

Parallel wire technique vs. Stingray

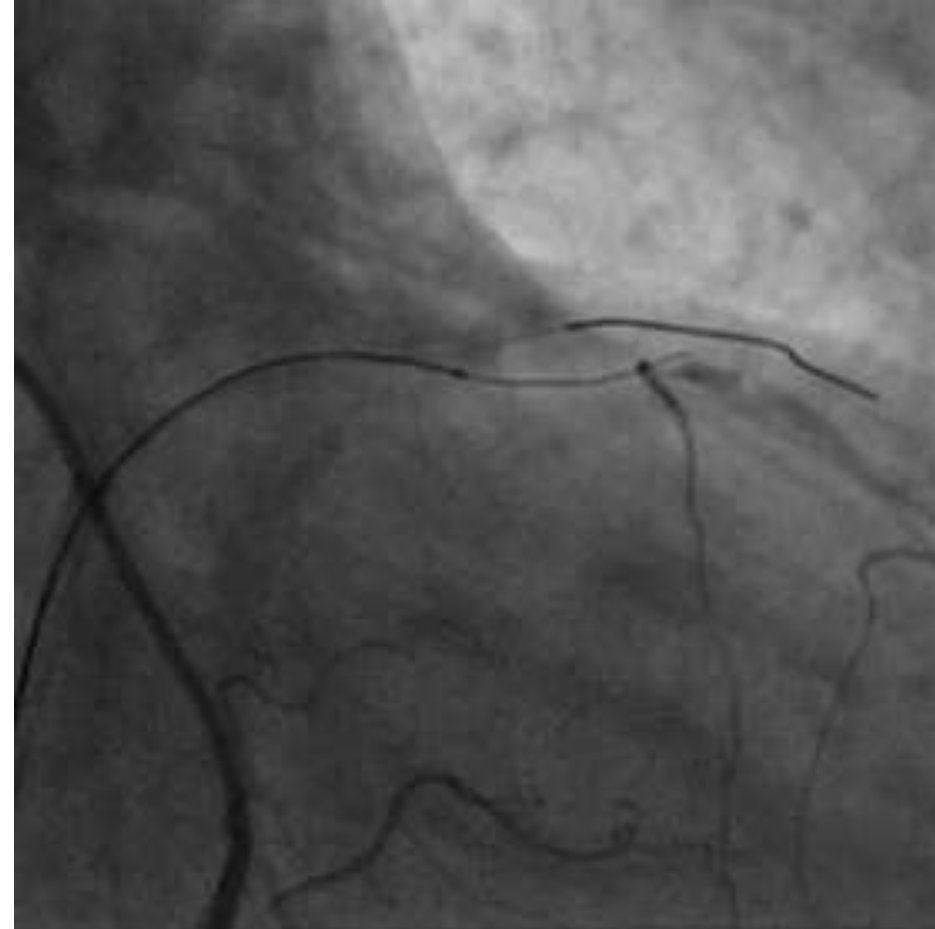


Scott Harding
Department of Cardiology
Wellington Hospital

If initial antegrade wiring fails what are the options?

Possible options:

- Wire redirection
- Parallel wiring
- Switch and use stingray
- Switch to retrograde



What if the initial wiring fails?

Choice of strategy depends on many factors including:

Anatomic factors

- How far the wire is away from the distal target
- Size of the distal target
- Extent of disease and calcification in the distal target
- Presence of a bifurcation at/or near the distal cap
- Whether the CTO course is ambiguous
- Presence and quality of interventional collaterals

What if the initial wiring fails?

Choice of strategy depends on many factors including:

Non-anatomic factors

- Operator skill set
- Availability of devices
- Financial restrictions

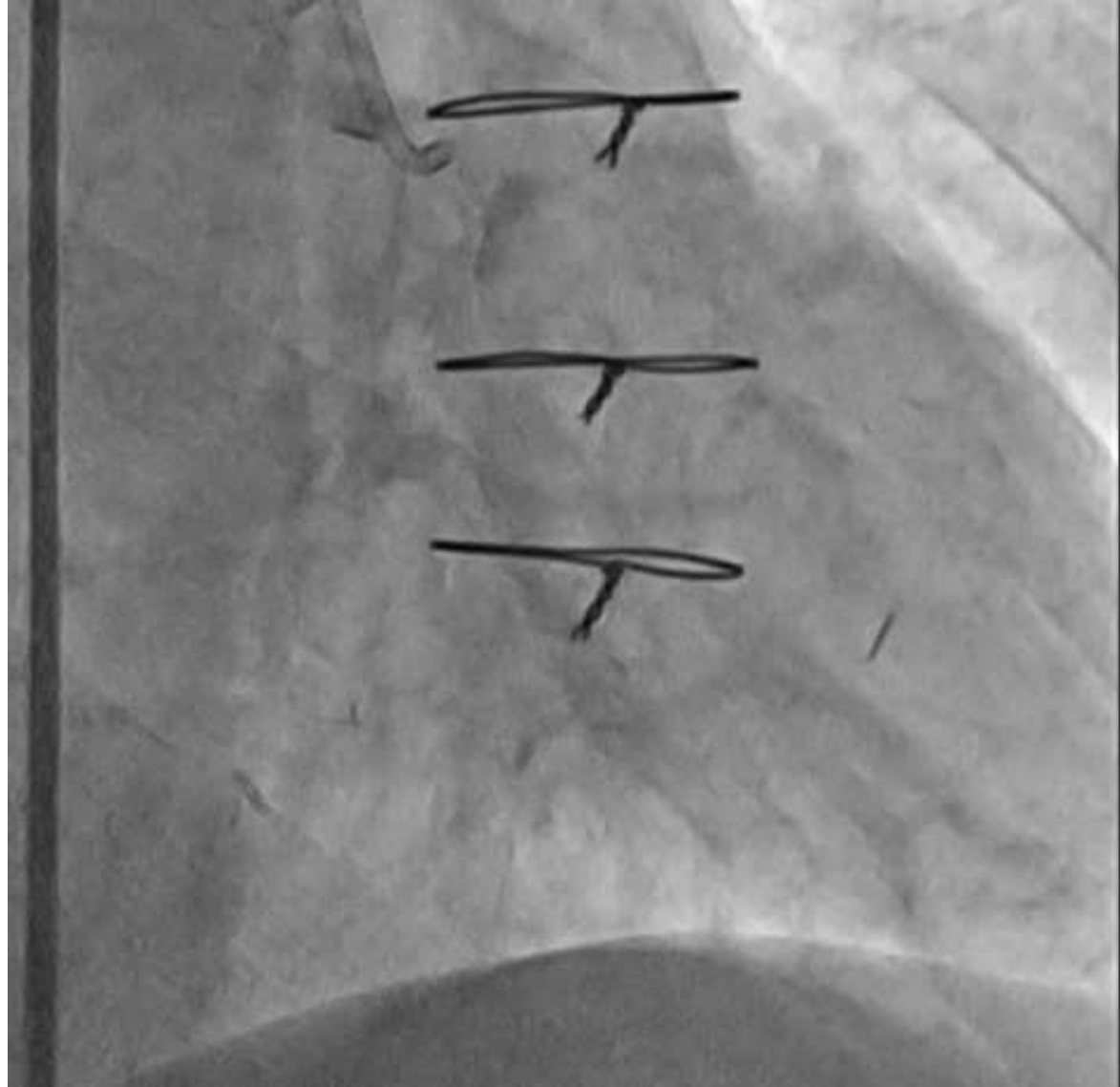
Case 1

- 56 year old male with stable angina
- Previous CABG
- Short CTO of mid RCA



Case 1

Short CTO of mid RCA
Unambiguous tapered
proximal cap.
Good distal target



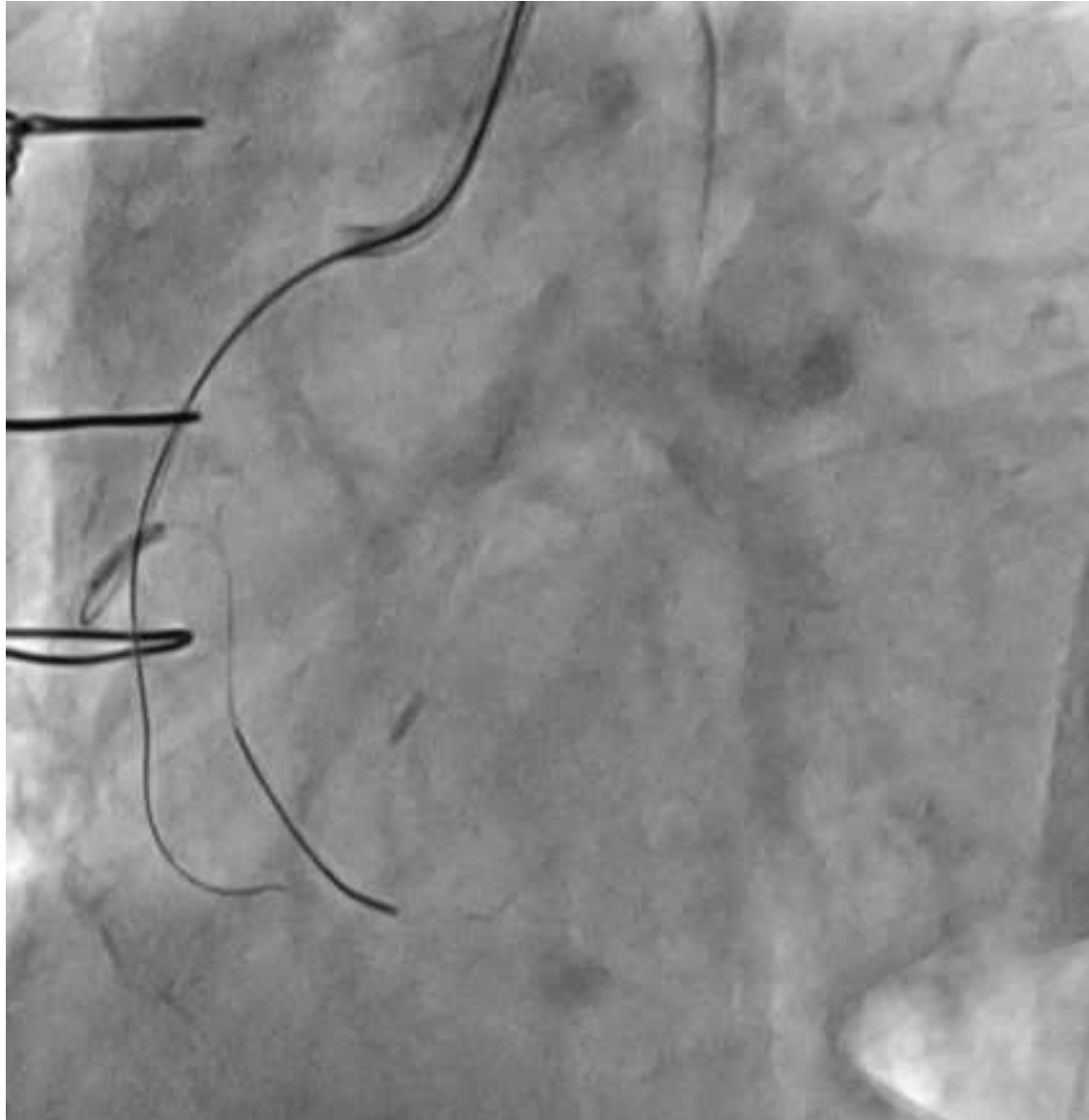
Case 1

Started with Fielder XT-A
and Corsair

Escalated to Gaia 1st but
this enters sub-intimal
space

Following failure of initial
wire should we:

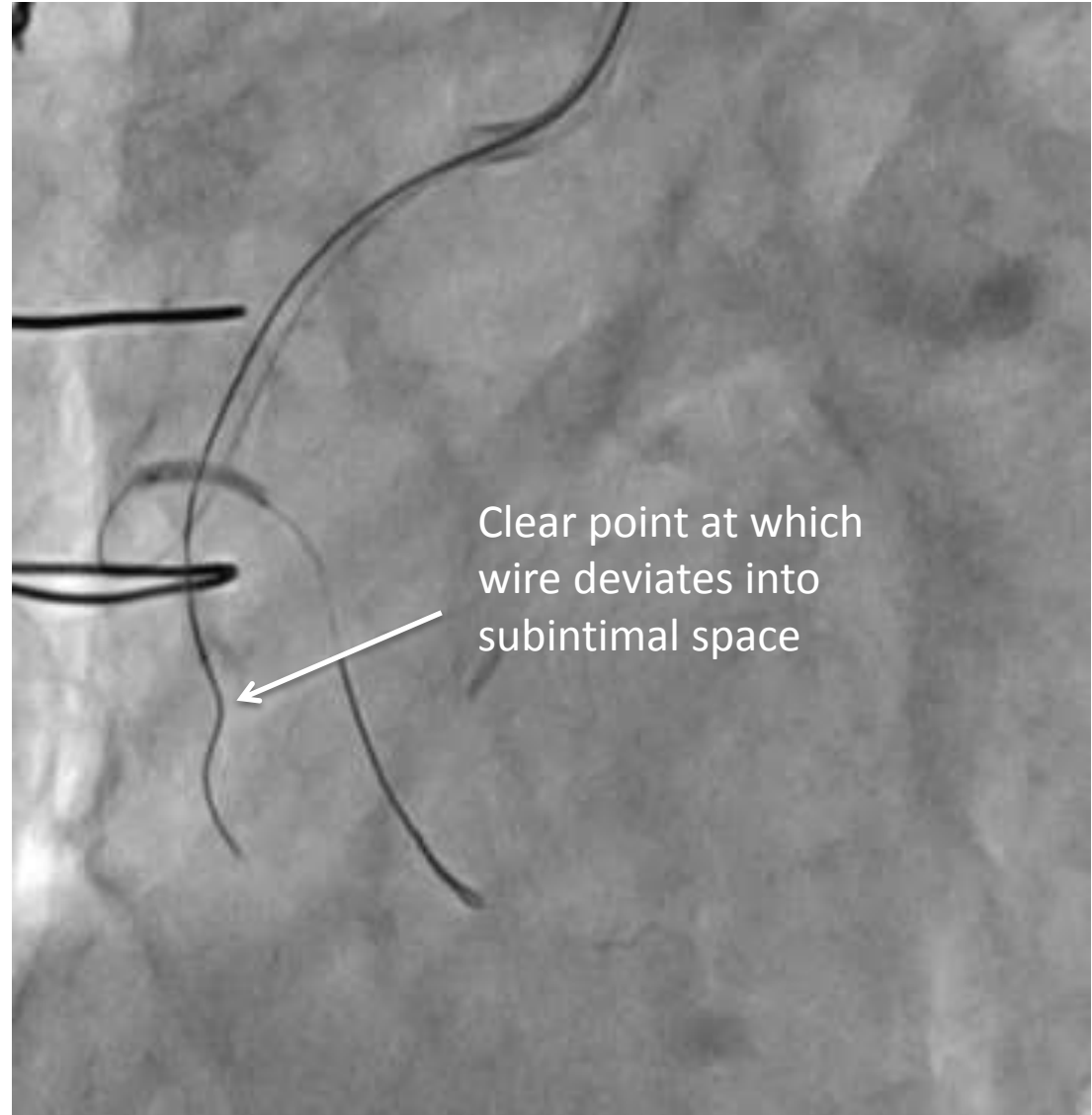
- Parallel wire?
- Switch and use
stingray?



Case 1

Decision to use parallel wire as:

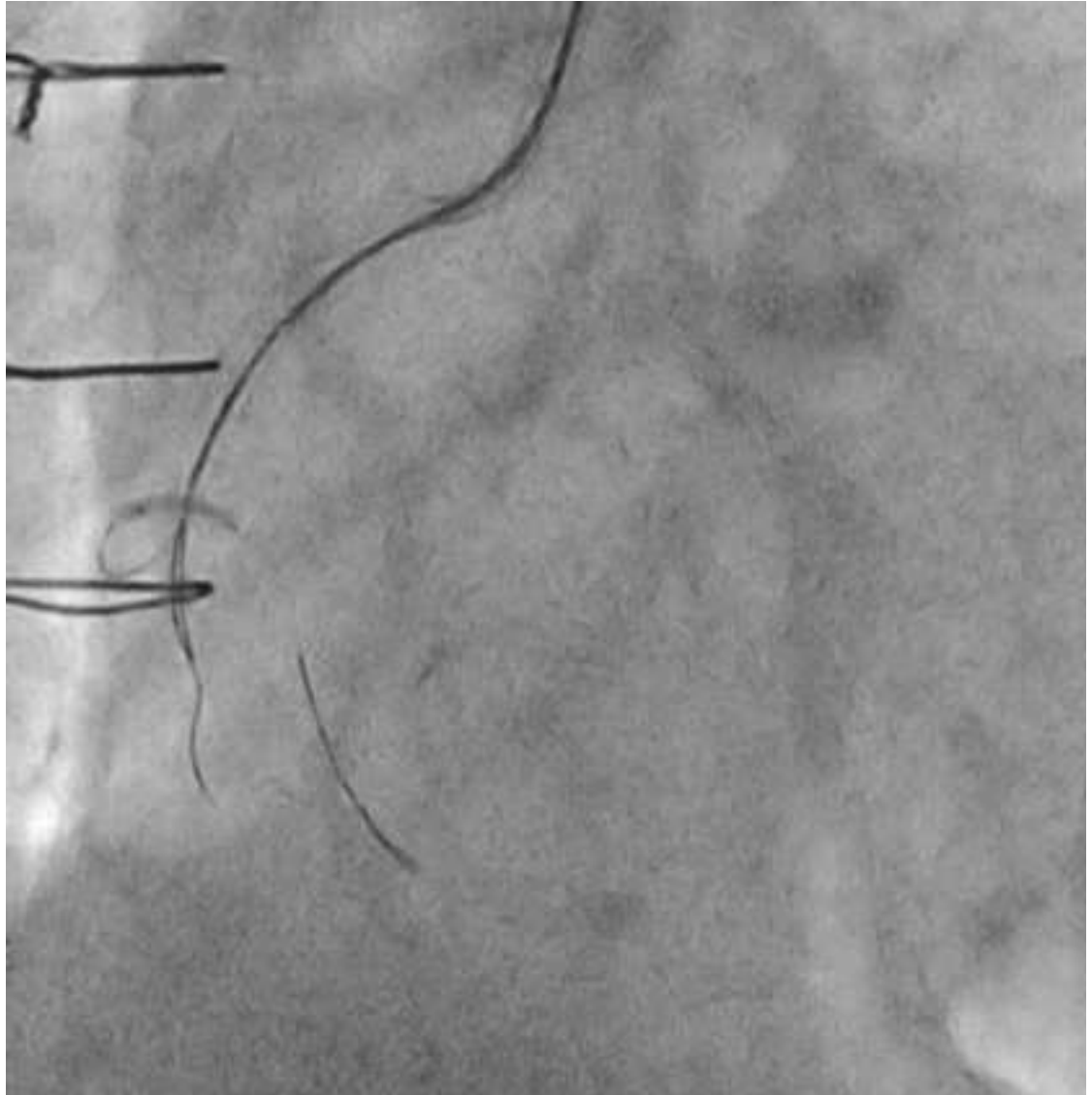
- Point at which wire deviated into the subintimal space clear
- CTO segment short
- Course unambiguous



Case 1

Proximal stenosis dilated
and a CRUSADE
microcatheter introduced
for parallel wiring

Parallel wiring using
Crusade and GAIA 2nd



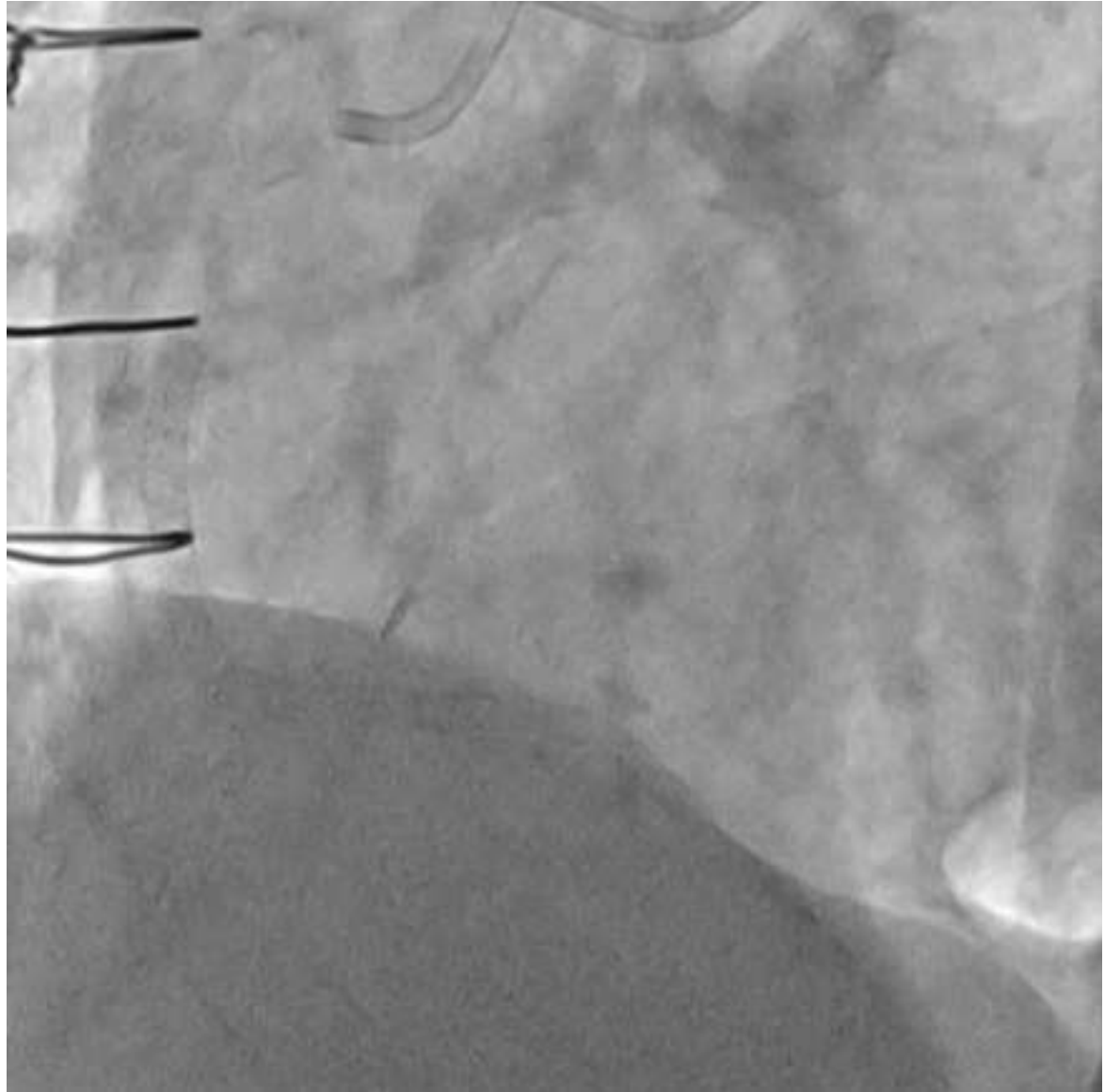
Case 1

Confirmation that GAIA
2nd is in the distal true
lumen



Case 1

Final result



Parallel wiring

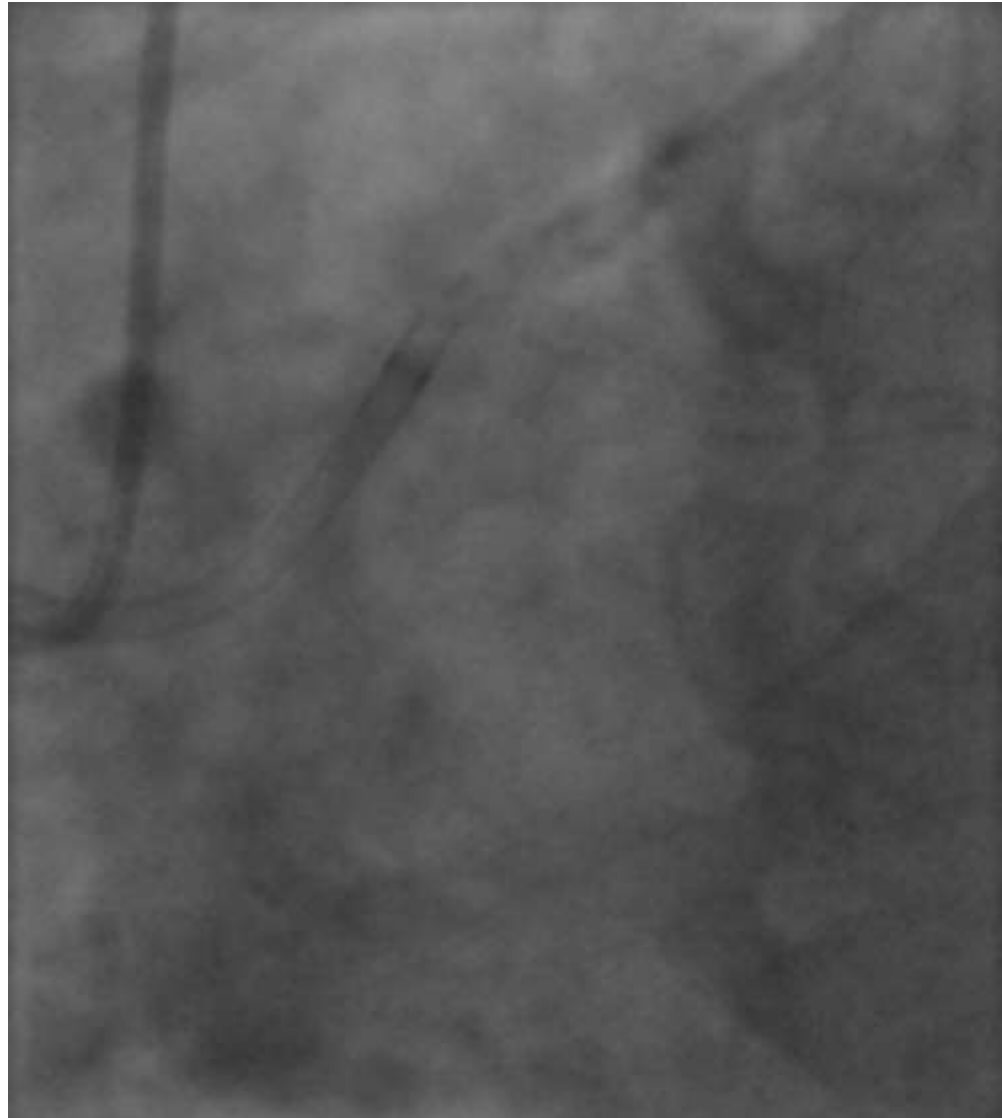
Works best when:

- The course of the CTO is unambiguous
- The point at which the initial wire has deviated into the subintimal space can be identified
- The CTO segment is relatively short

*However for parallel wiring to be successful the wire position must be intimal at the proximal cap

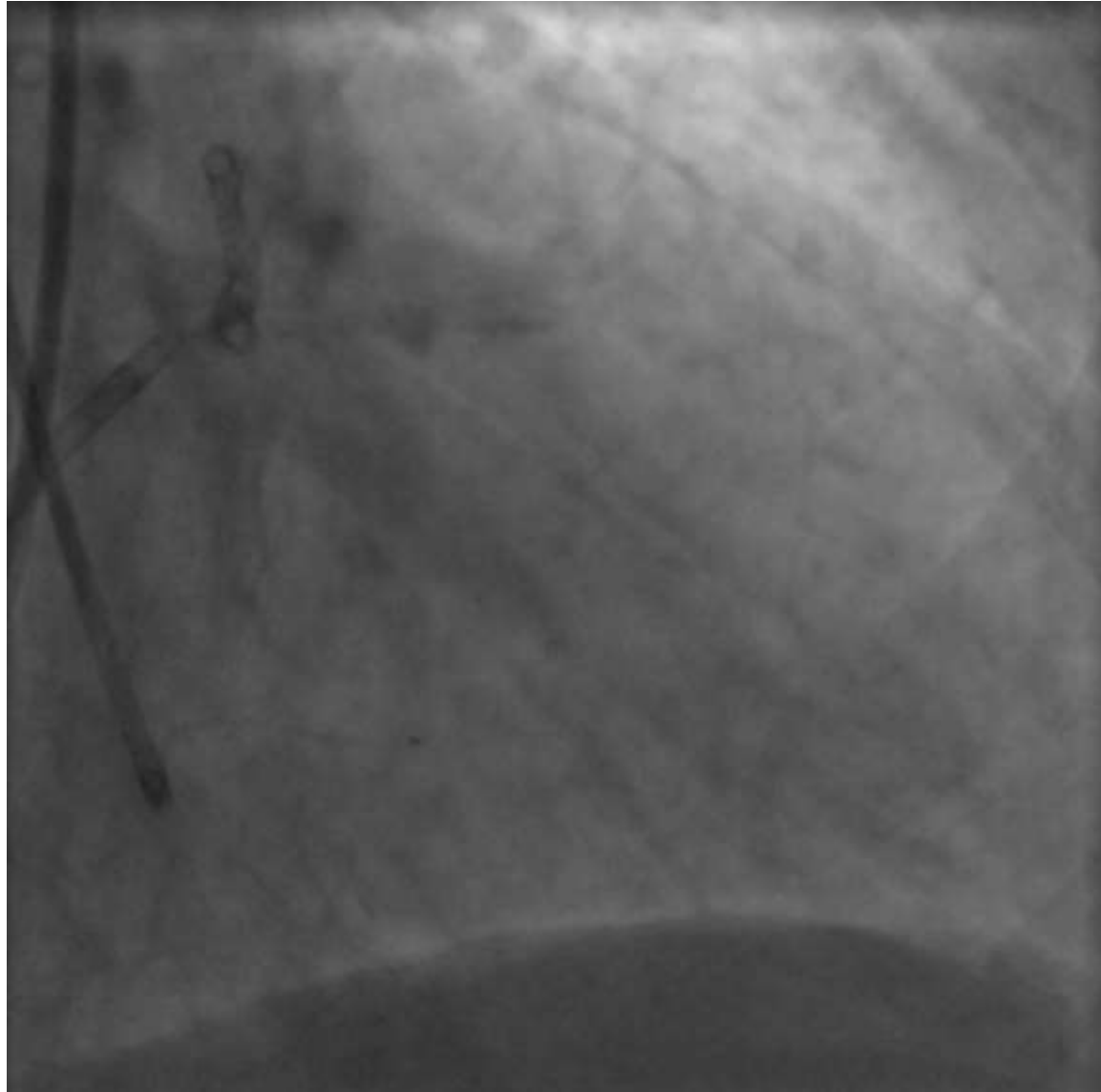
Case 2

Ostial occlusion of LAD
Non-ambiguous proximal
cap
LAD territory viable on MRI



Case 2

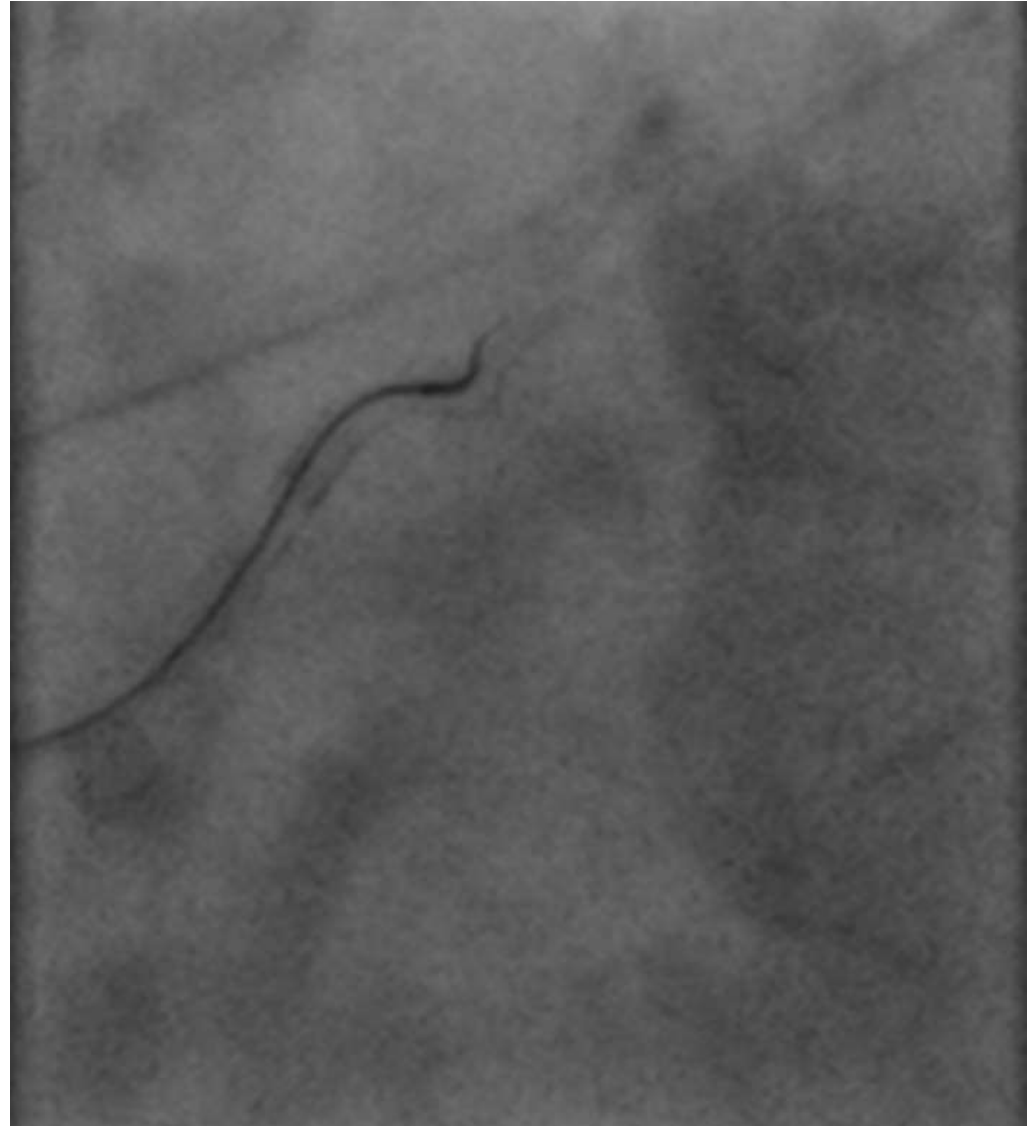
RAO cranial view demonstrating occlusion length of about 20mm with disease and heavily calcification distal to the occlusion



Case 2

Proximal Cap puncture
attempted with a Corsair
and GAIA 2nd and 3rd
– unsuccessful

Exchanged for Conquest
Pro 12 - successful



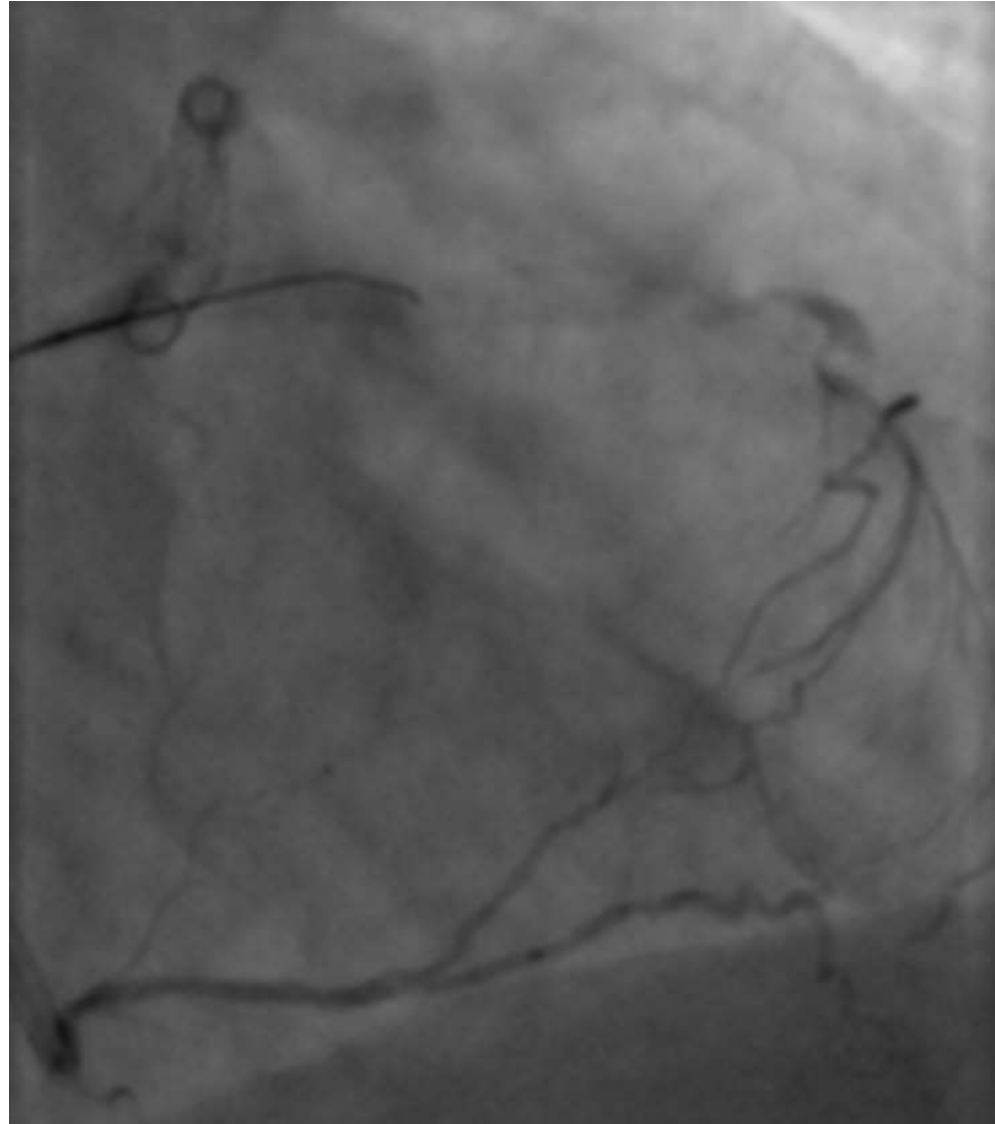
Case 2

Step down of wire from
Conquest Pro 12 to GAIA 2nd

Wire position superior to
distal true lumen

Following failure of initial wire
should we:

- Parallel wire?
- Switch and use stingray?



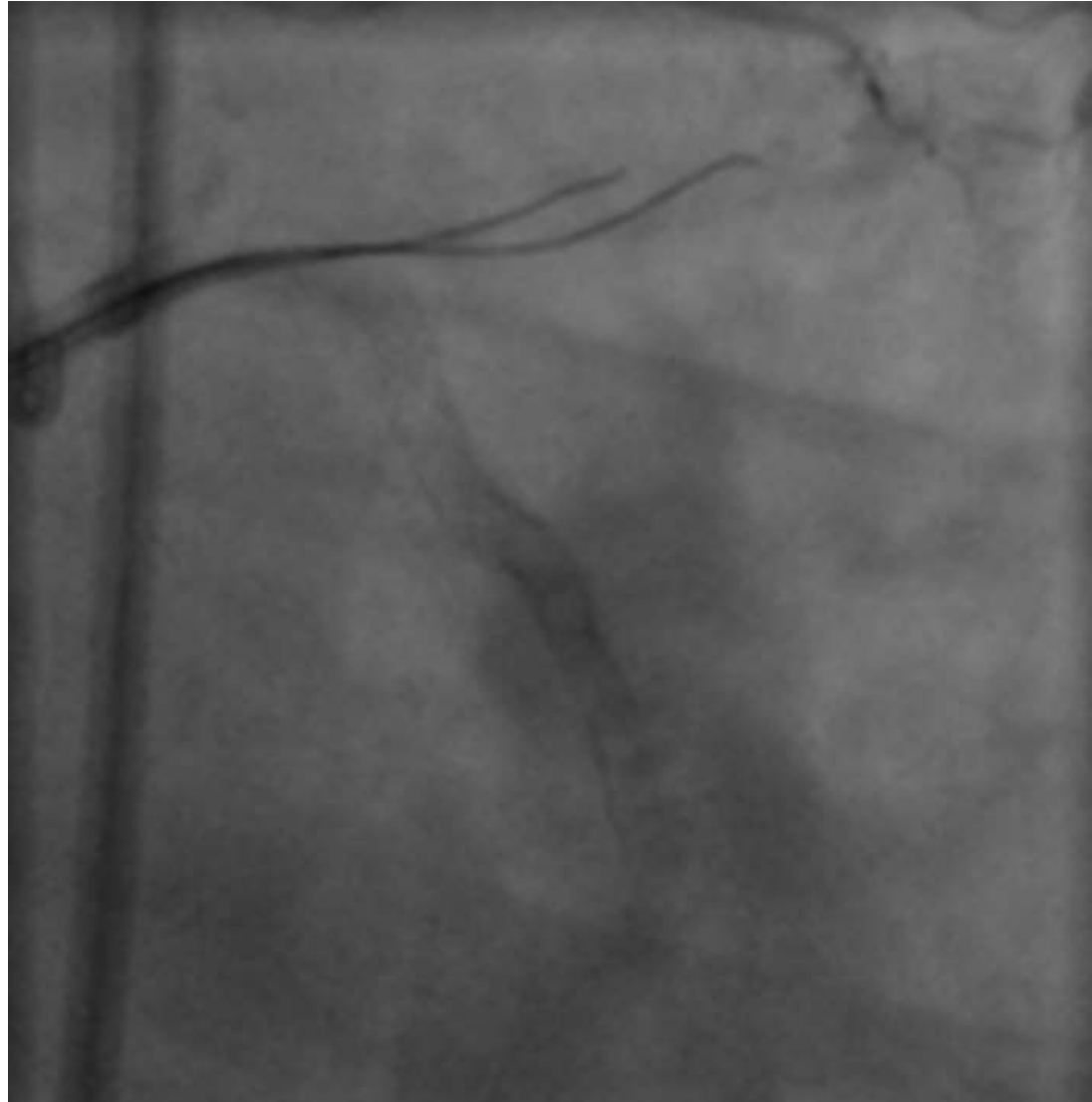
Case 2

As the vessel course was not ambiguous and there was severe disease with heavy calcification in the vessel segment distal to the CTO parallel wiring using GAIA 3rd was chosen



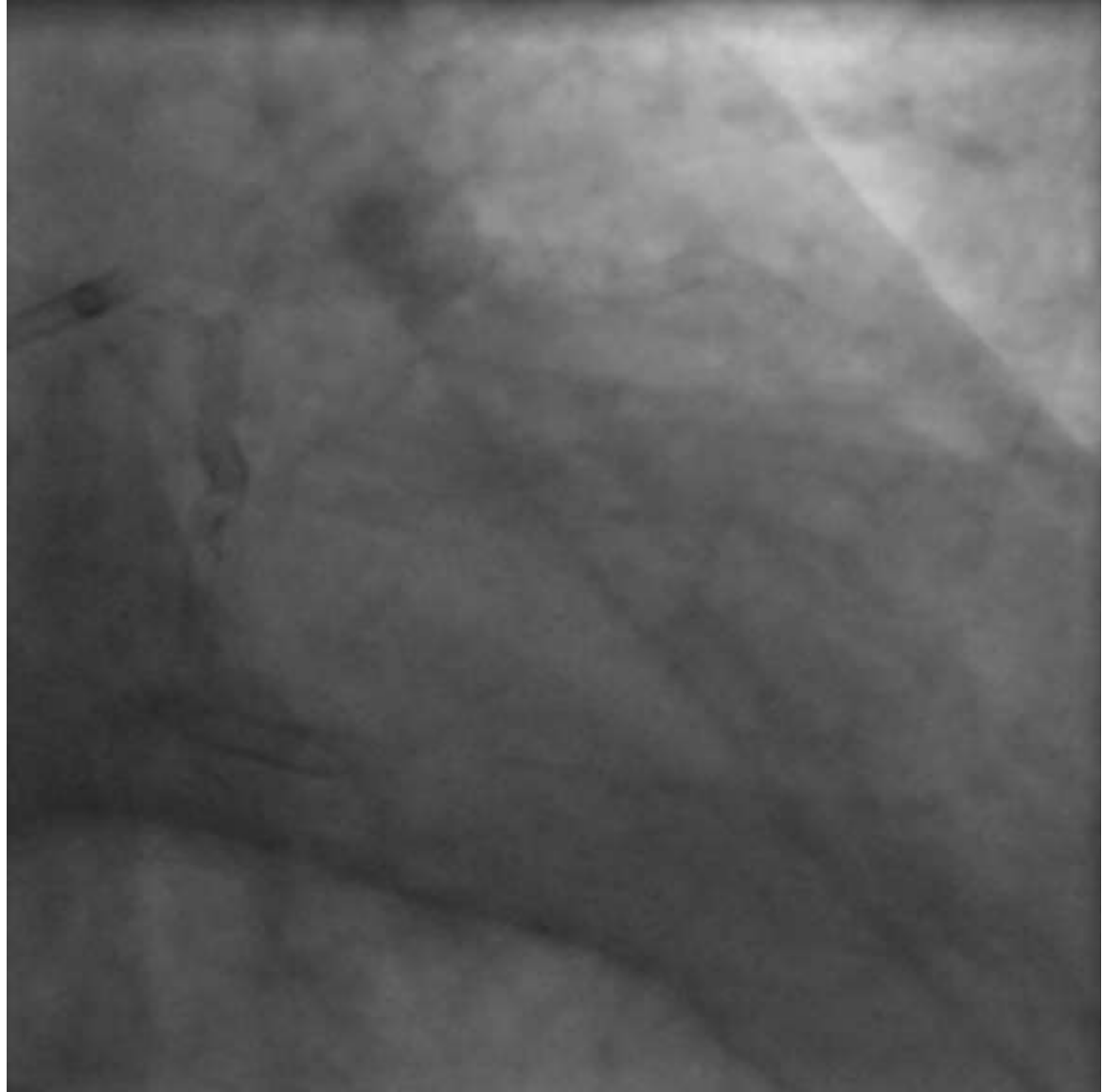
Case 2

GAIA 3rd subsequently
passed into the distal
true lumen



Case 2

Final result



Parallel wiring vs. Stingray

Parallel wire is a good option when:

There is diffuse disease / heavy calcification in the re-entry zone

or

There are important sidebranches at/or near the distal cap

Case 3

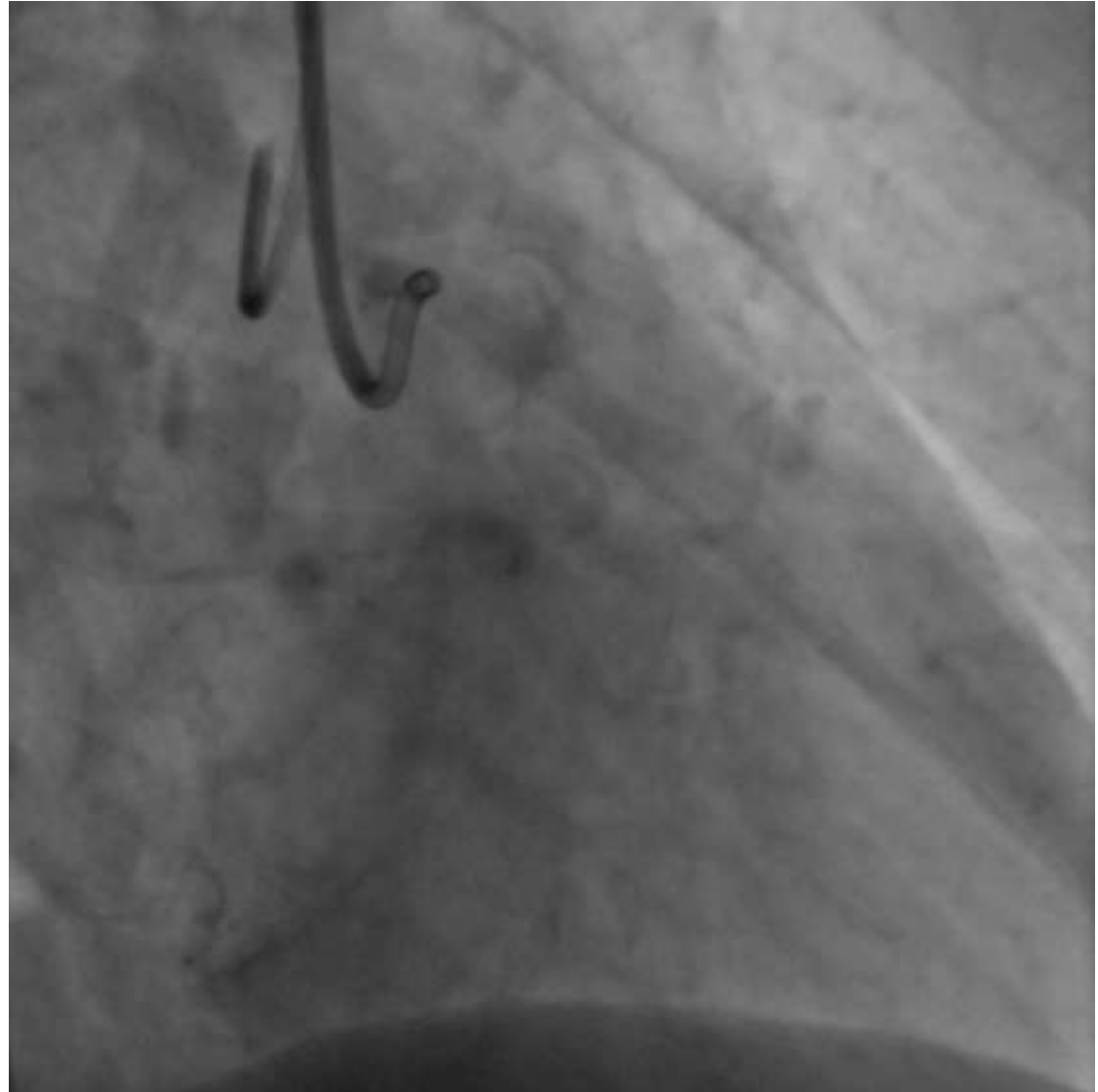
- 63 yr old male with stable angina
- Long CTO of the RCA with bridging collaterals
- Unambiguous proximal cap
- Good distal vessel



Case 3

Long CTO of the RCA

Distal vessel fills via
bridging collaterals,
collaterals from the RV
marginal branch and from
septal collaterals



Case 3

Initial approach with Fielder
XT-A and Corsair

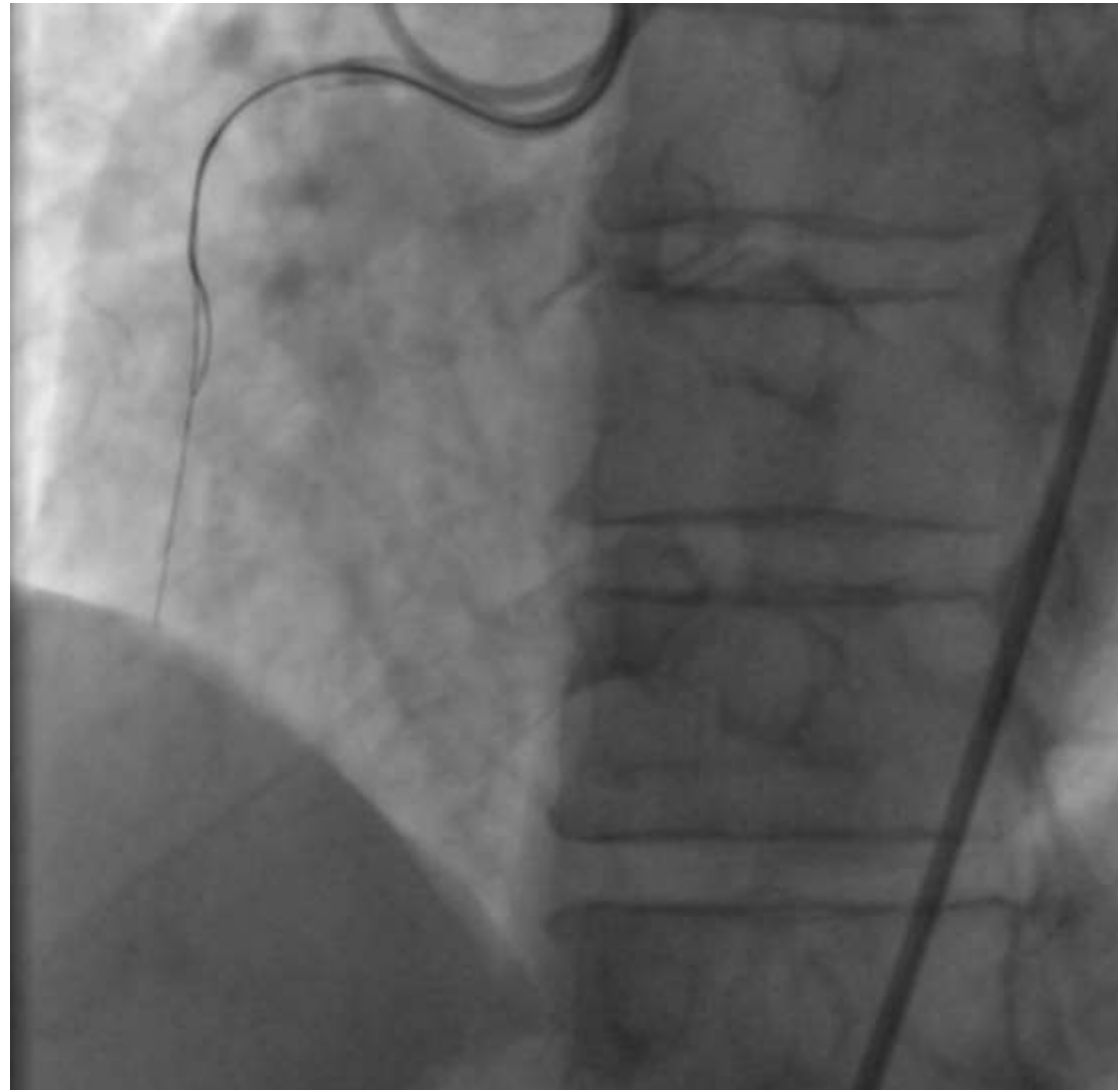
Escalation to GAIA 2nd

Distal wire position incorrect

Following failure of initial wire
should we:

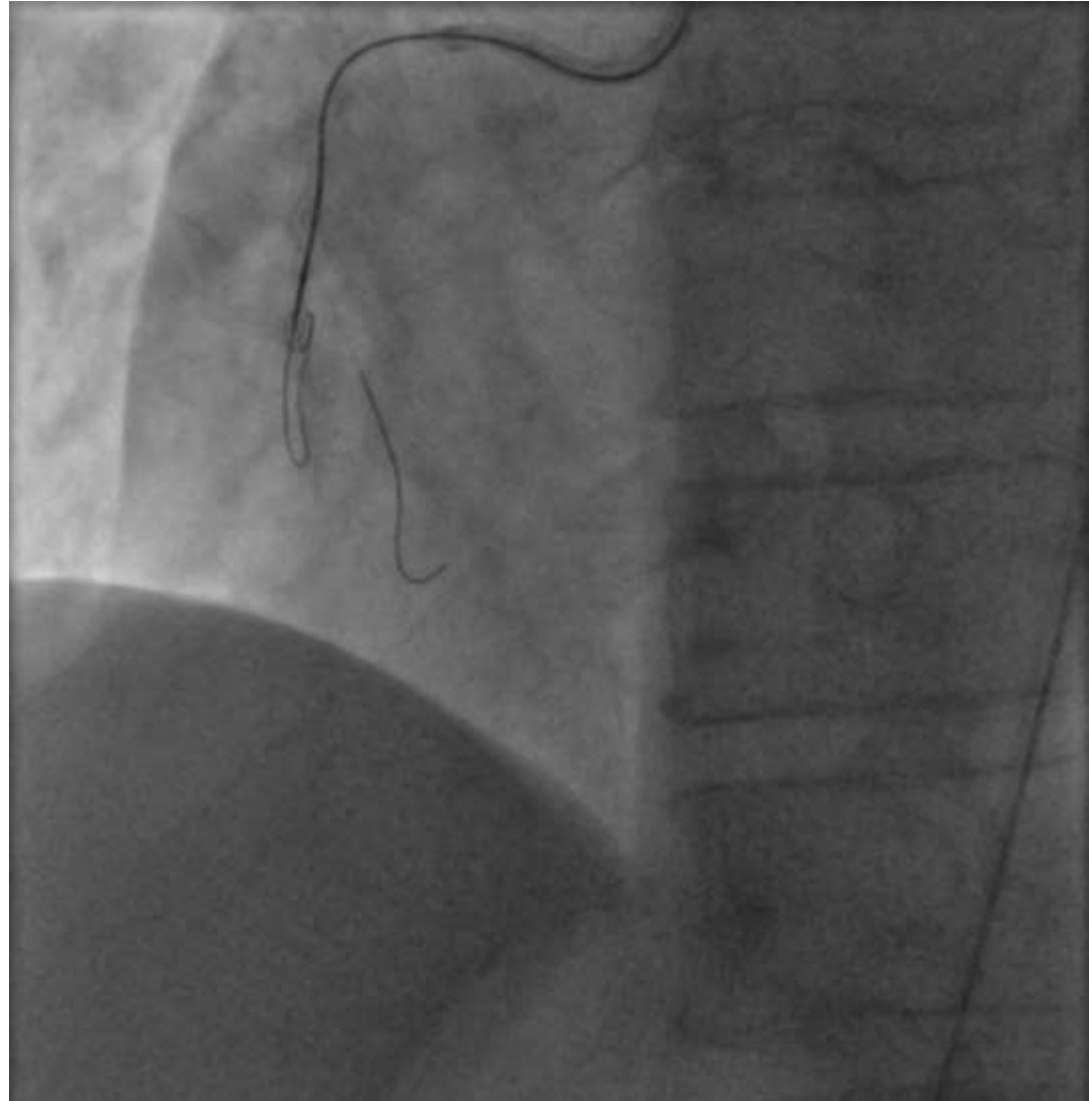
Parallel wire?

Switch and use stingray?



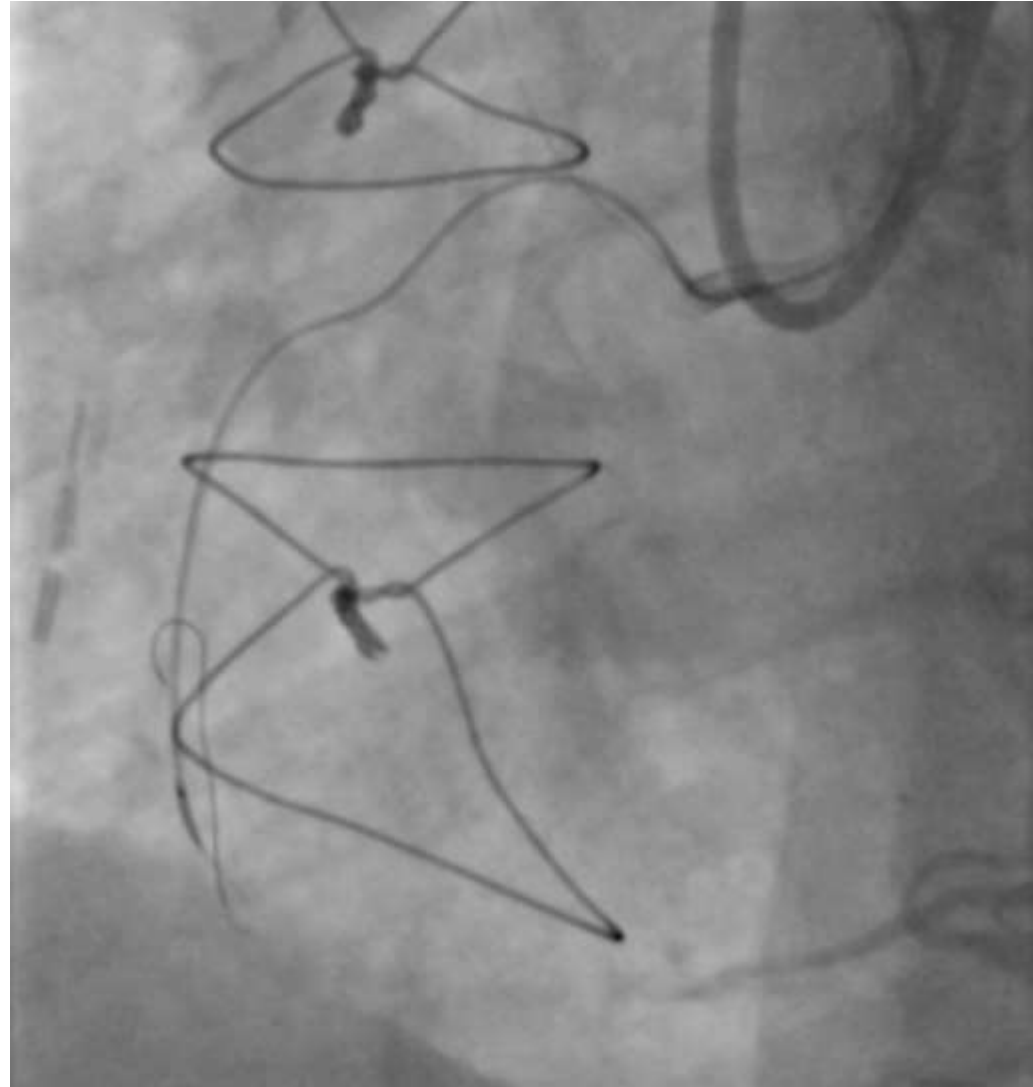
Case 3

- IVUS performed and confirmed correct entry point
- Point at which initial wire went off course unclear
- As CTO long with good re-entry zone chose to use a knuckle wire followed by stingray re-entry



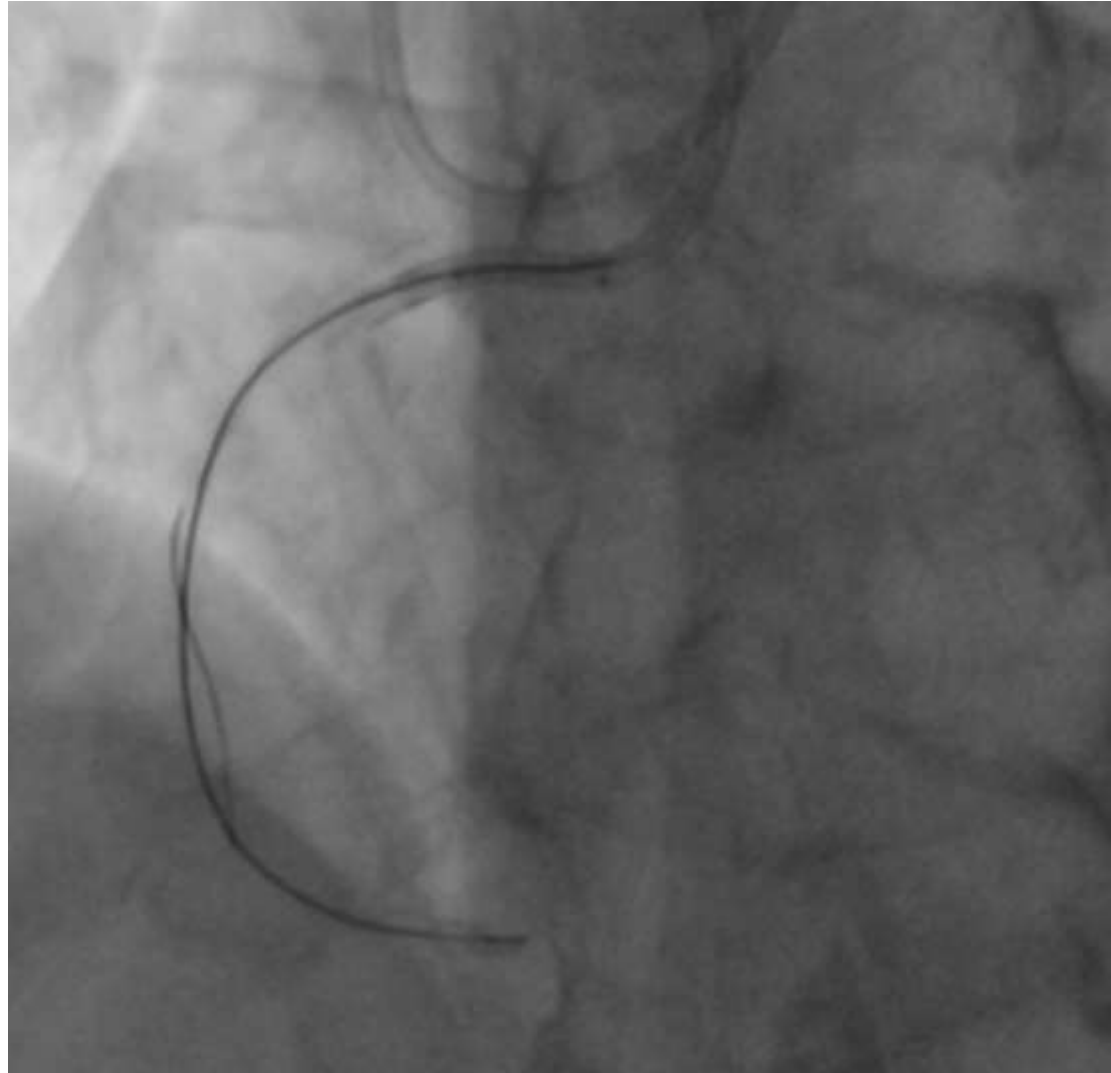
Case 3

Knuckle and Corsair
advanced around to
beginning of landing zone



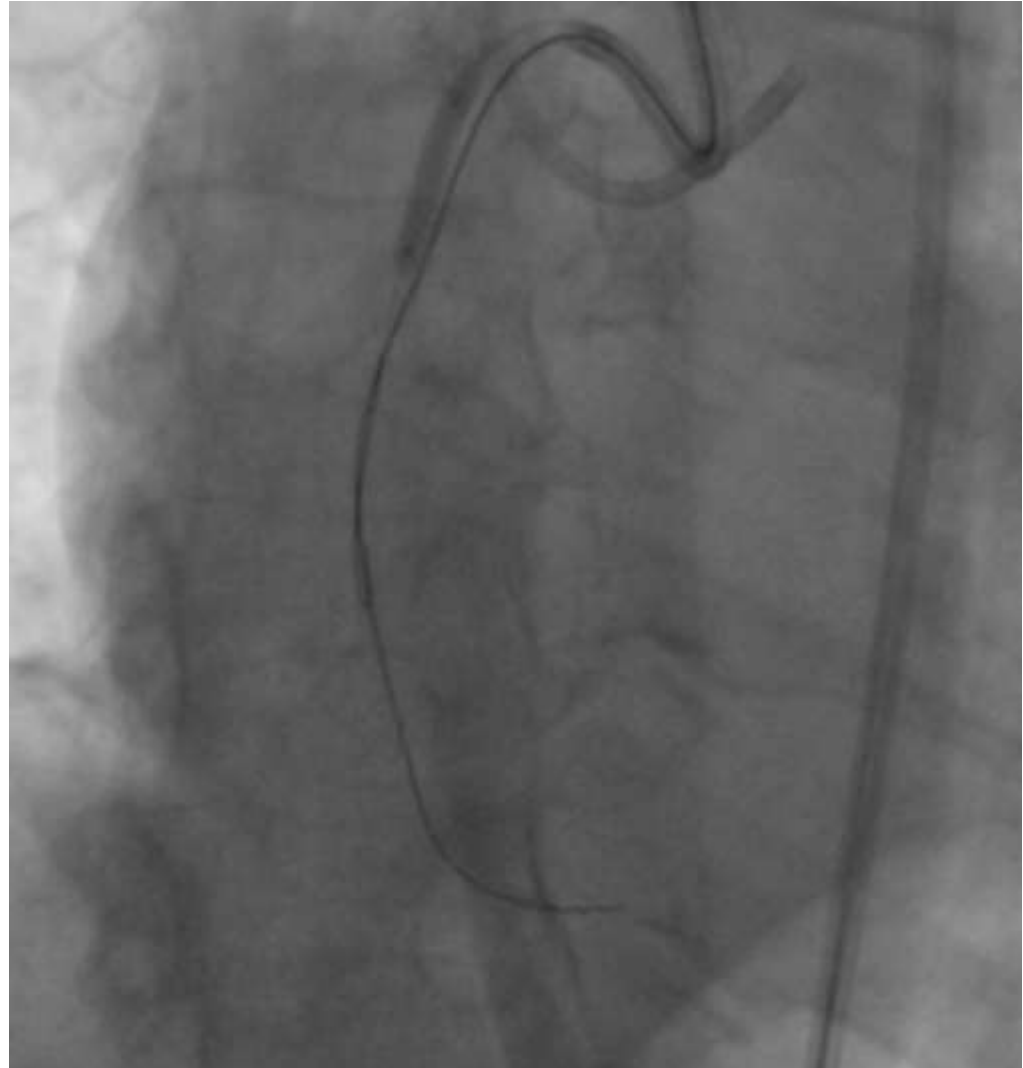
Case 3

Stingray in position but
incorrect view



Case 3

- Stingray in the correct view for puncture
- Stick into distal true lumen using stingray wire



Case 3

Stick and swap

- Pilot 200 advanced into distal vessel
- Position in distal true lumen confirmed with retrograde injection.



Case 3

Final result



Parallel wiring vs Stingray

Re-entry with Stingray is a good option when:

- There is a long CTO segment particularly if there is ambiguity of the CTO course
- If the wire is subintimal from proximal cap
- There is a good re-entry zone with no major branches.

Summary

Major features favouring use of stingray

- Vessel course ambiguity
- If wire subintimal at the proximal cap

Major features favouring use of parallel wiring

- Heavy calcification and diffuse disease of the distal vessel
- CTO length <20 mm
- Stingray not available or financial restraints

Important to understand that use of parallel wiring and stingray are no interchangeable