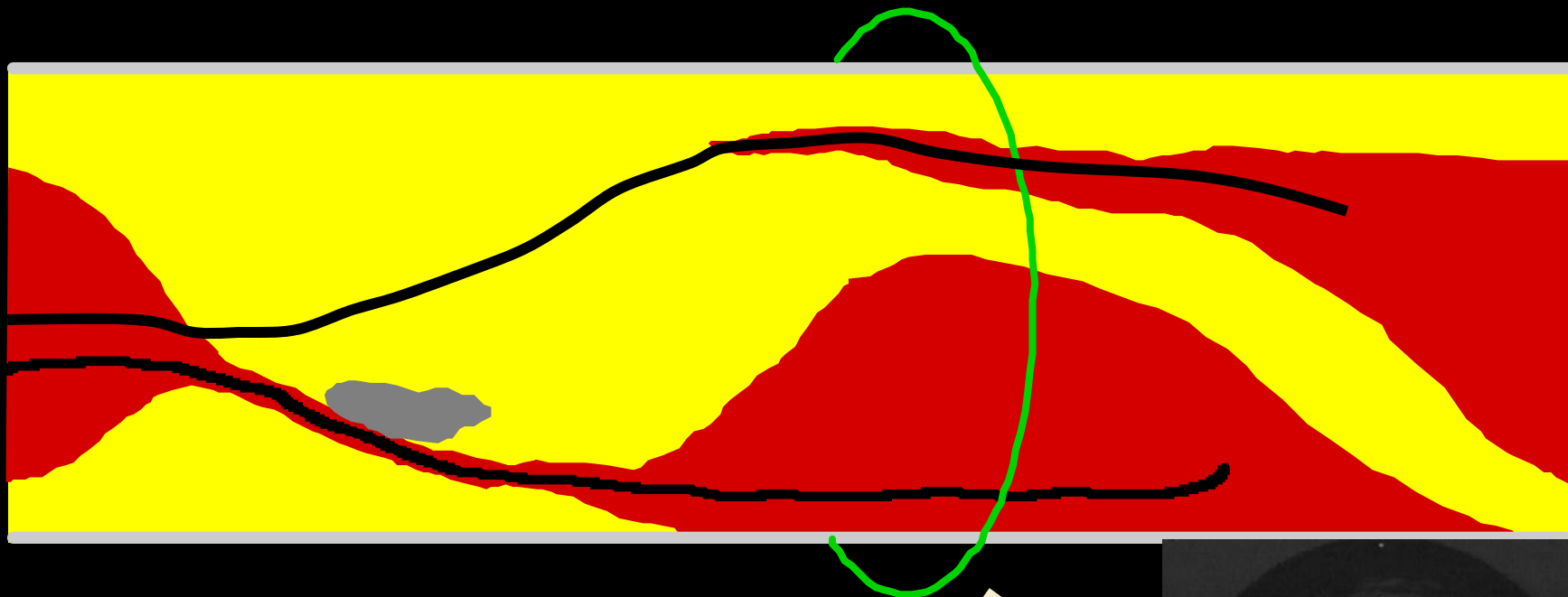


Retrograde Approach

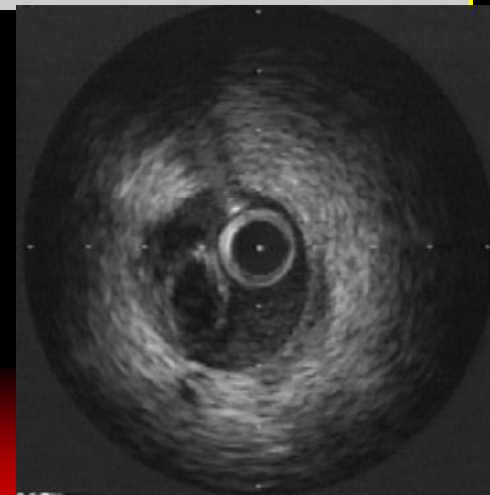




Where should the 2nd wire run?



Re-Entry **X**
Fresh Start **O**



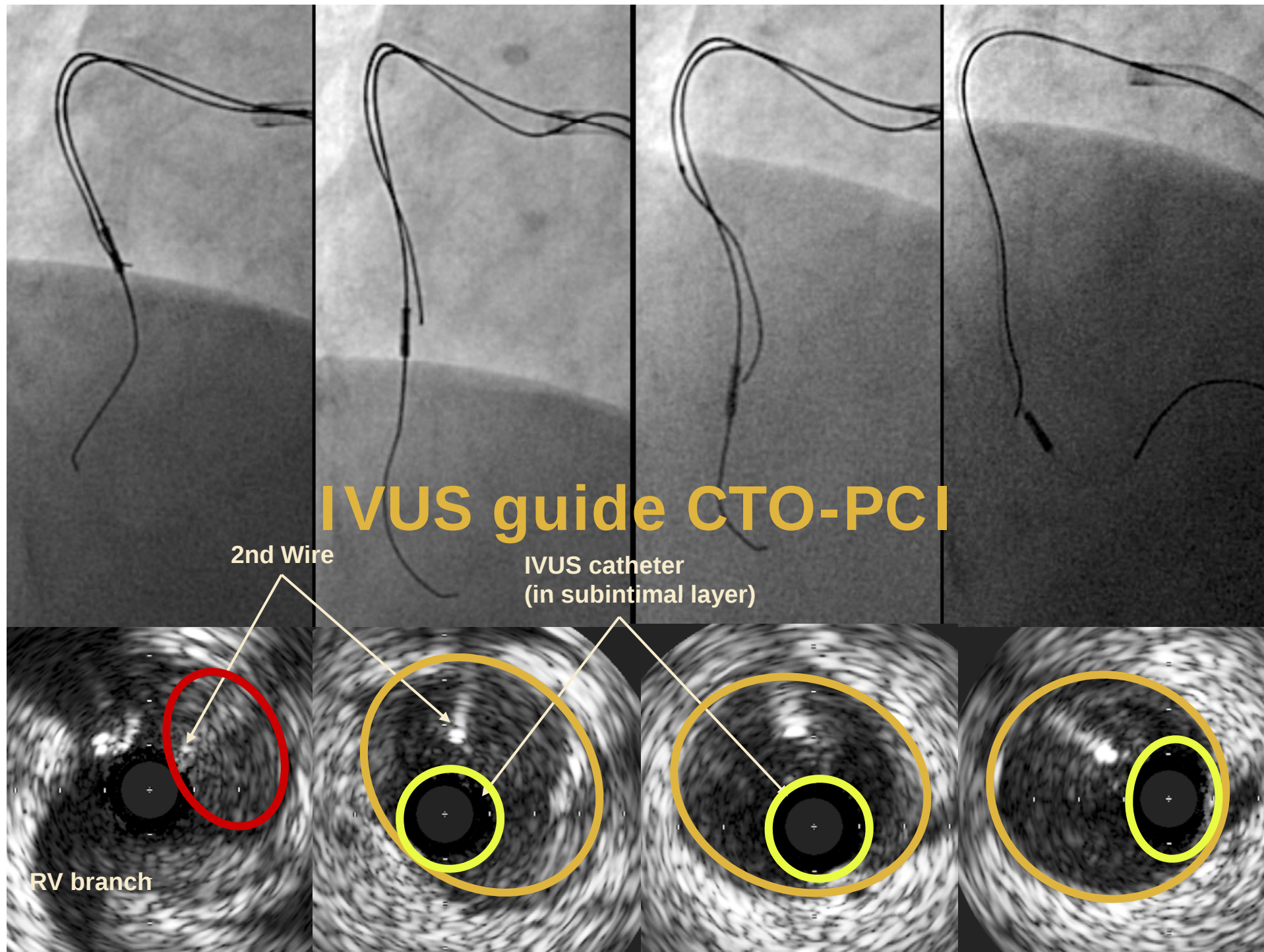
Toyohashi Heart Center

IVUS guide CTO-PCI

2nd Wire

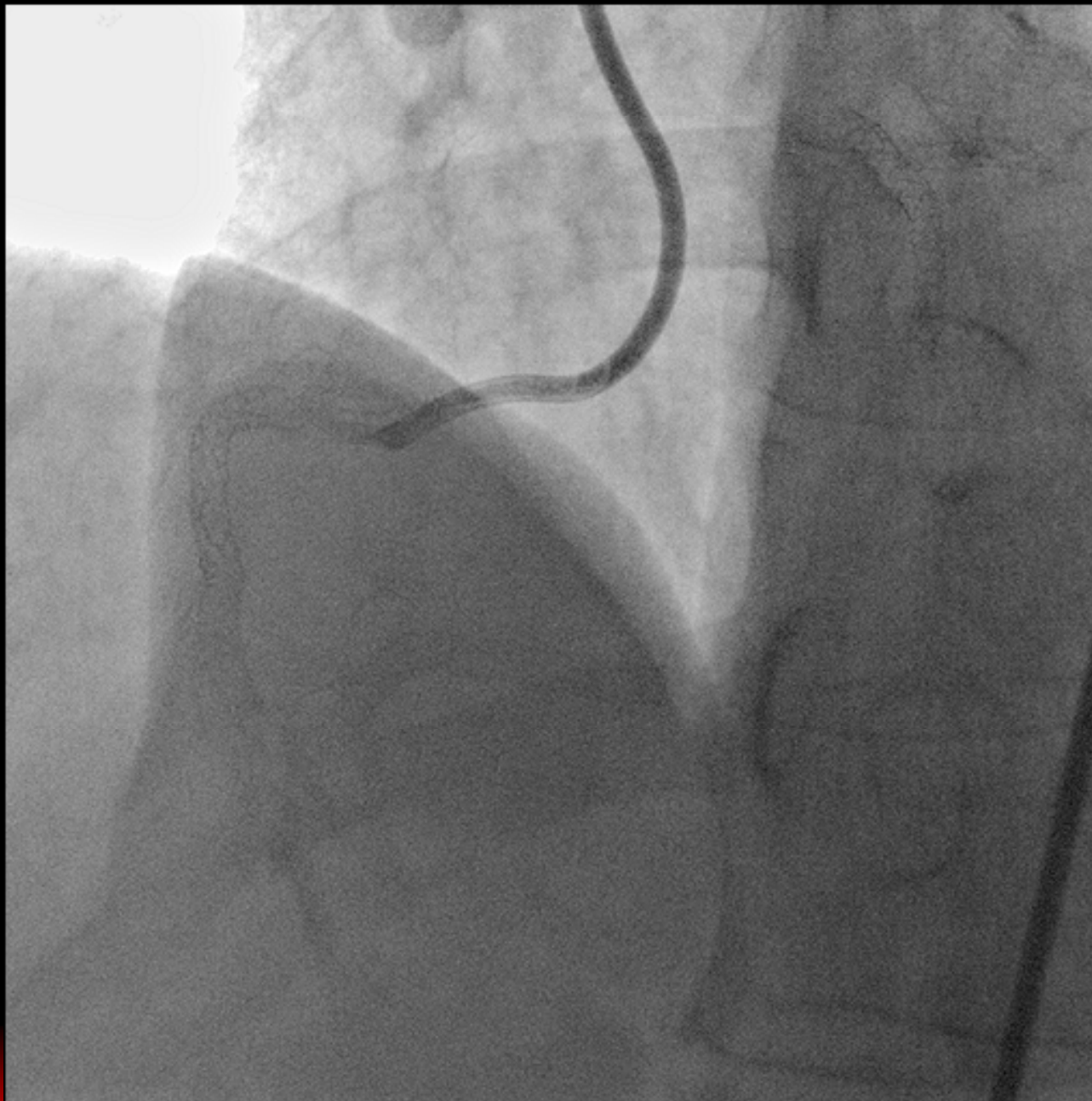
IVUS catheter
(in subintimal layer)

RV branch





Final





Summary

- 1. When we are stuck in CTO Path, we should do step by step strategy, and quickly move to the next step.**
- 2. IVUS is often a key in order to solve the problem.**