

Case Presentation

An aerial photograph of a coastal city, likely Kaohsiung, Taiwan. The image shows a large harbor with several large cargo ships and smaller boats. The city skyline is visible in the background, featuring a prominent skyscraper on the left. The sky is blue with scattered white clouds. The water in the foreground is dark blue.

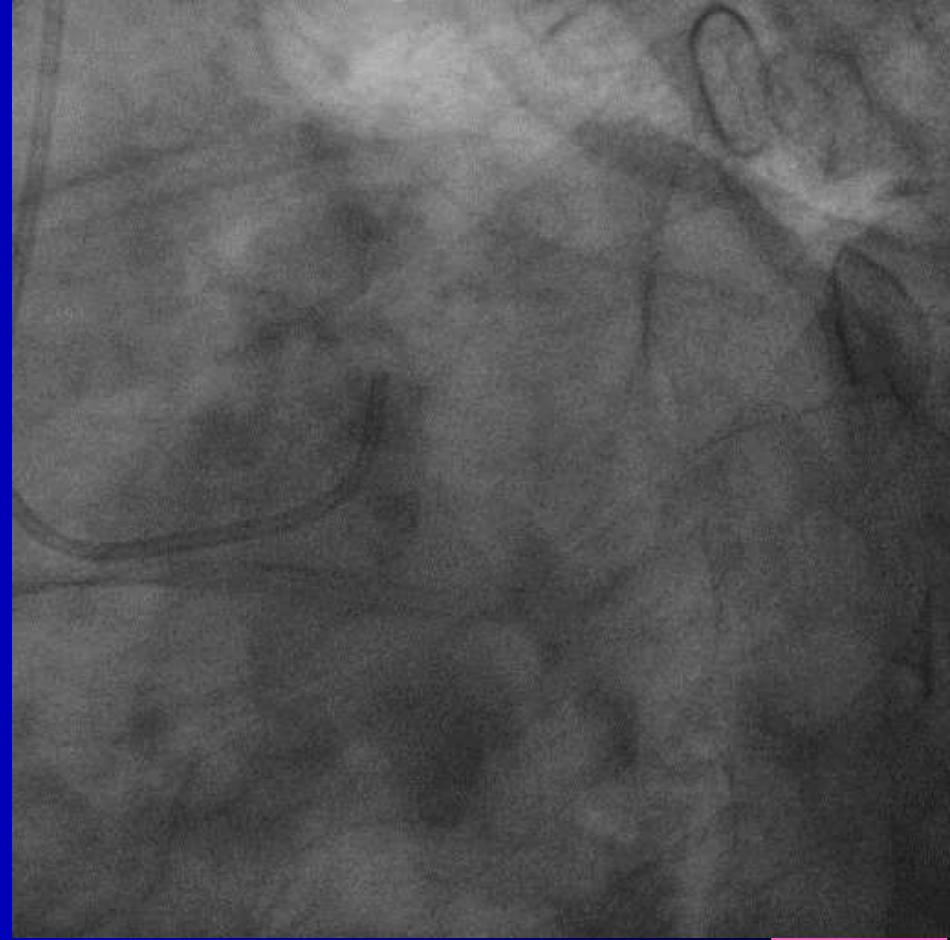
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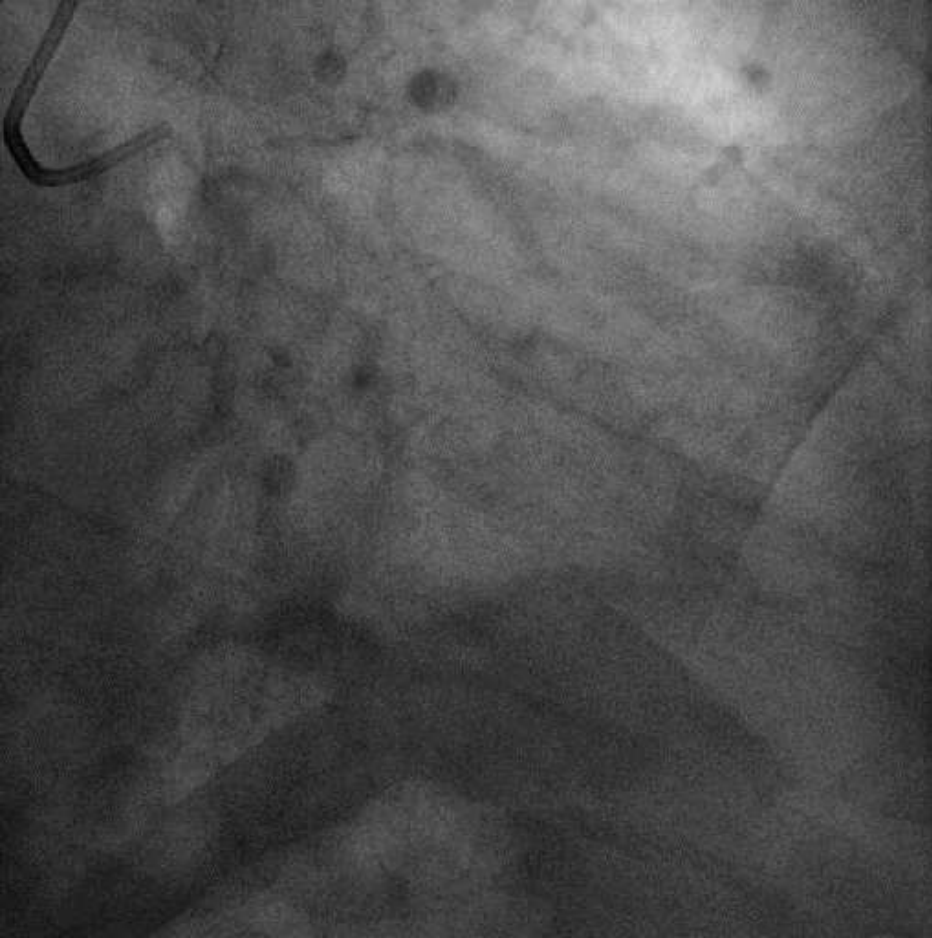
History

- 58y/o male
 - Angina for 2 months
 - Dyslipidemia (+)
 - HTN (+)
 - BUN 22 mg/dl; Cre 1.1 mg/dl
 - Denied smoking

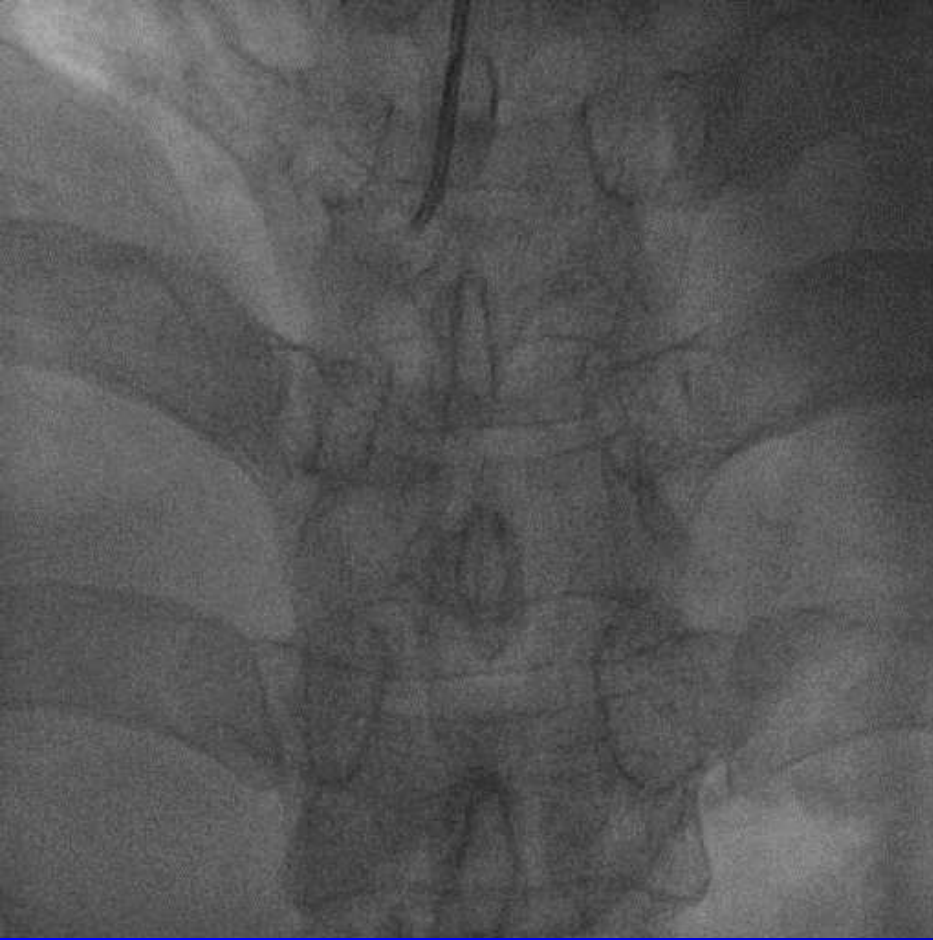
Angiography-LCA



Angiography-LCA

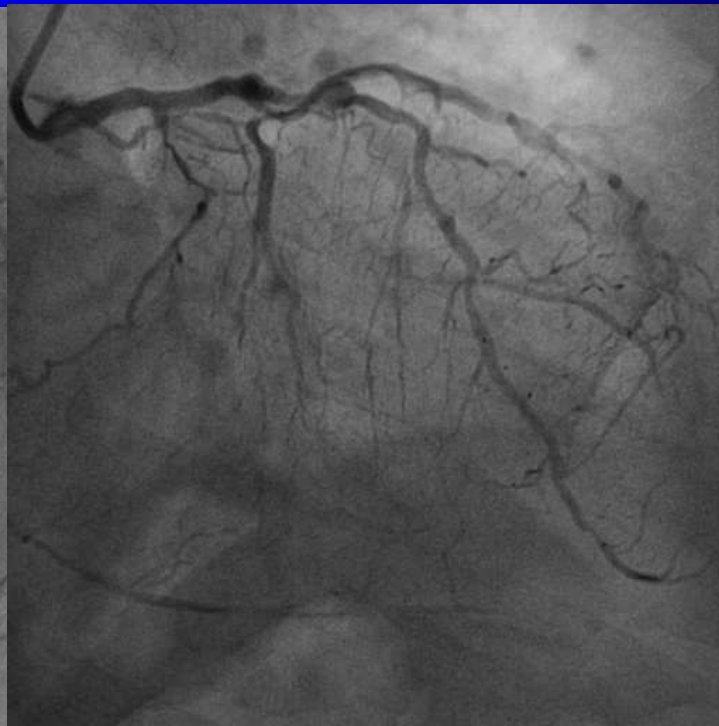
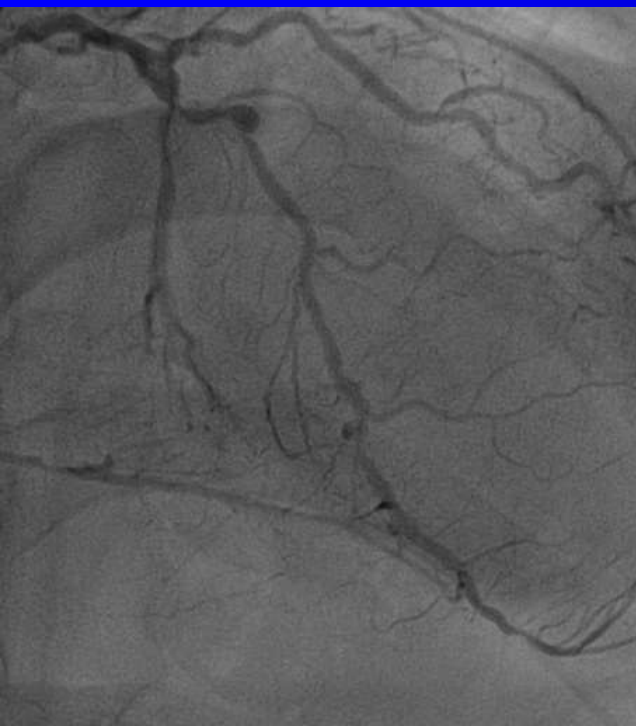


Angiography-RCA



Interpretation of Angiography

- LAD: mid aneurysm with 70% stenosis, distal 50% stenosis
- LCx: proximal total occlusion
- RCA: mid total occlusion, tortuous bridging collaterals

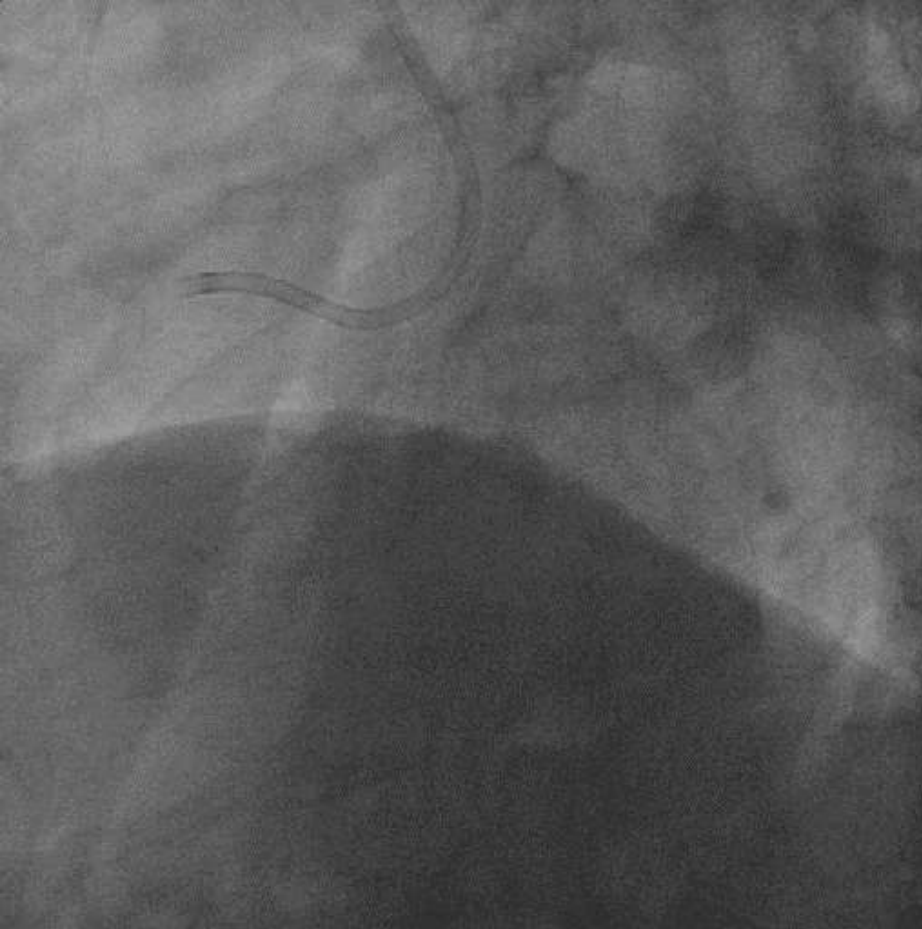


Treatment Strategy

- LAD: mid aneurysm with 70% stenosis, distal 50% stenosis
- LCx: proximal total occlusion
- RCA: mid total occlusion, tortuous bridging collaterals
- Syntax score = 29

- CABG or PCI ?
- PCI to RCA or LCA first ?
- If PCI to RCA occlusion, antegrade or retrograde ? Radial or femoral approach ?

RCA Intervention (I)



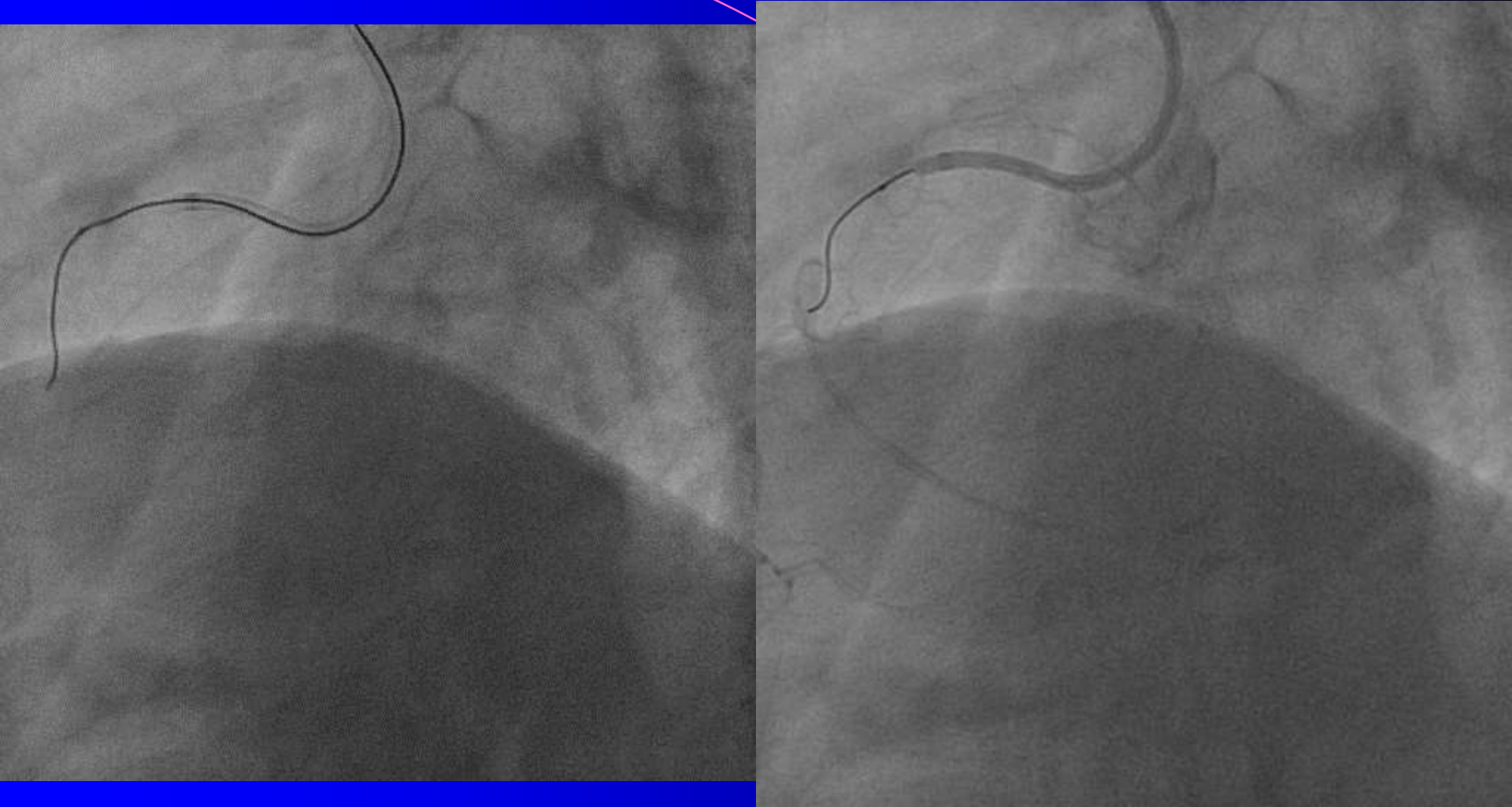
RCA total occlusion, with a large bridging collateral branch

RCA Intervention (II)



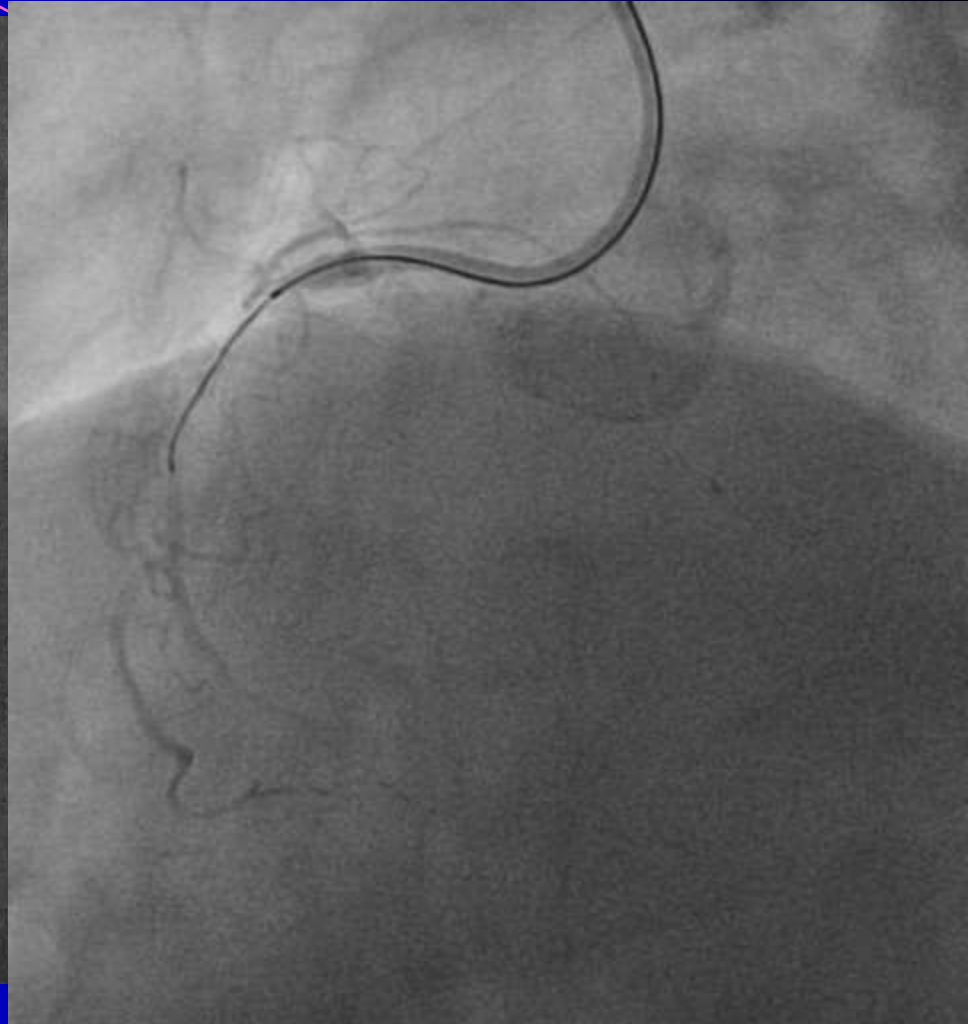
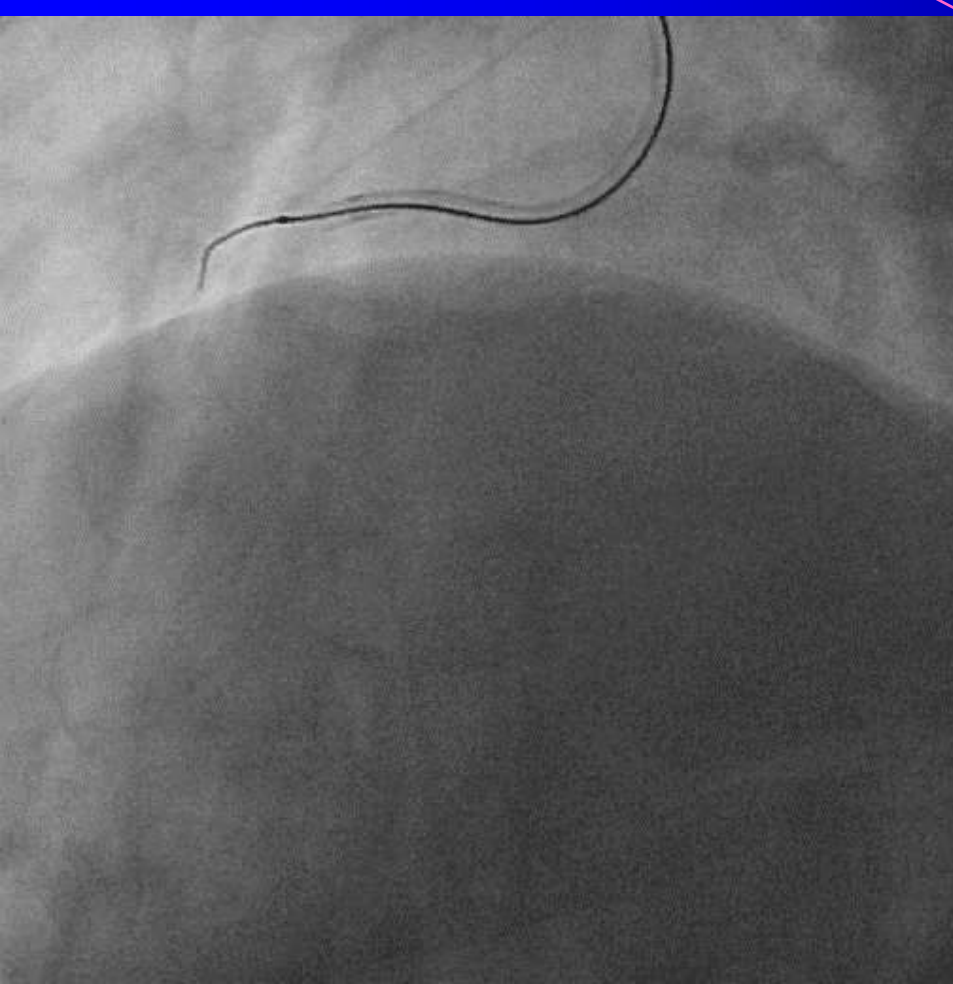
Could we attack RCA CTO from the bridging collateral branch directly ?

RCA Intervention (III)



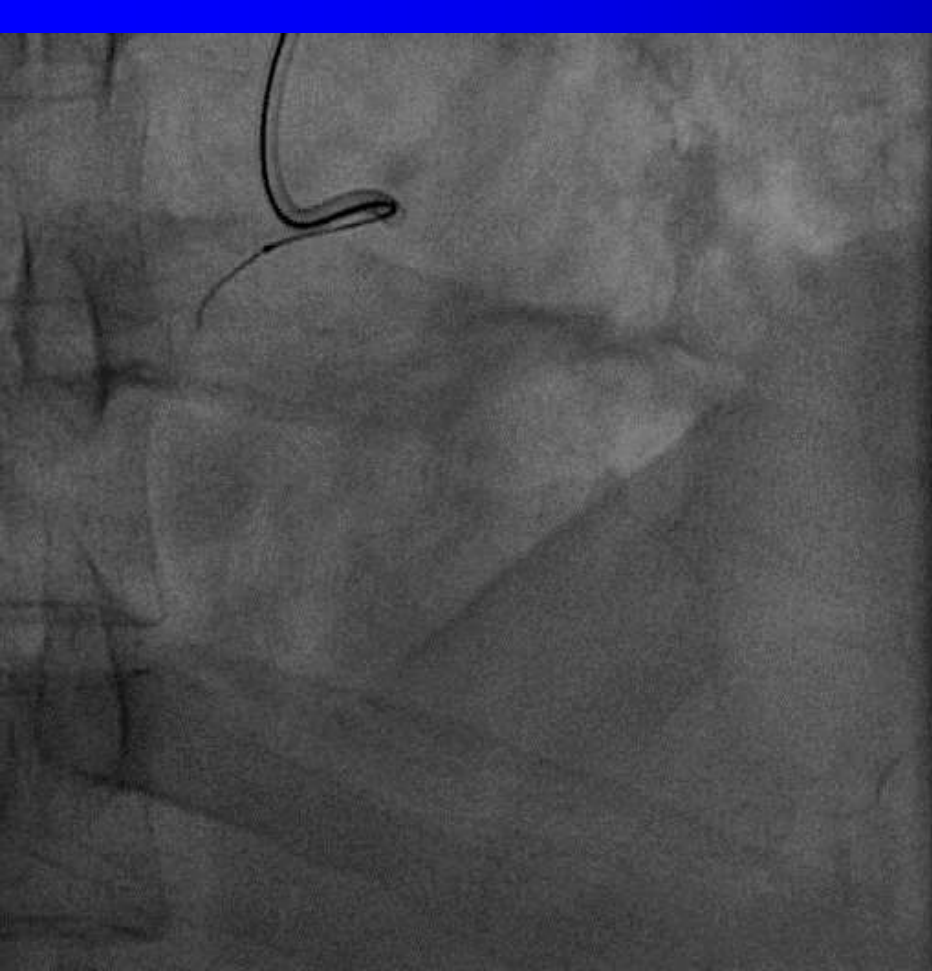
The guidewires went into false lumen again and again
(GW: Runthrough, Fielder FC, Ultimate bros 3)

RCA Intervention (IV)



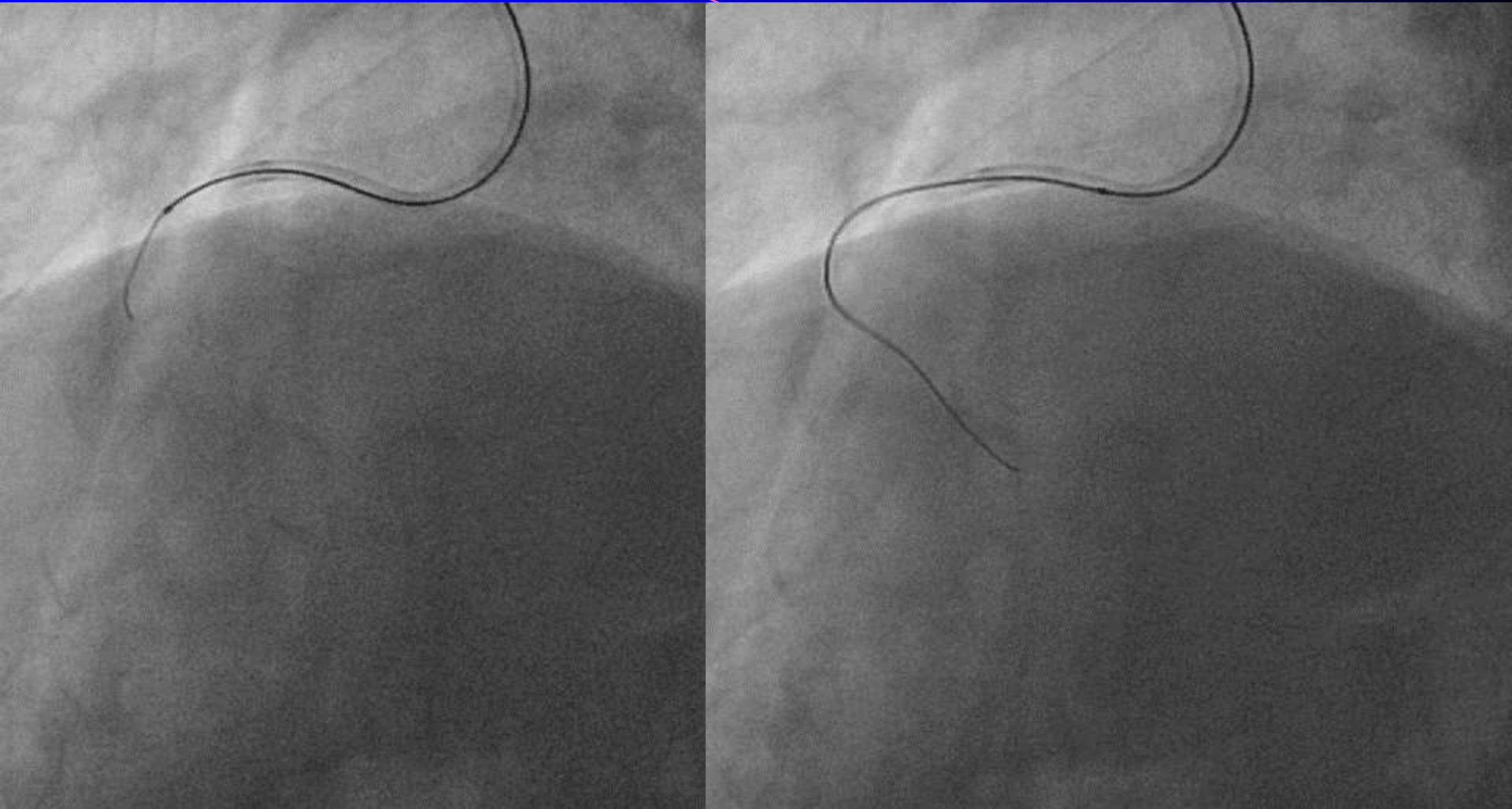
We changed to stiff guidewire and seems to get into true lumen (GW: Conquest pro, Asahi Intecc).

RCA Intervention (V)



Actually, the guidewire still 2mm away from distal true lumen.

RCA Intervention (VI)



False lumen was gradually enlarged during antegrade guidewire attempts.

Failed PCI to RCA



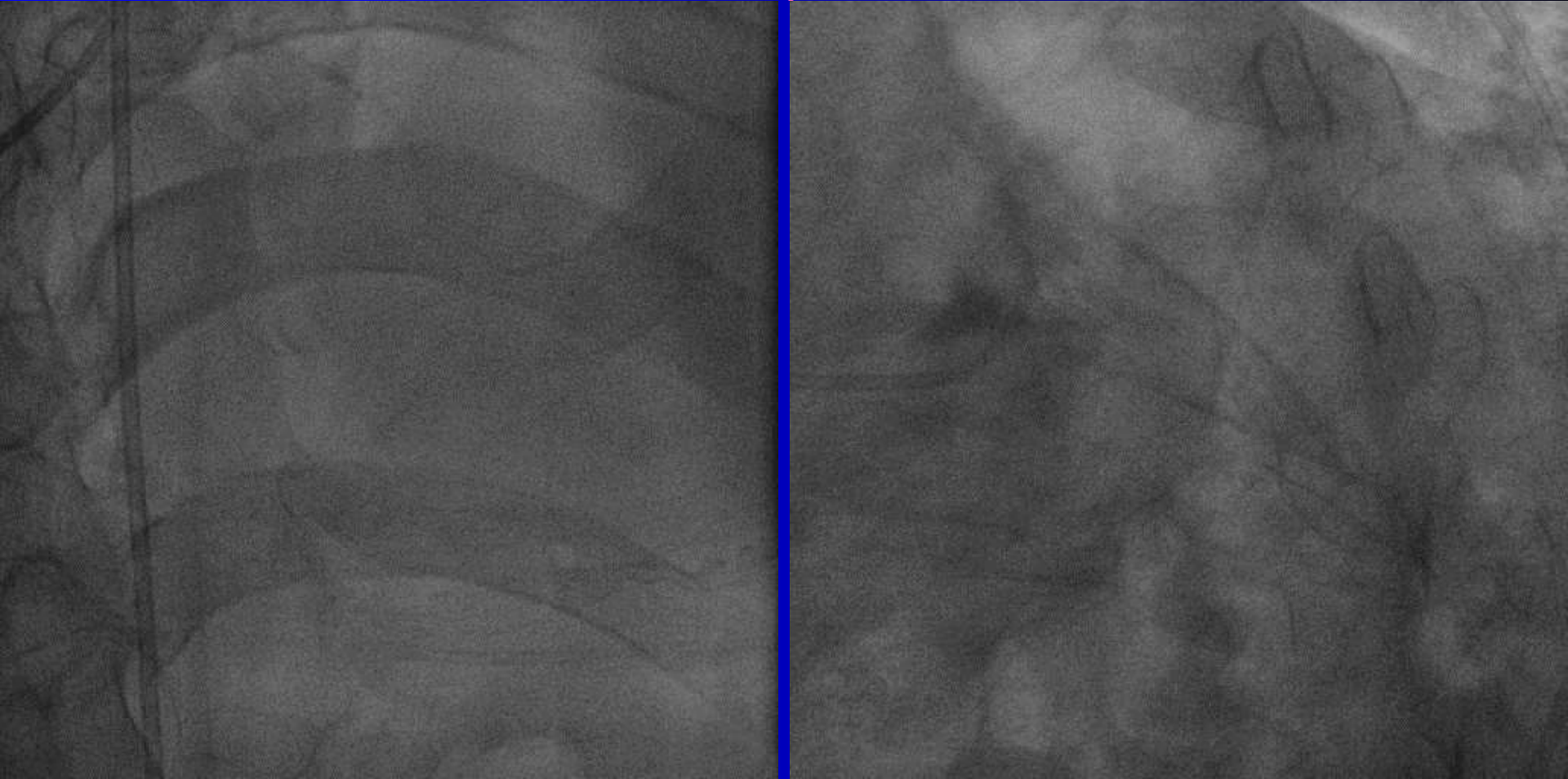
A large false lumen was created with loss of distal RCA flow.
Fortunately, the patient was symptoms free.

Follow-up after 2 Days

- LAD: mid aneurysm with 70% stenosis, distal 50% stenosis
- LCx: proximal total occlusion
- RCA: mid total occlusion, after failed PCI
- CABG or PCI ?

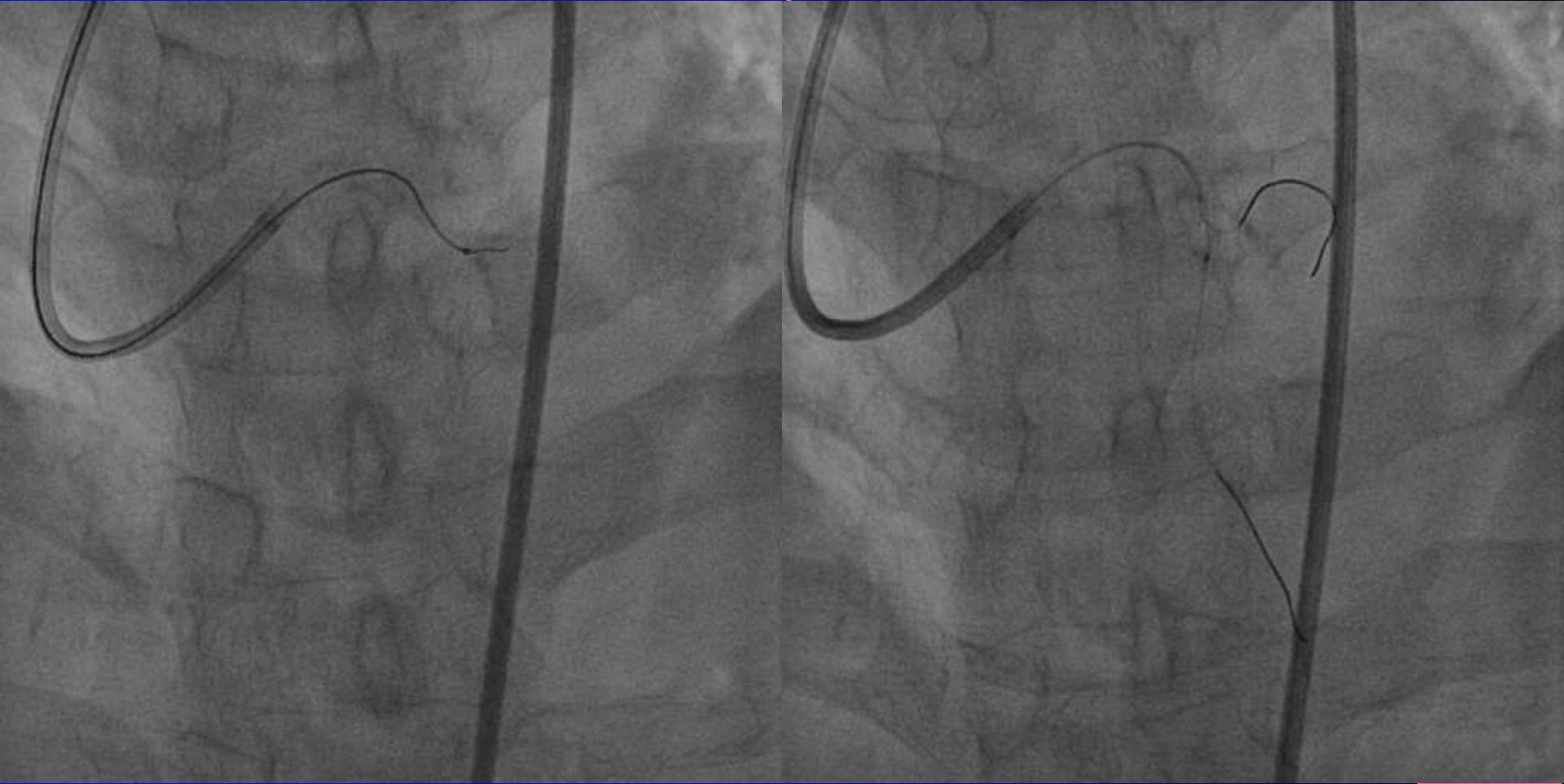


LAD Intervention (I)



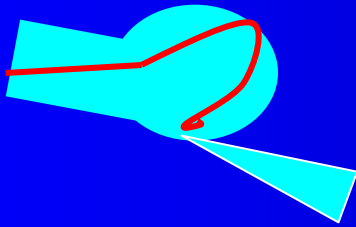
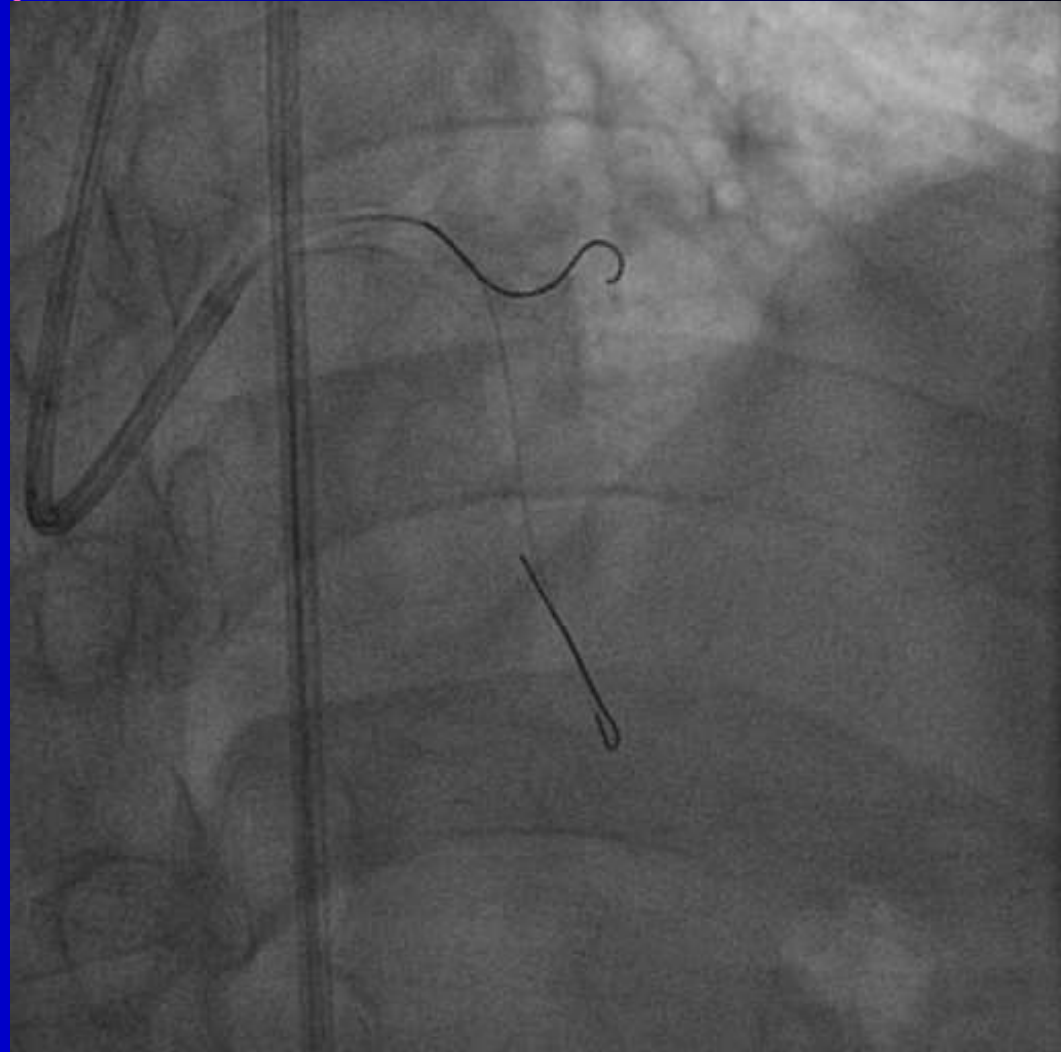
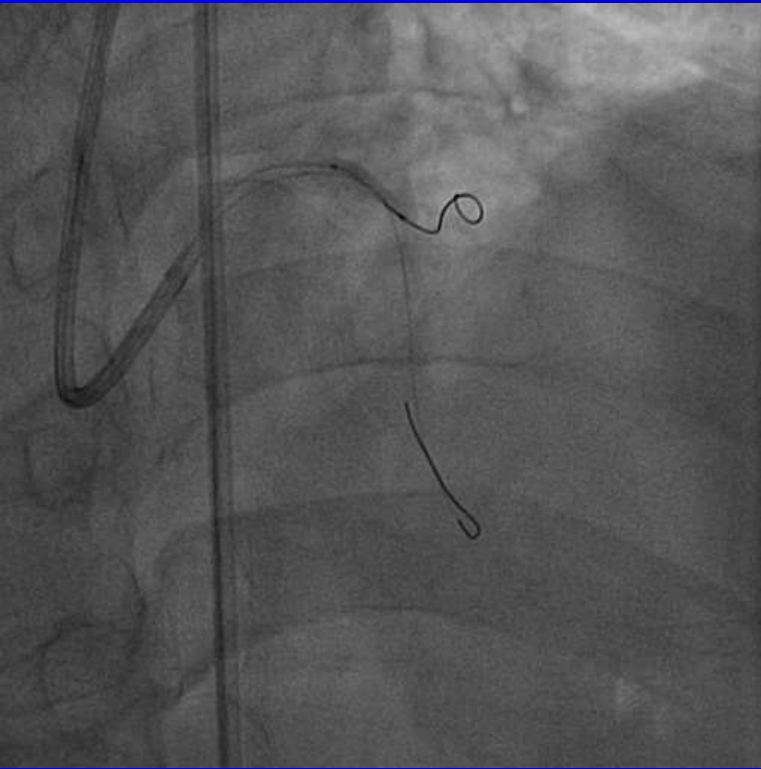
We decided to do LAD PCI only.
LCx CTO was left to medical treatment.

LAD Intervention (II)



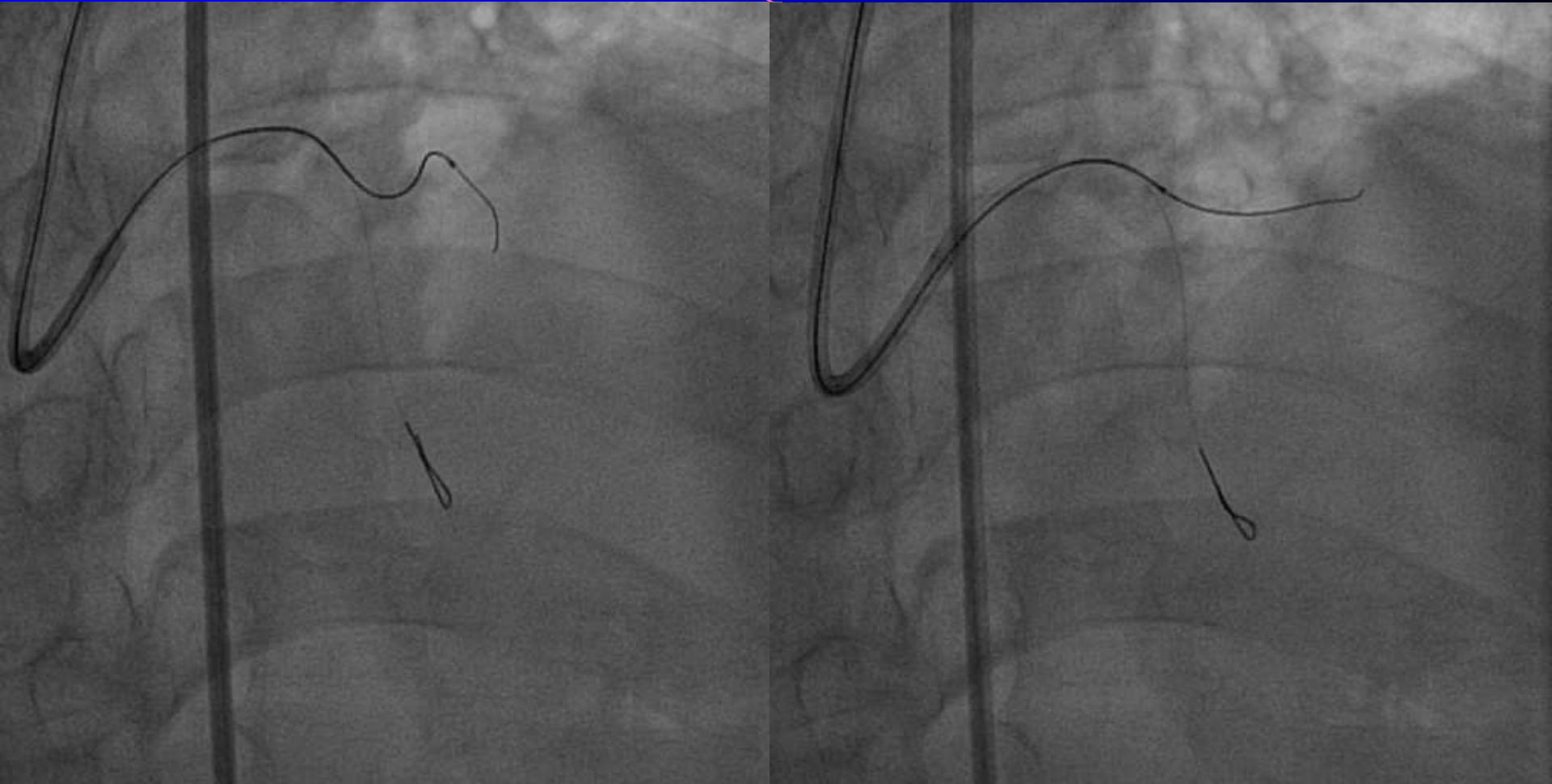
Difficulty in wiring LAD due to aneurysm formation with critical stenosis.

LAD Intervention (III)



After balloon dilatation to proximal LAD, still difficult in wiring LAD due to aneurysm formation with angulation.

LAD Intervention (IV)



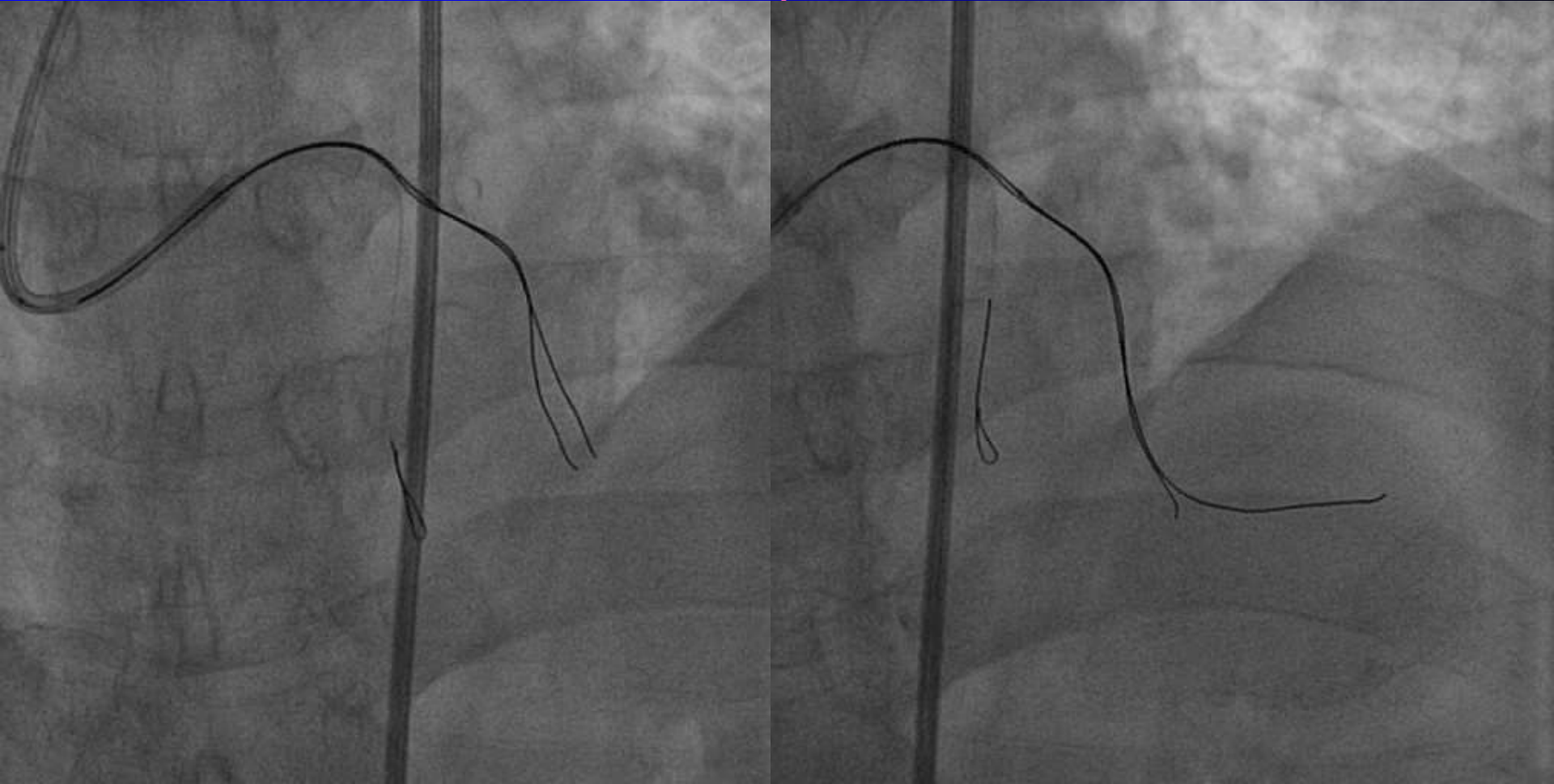
We tried to penetrate through false lumen, but still in vain.

LAD Intervention (V)



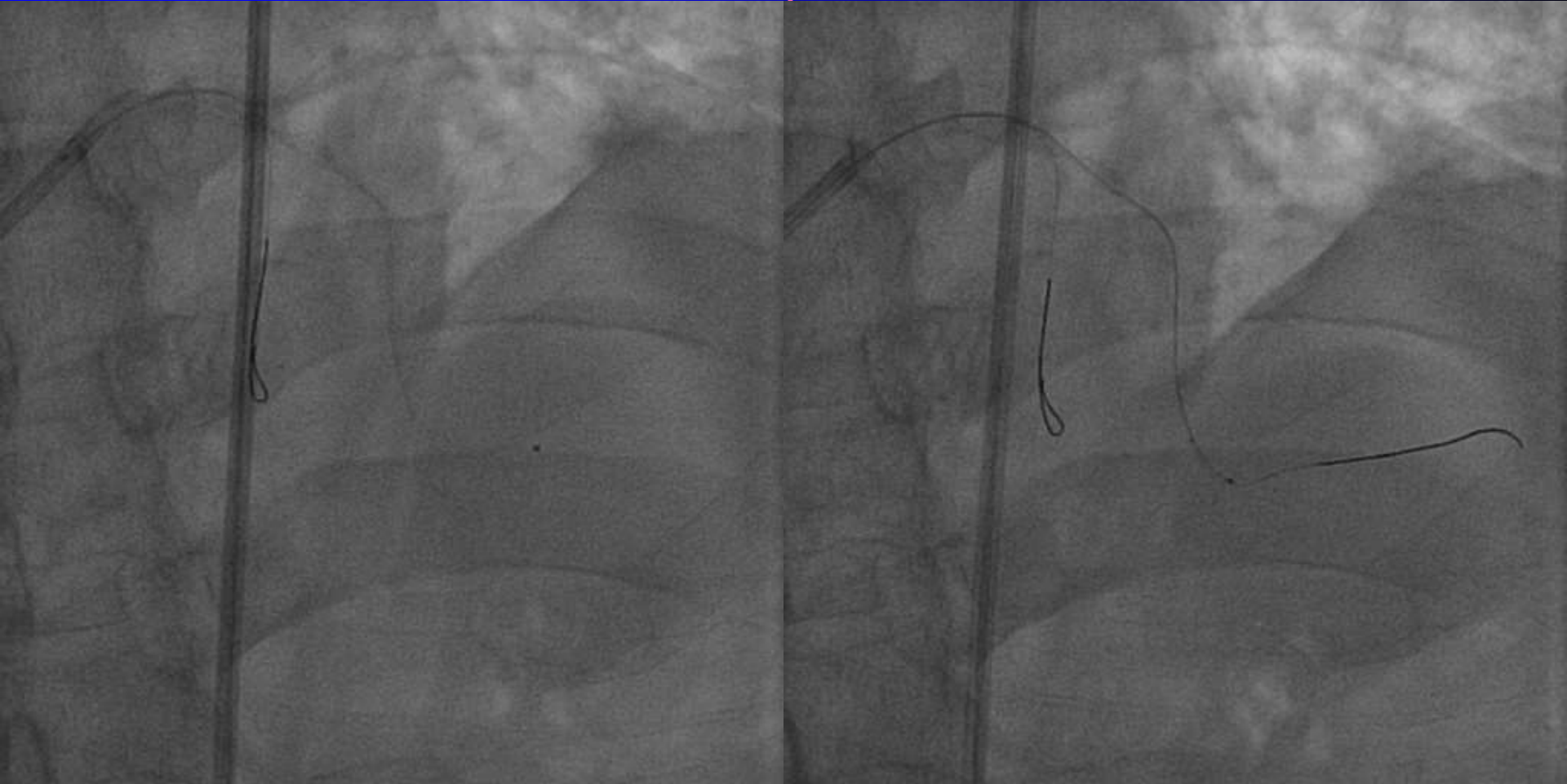
Frontal view looks good, but still in false lumen.

LAD Intervention (VI)



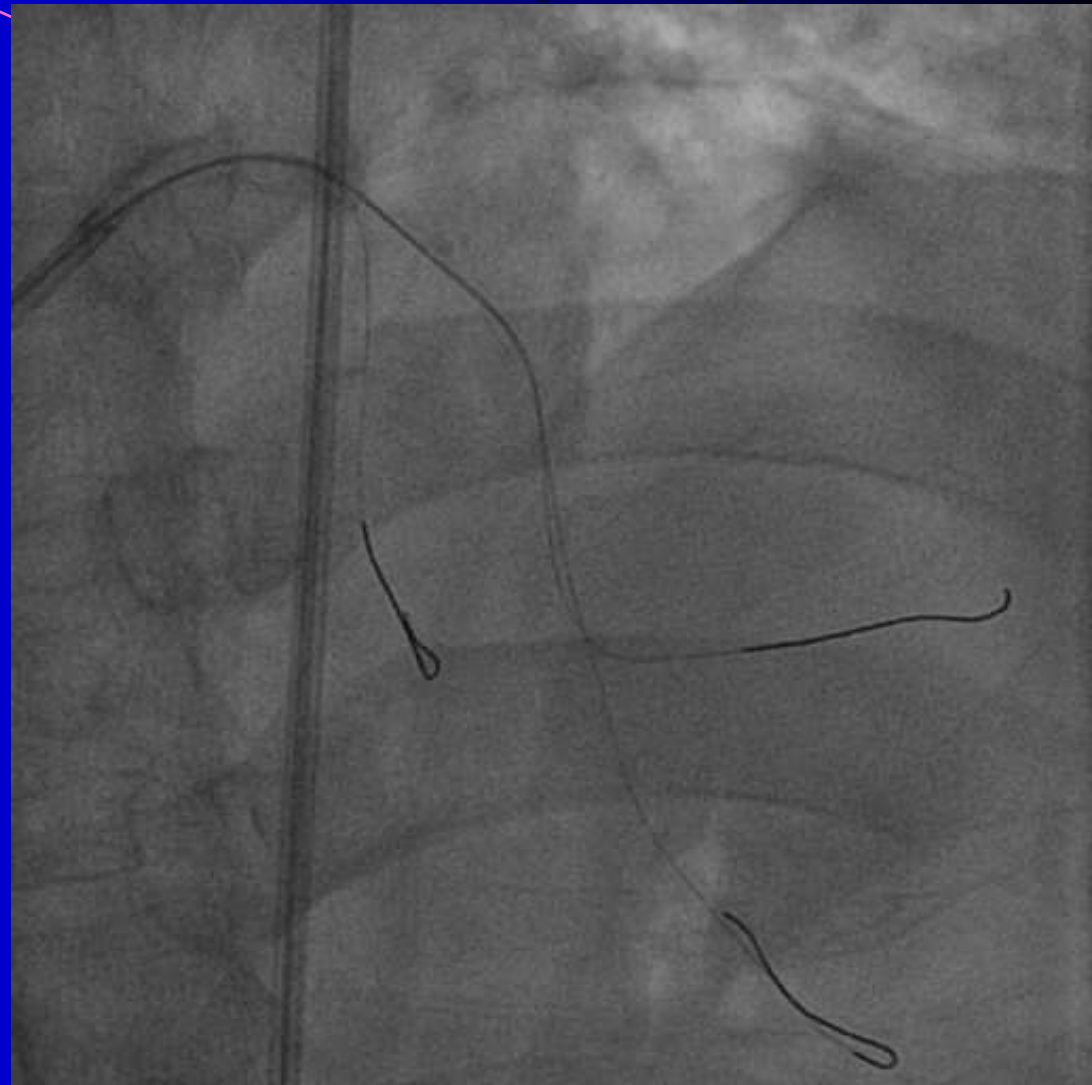
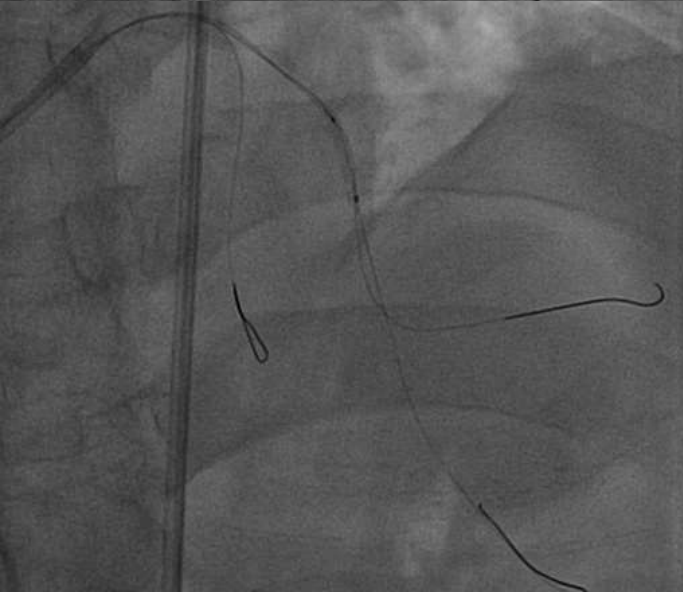
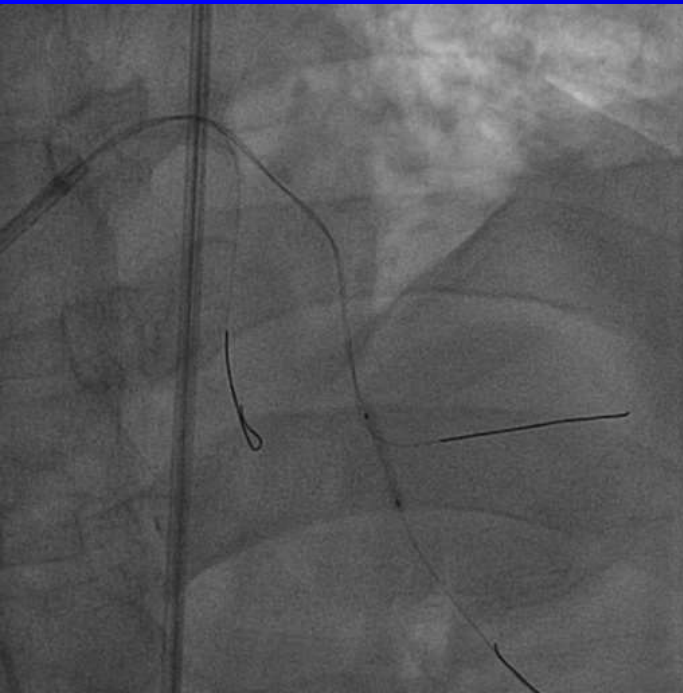
Buddy wire technique with Fielder XT and Conquest pro guidewires (Asahi Intecc).

LAD Intervention (VII)

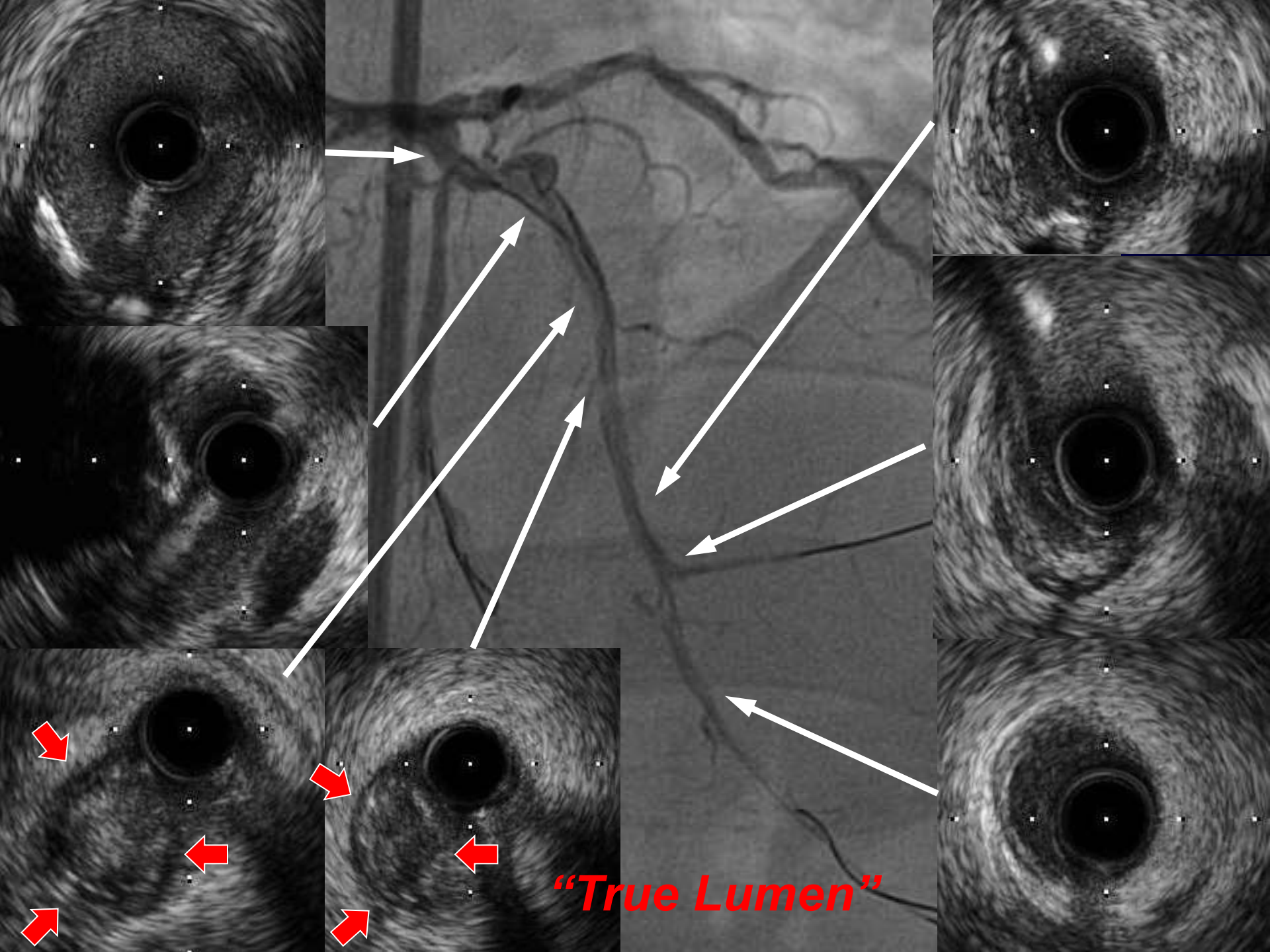


Supporting catheter with Finecross (Terumo) and Crusade microcatheter (Asahi Intecc).

LAD Intervention (VIII)

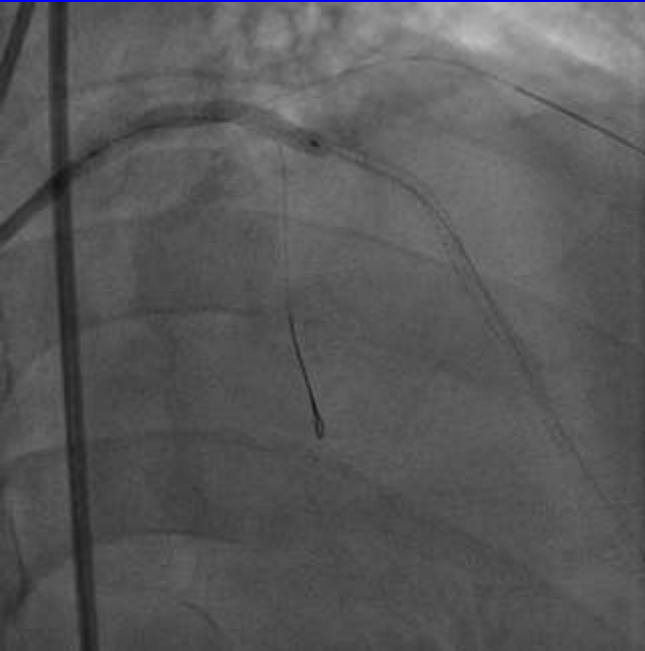


After 2.5x15mm balloon dilatation.

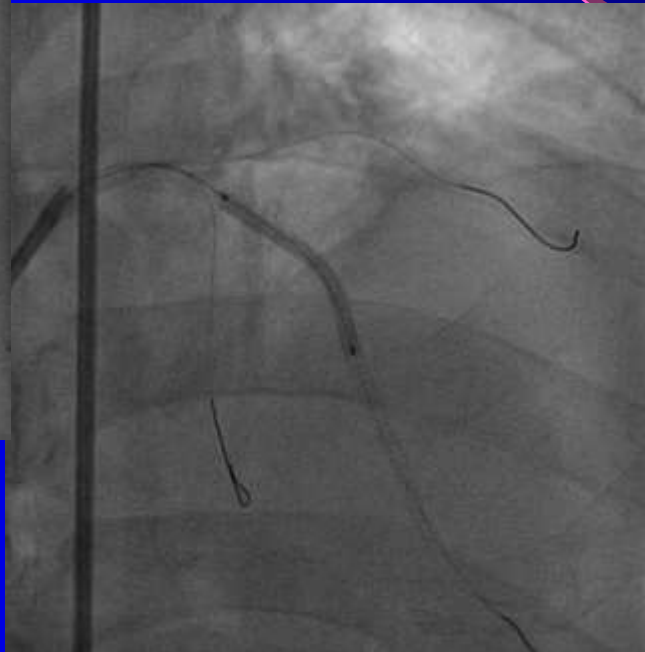


"True Lumen"

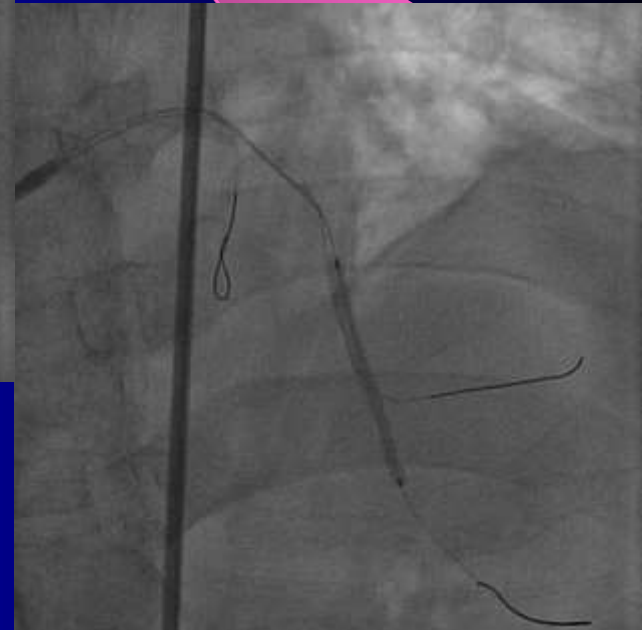
LAD Intervention (IX)



3.5X38mm Stent

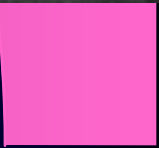


2.75X38mm Stent



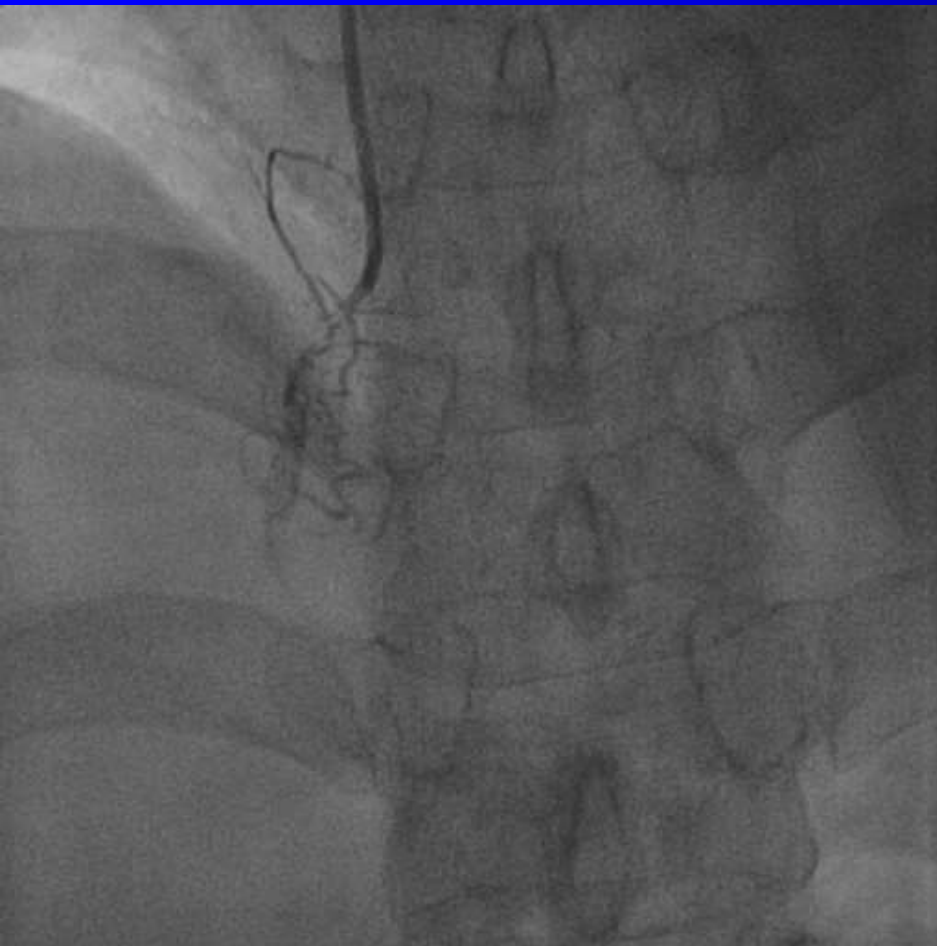
2.5X38mm Stent

Final LAD



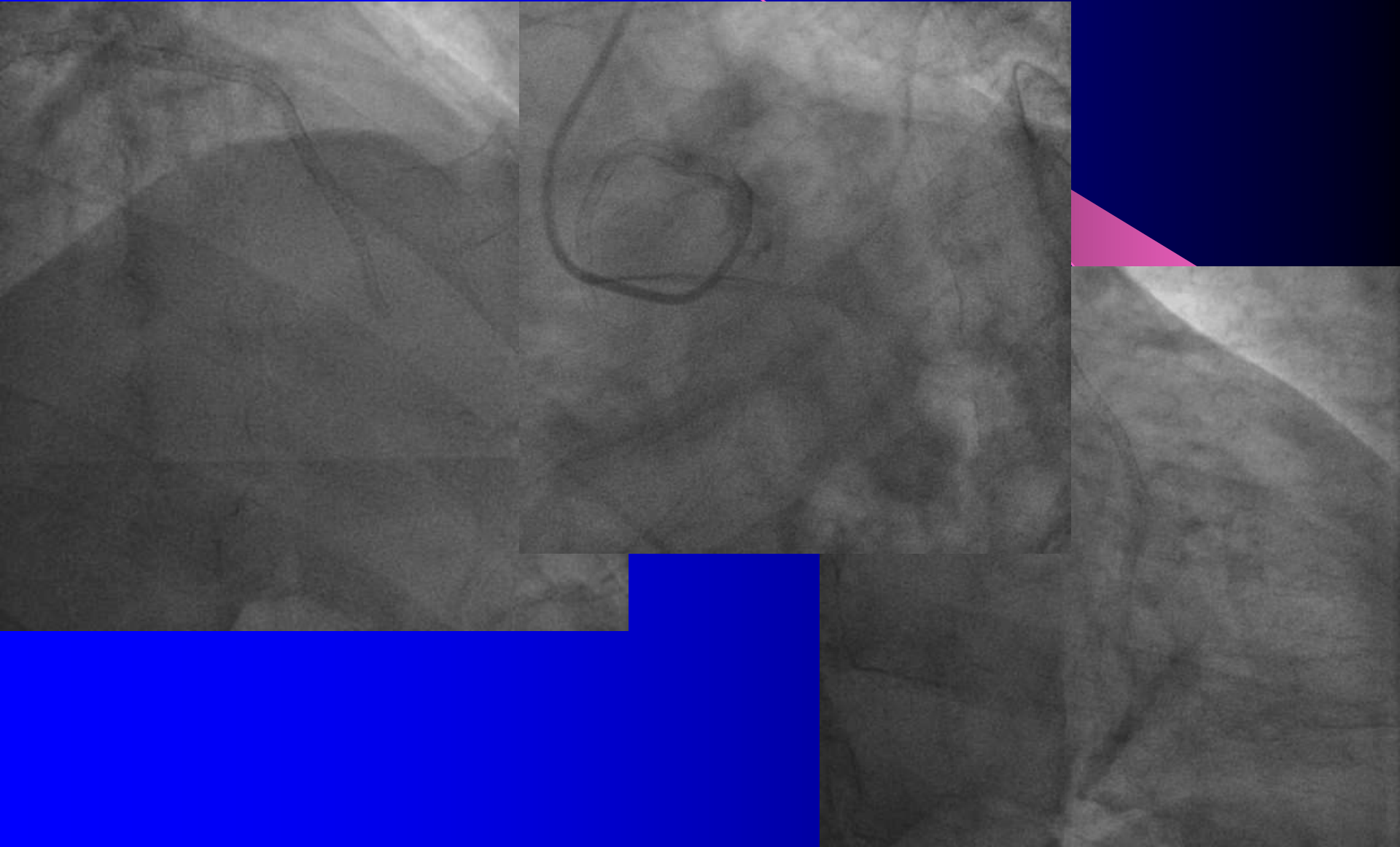
Follow-up after 1 Month

- The patient was symptoms and complication free after the PCI
- But chest pain recurred after 1 month

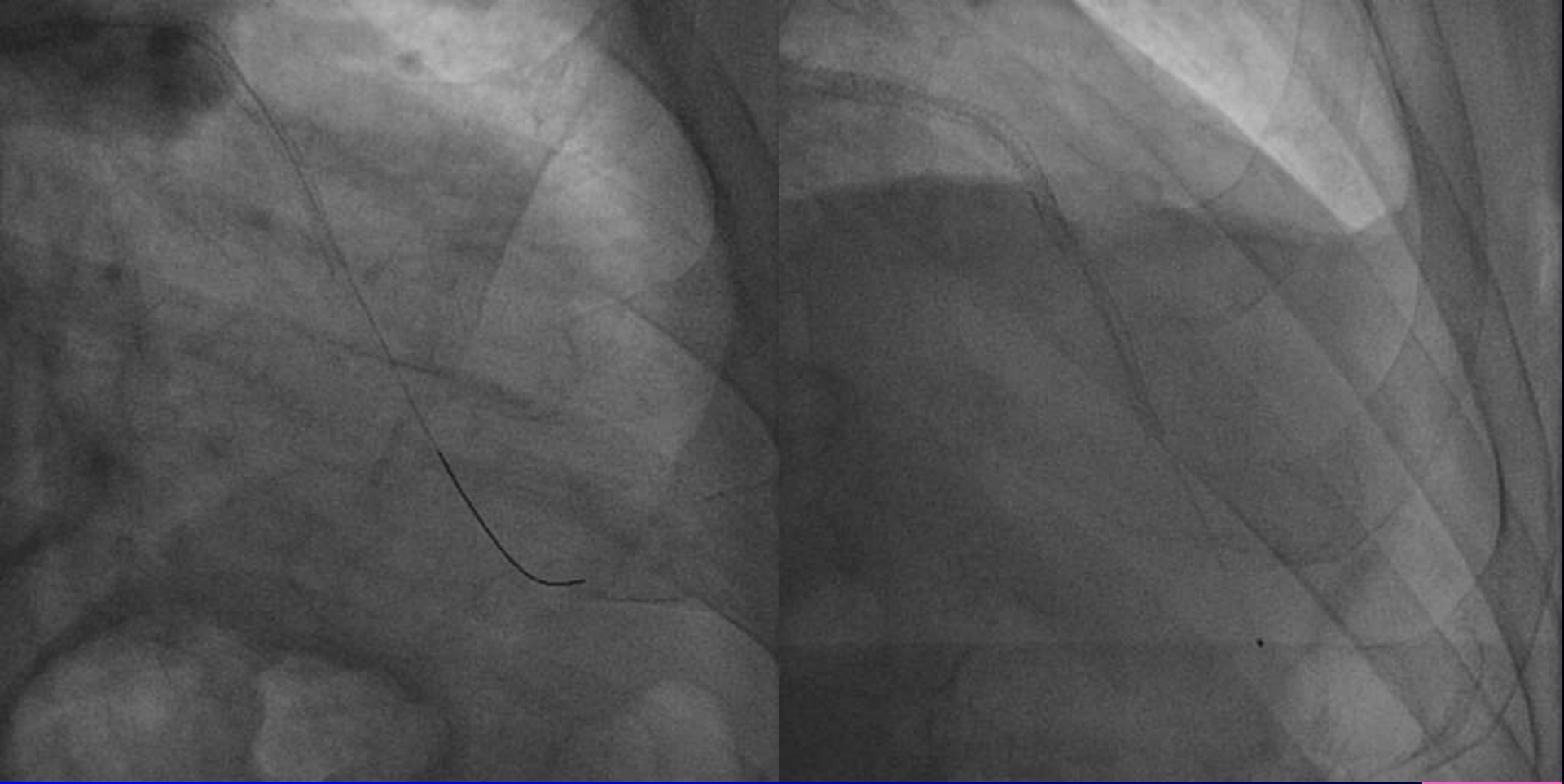


Follow-up after 1 Month

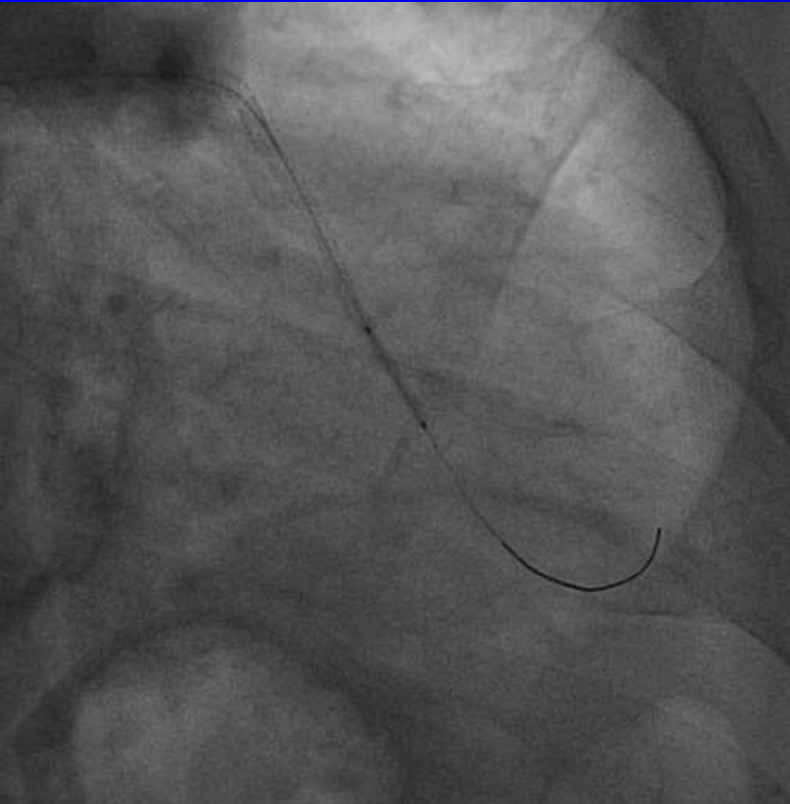
- Should we treat LAD, LCx or RCA ?



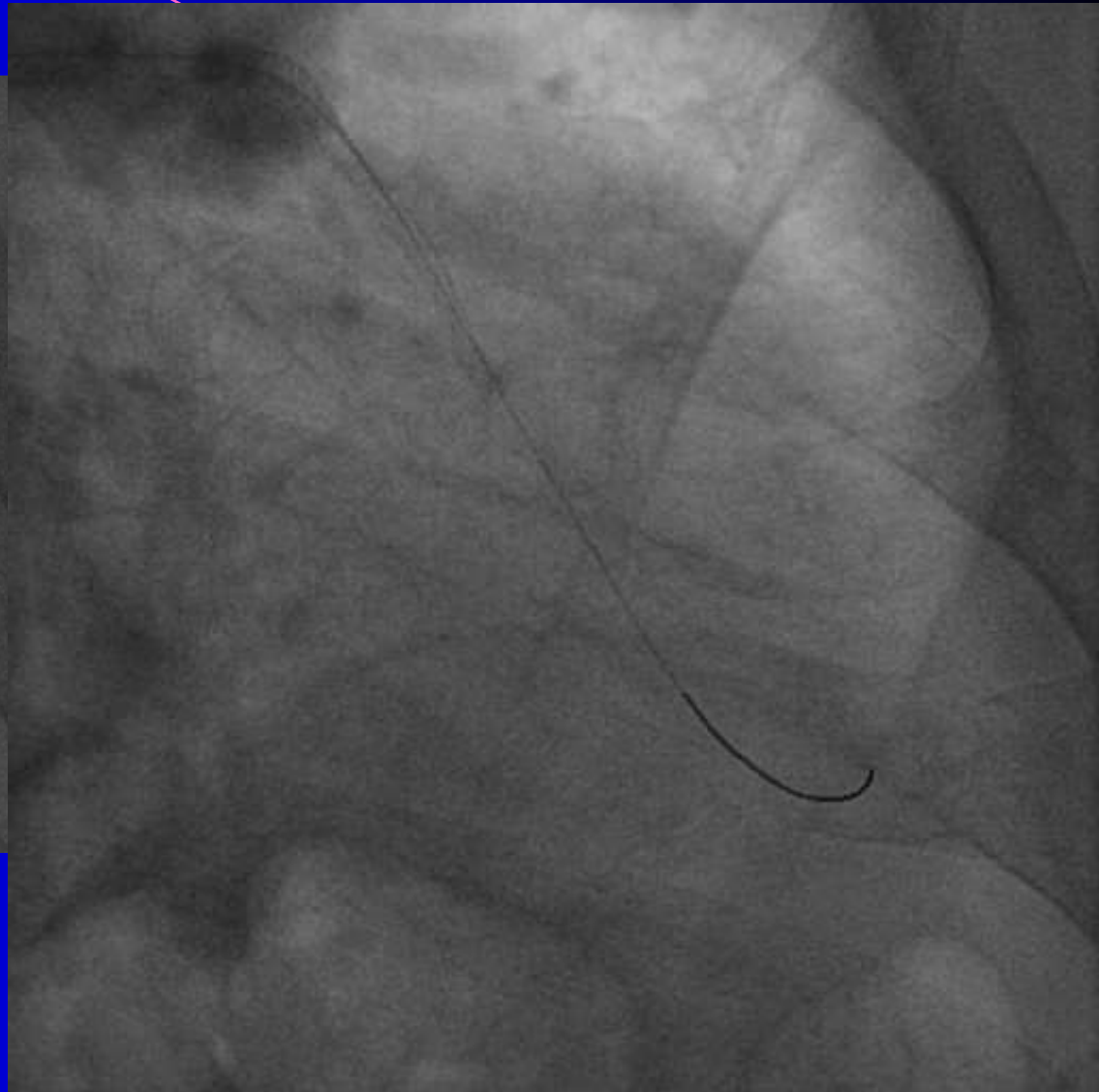
Wiring LAD



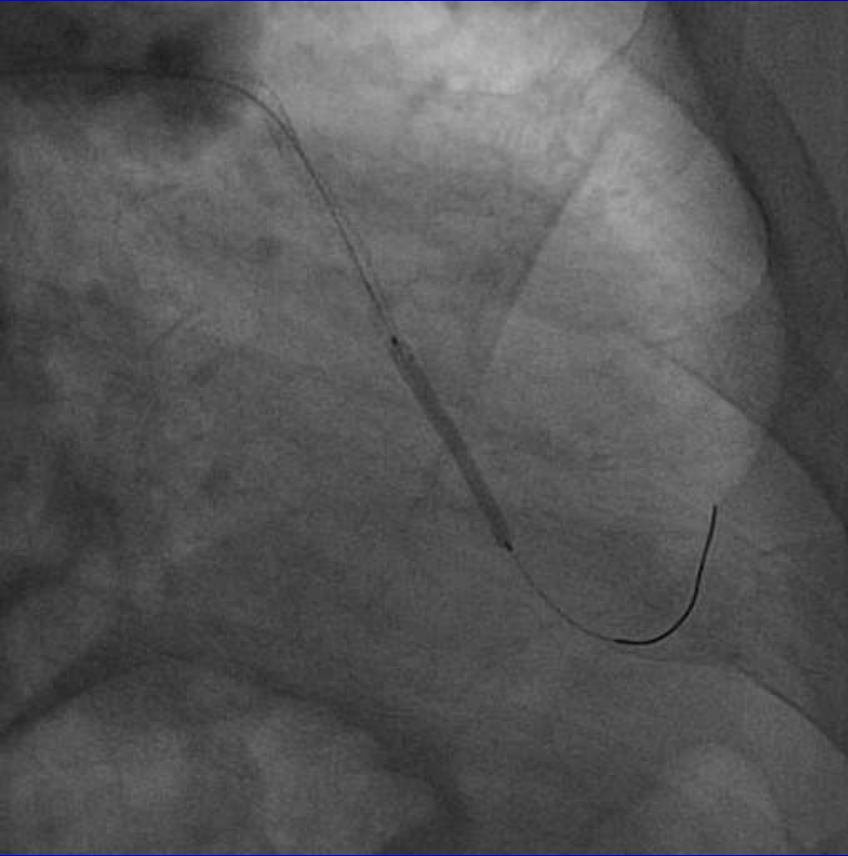
Balloon to LAD



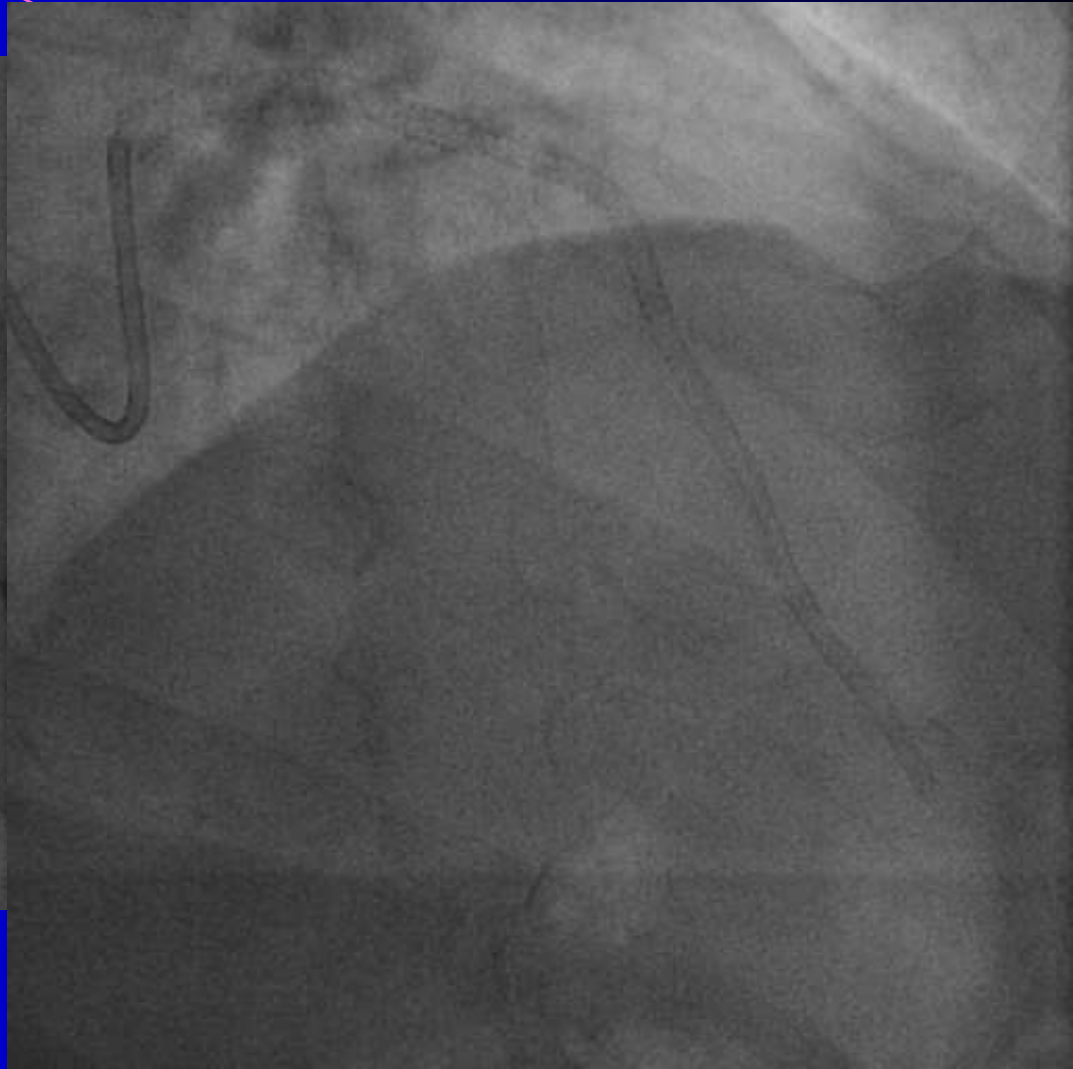
2.0x15mm Balloon



Stenting to LAD



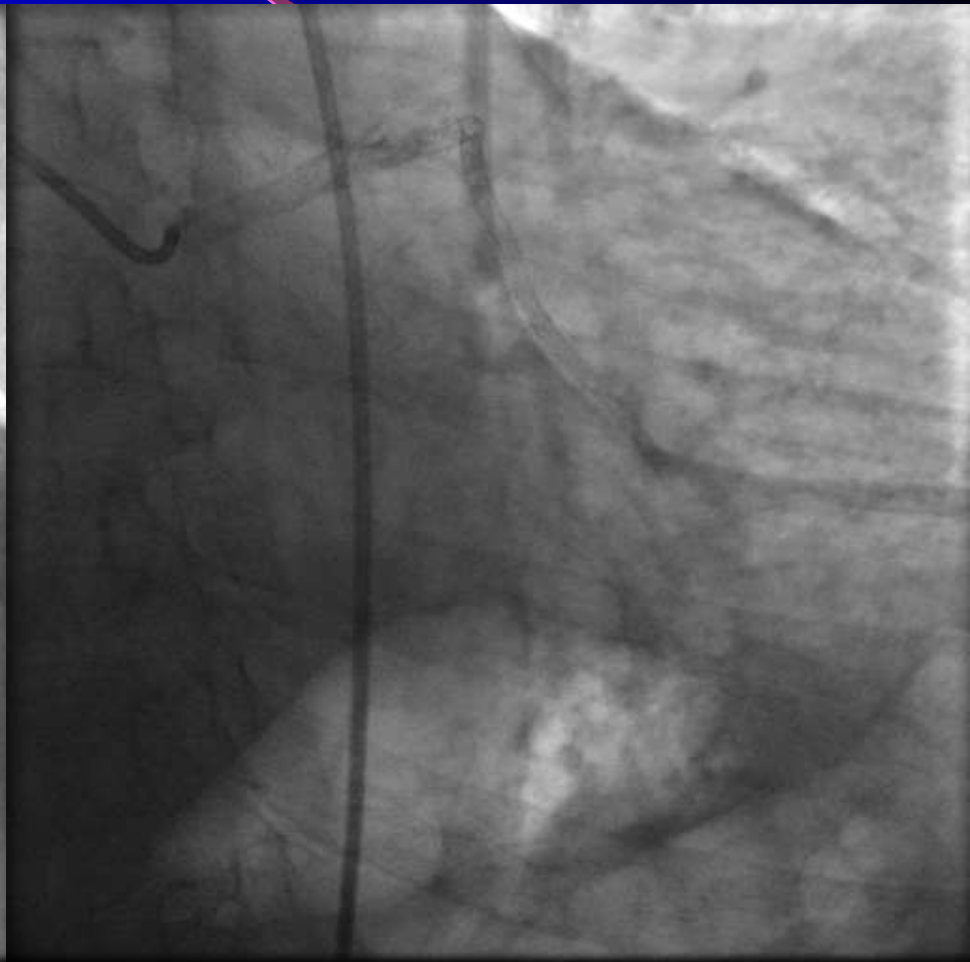
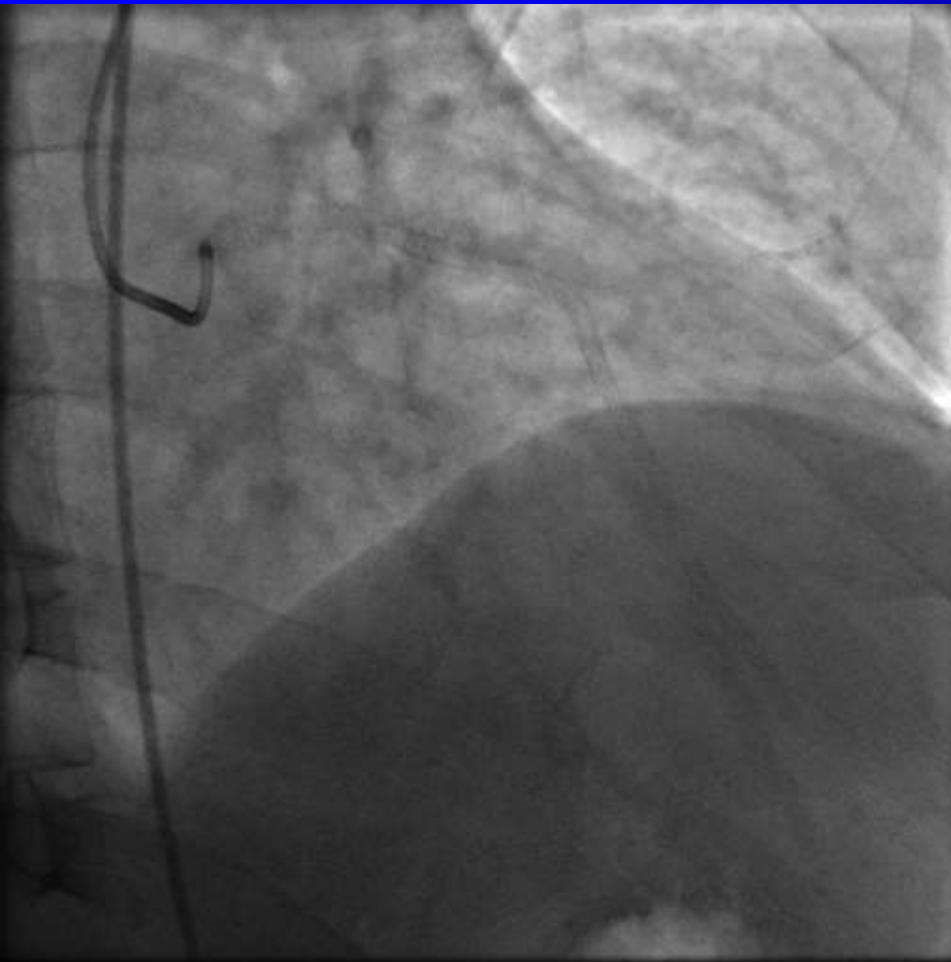
2.25x26mm Stent



Final LAD

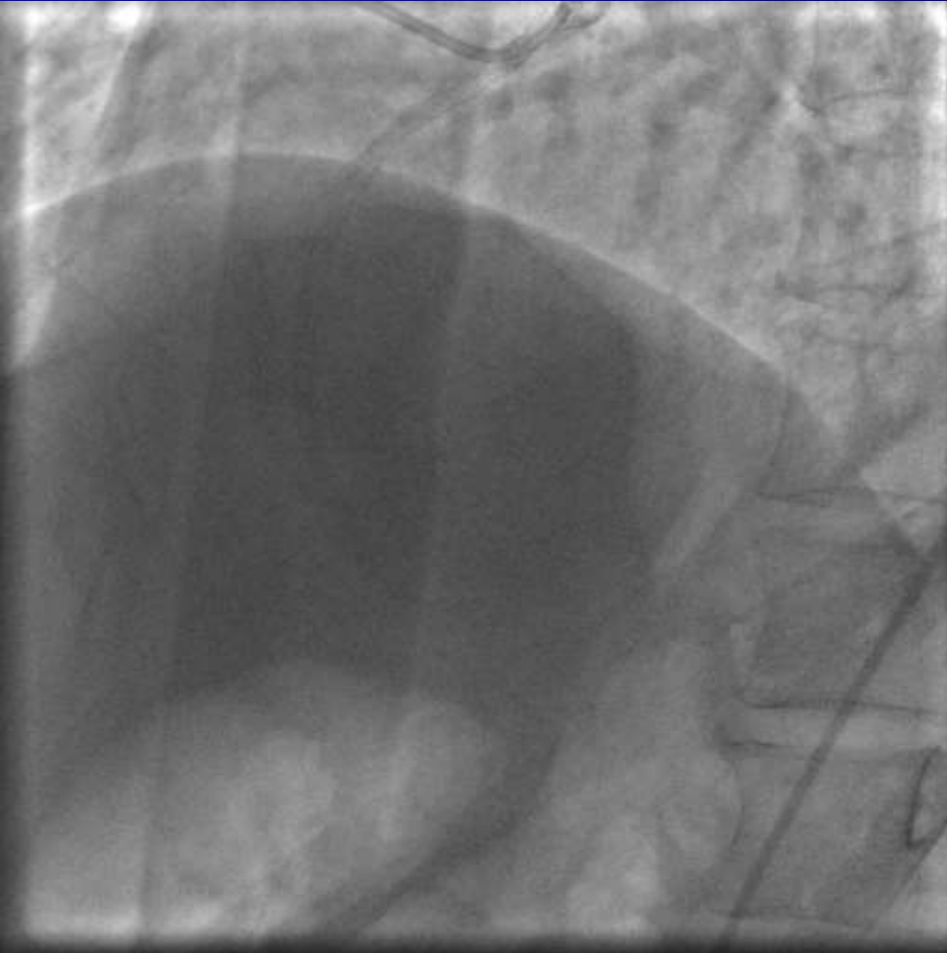
PCI to RCA for 2nd Trial

- The patient was symptoms and complication free
- Arrange PCI to RCA CTO 2 months later

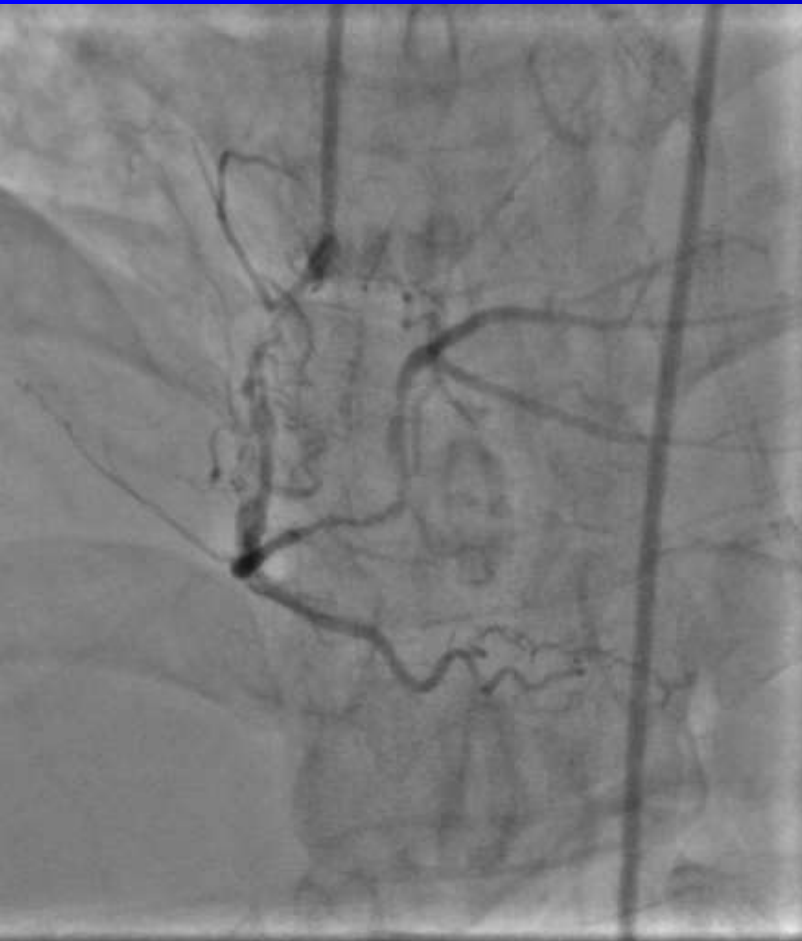


PCI to RCA for 2nd Trial

- Antegrade or retrograde for RCA CTO ?

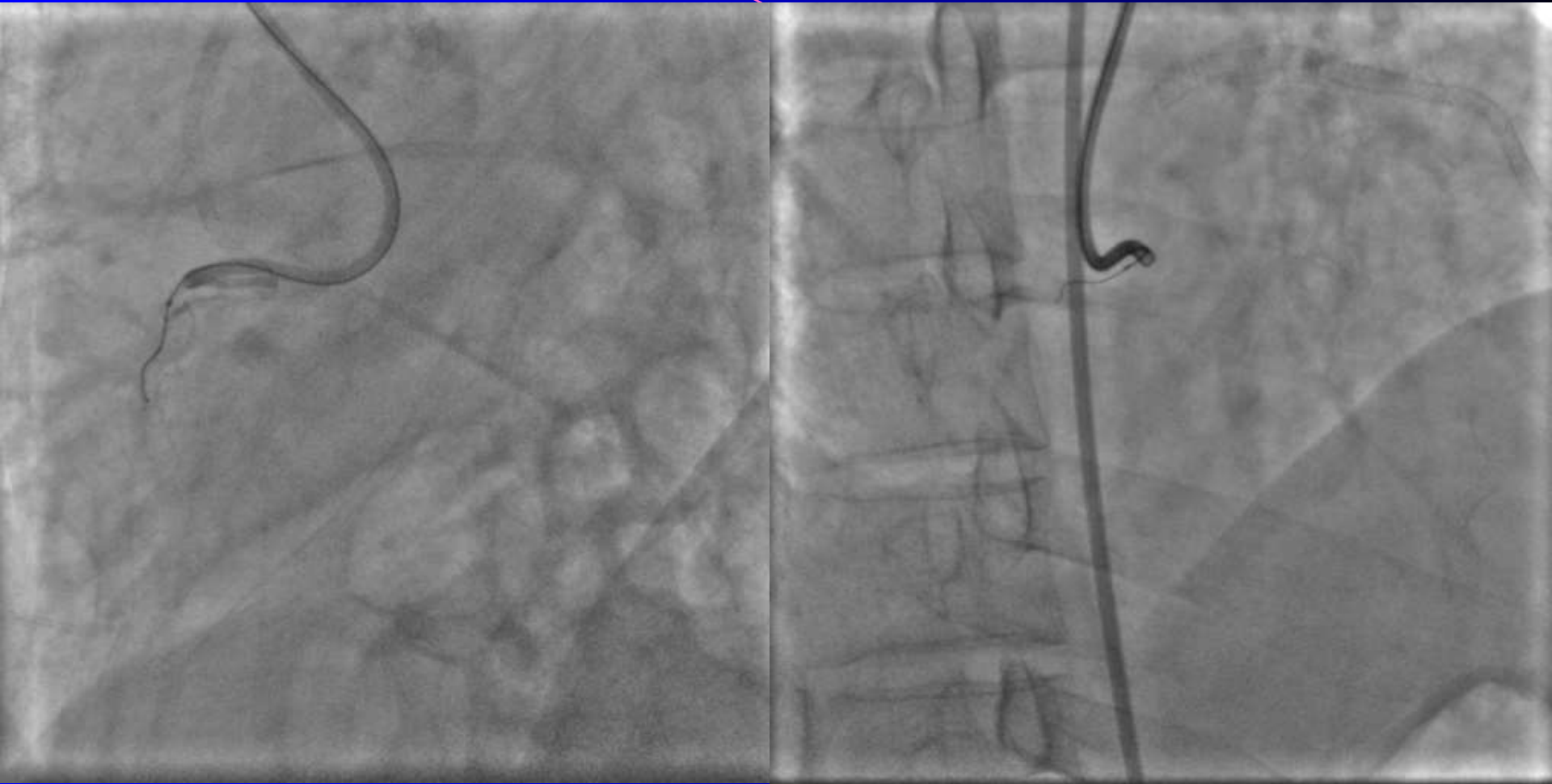


Antegrade Attempt Again



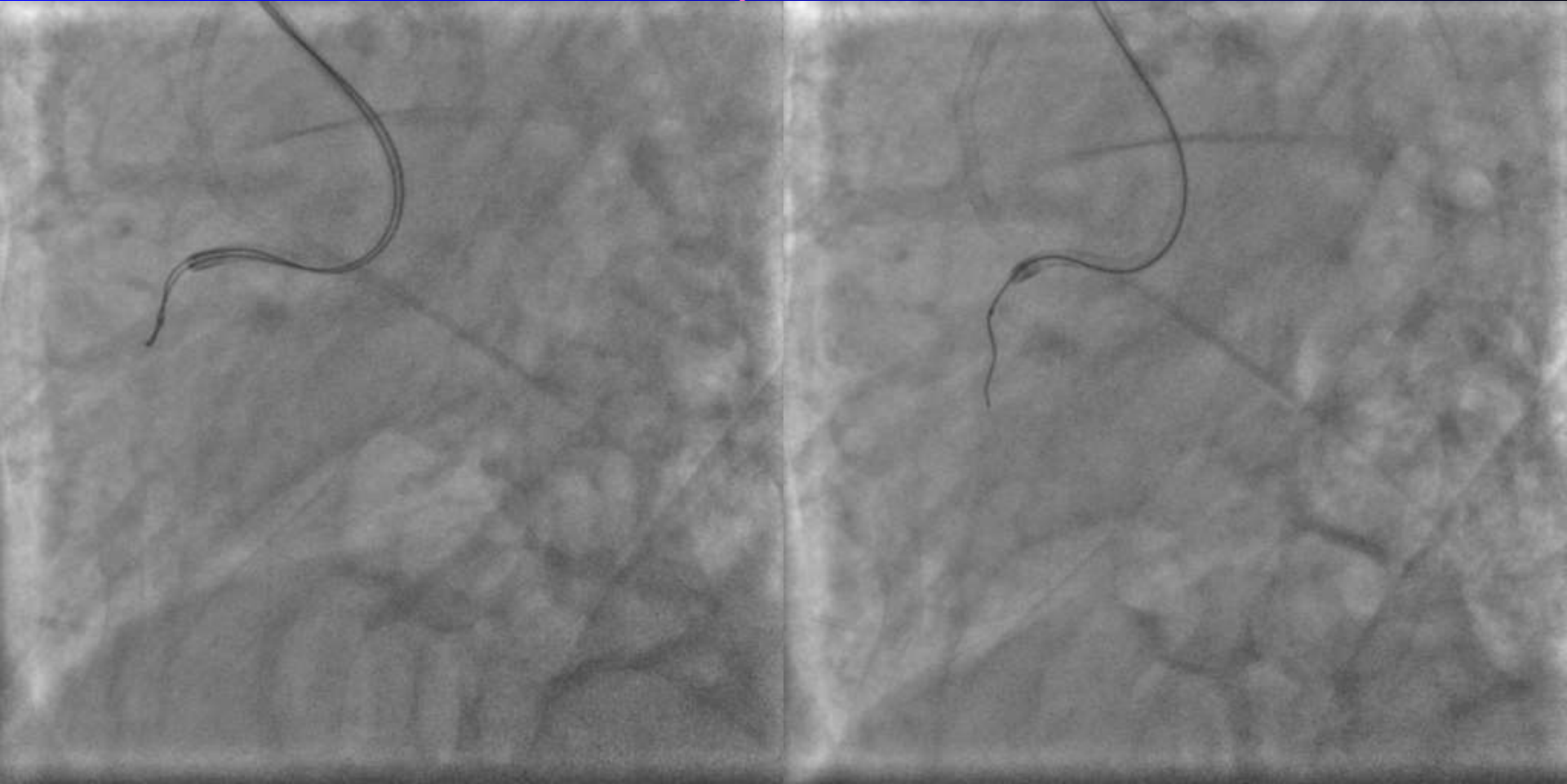
*New Gaia guidewires
available !!*

Antegrade Intervention with 7F AL-1



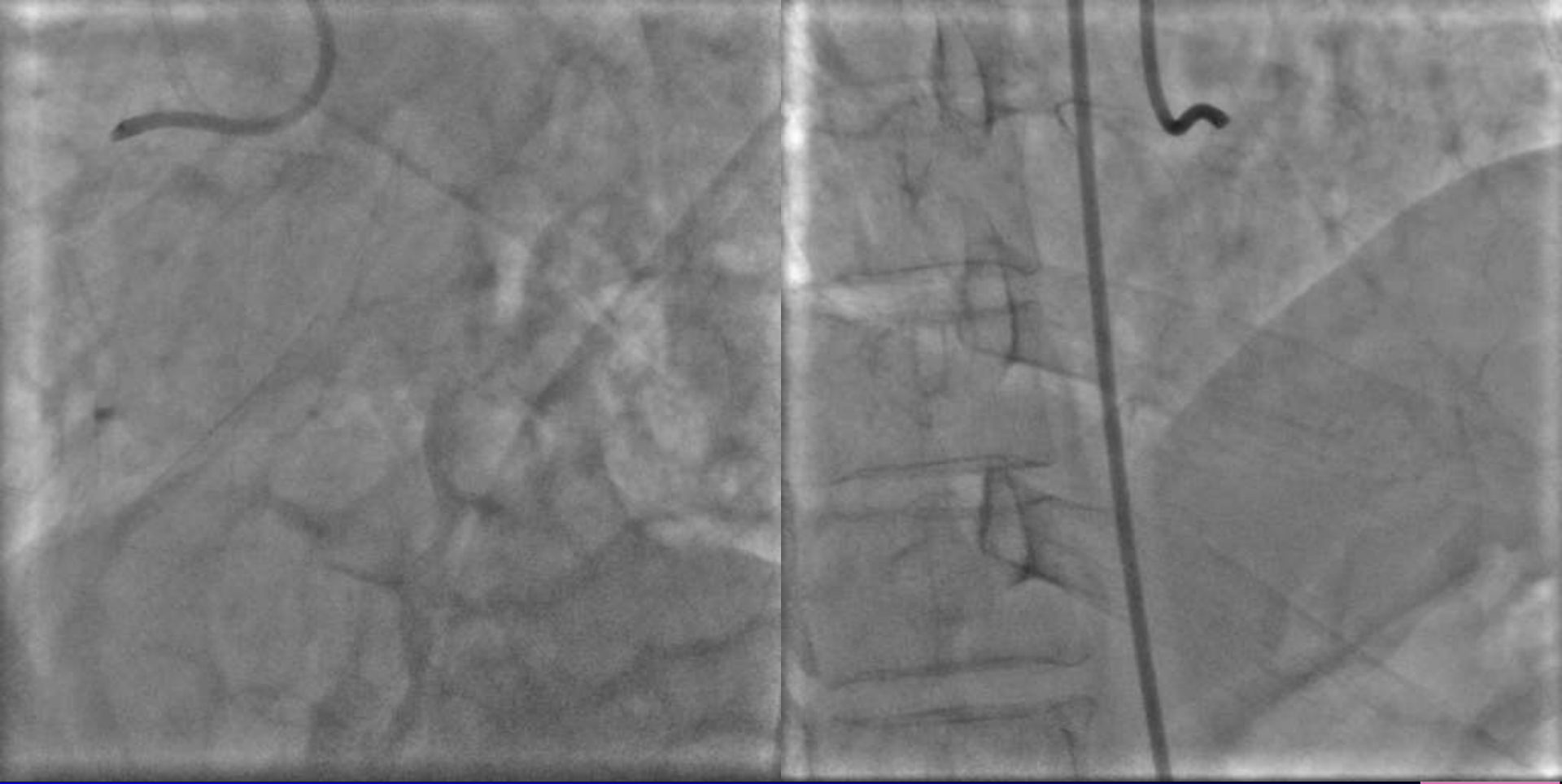
Again we got into bridging collateral with Sion and Gaia I guidewires (Asahi Intecc).

RCA Intervention (III)



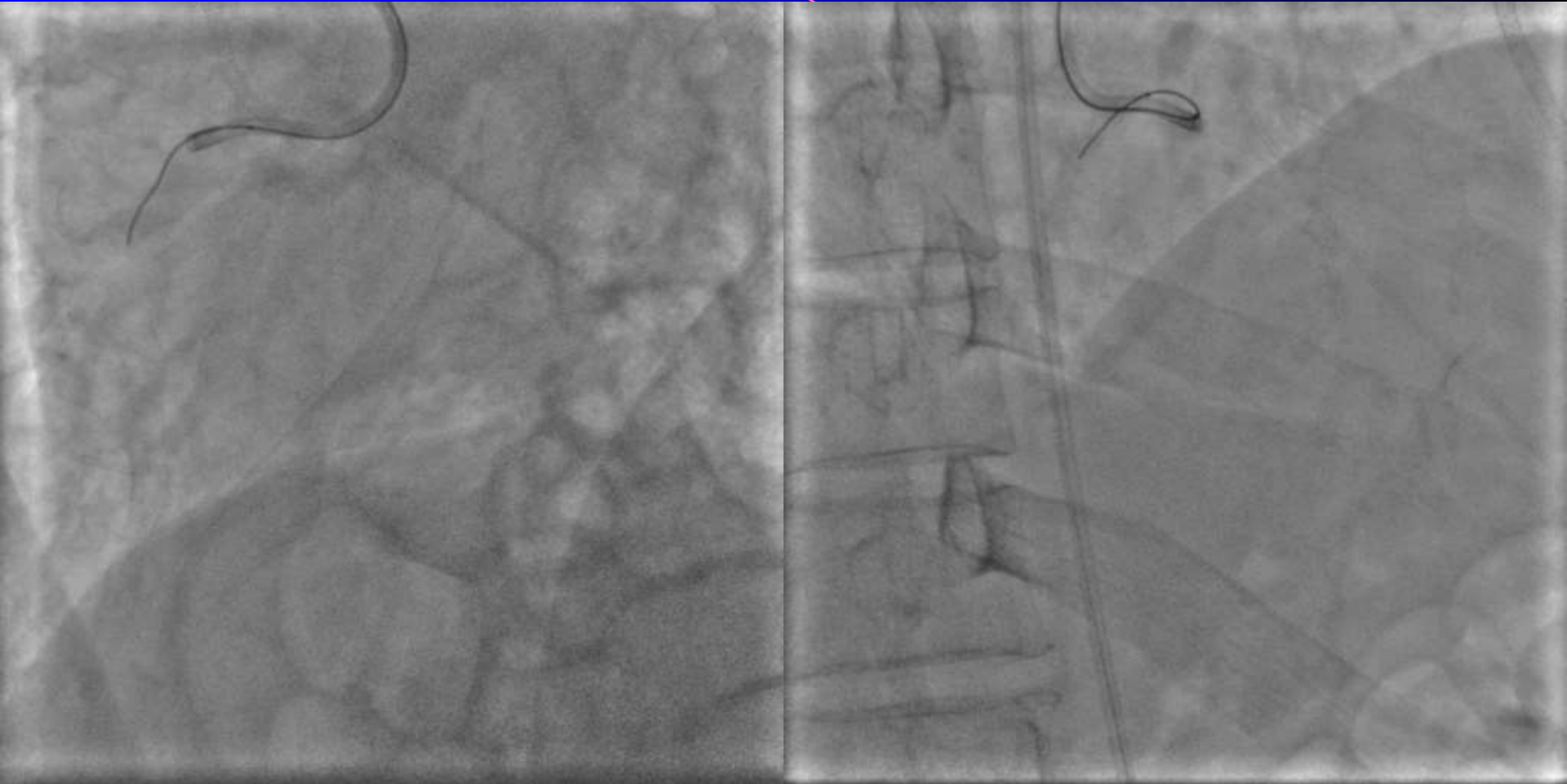
The guidewires failed to get into true lumen with Gaia II & Gaia III guidewires (Asahi Intecc).

RCA Intervention (IV)



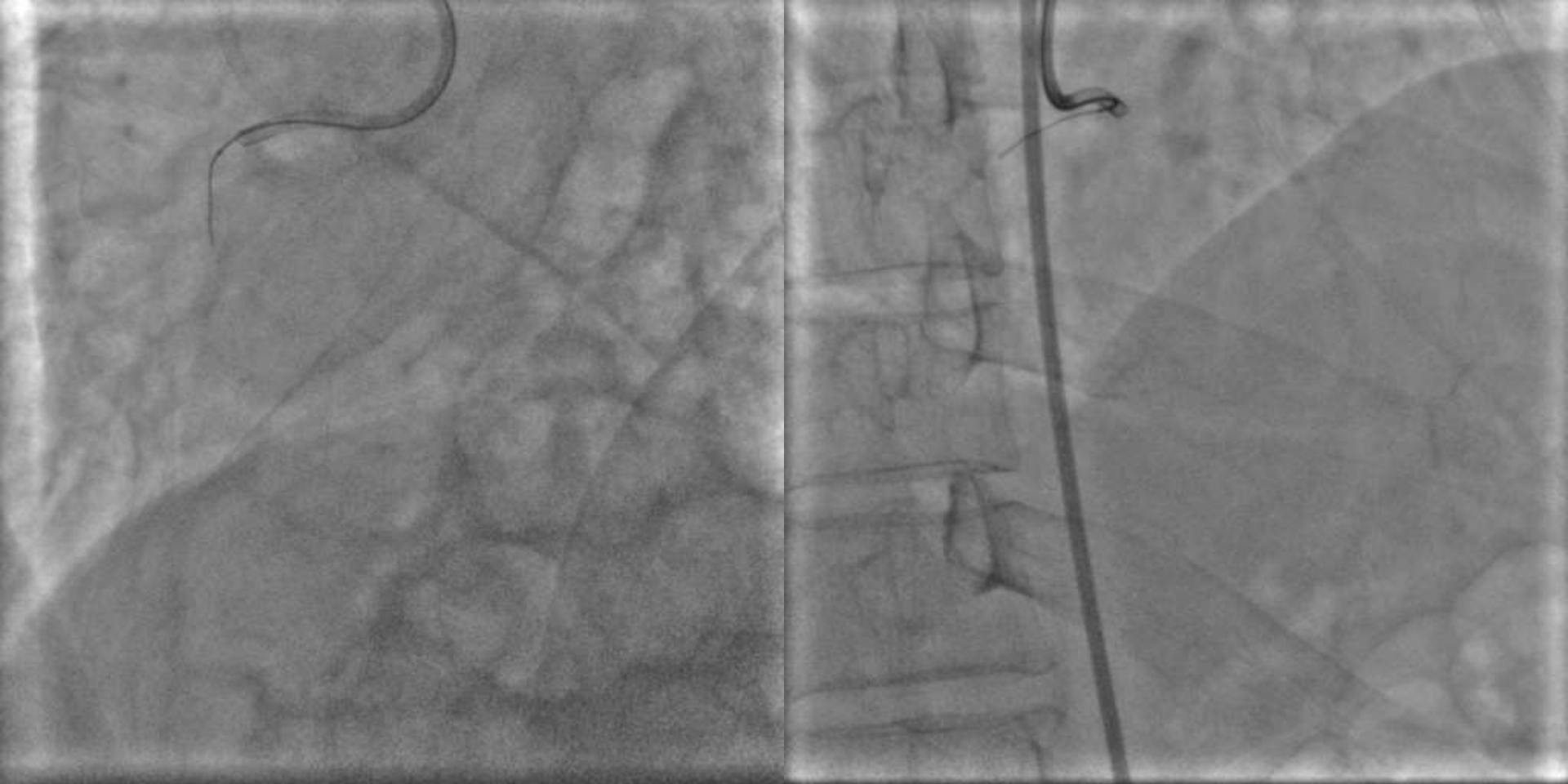
What could we do now ?

RCA Intervention (V)



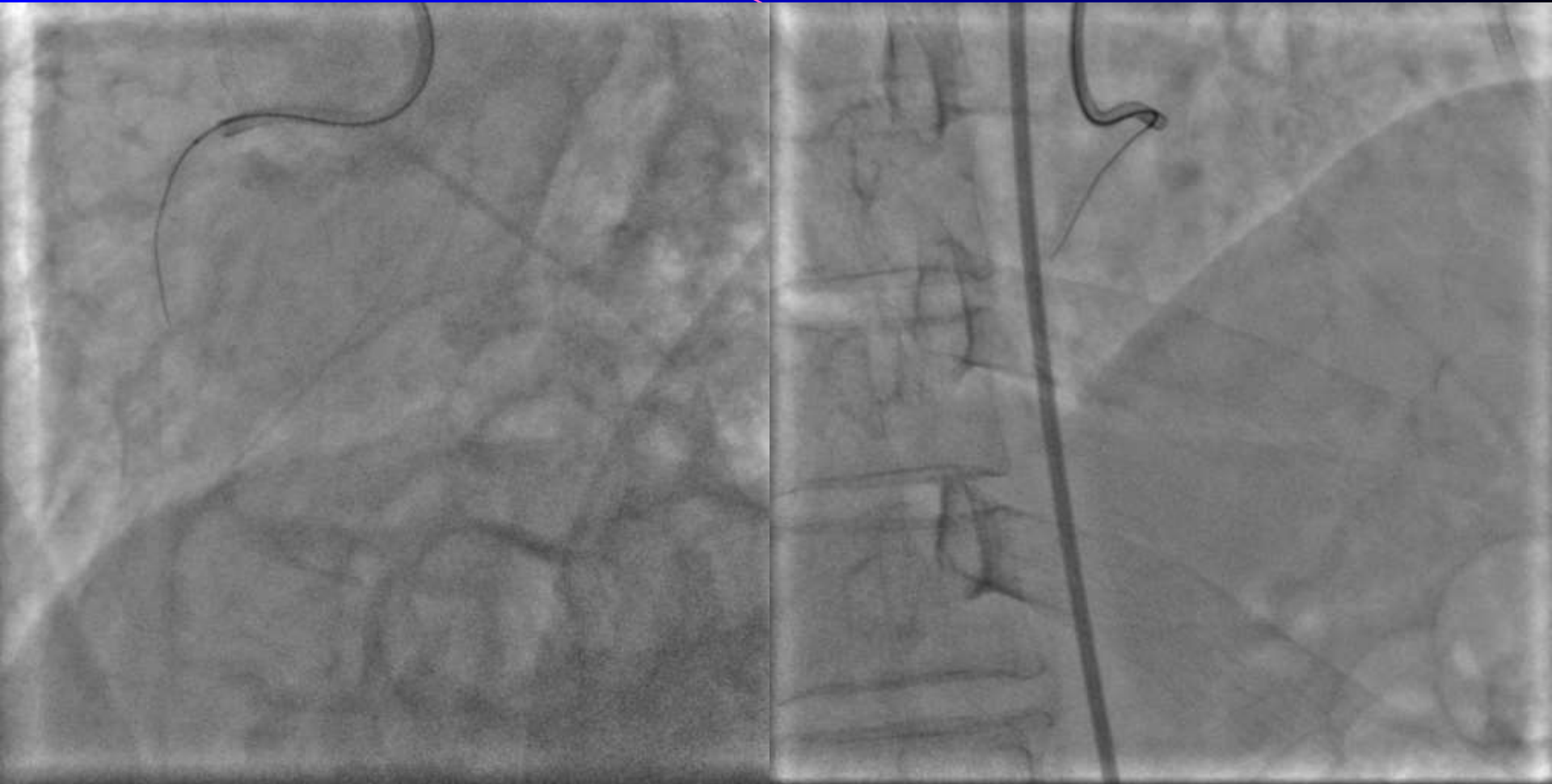
We used Conquest pro guidewire (Asahi Intecc) and tried the other side of RCA.

RCA Intervention (VI)



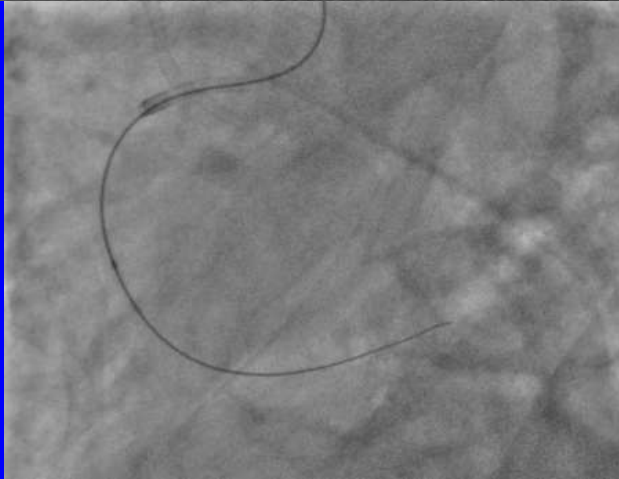
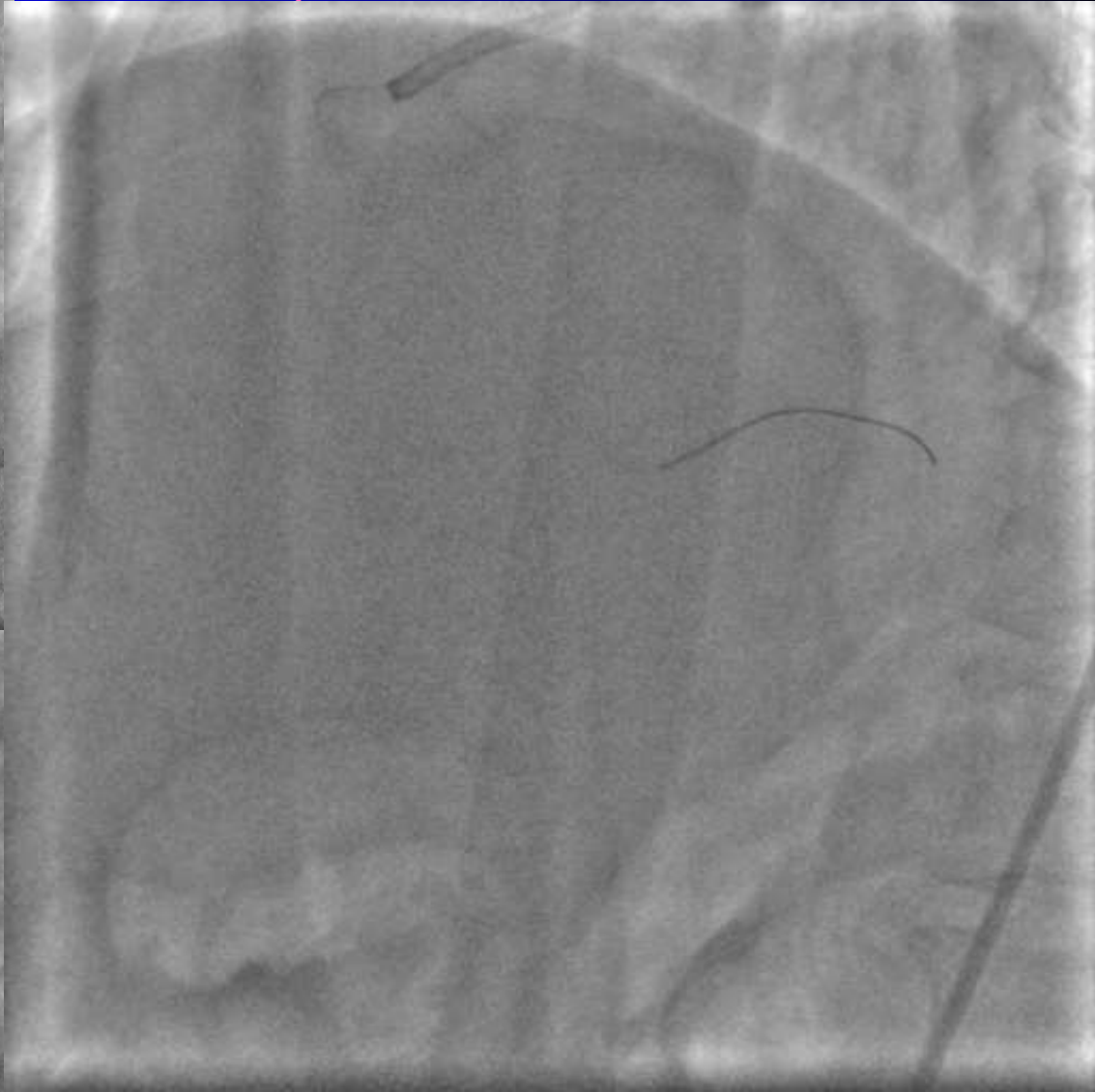
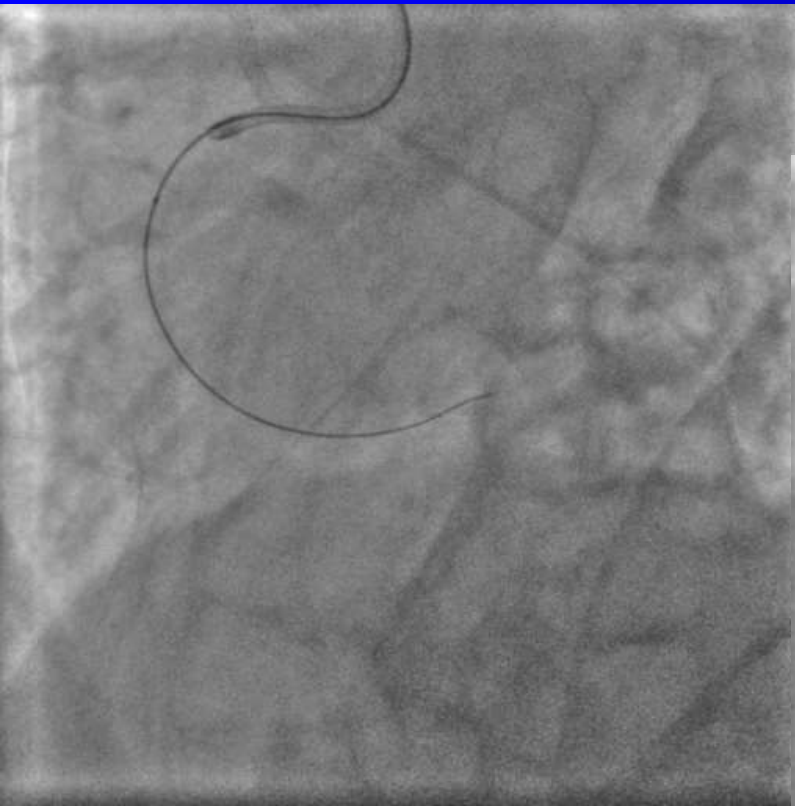
A much better route by the Conquest pro guidewire (Asahi Intecc).

RCA Intervention (VII)

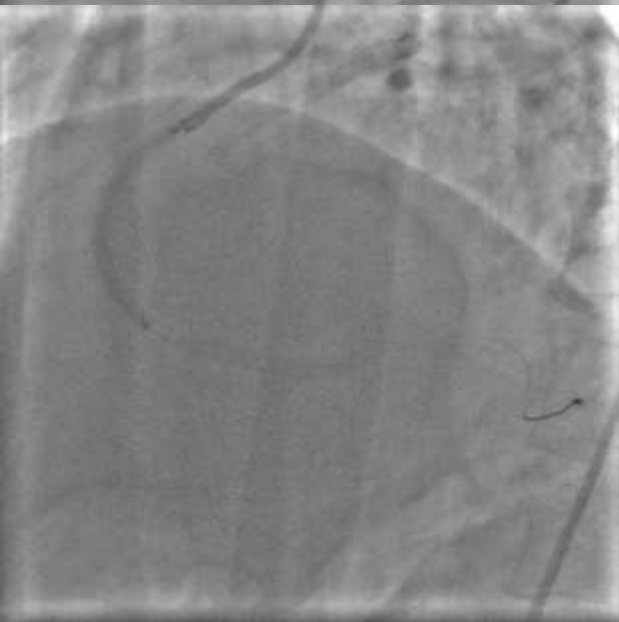
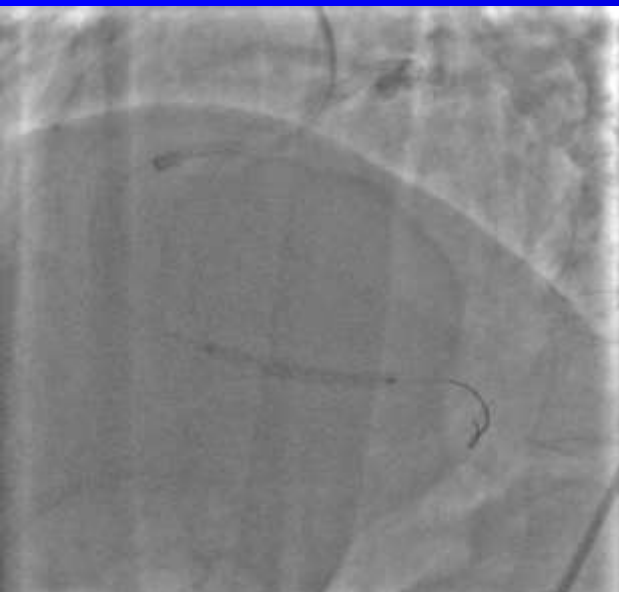


Entrance into RCA true lumen.

RCA Intervention (VIII)

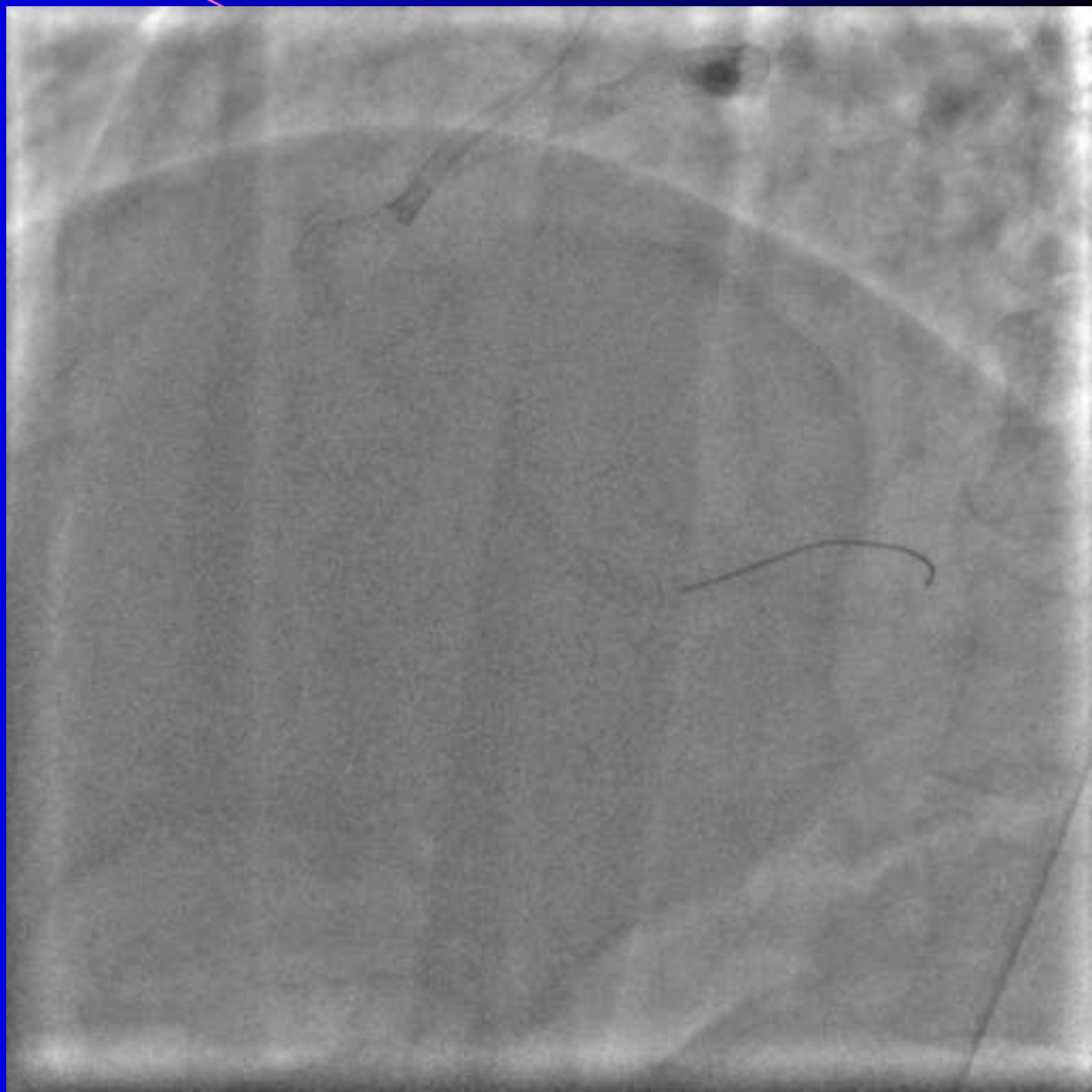


3.0x33mm Stent



3.0x48mm Stent

Final RCA



Take Home Message

- True-false-true penetration may be needed during PCI with difficult coronary anatomy
- Antegrade penetration of CTO may not go through a direct way as your imagination
- PCI to complex lesion may be done with delicate attempts



TAIWAN TRANSCATHETER THERAPEUTICS

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