

# 5 Fr Guiding Catheter PCI for RCA Restenosis

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# Case presentation

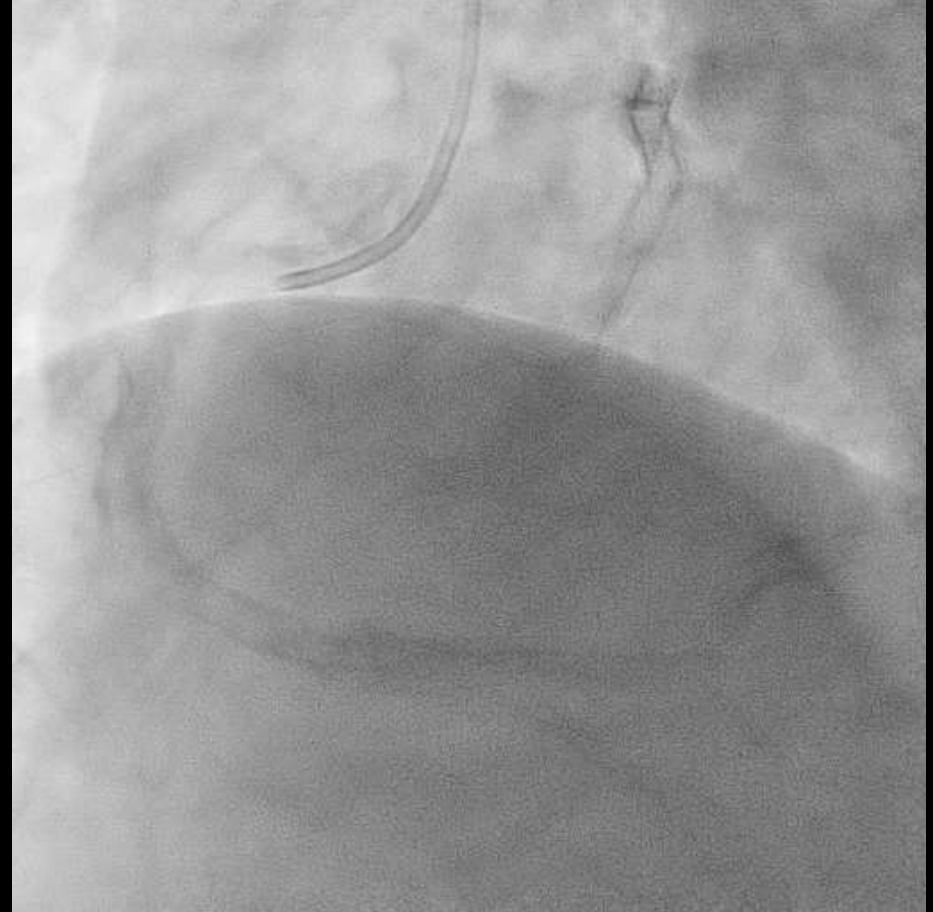
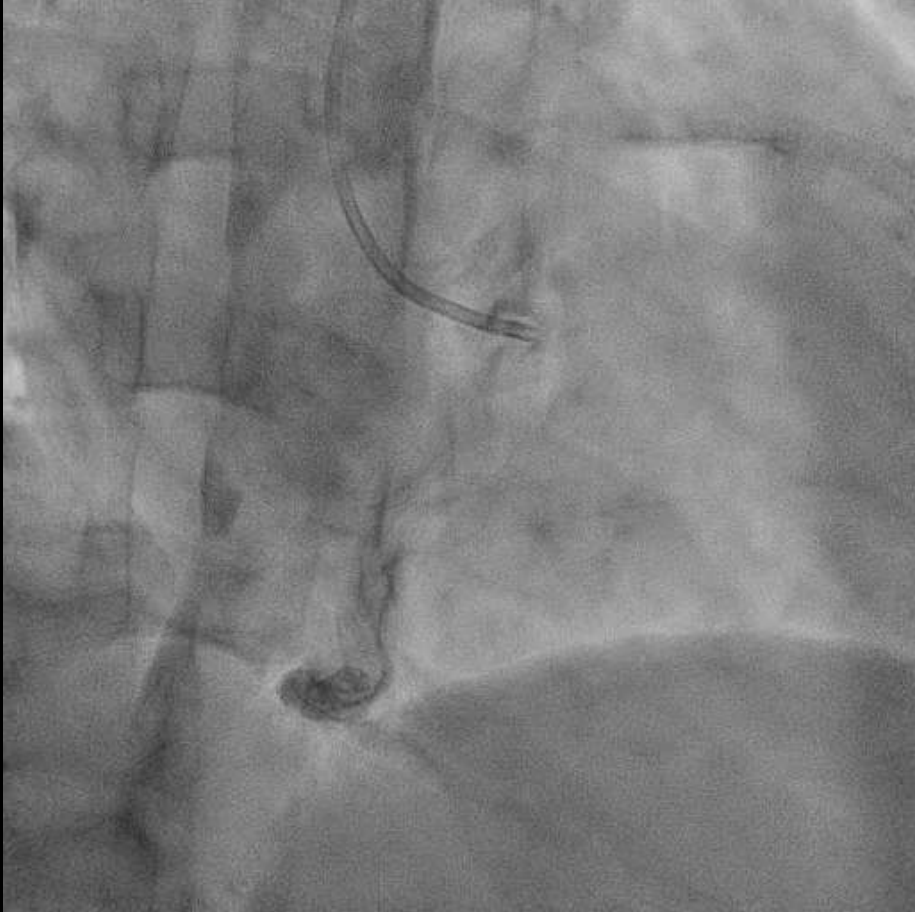
- 36 y/o Female, BH: 155cm, BW: 45kg
- Present to ER due to chest pain at 20190814.
- Hx:
  - Hypertension
  - ESRD on HD for 9 years
  - PAD s/p bypass (Left in 2017 and right in 2019 Feb)
  - Abdominal aorta occlusion s/p Turbohawk and Endurant stent in Jan 2019.
  - NSTEMI s/p PCI on 20180819, 20180913, 20190102, 20190412

# Hx of PCI

- 20180819 NSTEMI. RFA, 7Fr GC. LAD: Turnpike Gold and POBA
- 20180913 RFA, 7Fr GC. LAD: POBA, Rotablator and DES (Synergy 3.0x48mm). RCA: POBA and DES (Synergy 3.0x24mm)
- 20190102 NSTEMI. RFA, 7Fr GC. LAD **ISR: DEB**. RCA **ISR: DEB**
- 20190412 NSTEMI. RRA, 6Fr EBU 3.5. RCA **ISR: POBA**
  - about CABG: No good choice for vessels conduit. Patient and family refused.

- Present to ER due to chest pain at 20190814
- ECG:
  - LVH with strain
  - ST depression at II, III and aVF
- Troponin-I elevation

RRA. Severe pain with 6Fr sheath.  
5Fr sheath + 5Fr EBU 3.5 GC



# Limitation of 5 Fr GC for PCI

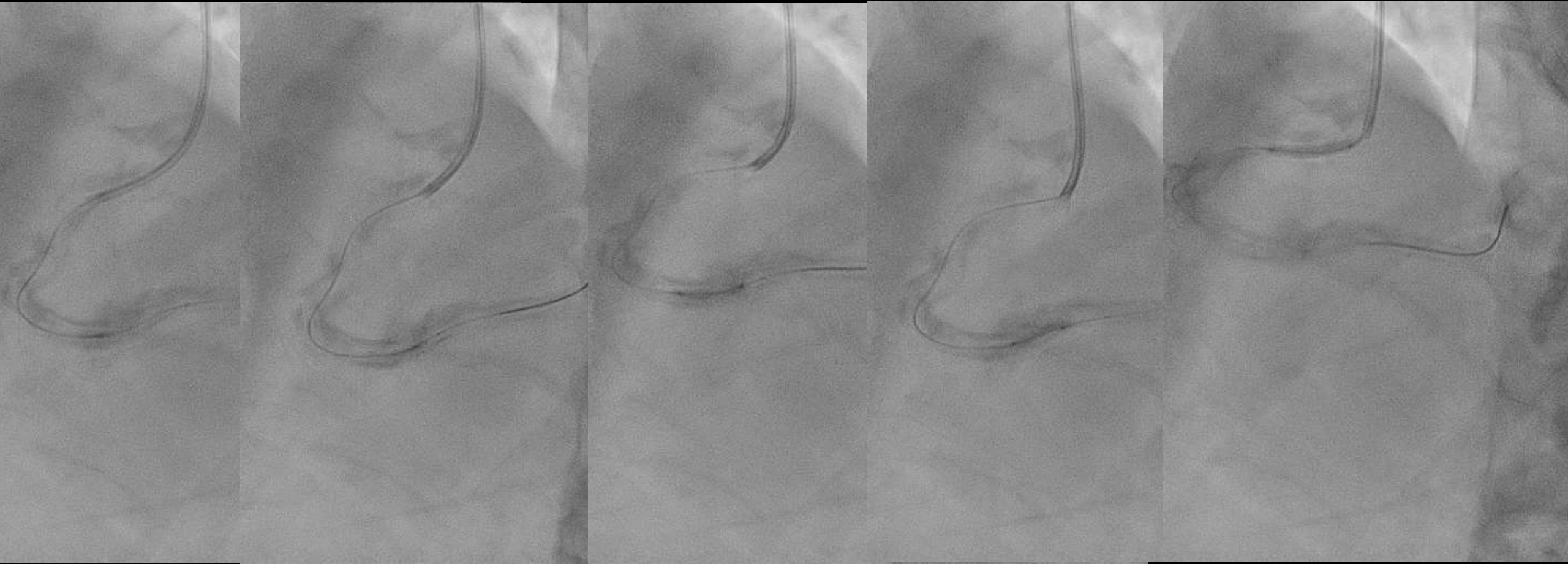
- Poor back-up support can result in procedural difficulties
- Not compatible with some angioplasty equipment
  - rotational IVUS imaging catheters,  $\geq 1.5$  mm rotablator burrs, thrombus aspiration catheters, BVS  $> 3$  mm, or  $\geq 3.0$  mm cutting balloons

VersaTurn wire.

NC Trek 2.5/15mm cannot cross to distal, 16 atm

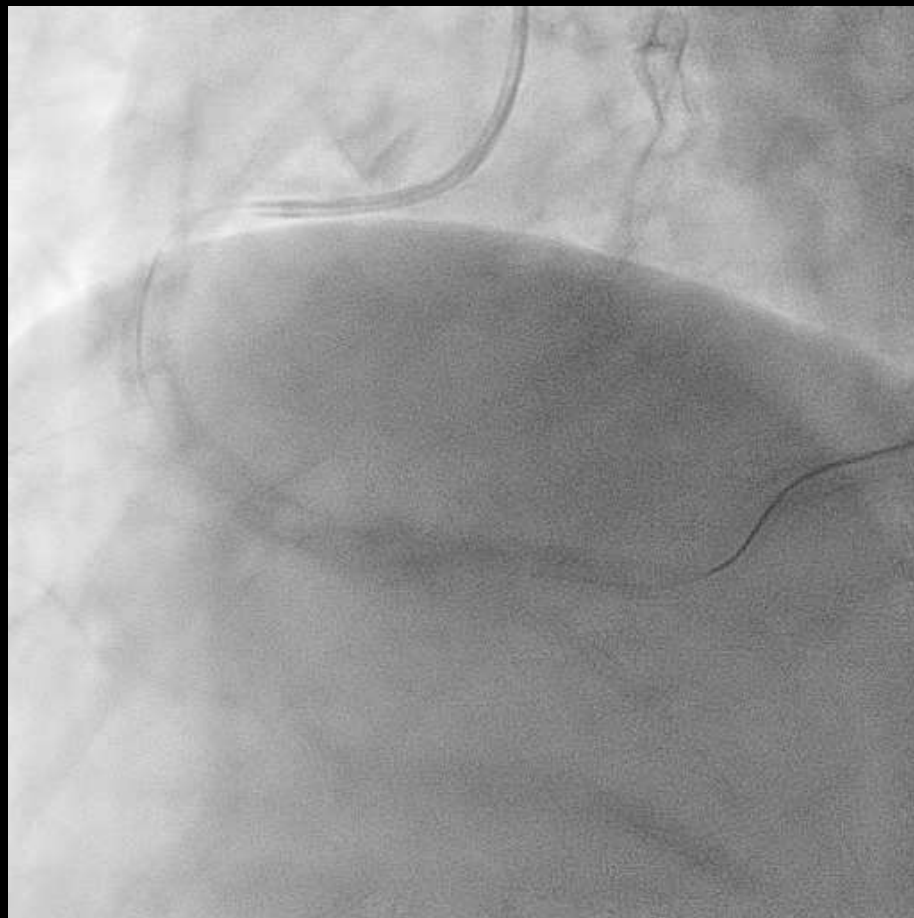
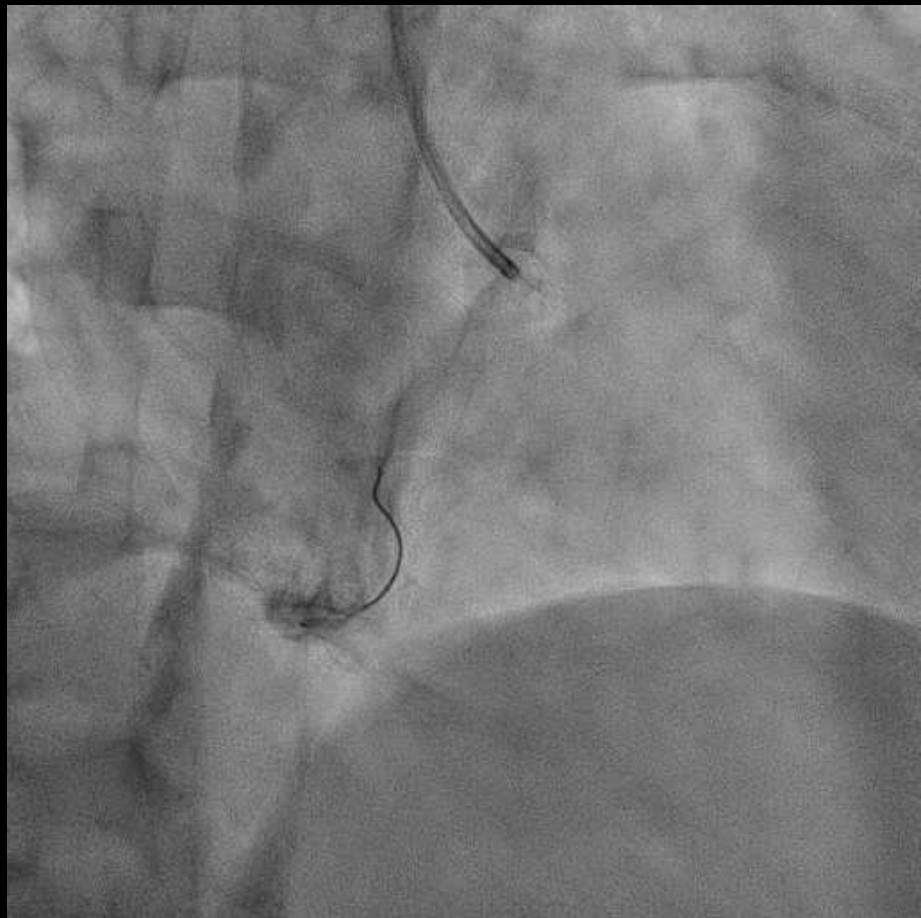


MiniTrek 1.5/6mm 12 atm,  
NC Quantum 2.0/15mm 16atm,  
NC Trek 2.5/15mm 16 atm

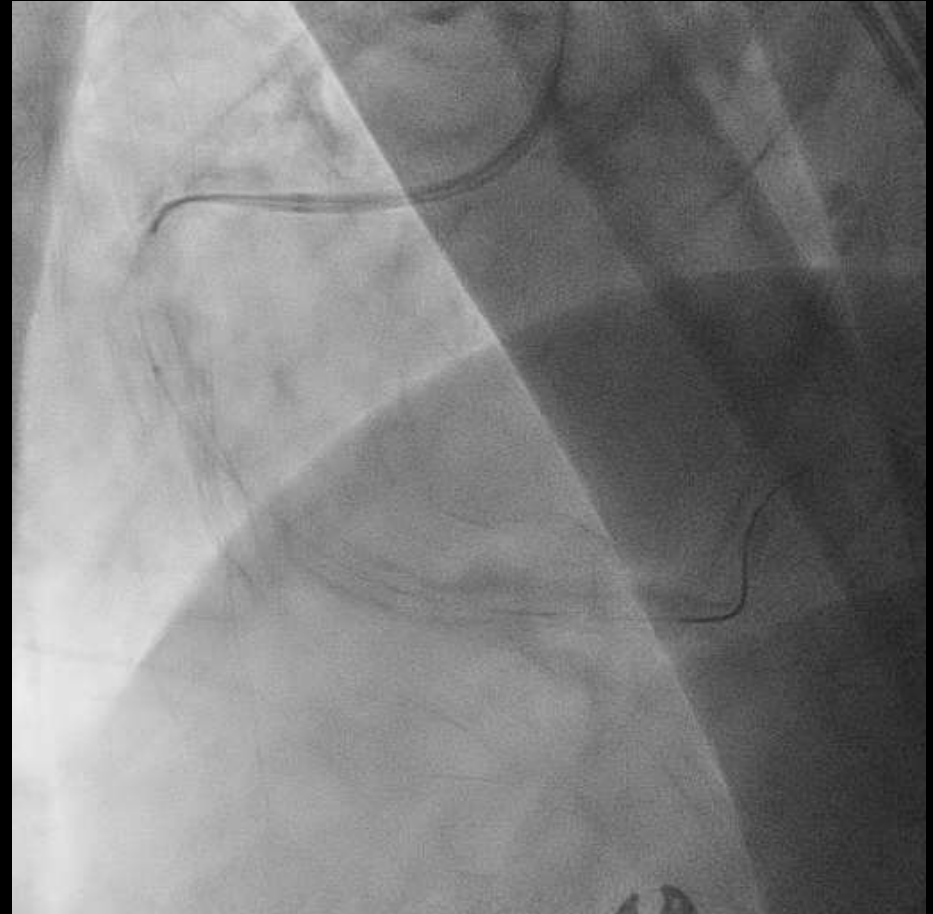
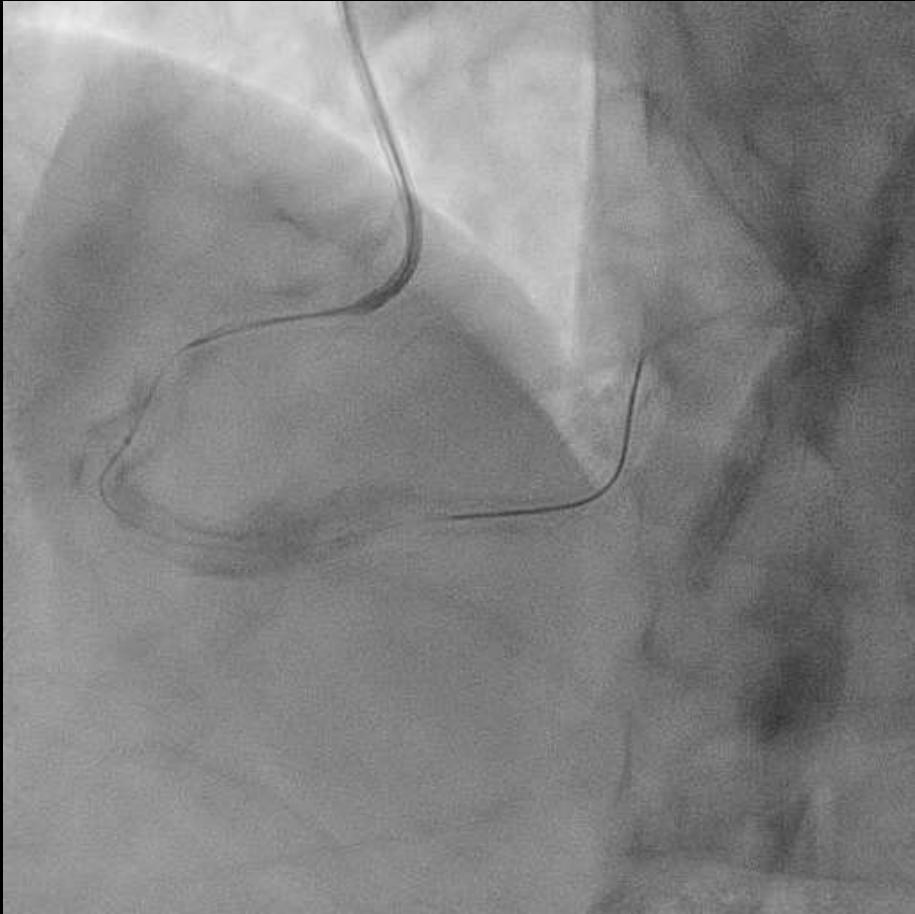




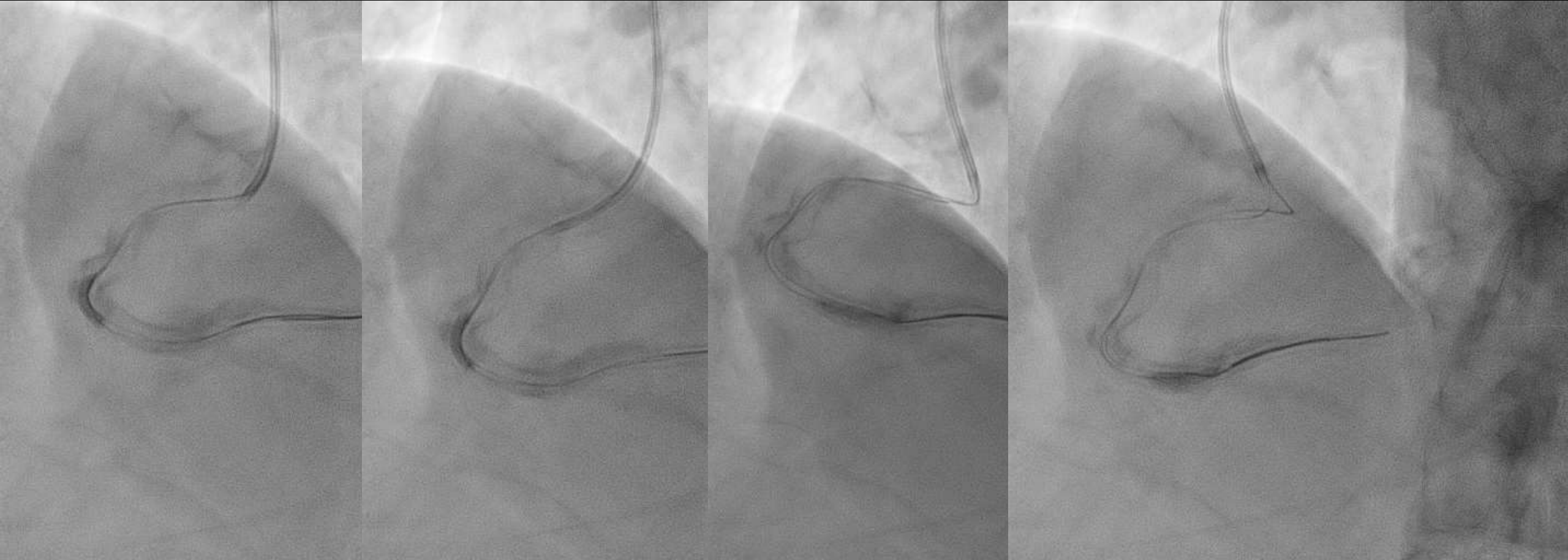
# TIMI III antegrade flow



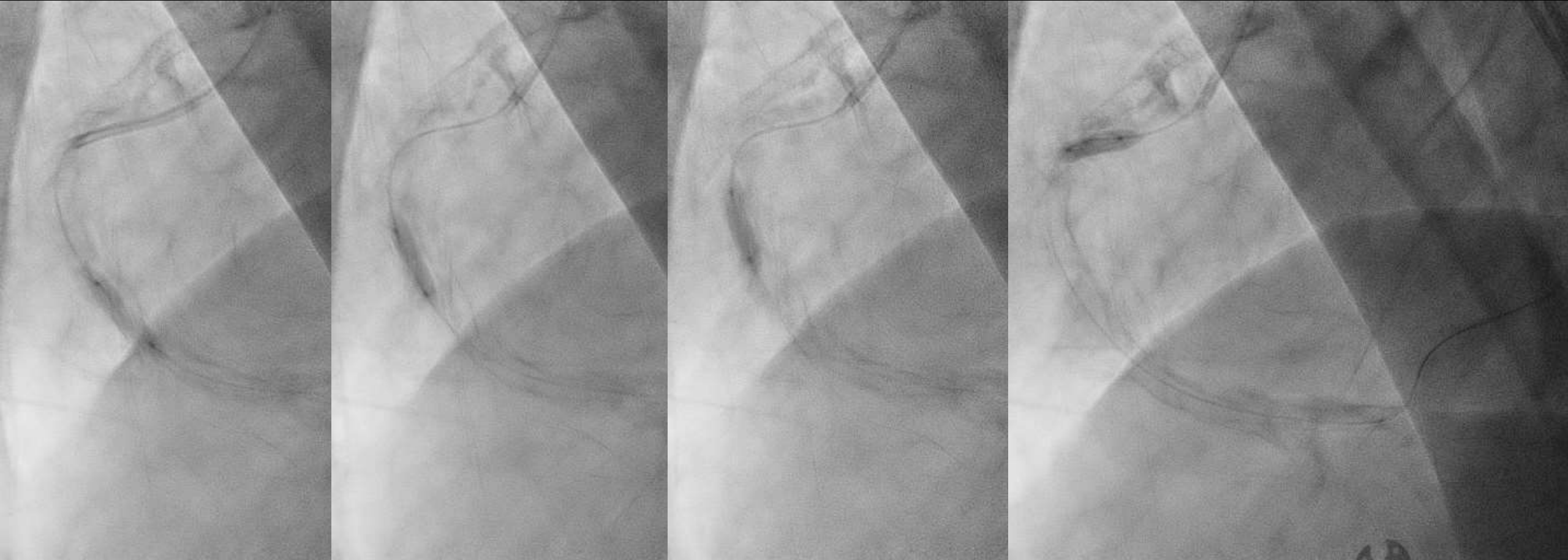
IVUS cannot cross



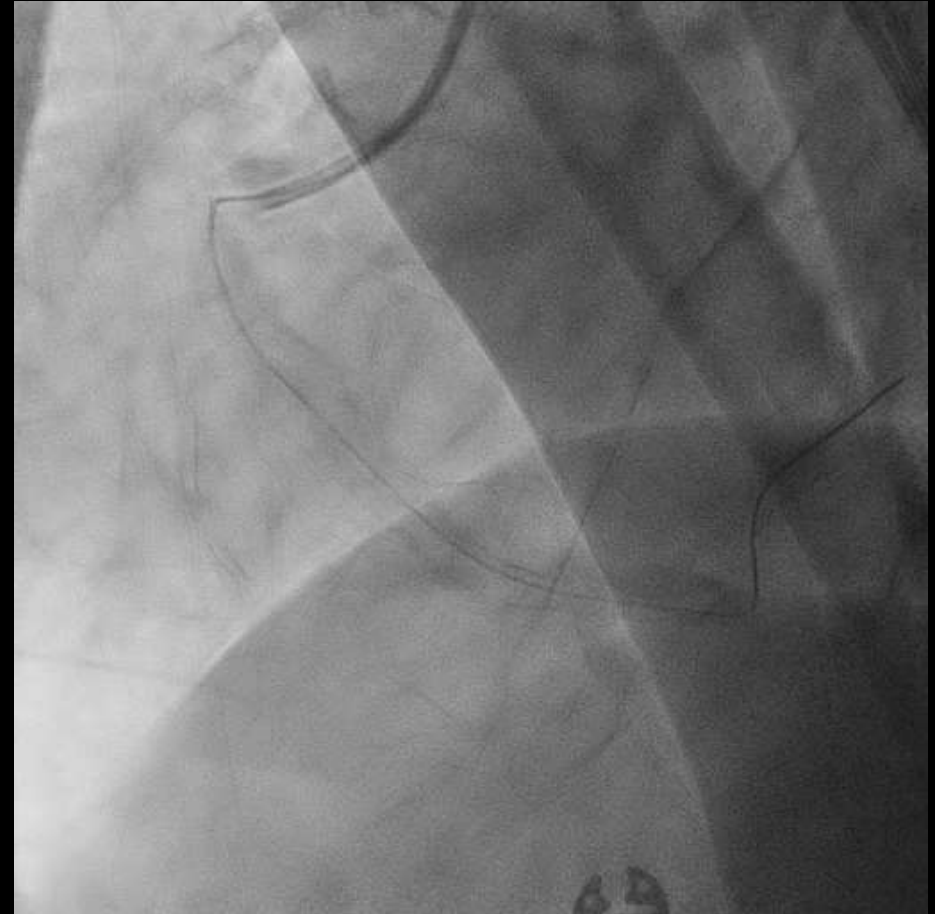
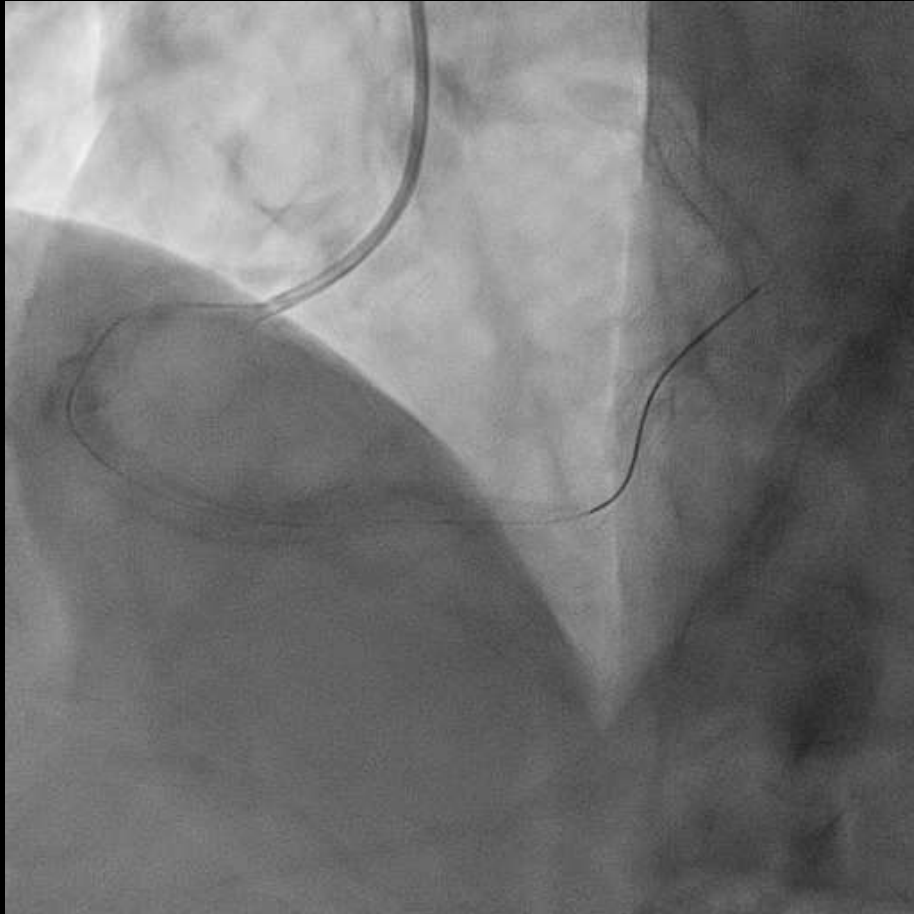
Buddy wire: VersaTurn + Fielder FC.  
NC Trek 3.0/15mm, 16atm



NC Trek 3.5/12mm, 14atm



# Dissection at middle RCA



Problem:

Onyx 3.5/30mm stent cannot cross with Buddy wire

- Next step ?
  - POBA with bigger balloon ?
  - Get other arterial access, eg. RBA
  - Use sheathless GC, eg 6Fr
  - CABG
  - ...
- How to overcome the poor GC support ?

# Back-up-improving techniques

**Loops (Alpha, Gamma, Epsilon)**

→ Must not lost the wire

**Anchor balloon to deep seated the GC**

→ Symptomatic after GC deep seated

**Anchor wire**

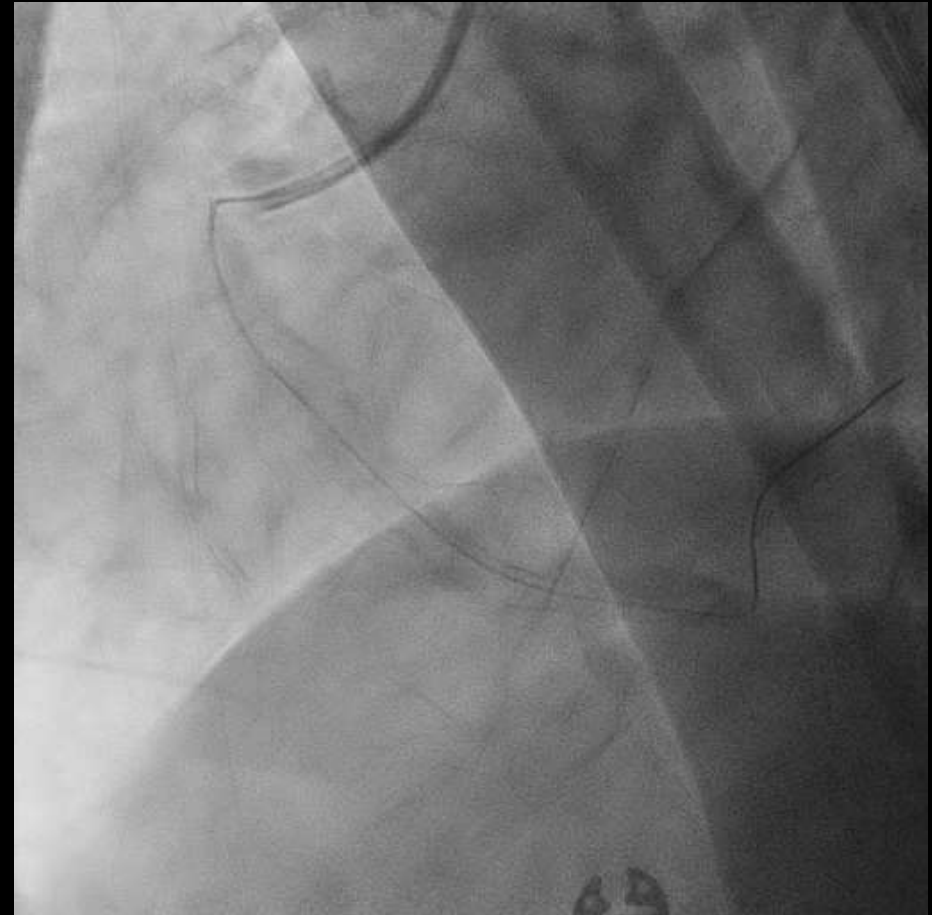
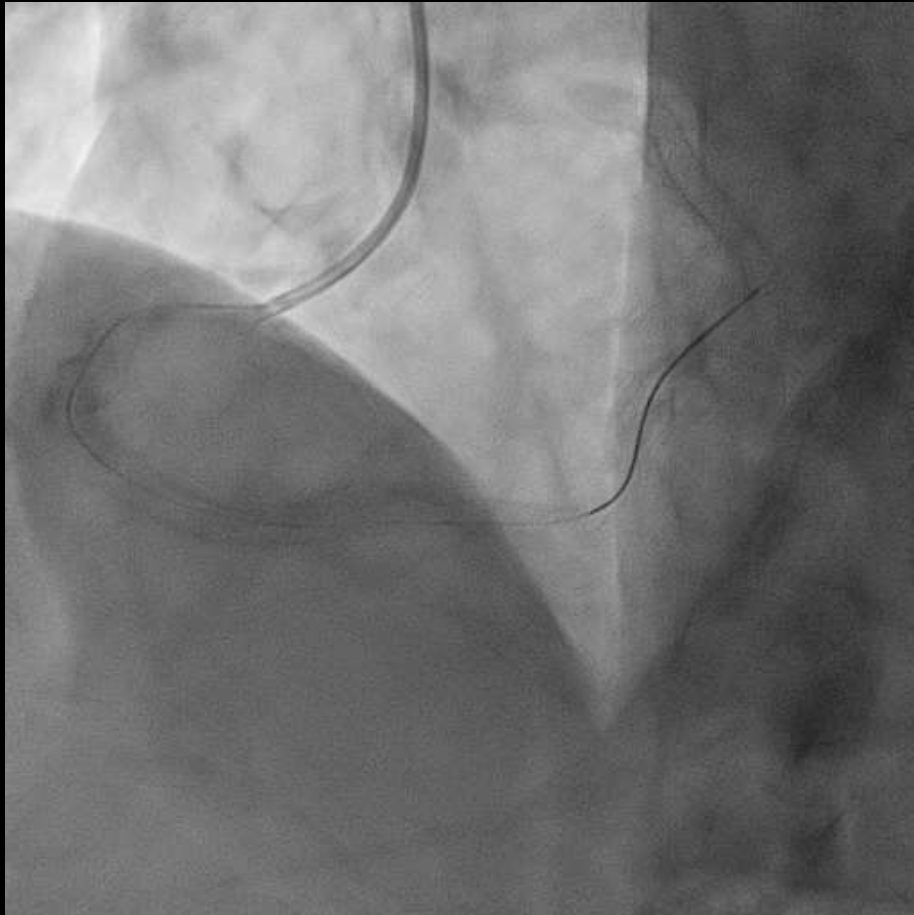
**Parallel wire**

**Mother and child**

→ No available daughter catheter

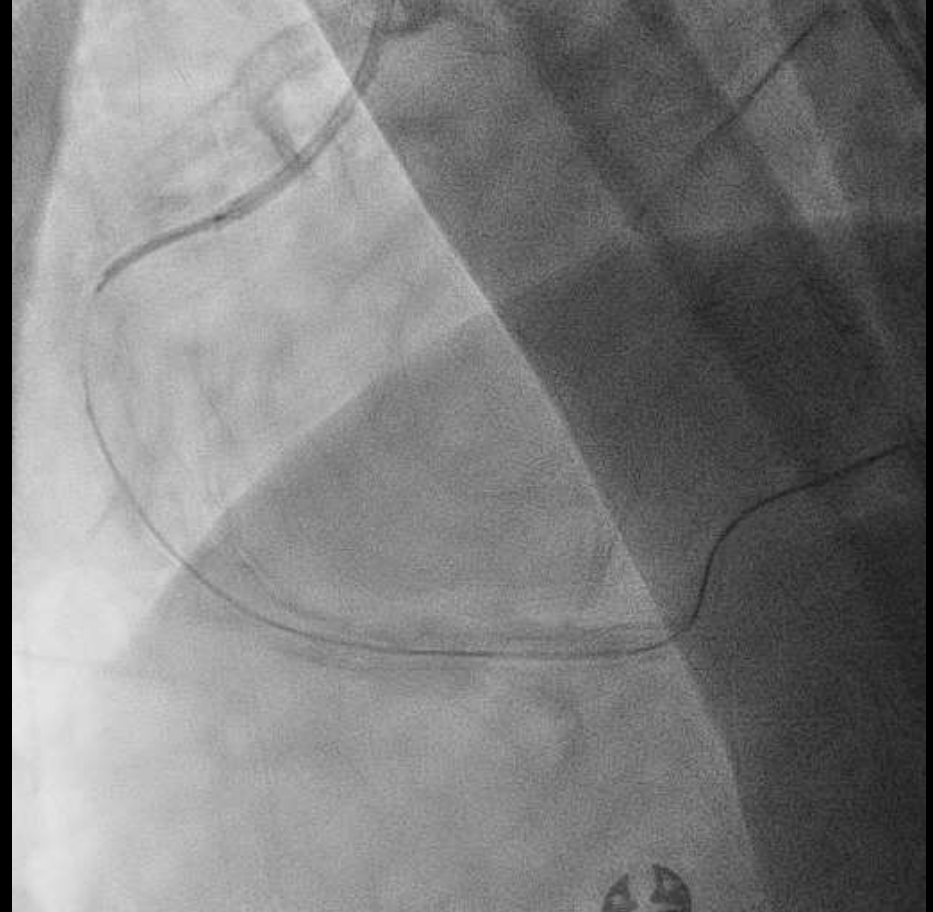
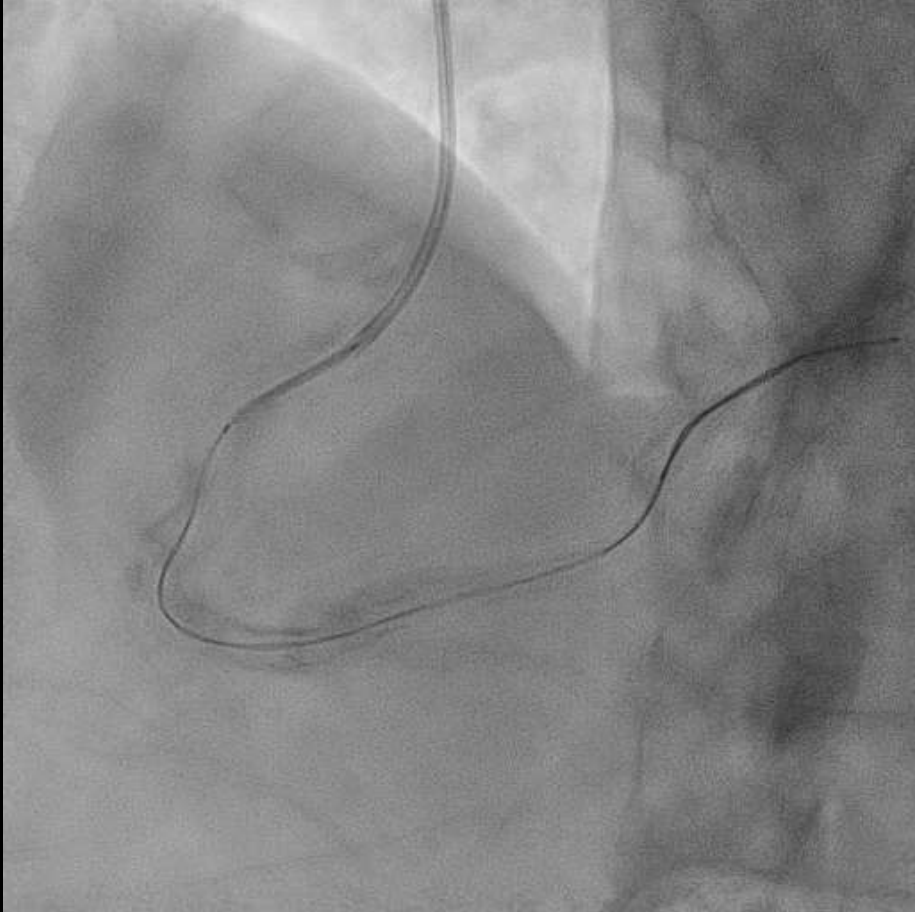
**“SATAI” (Stiff And Tapered guide wire penetration technique on Antegrade Intervention)**

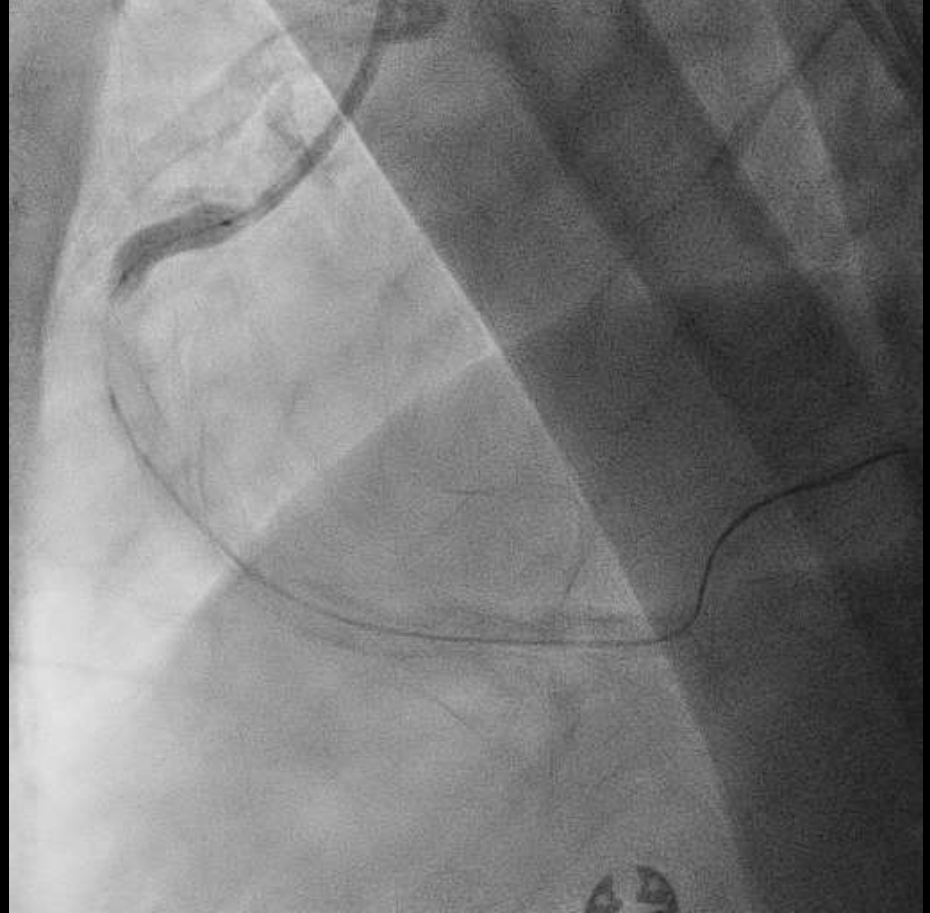
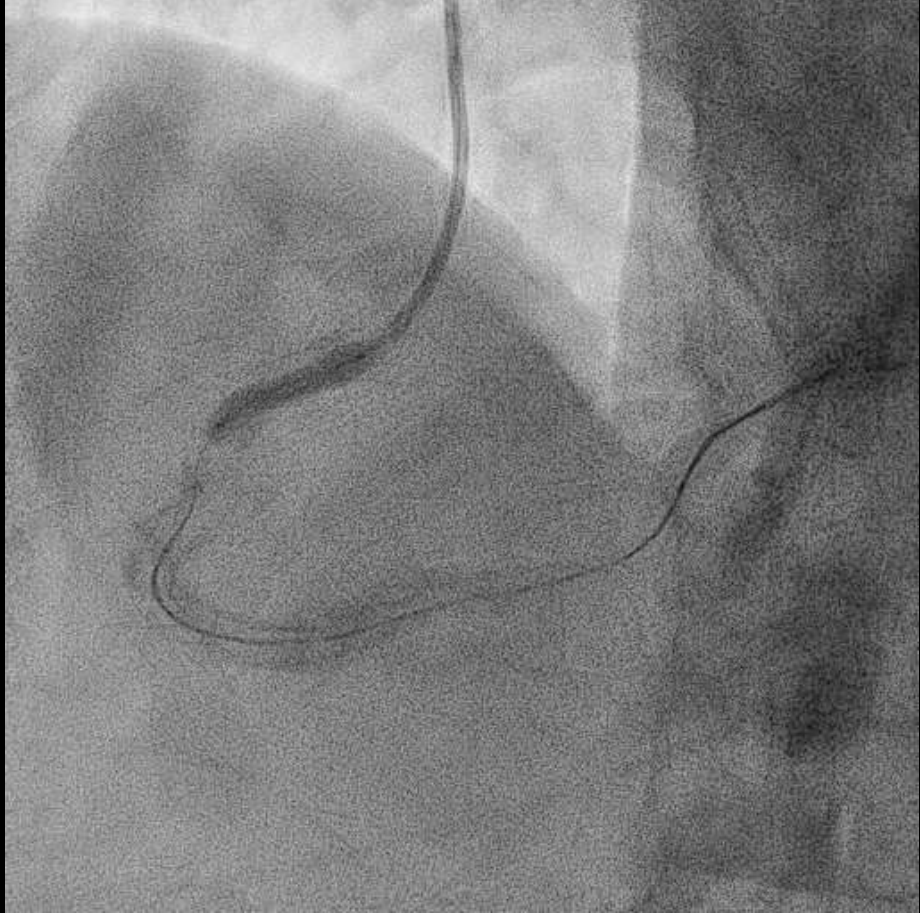
# Review the final angiography



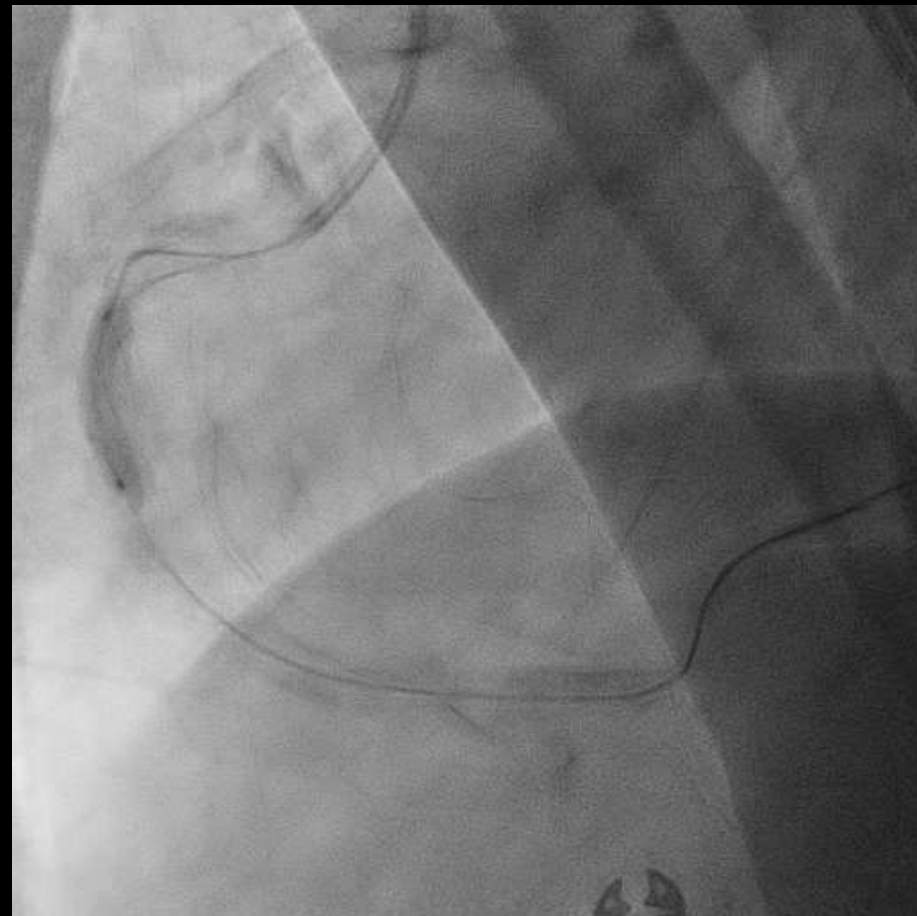
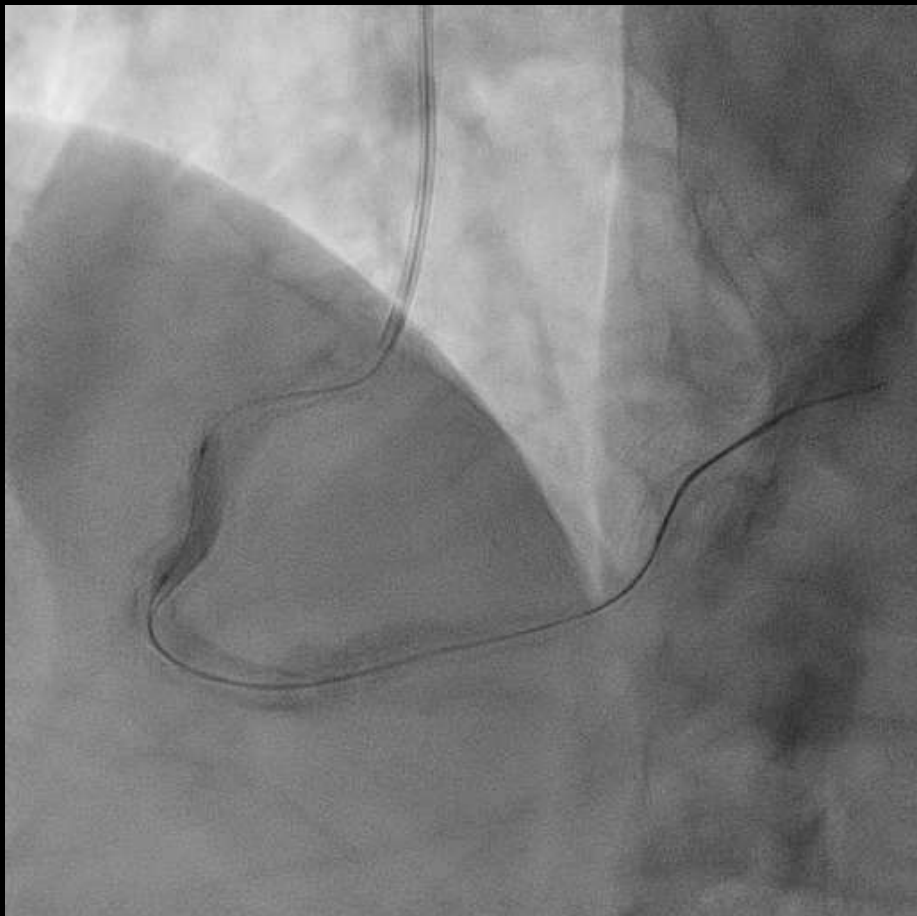


Onyx 4.0/15mm

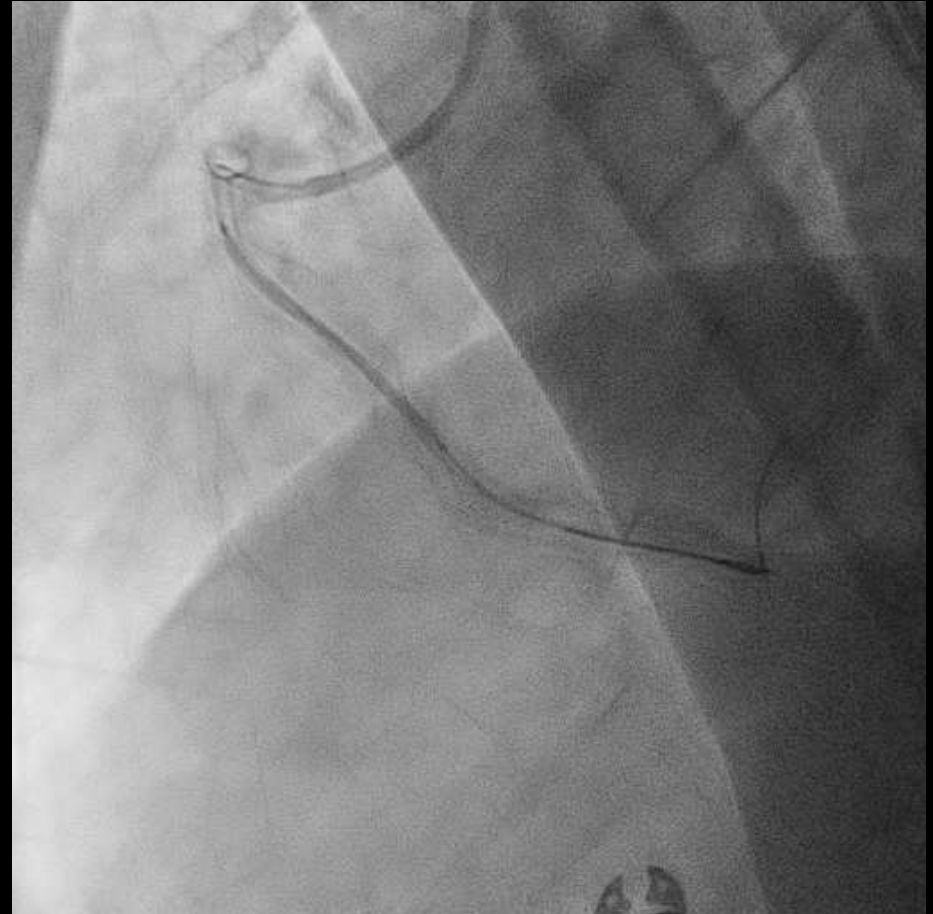
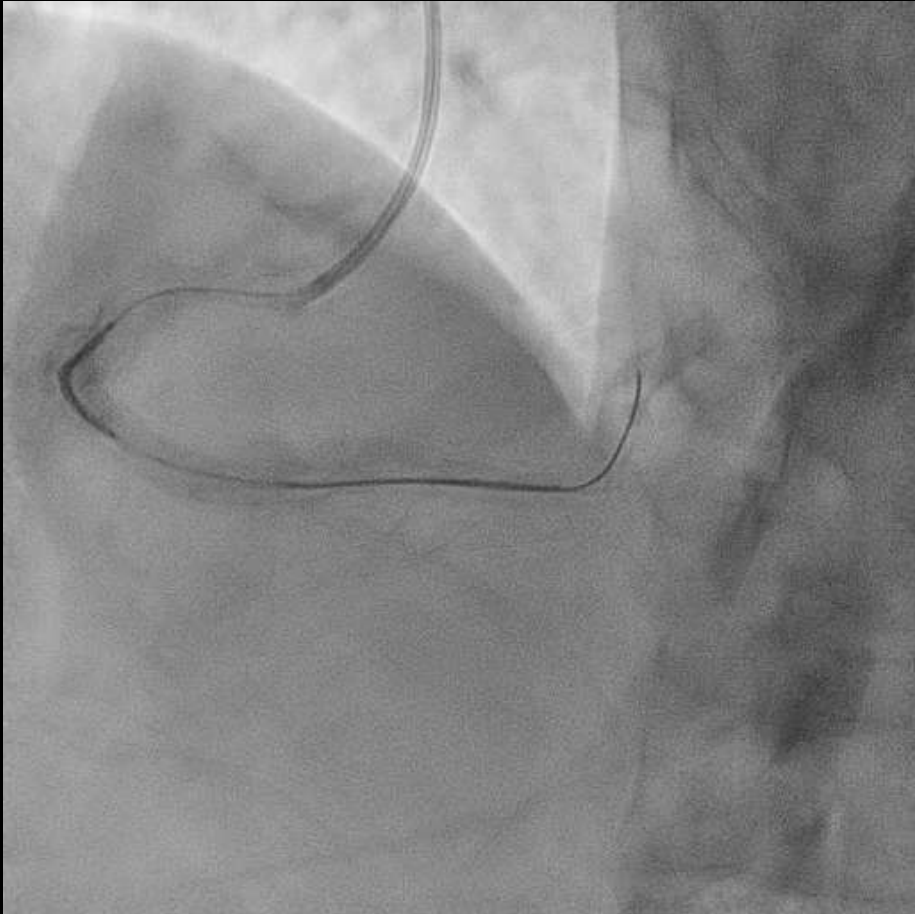


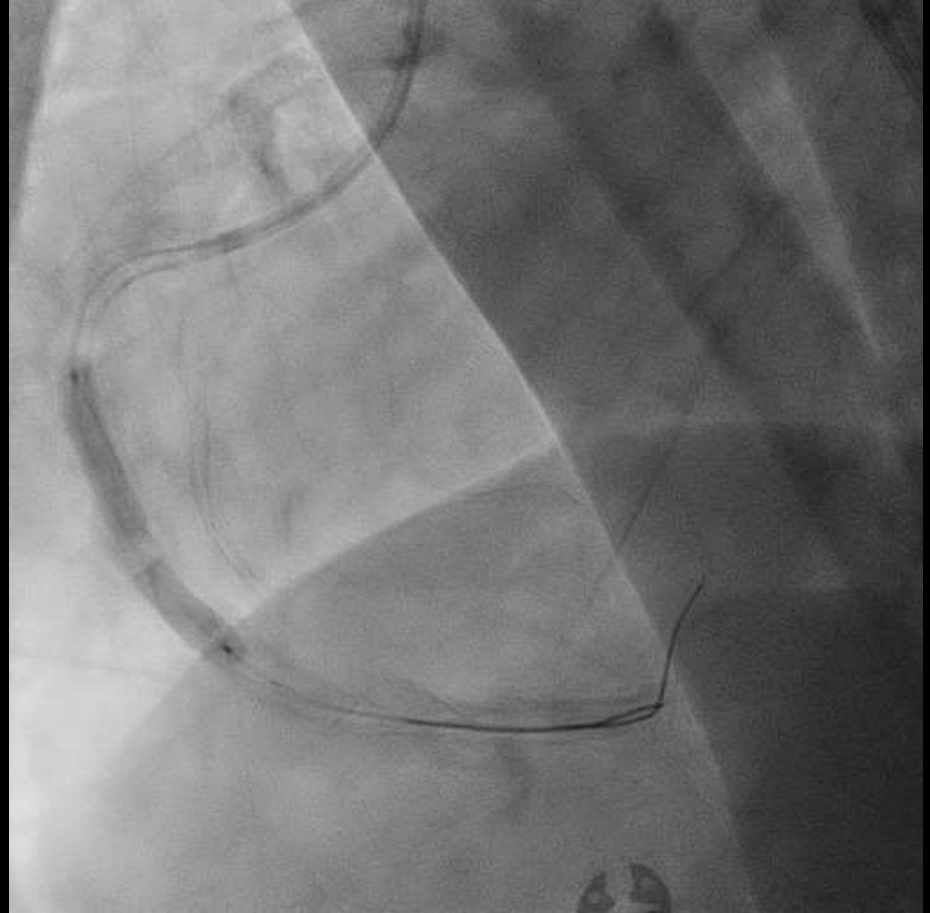
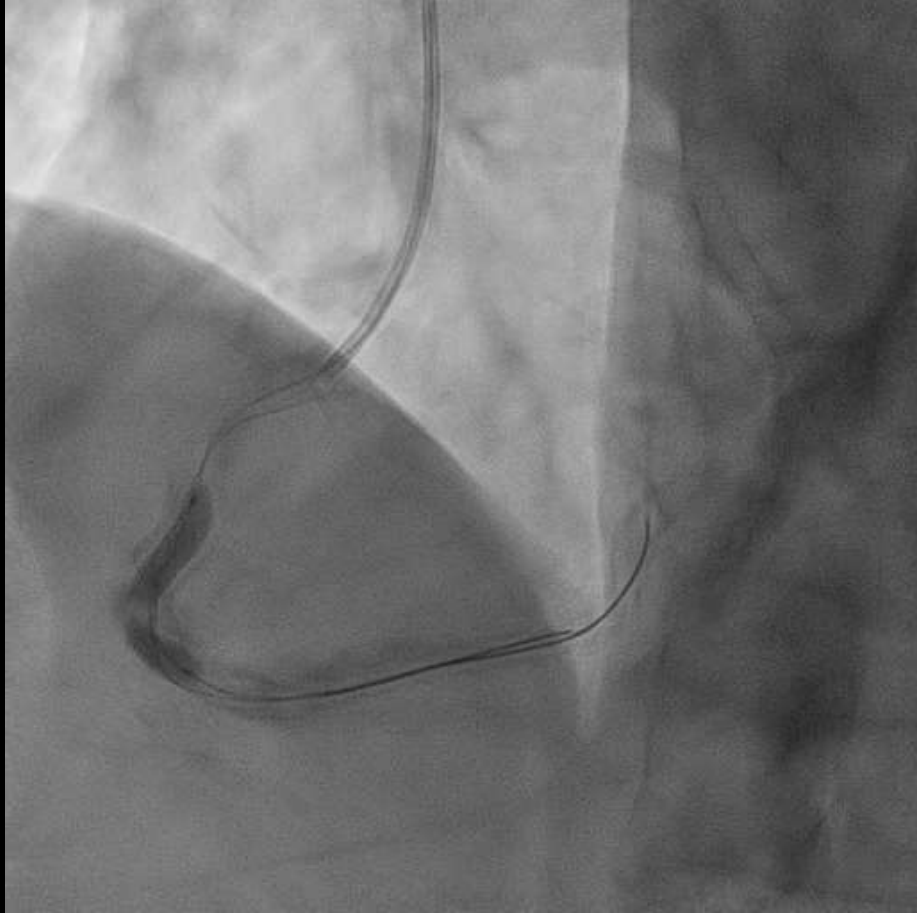


stent balloon, 18 atm

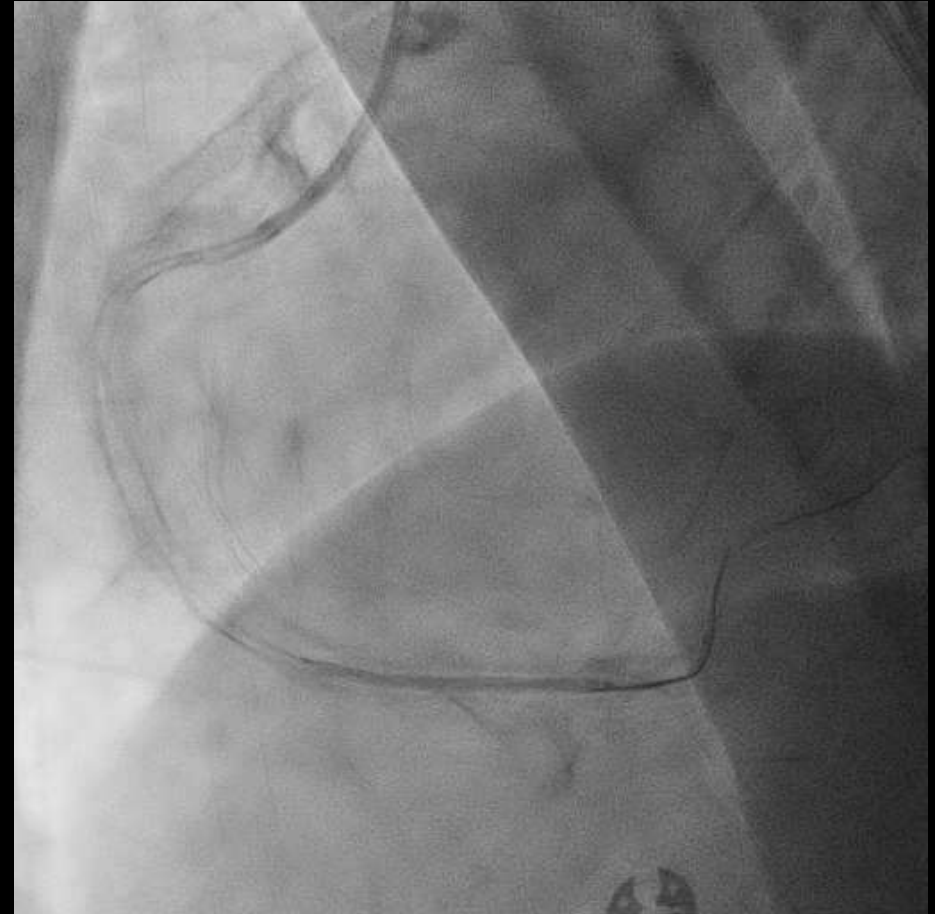
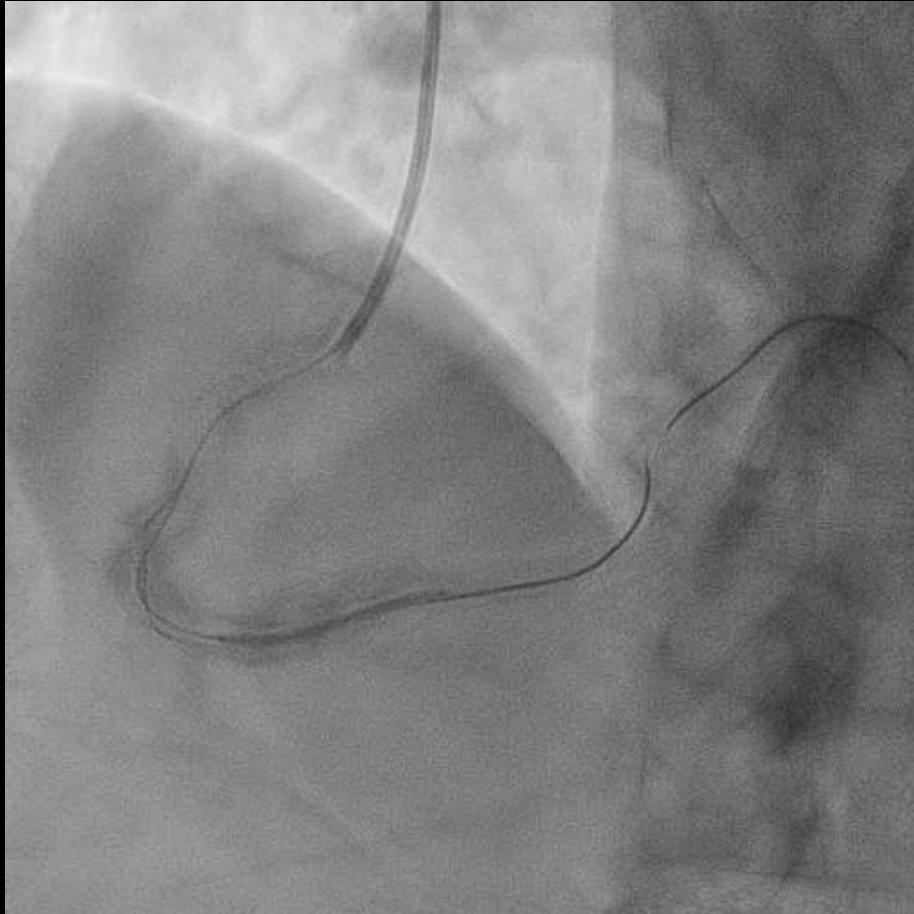


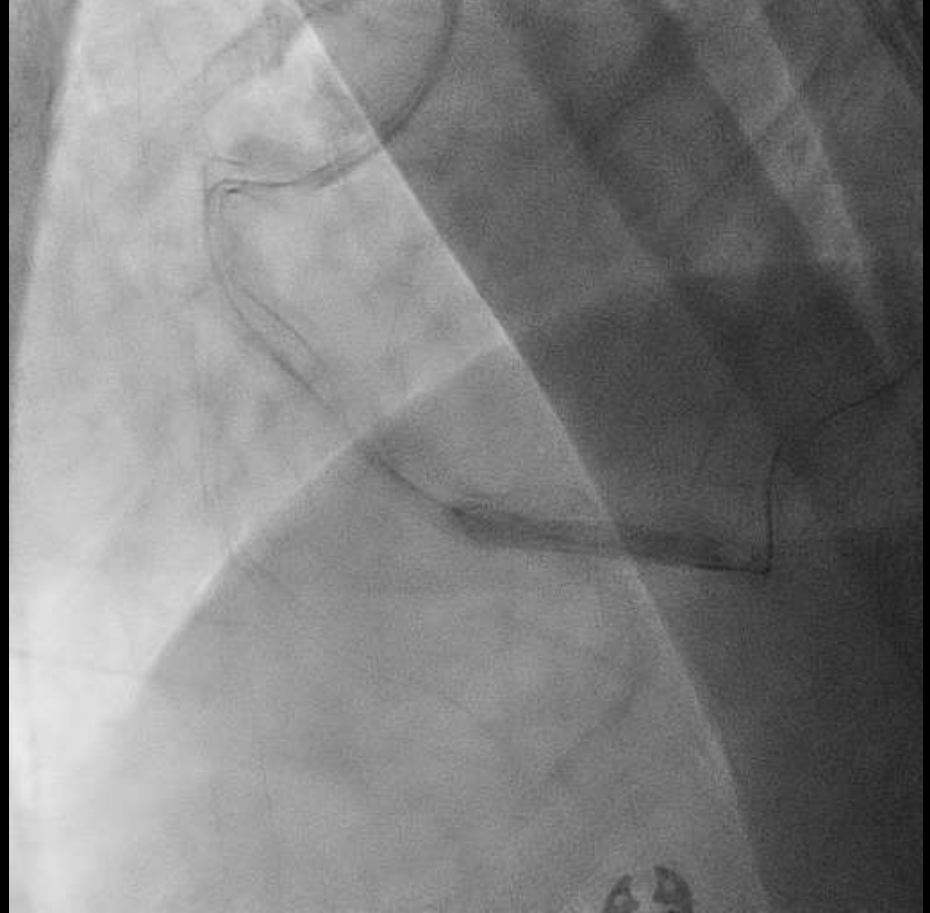
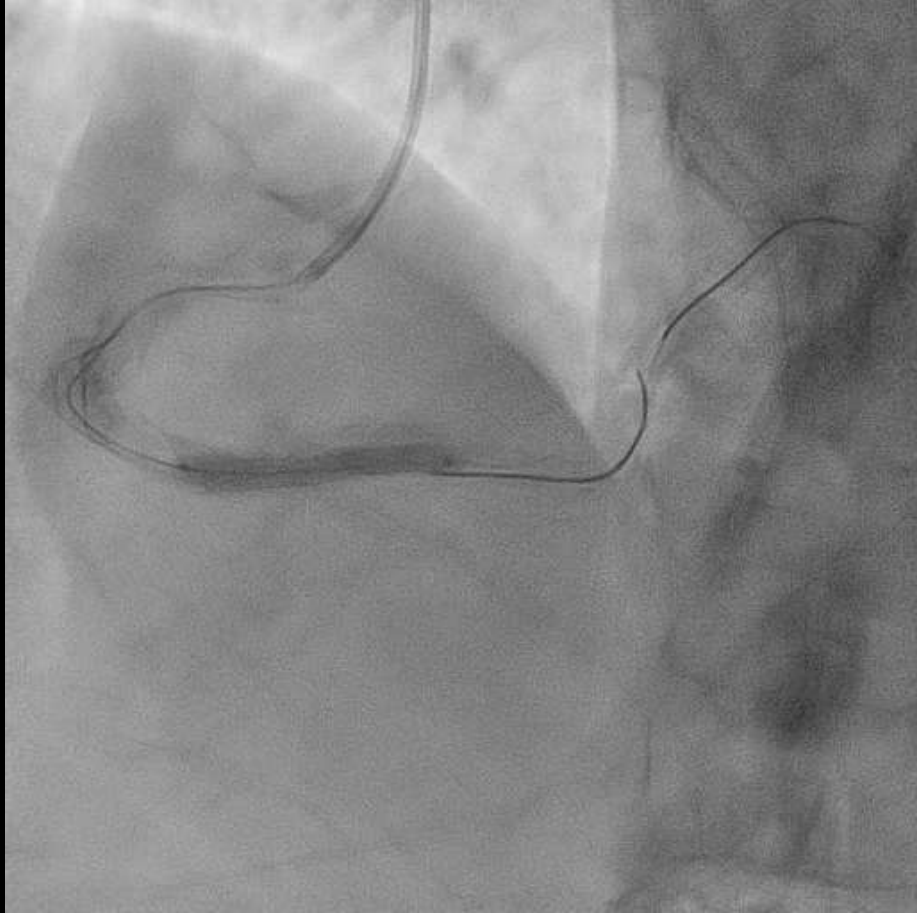
Cross Onyx 3.5/30mm through the proximal stent to middle RCA



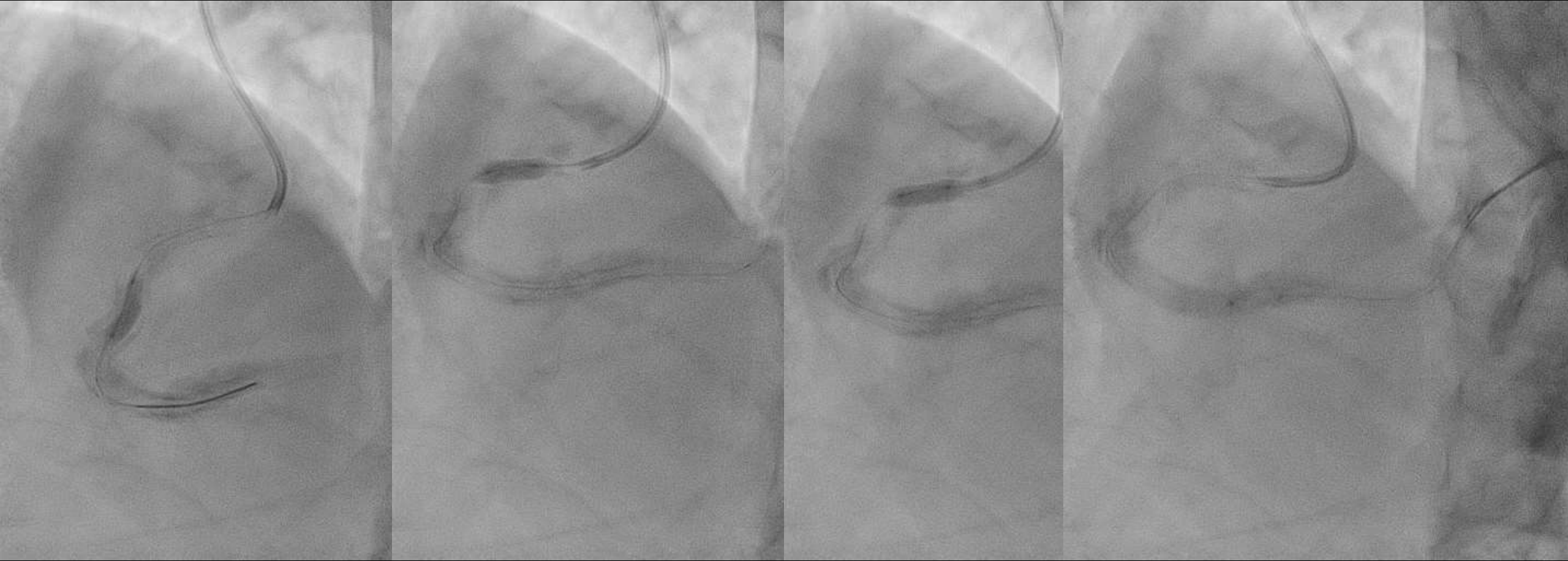


Onyx 3.0/30mm cross through the proximal and middle stents to distal RCA



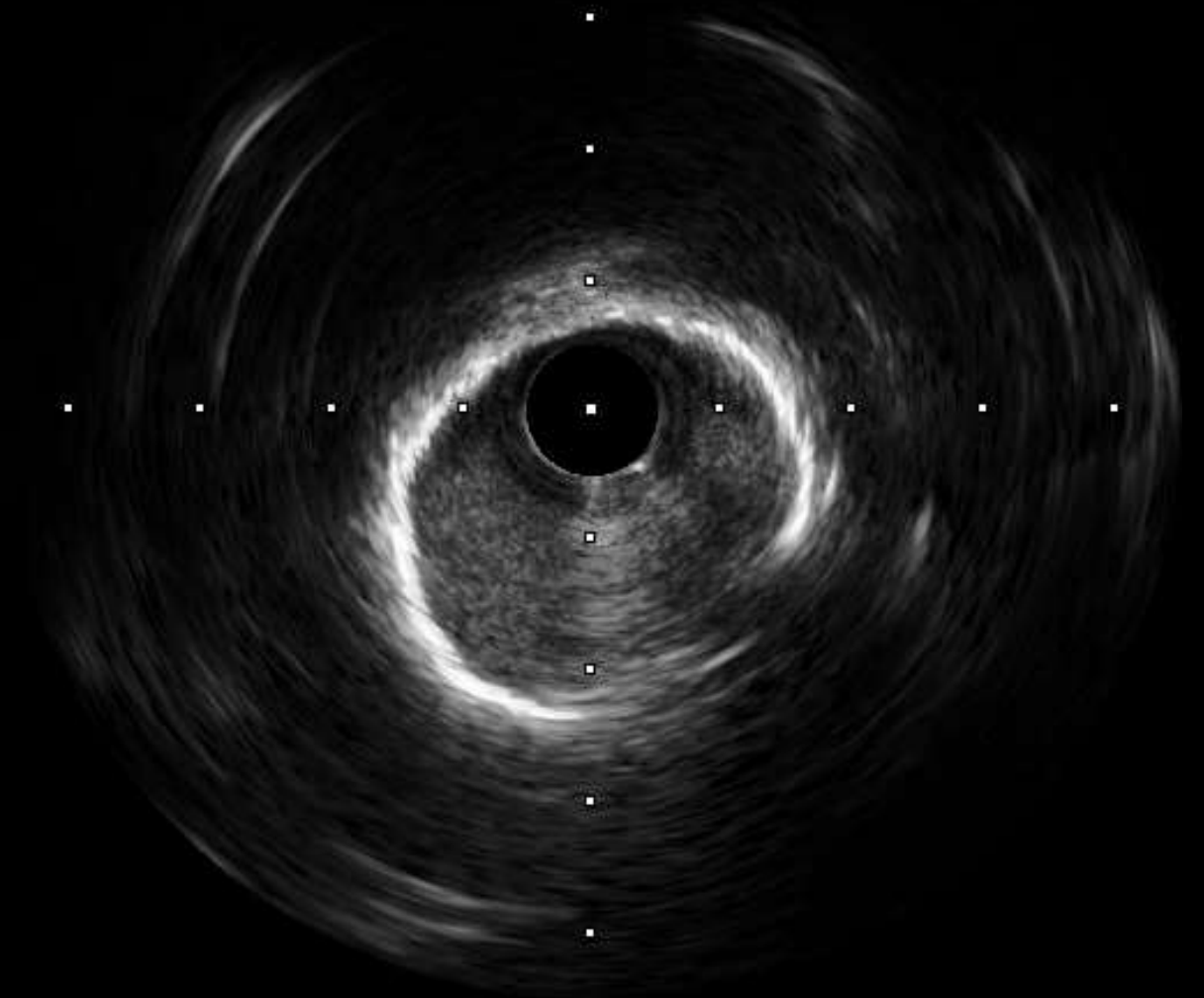
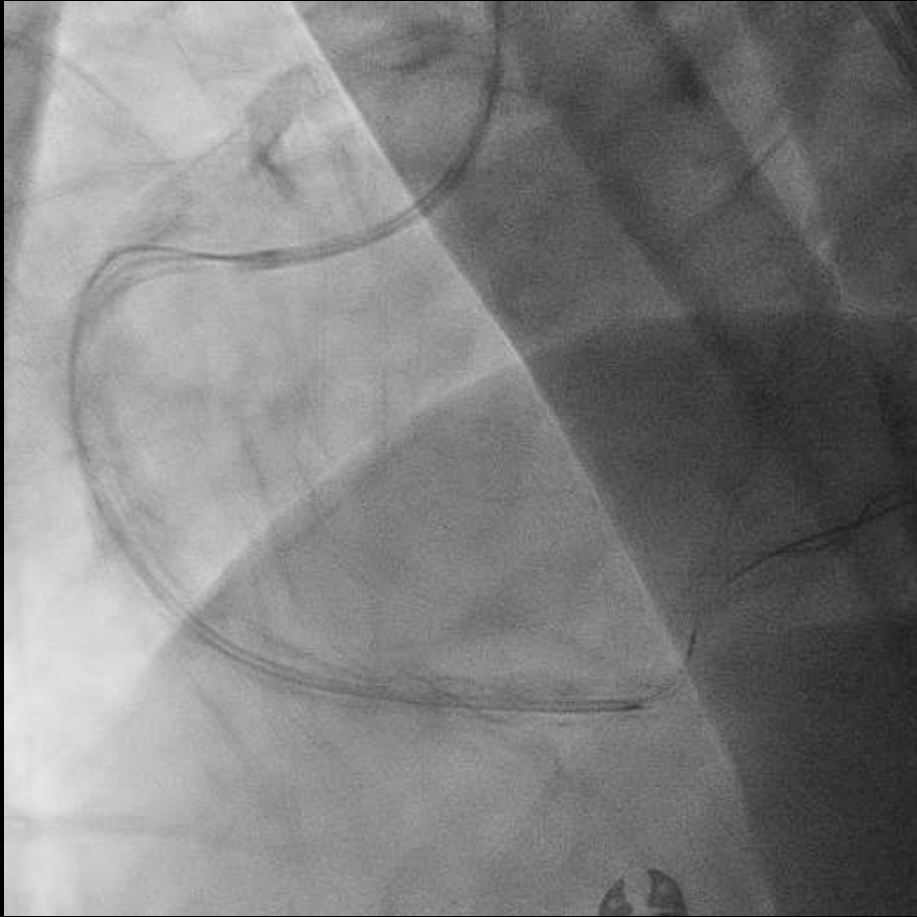


post dilatation: NC Trek 4.0/8mm, 26 atm.  
NC Trek 3.5/12mm, 22atm.

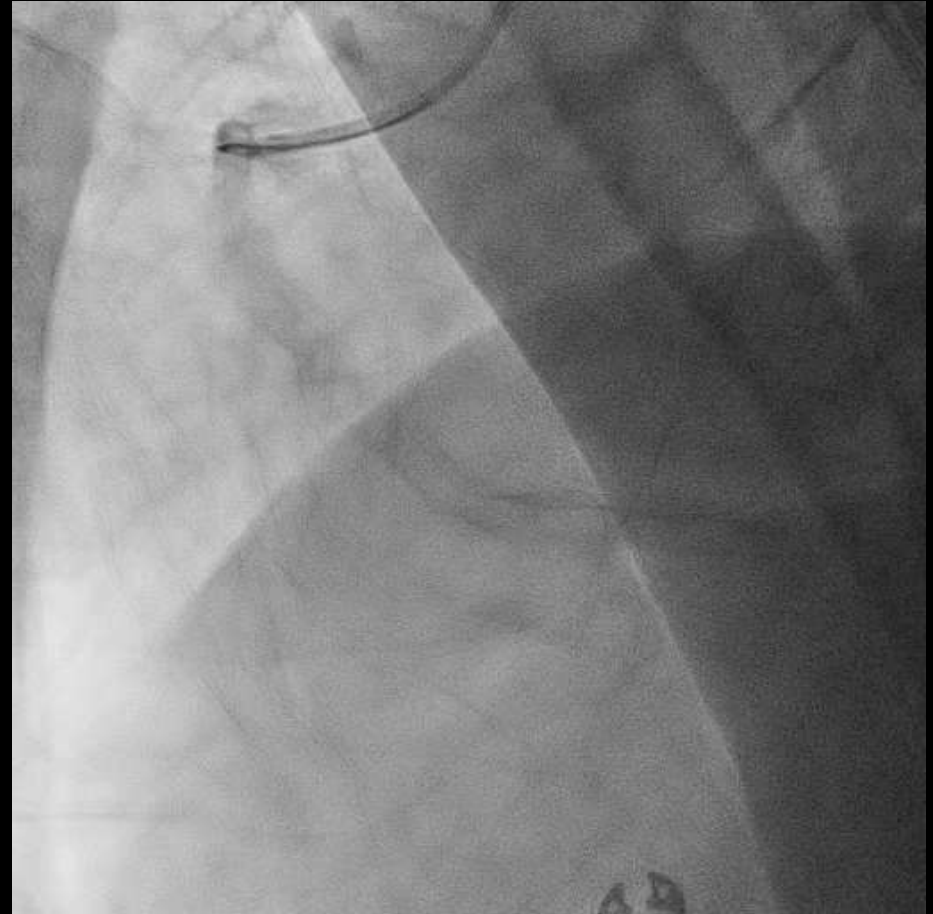
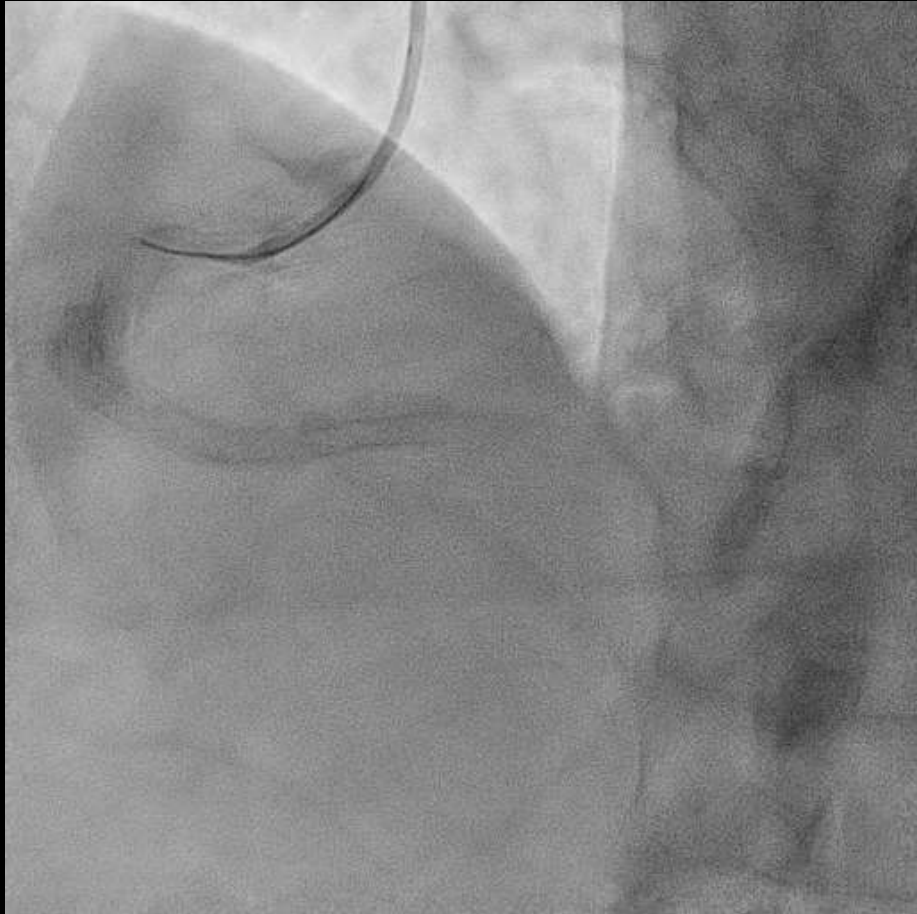




# IVUS



# Final angiography



# Procedure summary

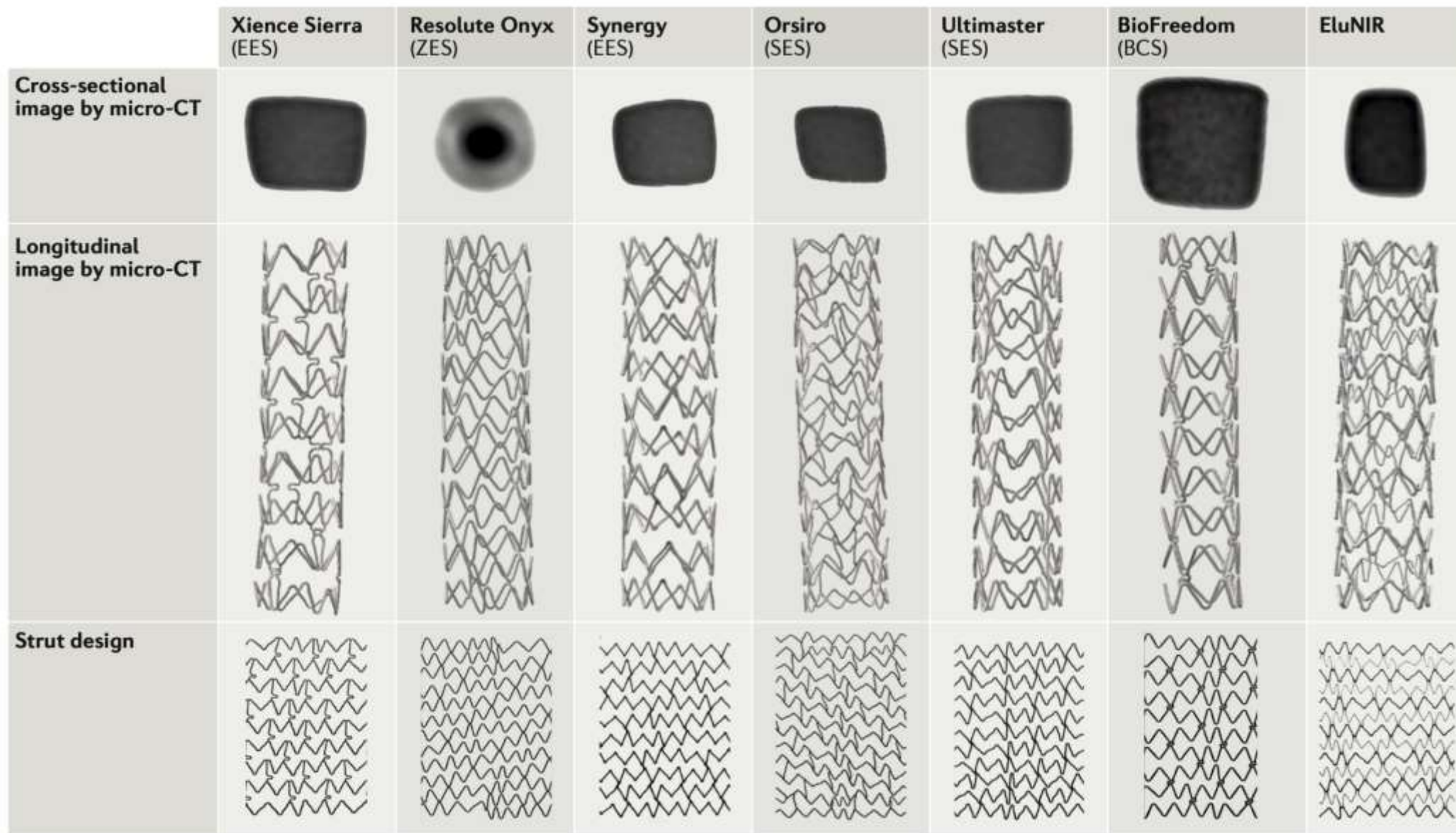
- Procedure time: 240 min
- Fluro time: 90 min
- Contrast: 200 ml

# Discussion Points

- 1. How deep can the 5Fr GC be seated safely ?
- 2. Are there any Stents should be avoided if we decided to stenting the proximal diseased segment first ?

# Conclusion/Take-home Message

- 1. Stent jailed wire provide a good backup support for the system. In suitable situation this technique can be considered, especially when poor GC support provided by 5 Fr GC and no other options could be used.
- 2. To deliver stent through stent, adequate lesion preparation and post dilation of deployed stent are important. Besides, thickness and shape of the Stent strut could affect the stent deliverability through the deployed stent.



**Fig. 1 | Micro-CT images of drug-eluting stents.** All the drug-eluting stents approved by the FDA and the Japanese Pharmaceuticals and Medical Devices Agency are shown. BCS, Biolimus A9-coated stent; EES, everolimus-eluting stent; SES, sirolimus-eluting stent; ZES, zotarolimus-eluting stent.