

Current Status of Retrograde Approach in CTO PCI

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Standardized Retrograde Technique

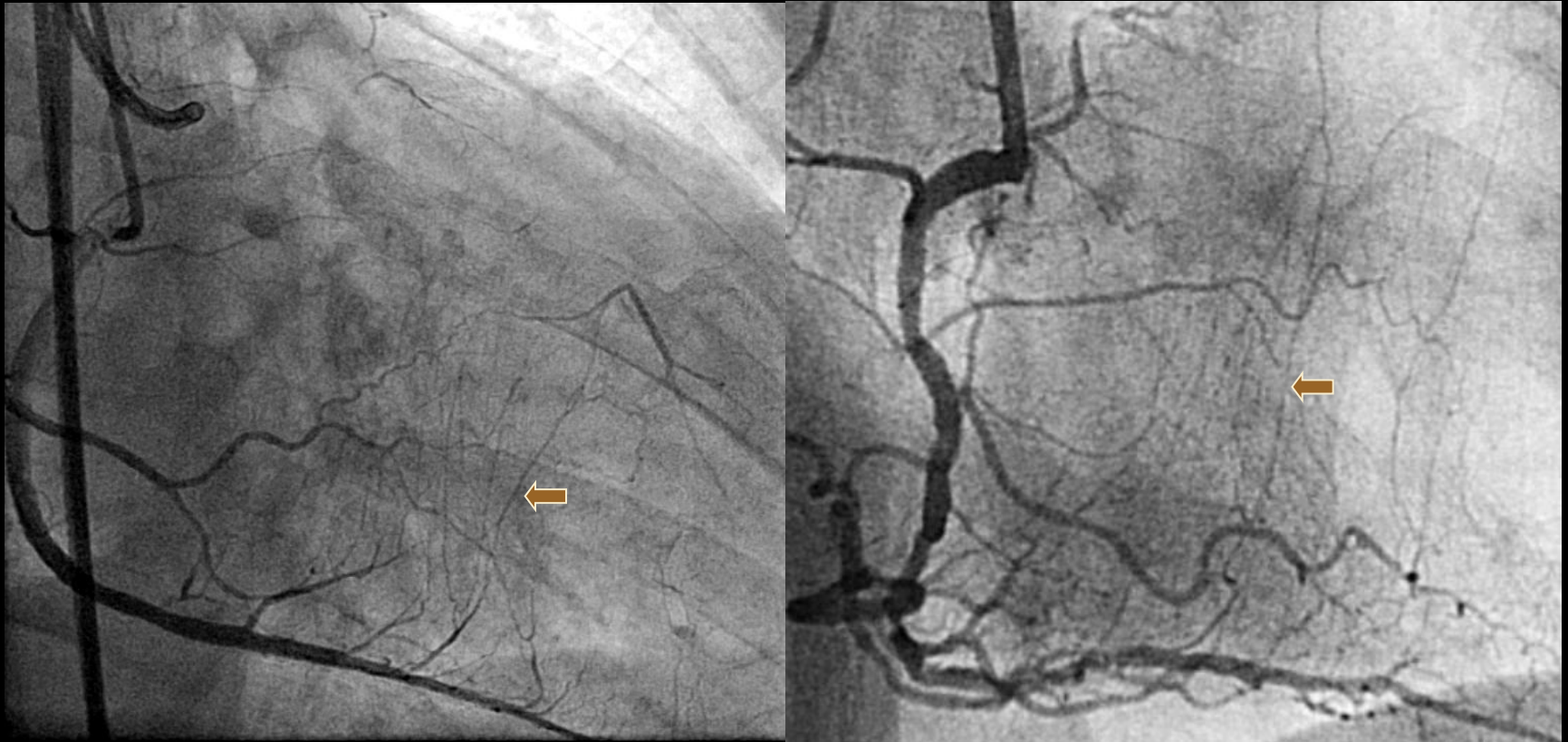
1. Channel Crossing



CC grade Aspect

Septal collateral with CC 1

Septal collateral with CC 2



Continuous connection: grade CC1 and CC2

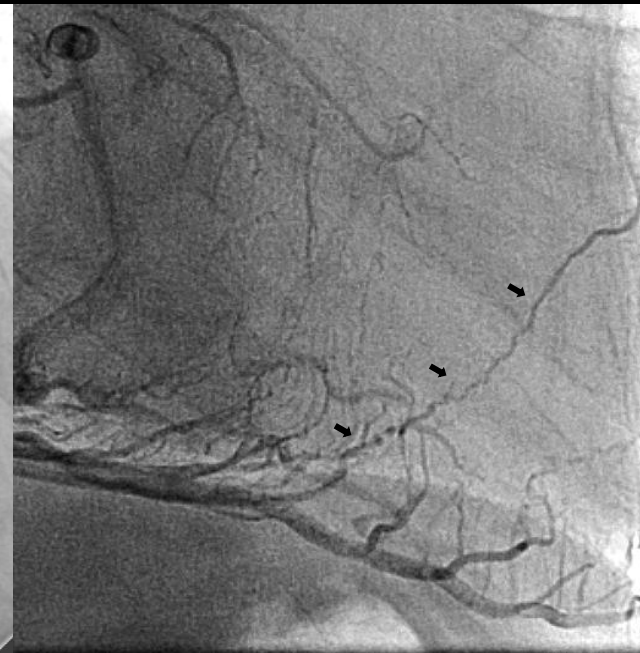
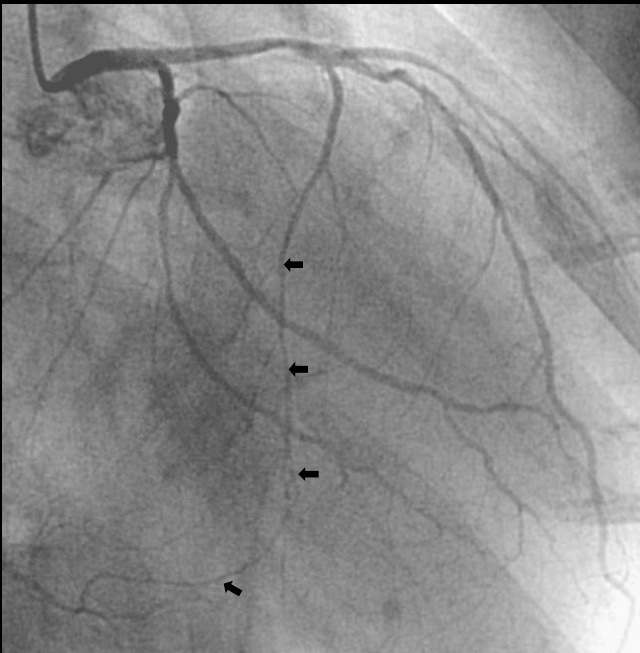


Tortuosity Aspect

Mild

moderate

severe

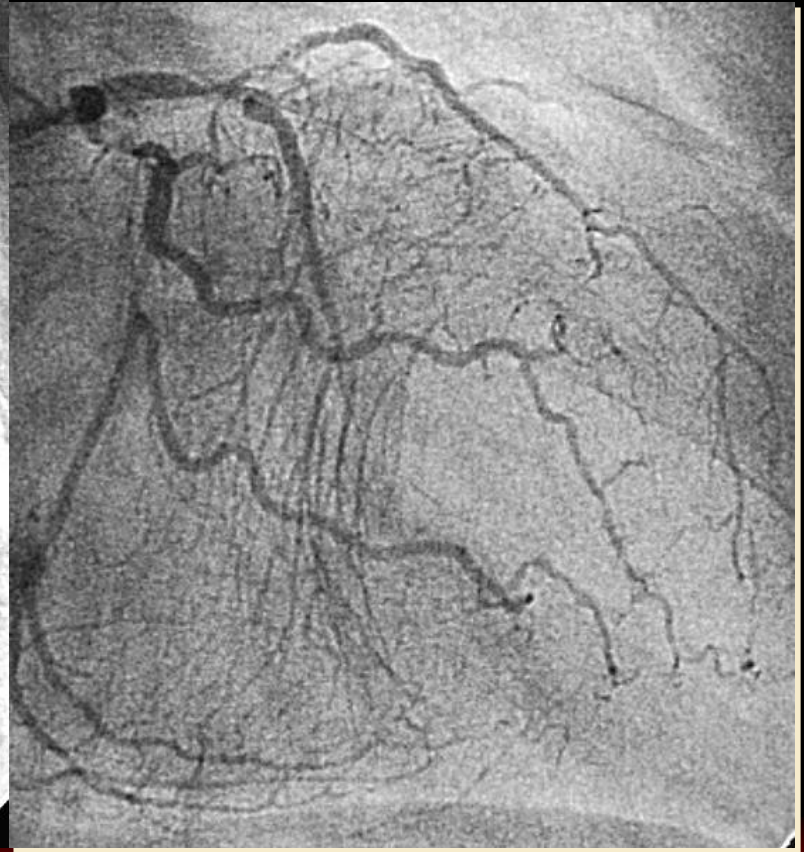
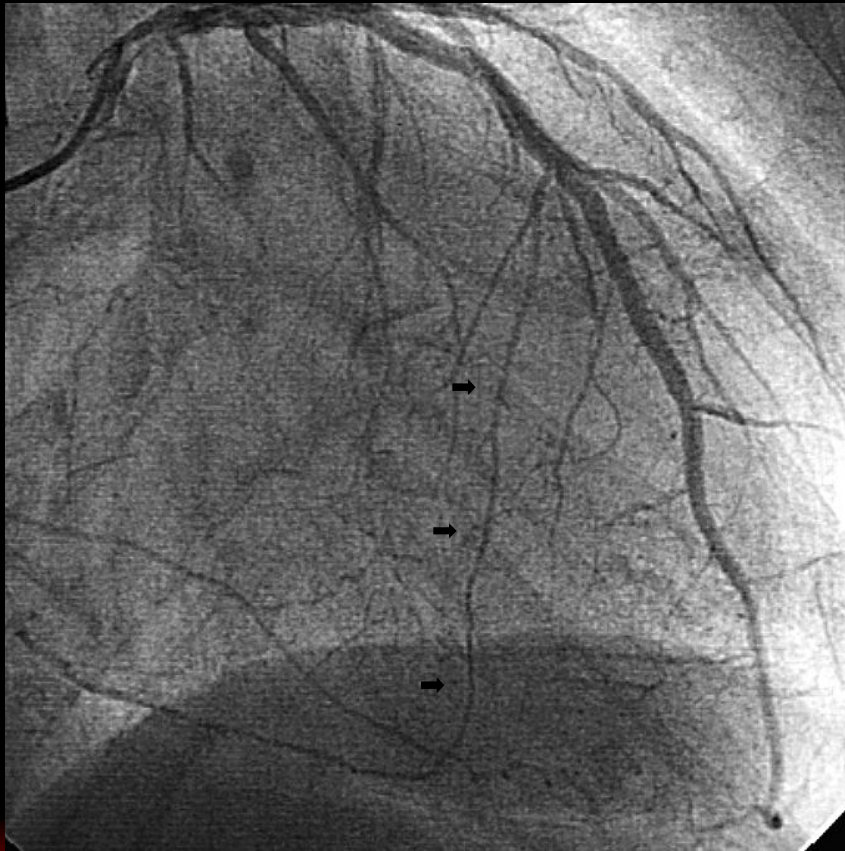




Branch Aspect

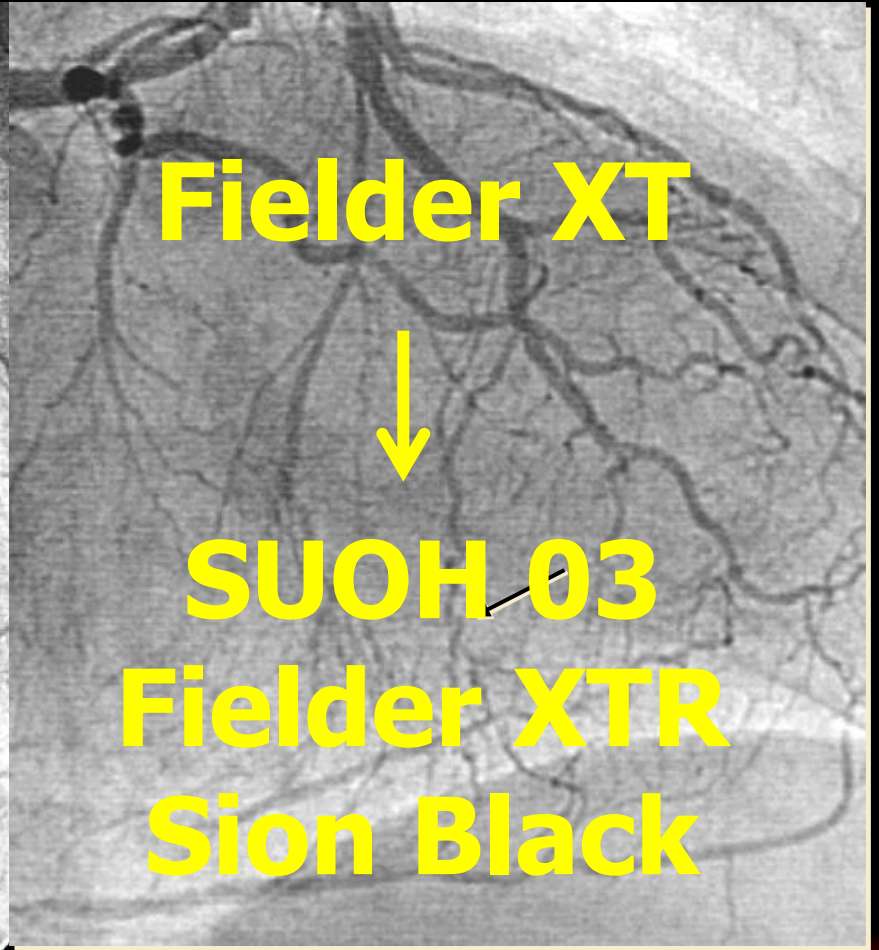
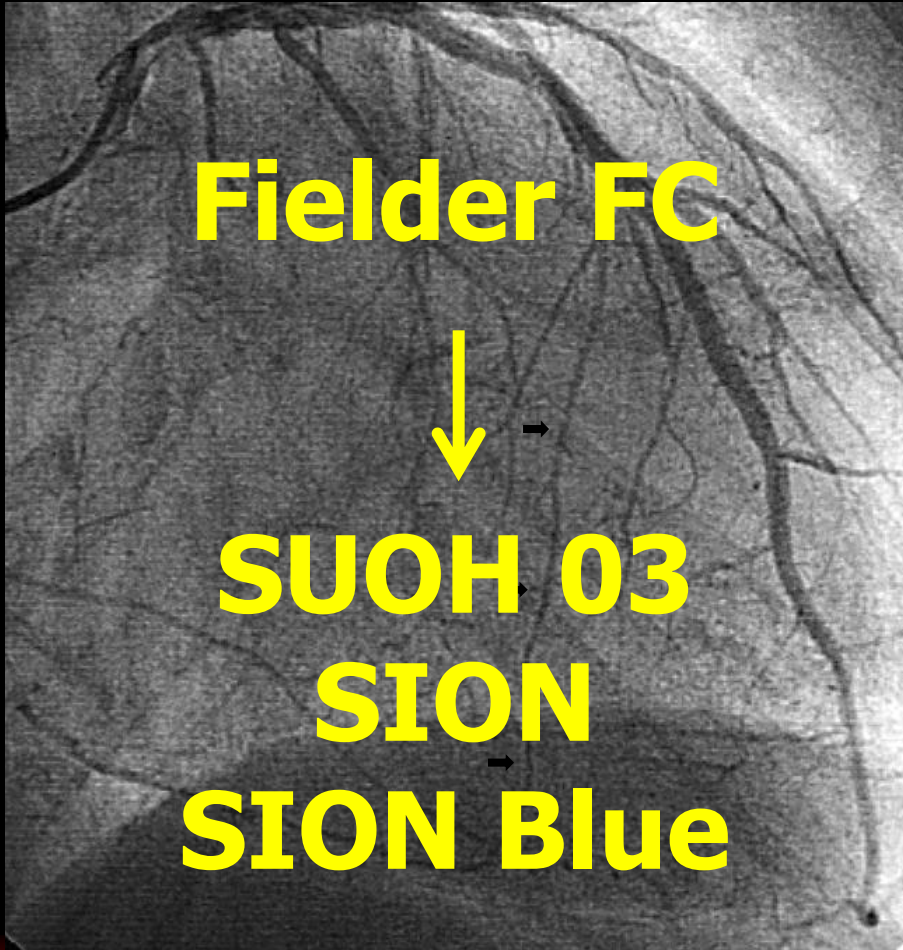
Non-branch

branch





Septal Channel



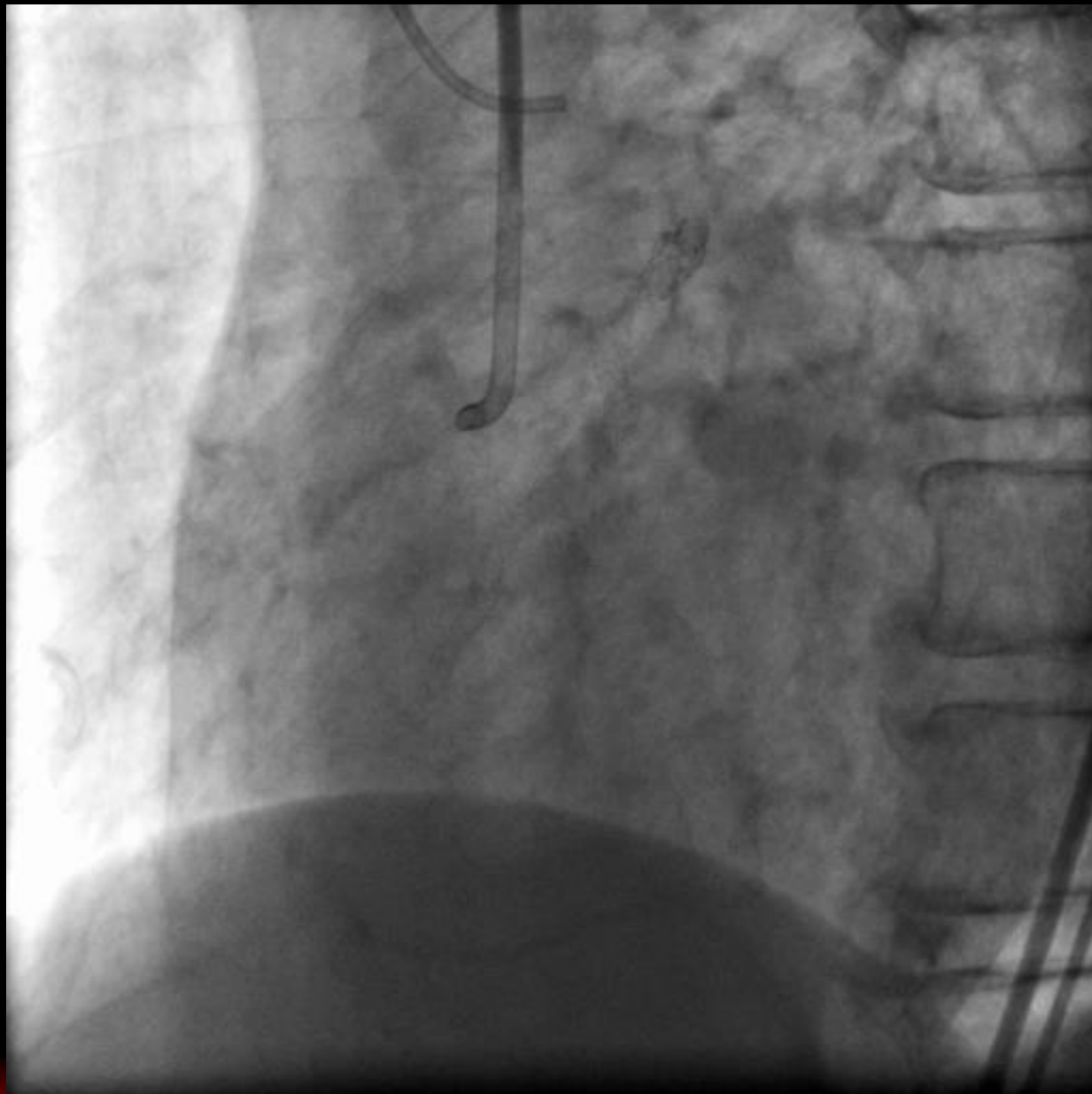


Previous Standardized Retrograde Technique

1. Channel Crossing
2. Retrograde Wiring

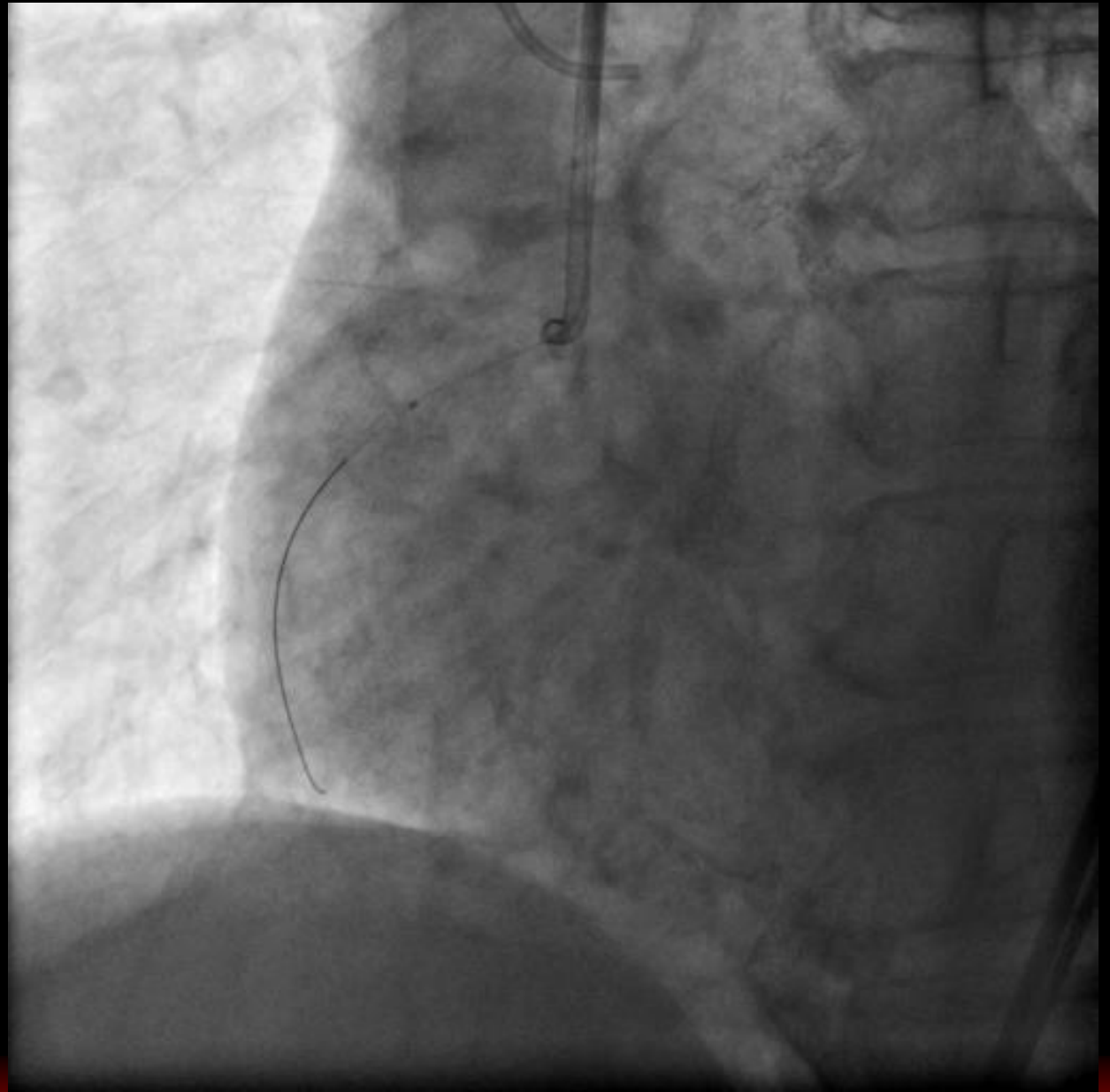


Case RCA



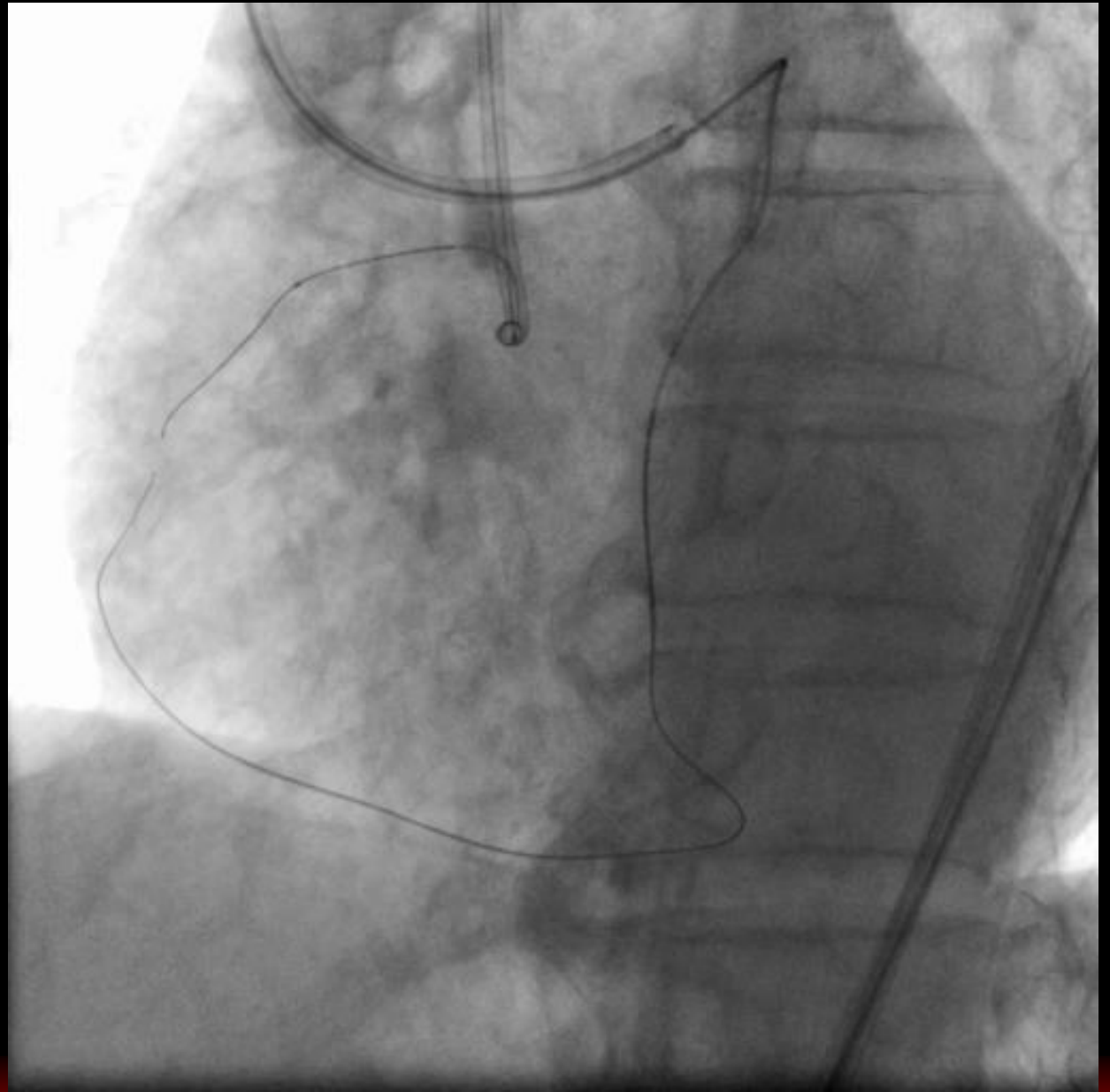


PCI





Retrograde Approach

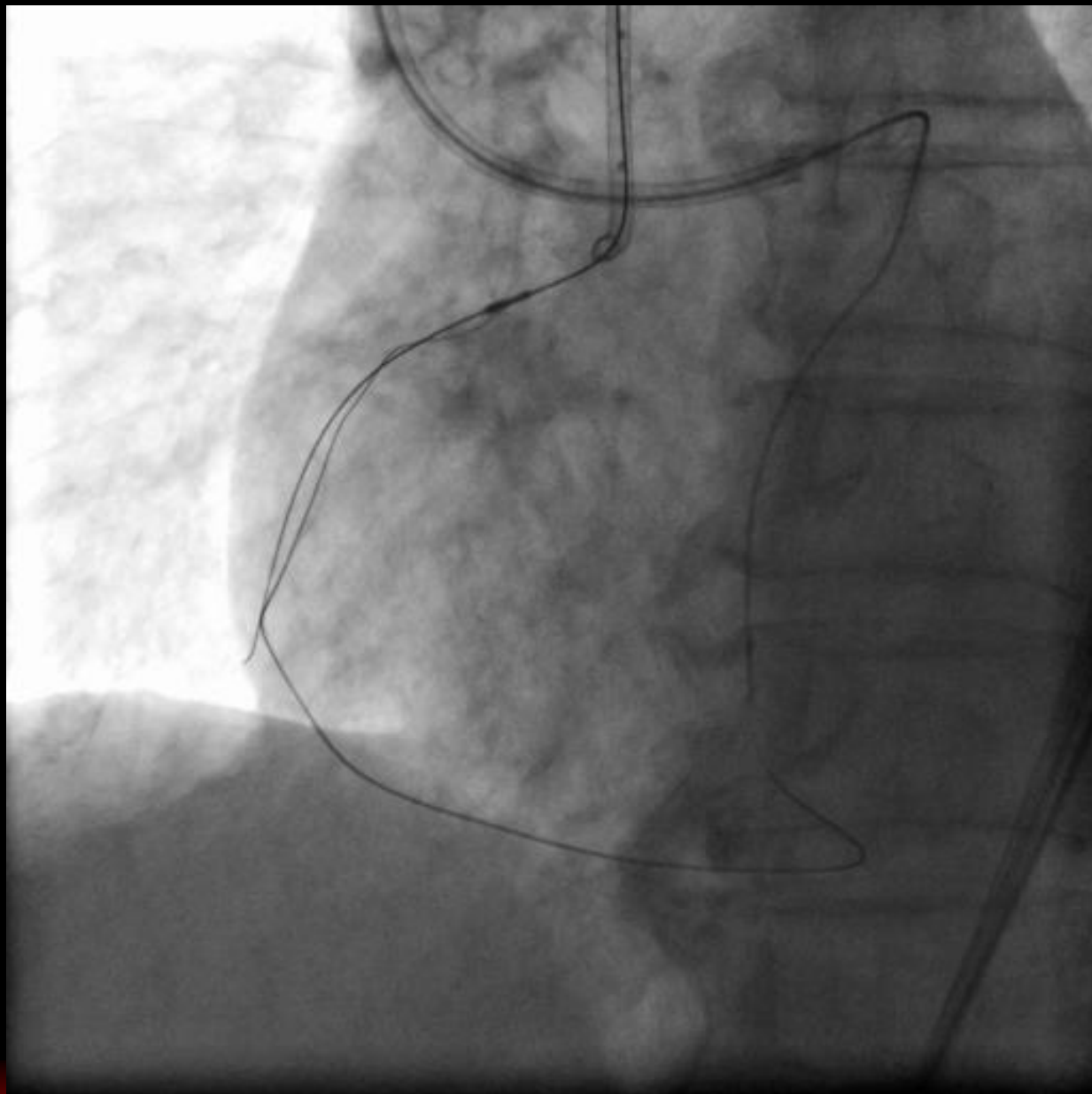




**IVUS
Guided
Wiring**

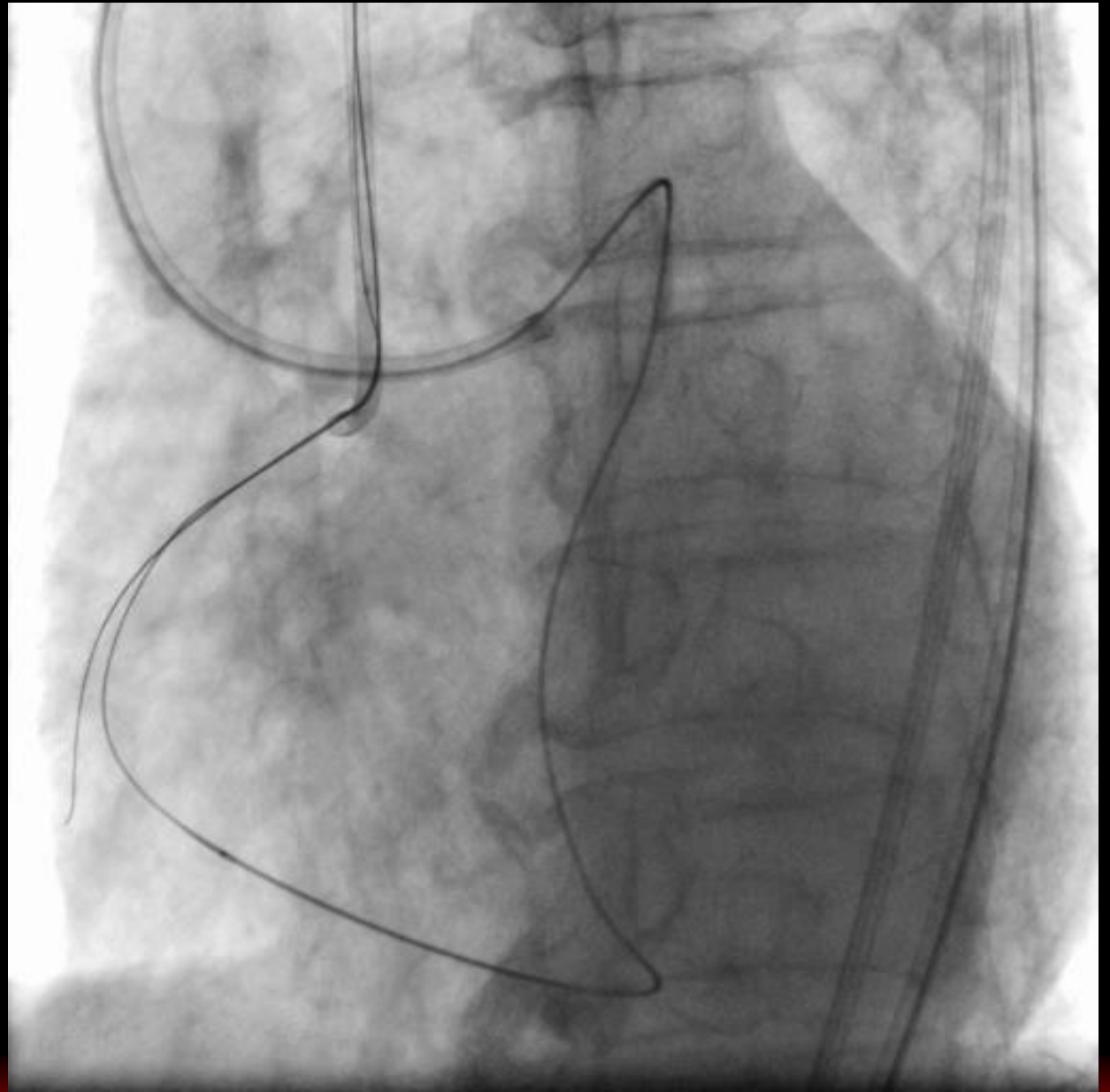


**Retrograde
Wire
Crossing**





**Retrograde
Wire →
Guide Cathe
↓
Trapping
Technique**

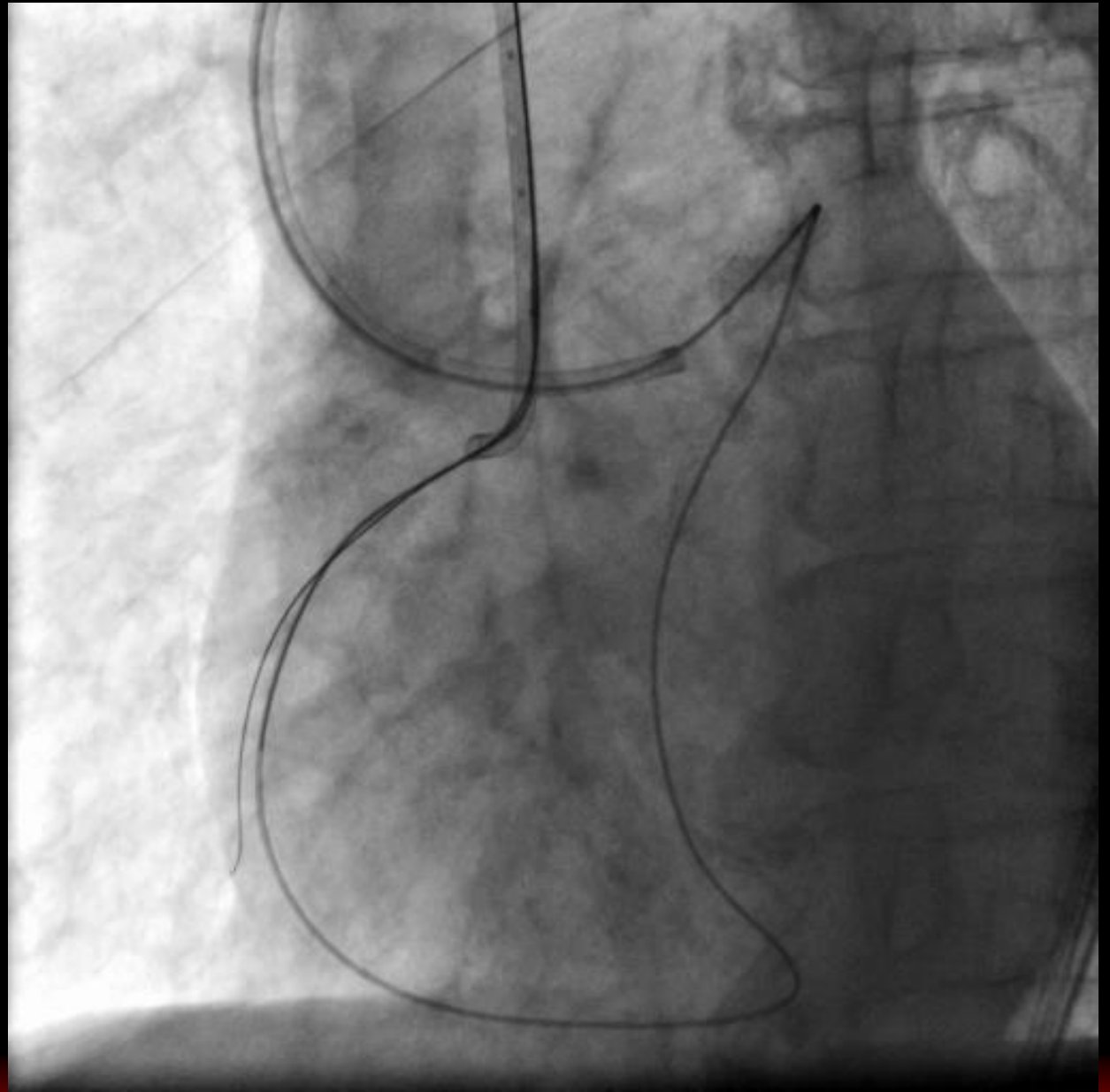




**Trapping
Technique**



**Corsair →
Guide Cathe**



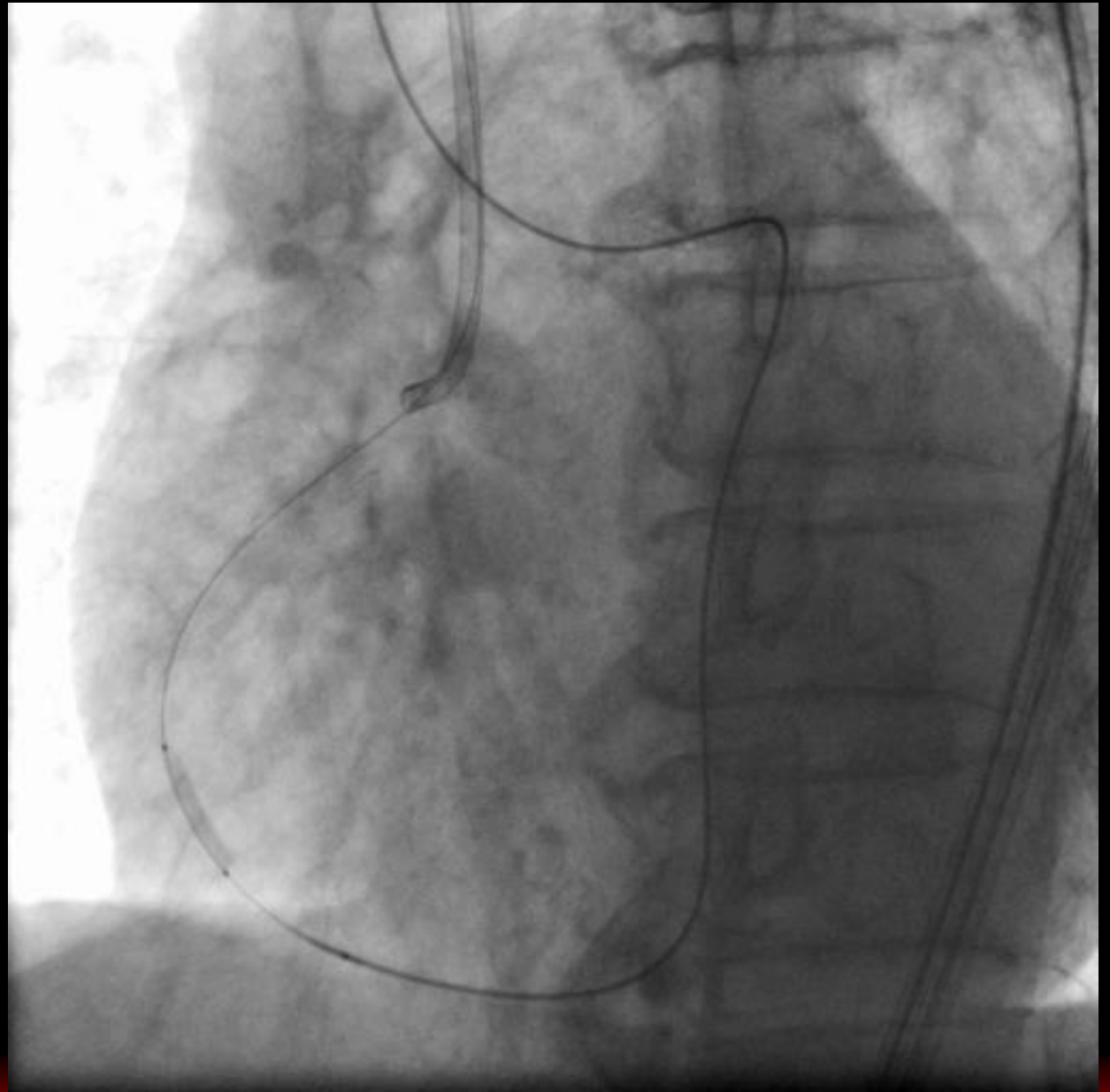


**Externalize
Using
RG-3
(300cm Wire)**



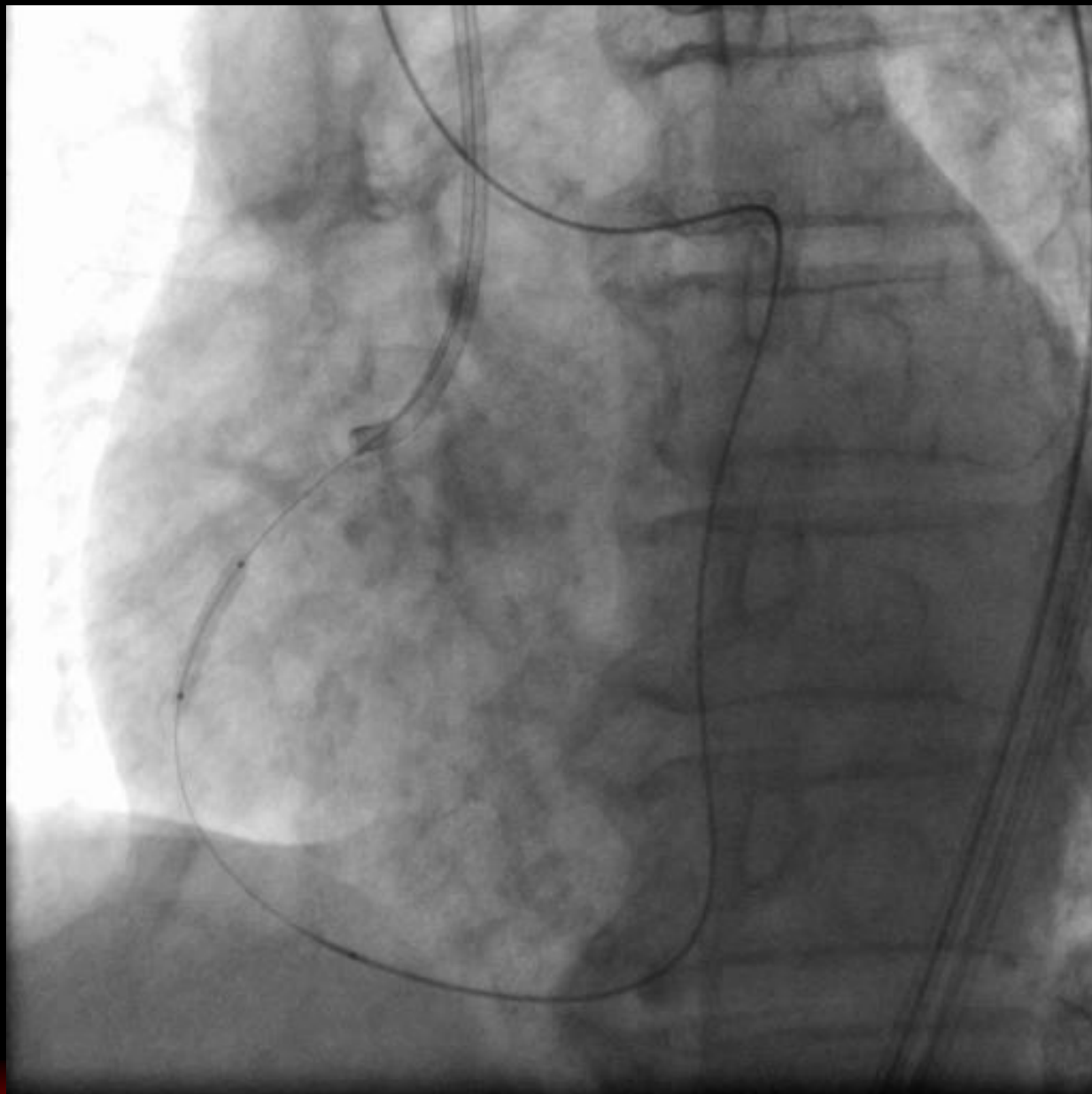


Balloon



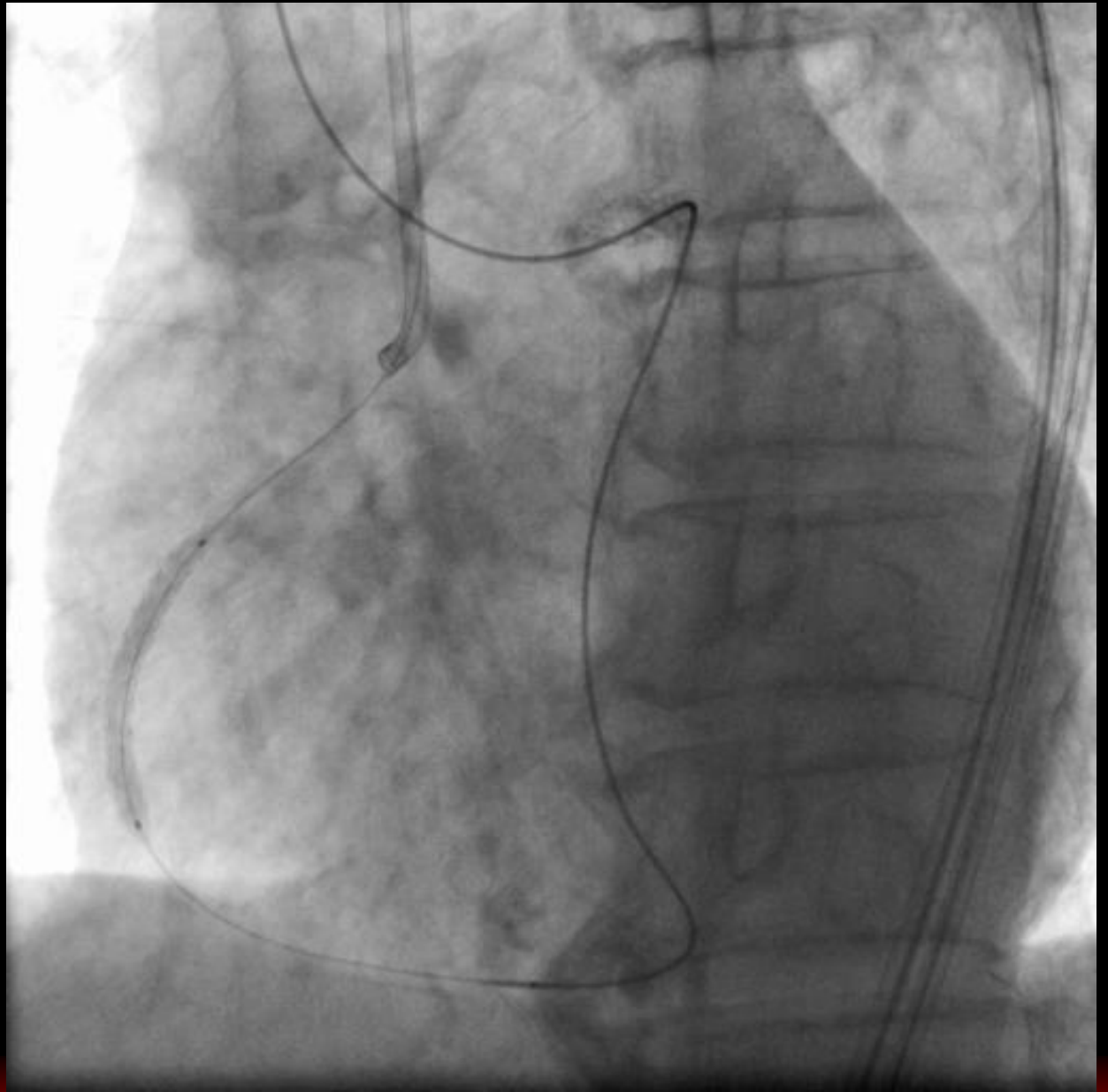


Balloon



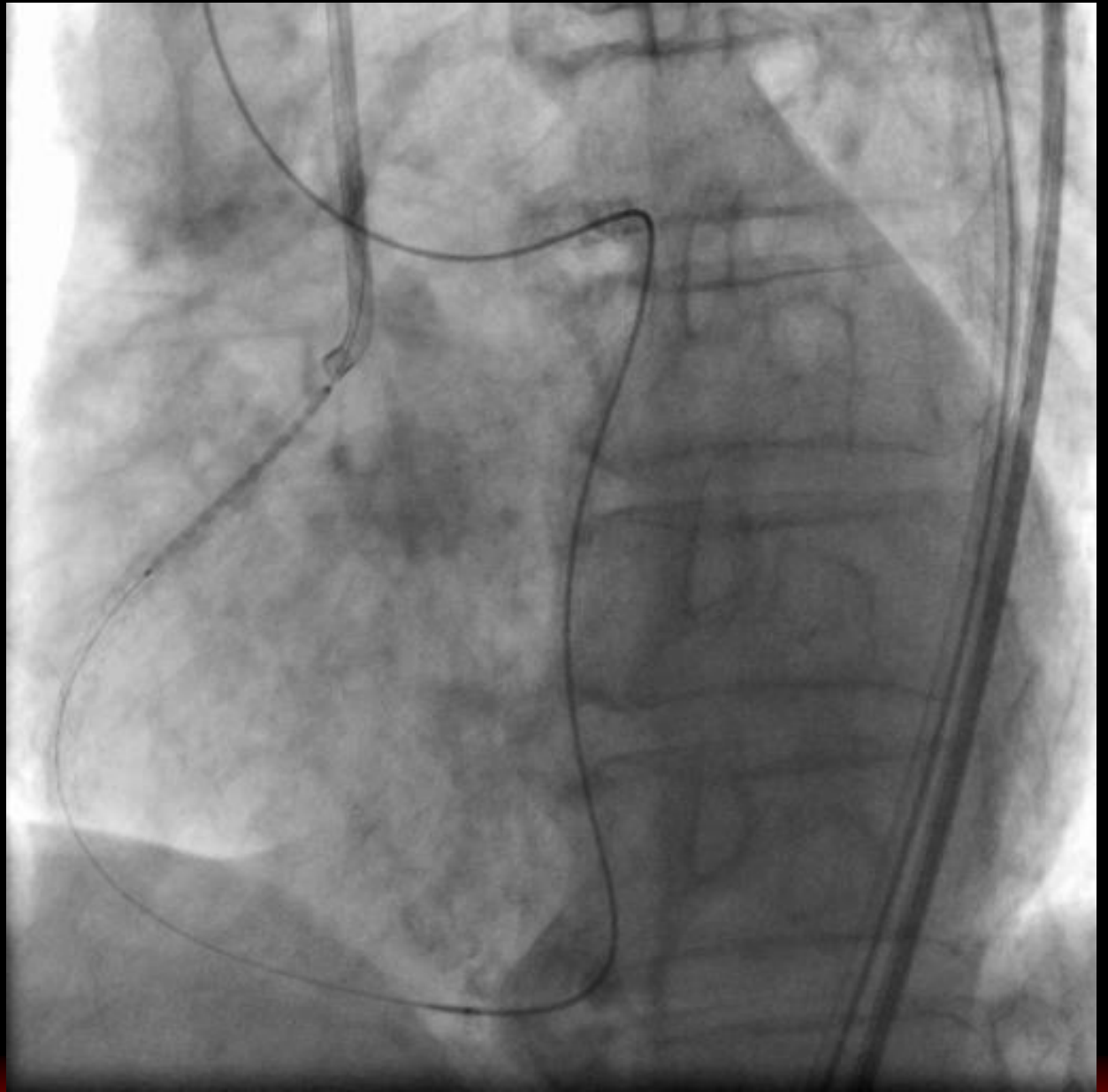


Stent





Stent



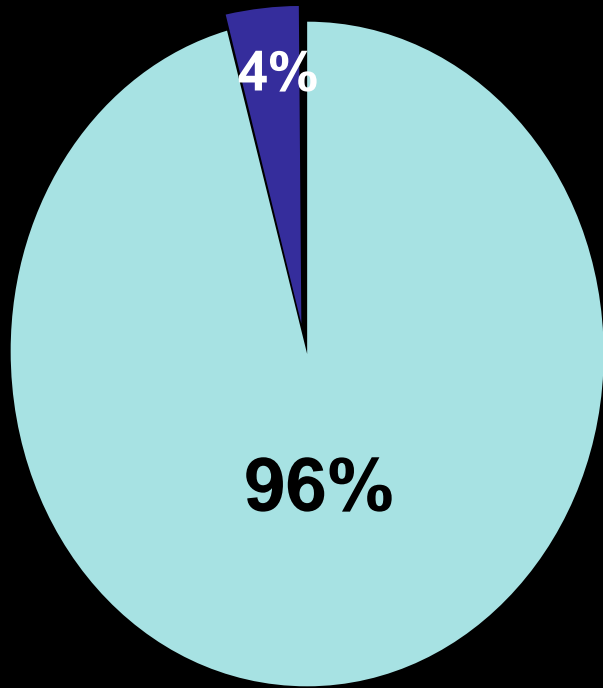


Final





Acute Results in Registry



■ success recanalization ■ failed

| attempted technique | number (%) |
|---------------------------------|-----------------|
| retrograde wire crossing | 38 (32%) |
| kissing wire | 6 (5%) |
| R-CART | 66 (55%) |
| CART | 3 (3%) |
| antegrade approach | 2 (2%) |

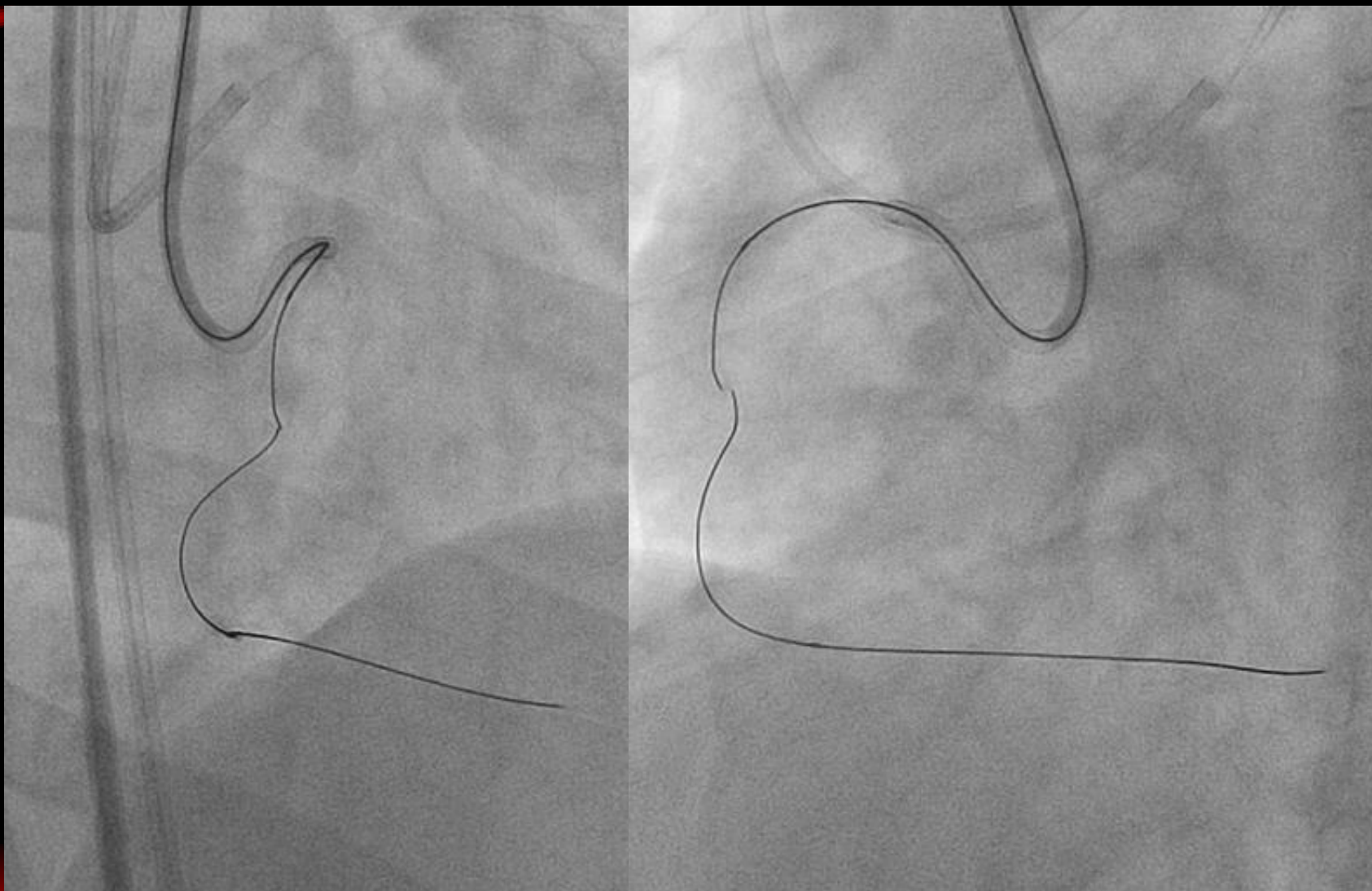


Previous Standardized Retrograde Technique

1. Channel Crossing
2. Retrograde Wiring
3. Kissing Wire Technique



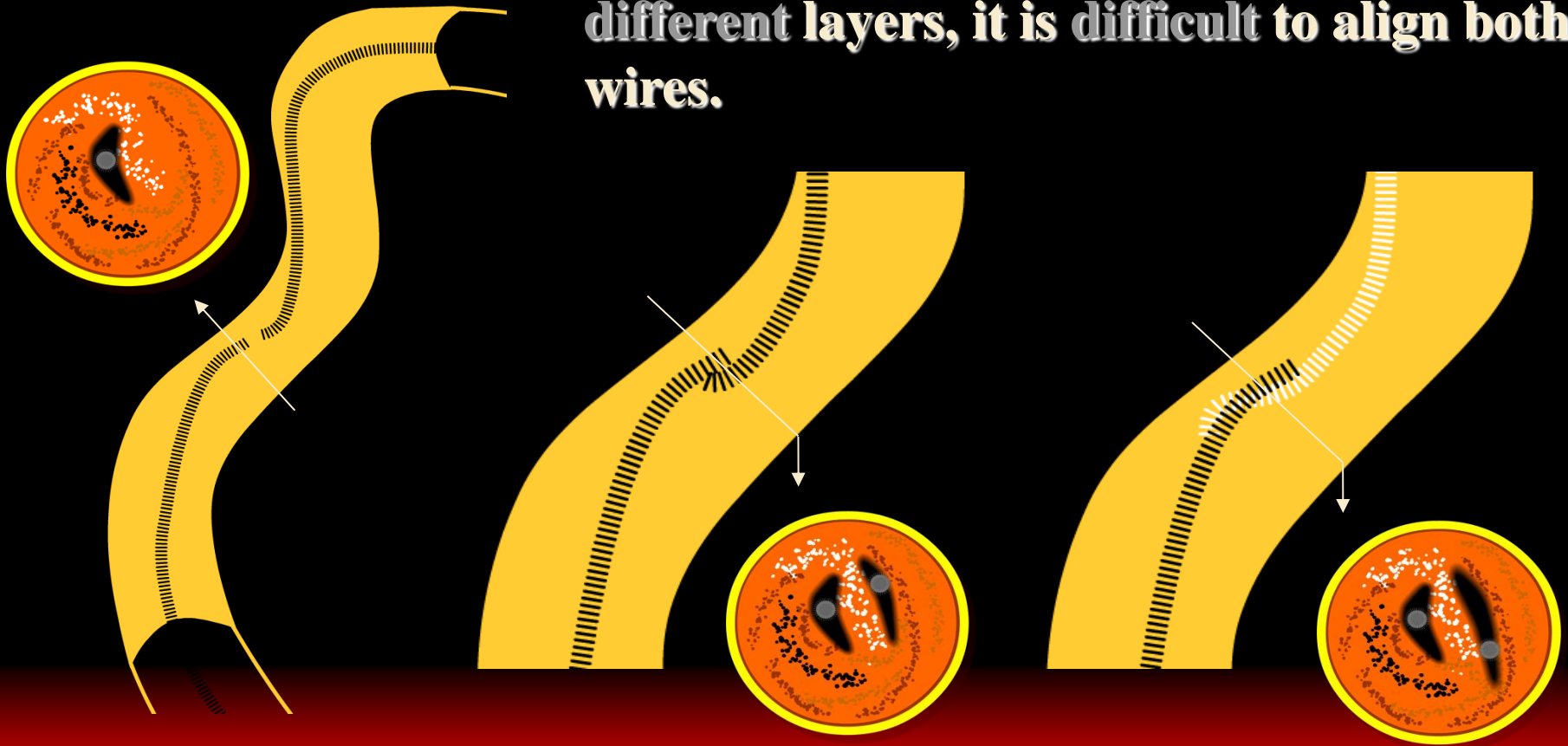
Kissing Wire Technique





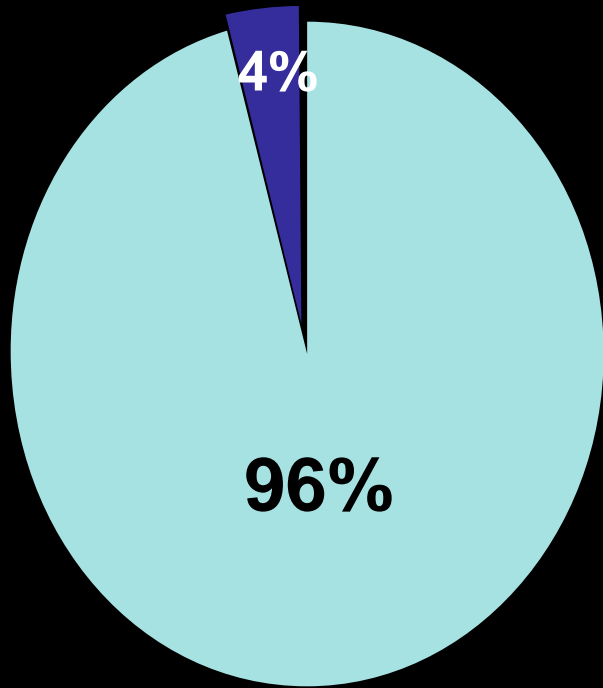
Major Limitation of Kissing Wire Technique

If antegrade and retrograde wires are in different layers, it is difficult to align both wires.





Acute Results in Registry



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Previous Standardized Retrograde Technique

1. Channel Crossing
2. Retrograde Wiring
3. Kissing Wire Technique
4. Subintimal Tracking

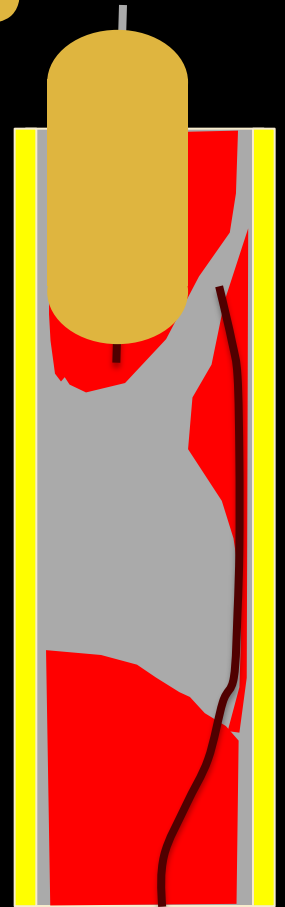
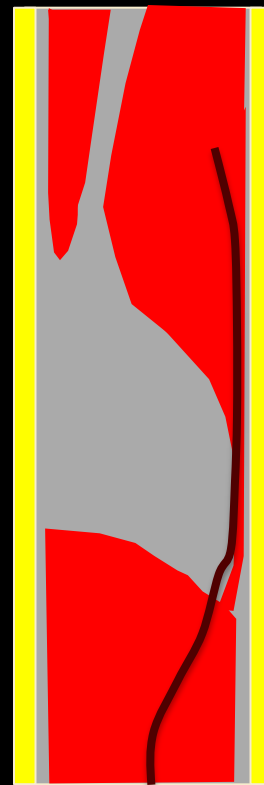
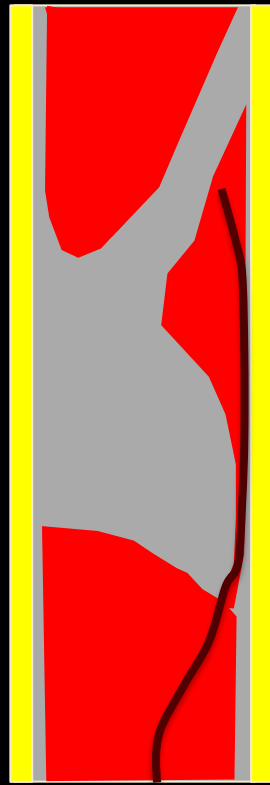
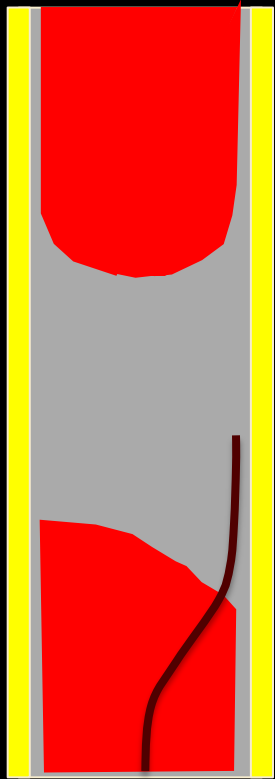


Previous Standardized Retrograde Technique

- 1. Channel Crossing**
- 2. Retrograde Wiring**
- 3. Kissing Wire Technique**
- 4. Subintimal Tracking**
- 5. IVUS Guidance**

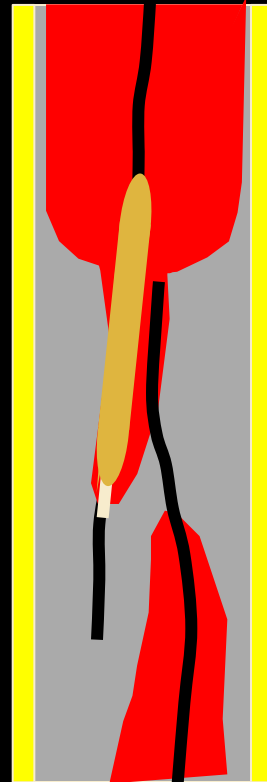
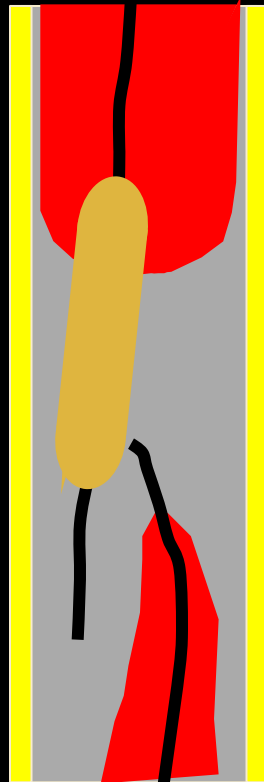
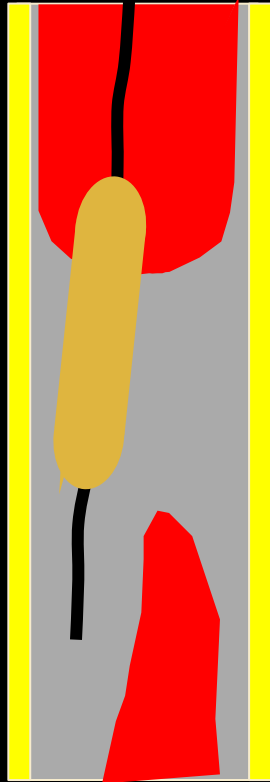
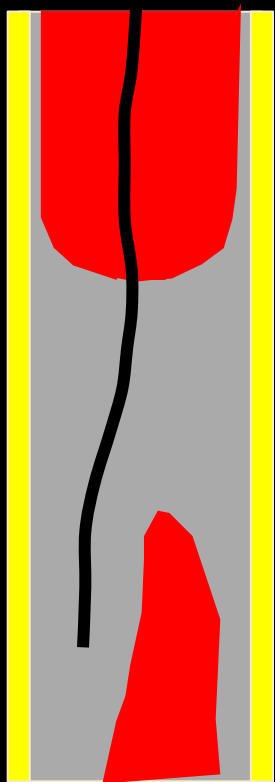


Problem in Retrograde Wiring



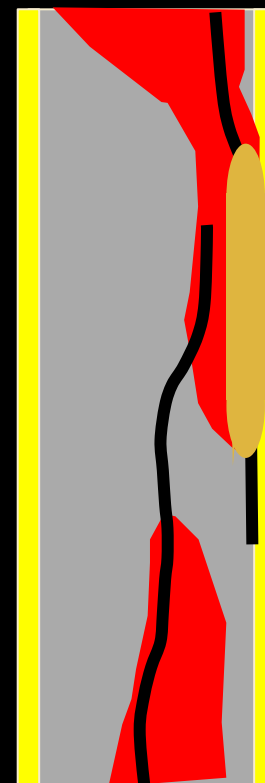
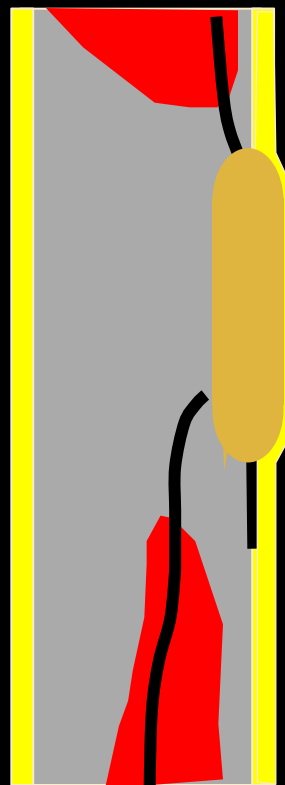
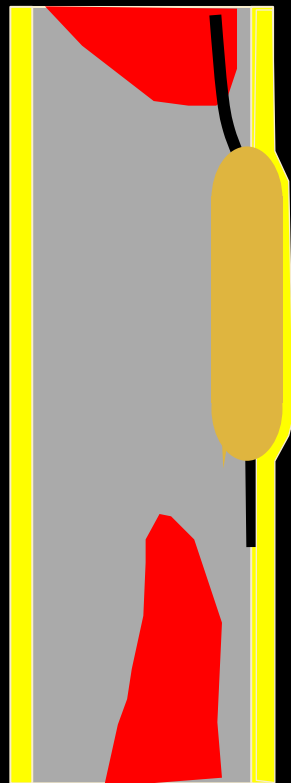
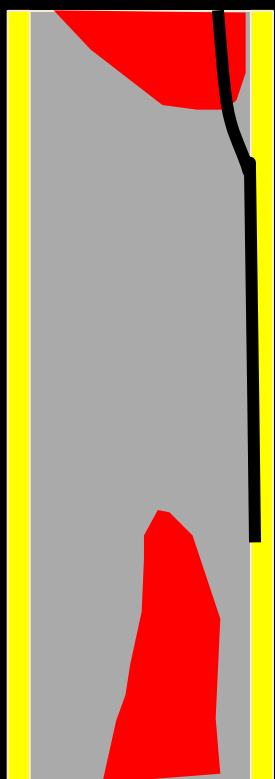


Concept of Contemporary Reverse CART



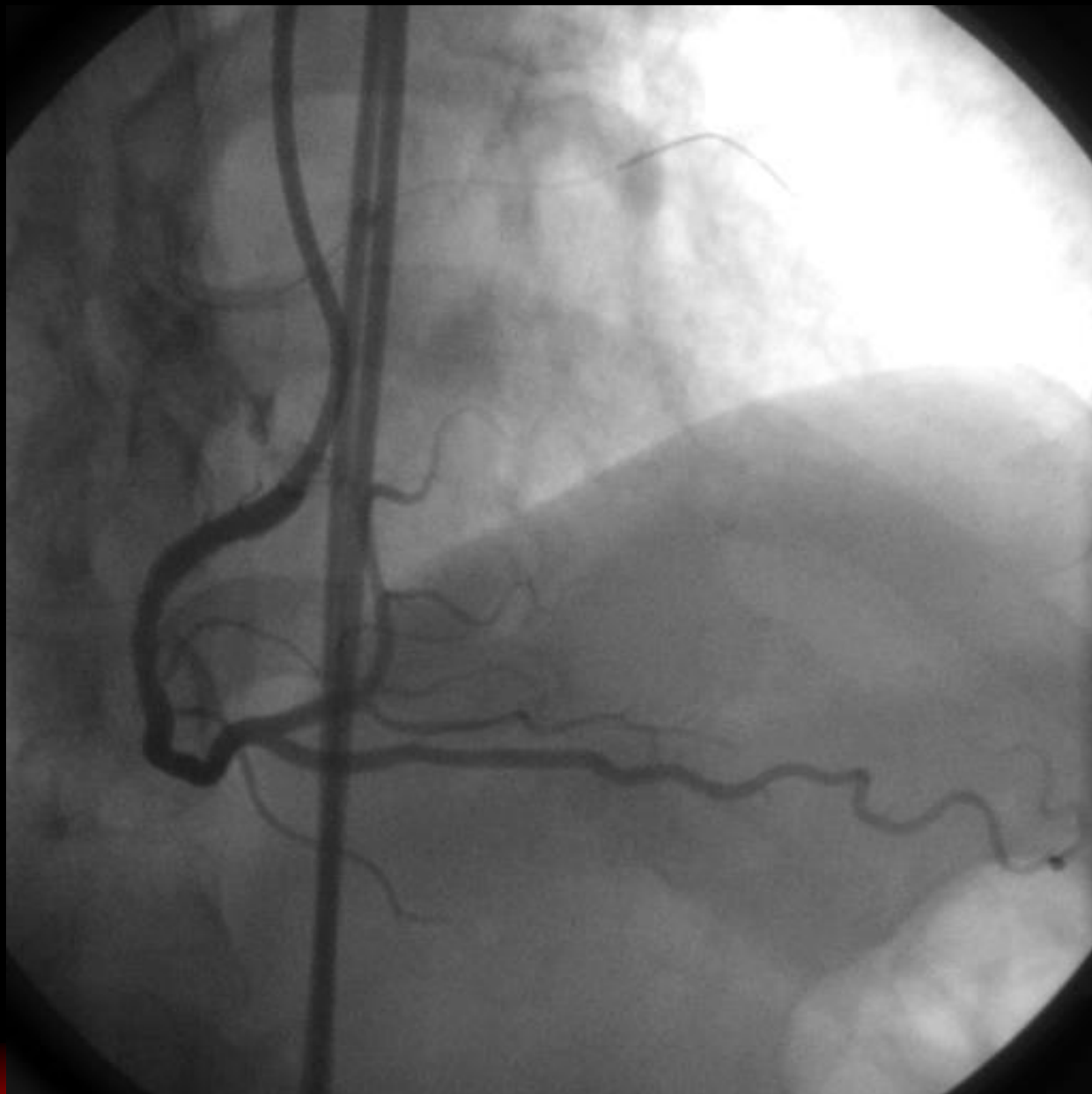


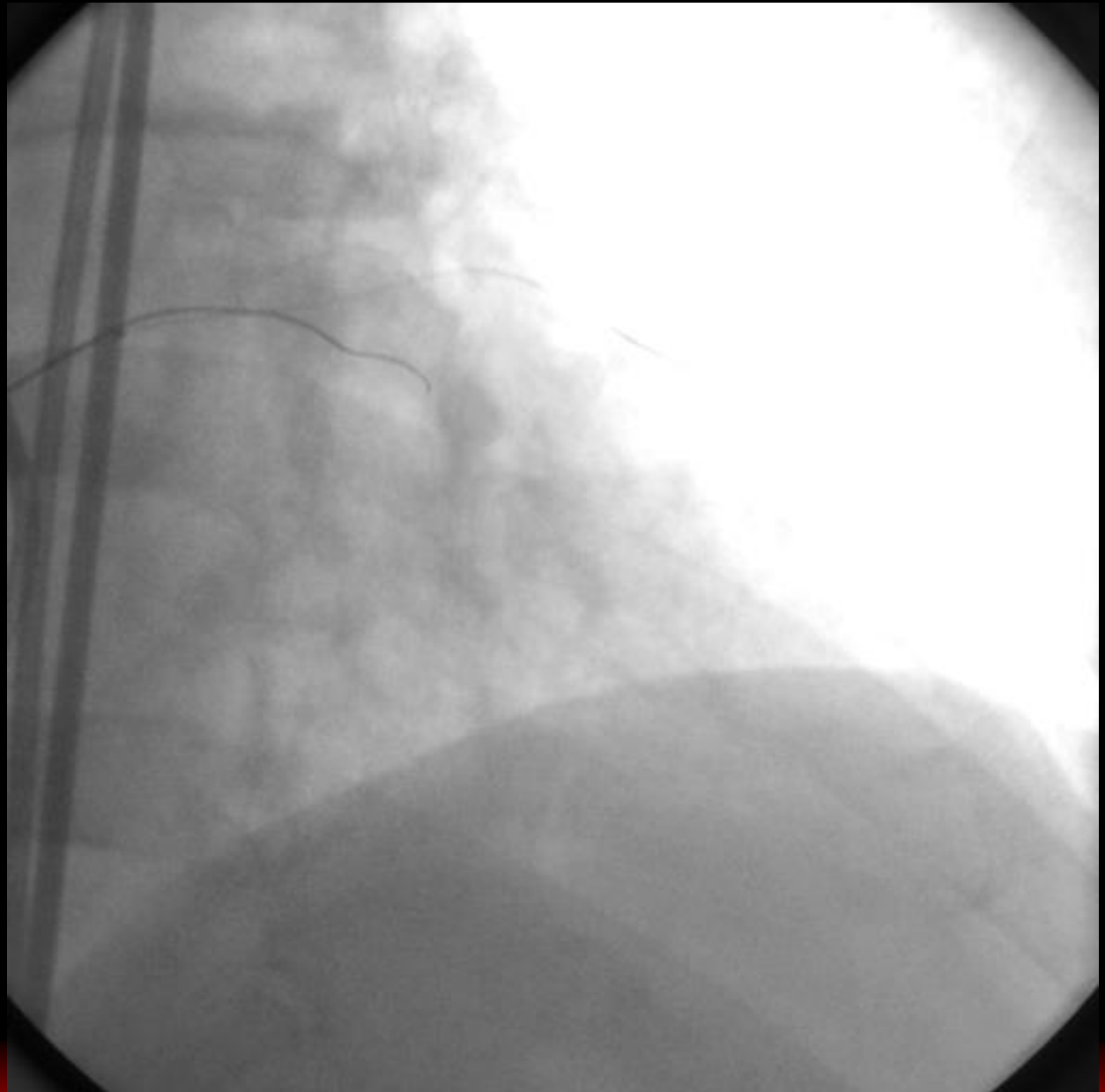
Concept of Contemporary Reverse CART





Case

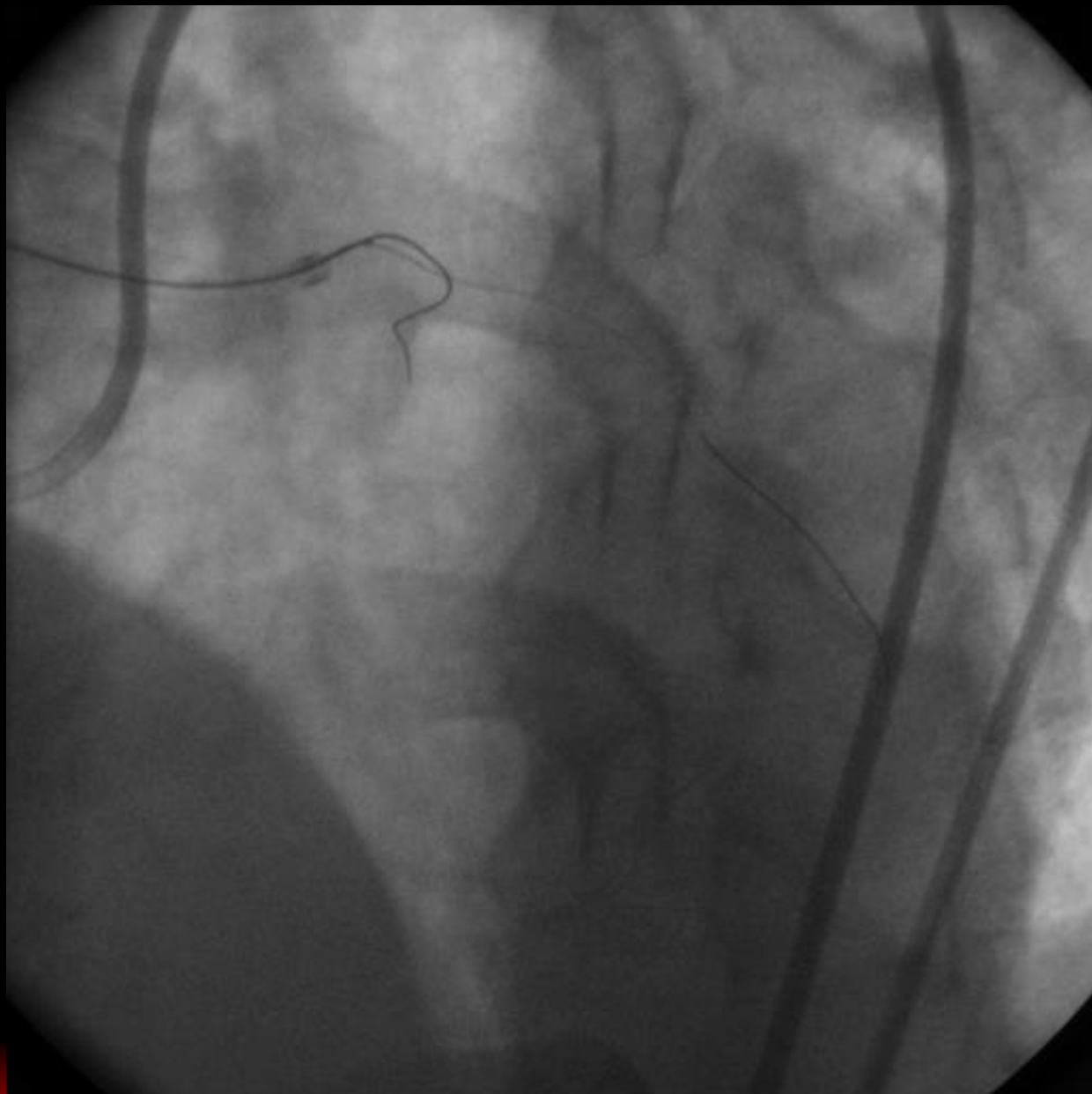




Antegrade Approach

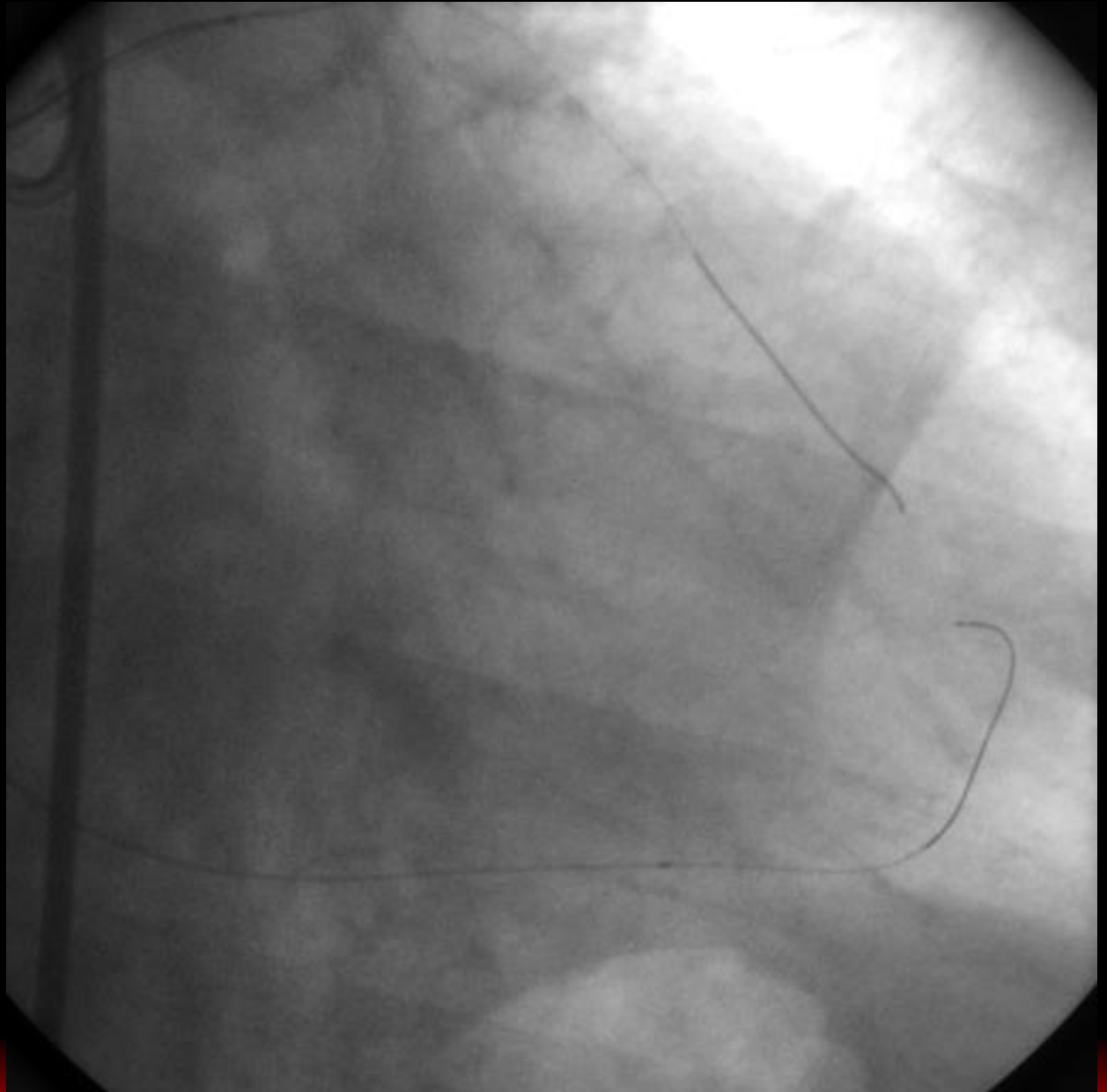


Failed Wiring





Retrograde Approach

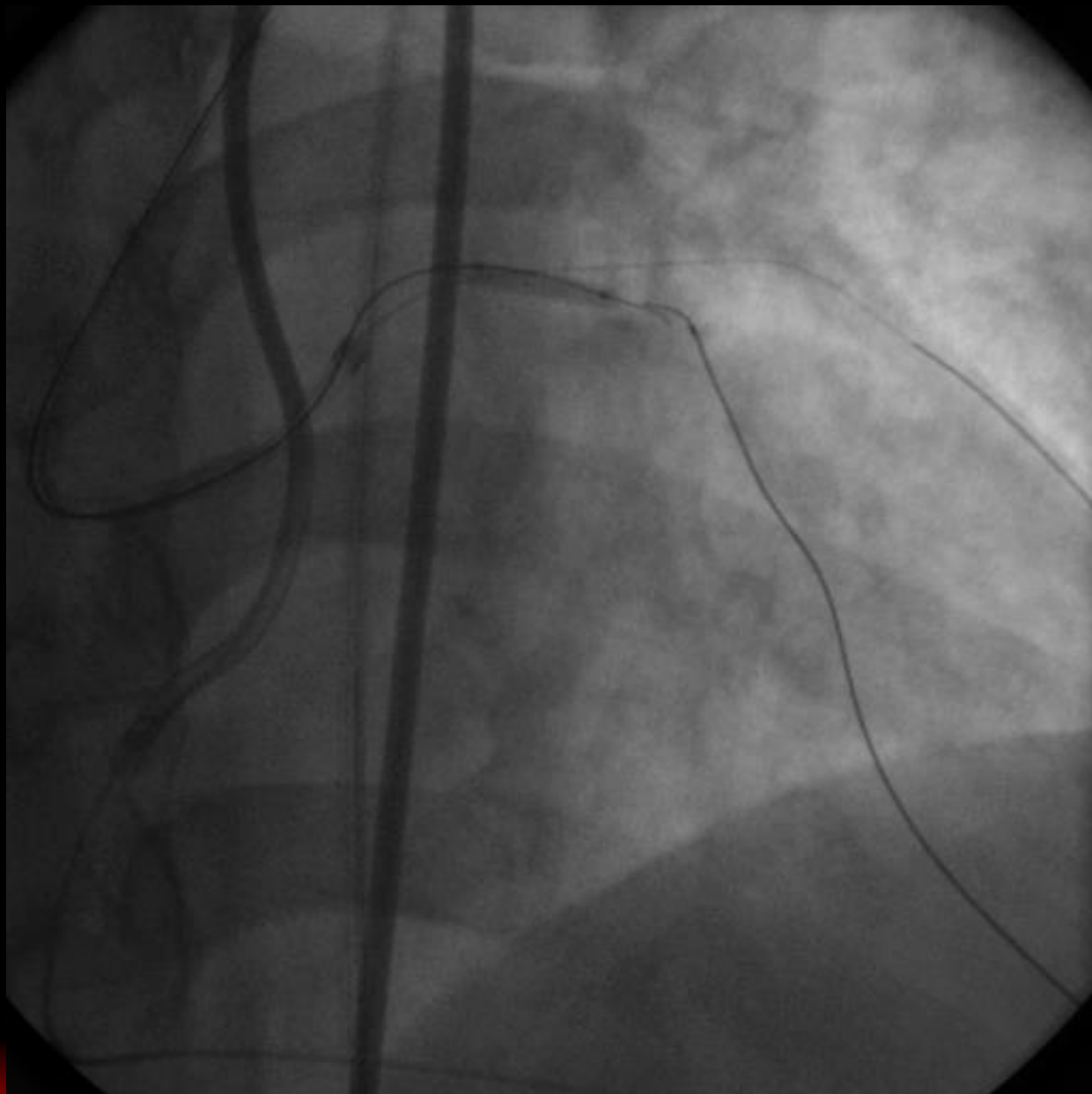




Antegrade Ballooning

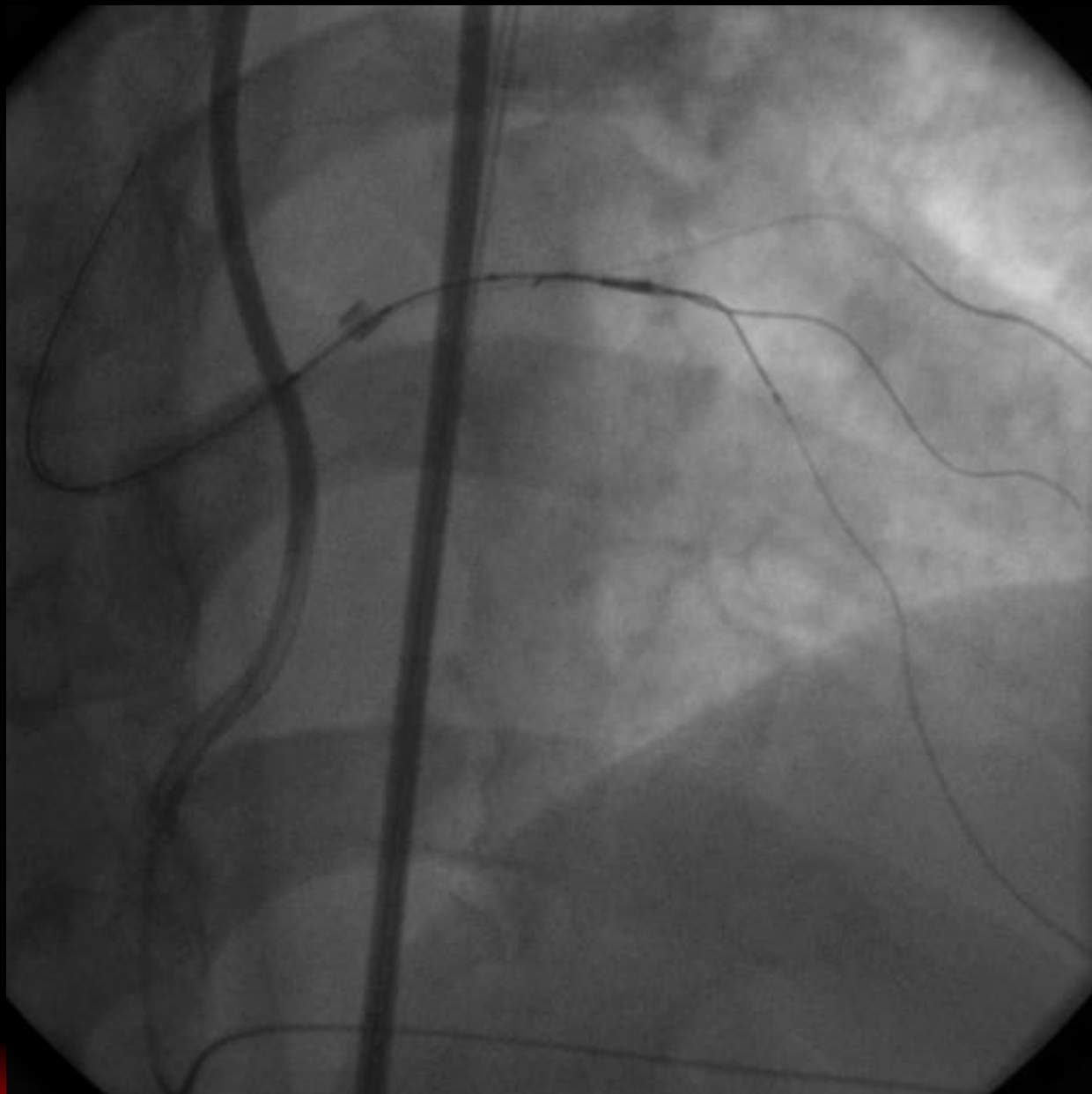
Directed
Reverse
CART

!!



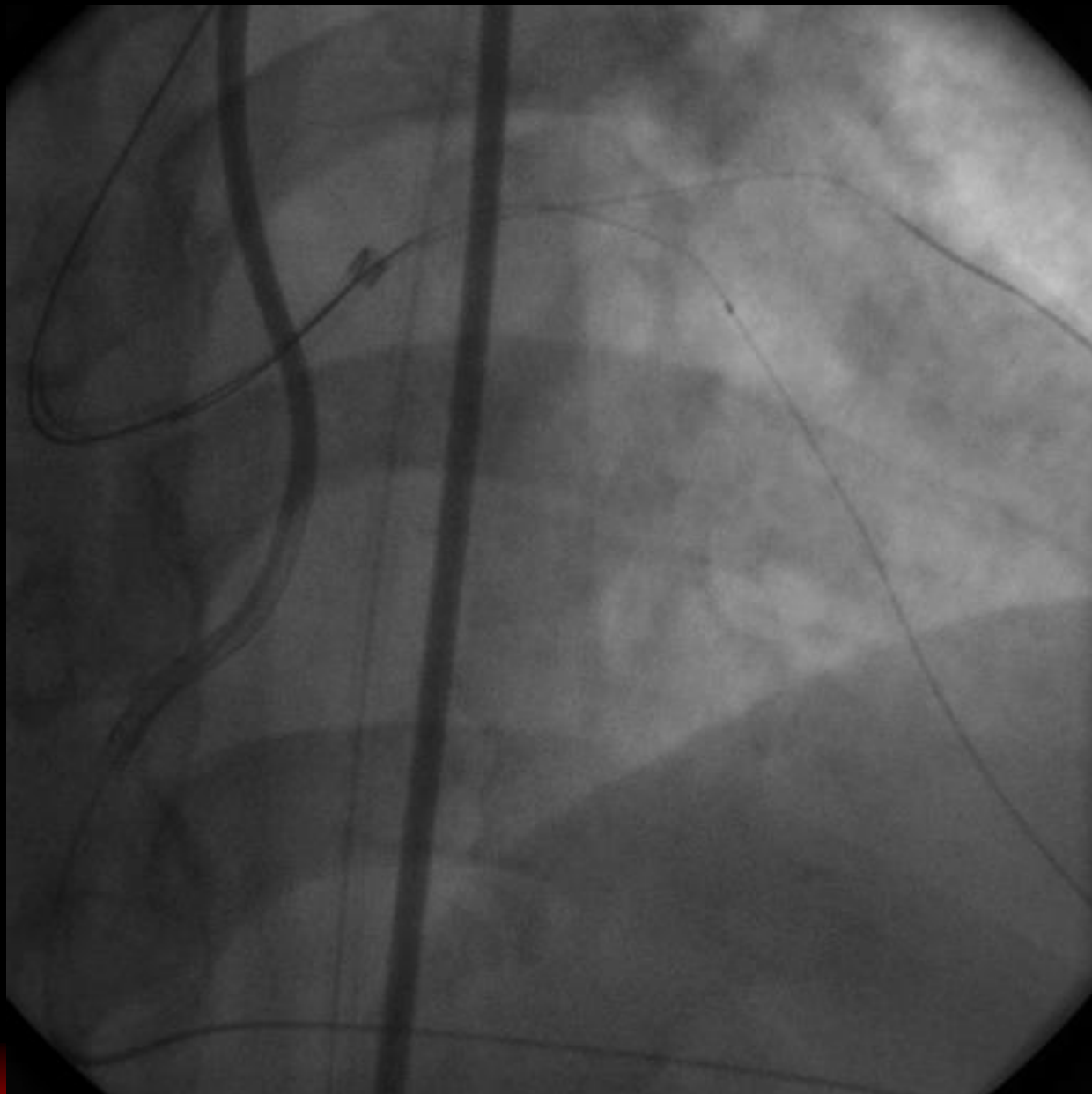


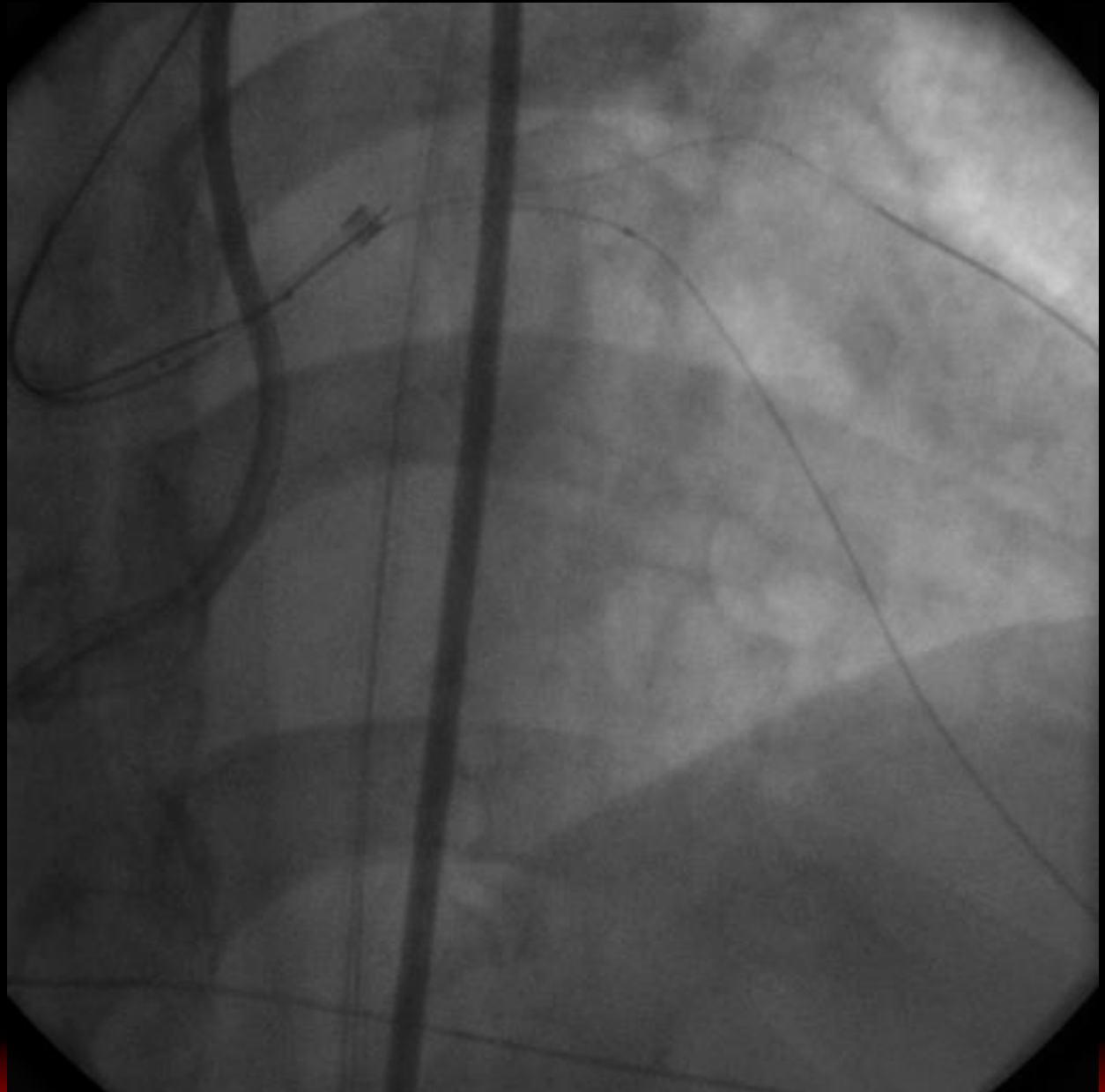
Successful Wiring





Successful Wiring

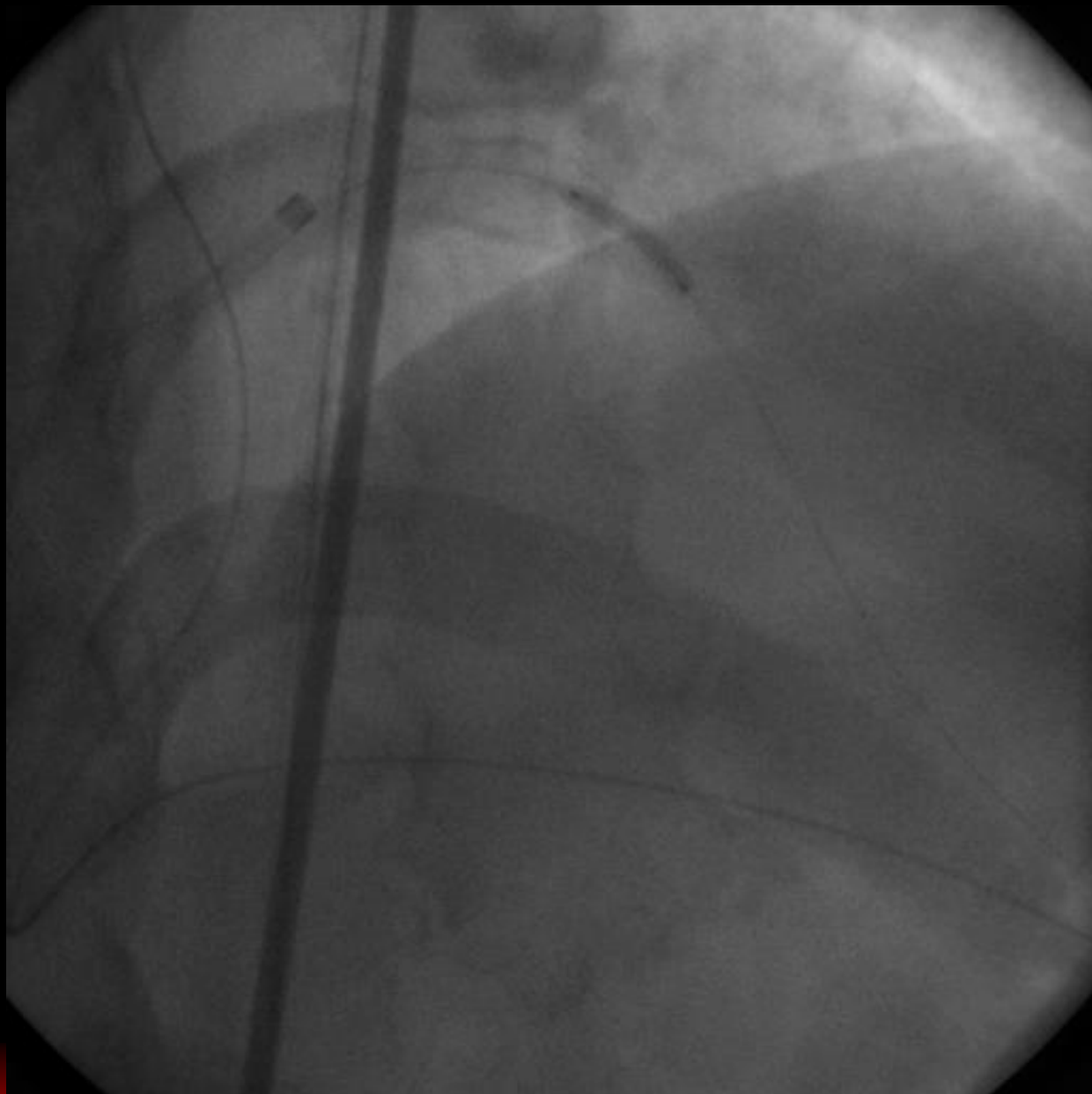




Trapping Technique

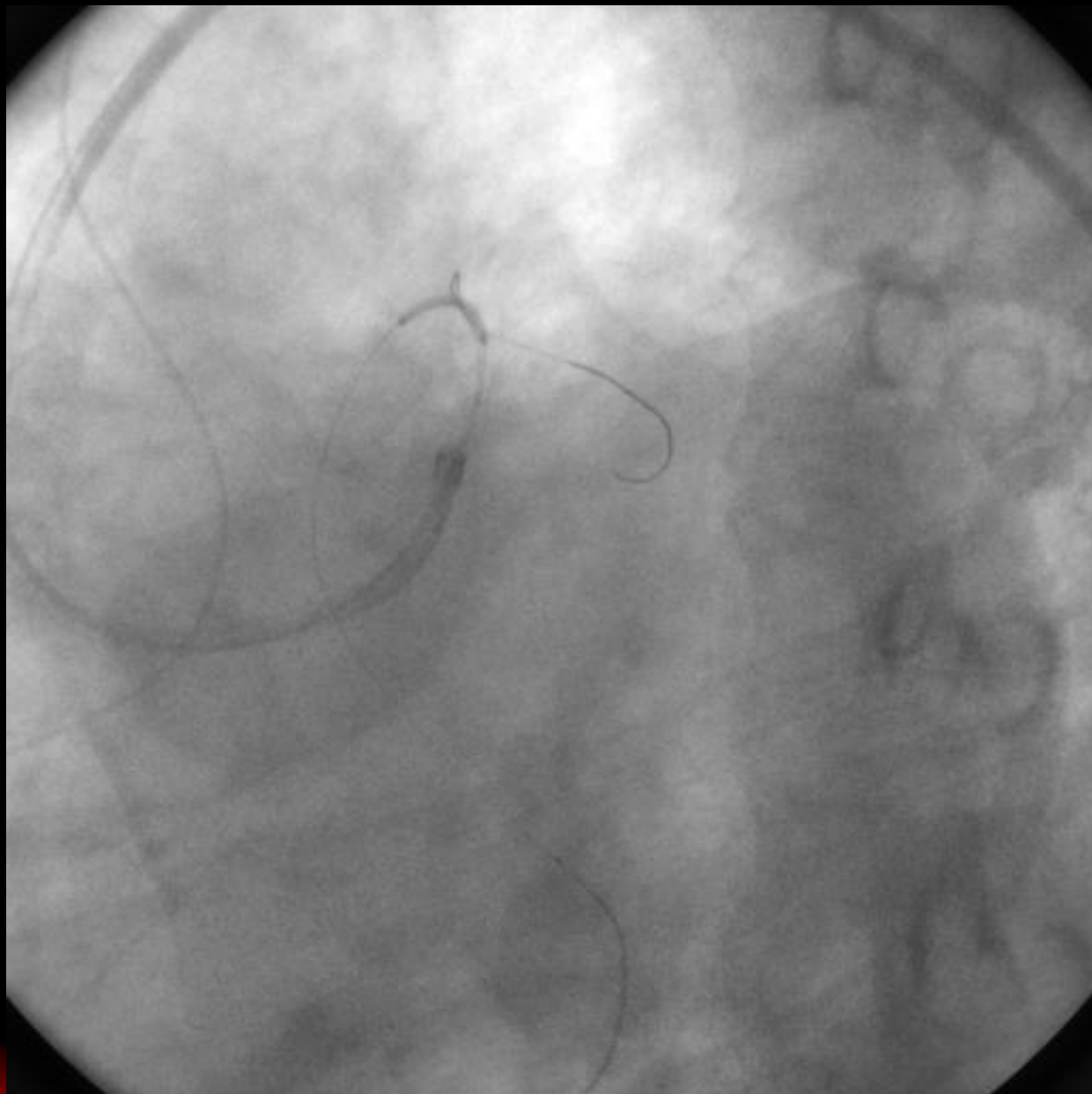


Balloon





Stent





Final





Final





Recent Standardized Retrograde Technique

- 1. Channel Crossing**
- 2. Antegrade Ballooning**
Directed reverse-CART
- 3. IVUS Guidance**



Summary

- 1. The retrograde approach is absolutely indispensable in CTO PCI.**
- 2. This technique has been established and standardized.**
- 3. Retrograde wiring and kissing wire technique are not recommended.**
- 4. Directed reverse CART is common procedure.**



TOPIC 2019

July 11-13, 2019

Thank you for Attention!





