



# Every Effort Applied in Revascularization of LAD CTO with Ambiguous CAP

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# Case Presentation

- 66 M, Type 2 DM, Dyslipidemia, Current Smoker
- Angina at CCS Fc II activity
- Cardiac SPECT (2019/06/20) :
  - Transient LV dilatation at stress
  - Partial reversible defect at apex, apical anteroseptal wall, (30~40% decrease) whole inferolateral wall (40%~50%)

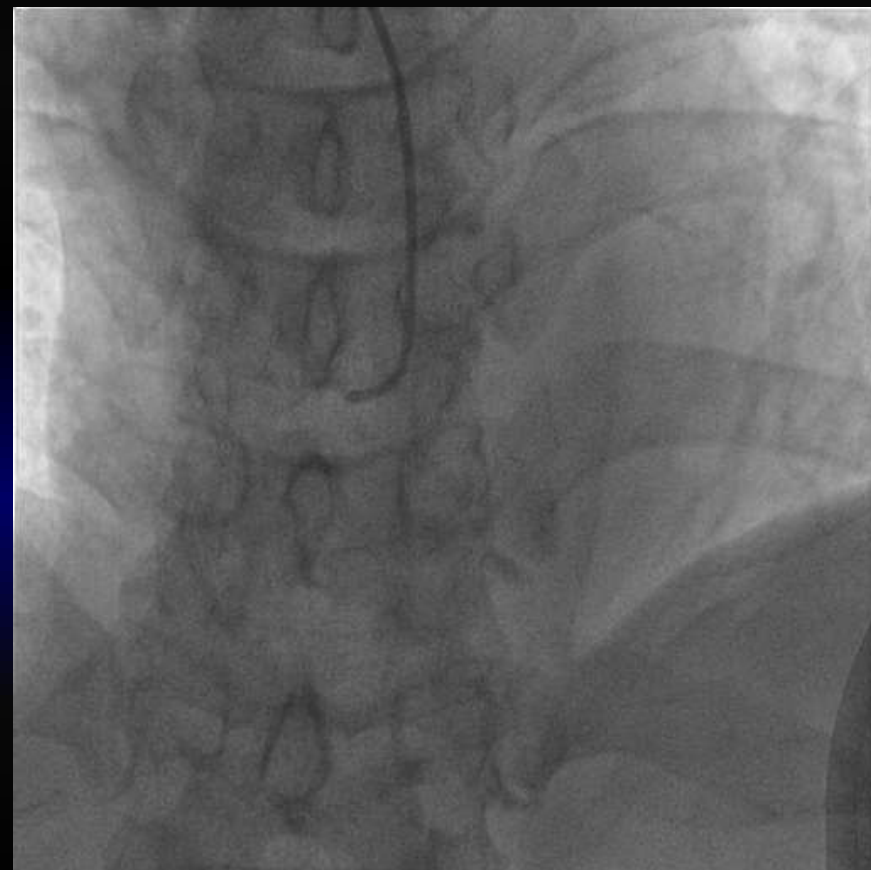
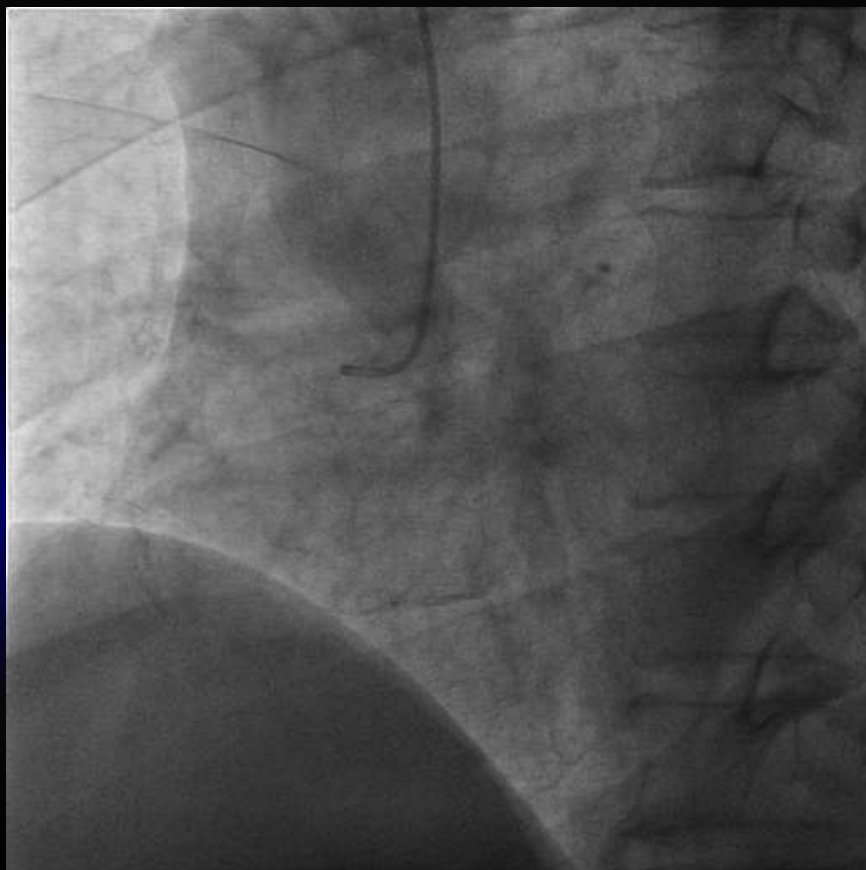


# Echocardiogram

- Preserved LV function, with mid MR (local H)



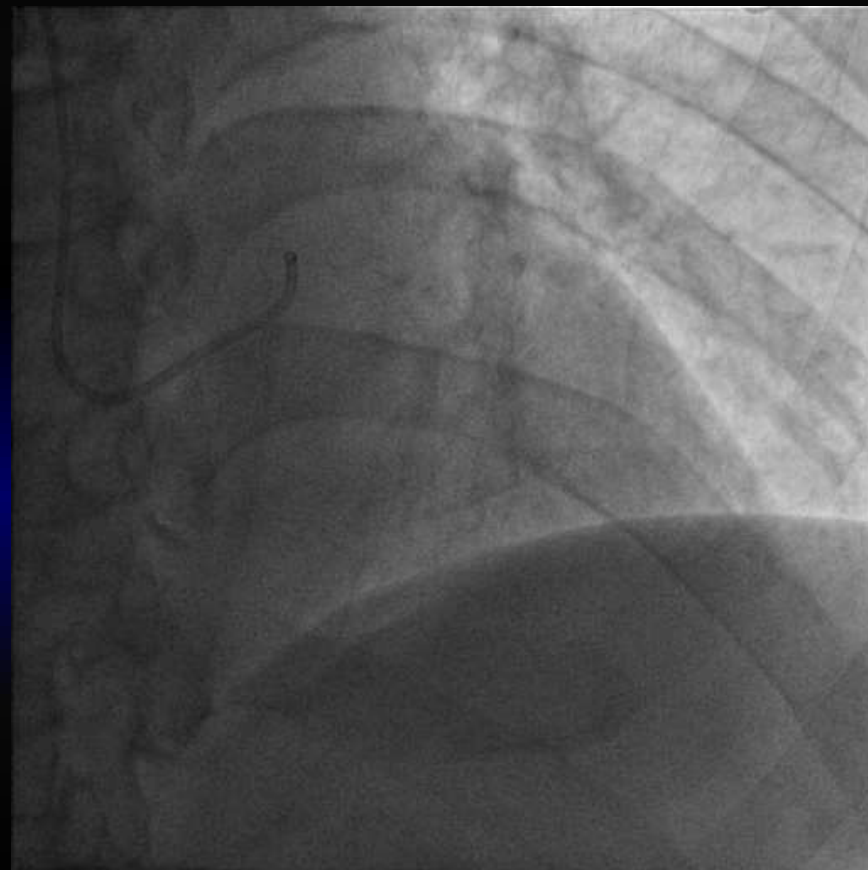
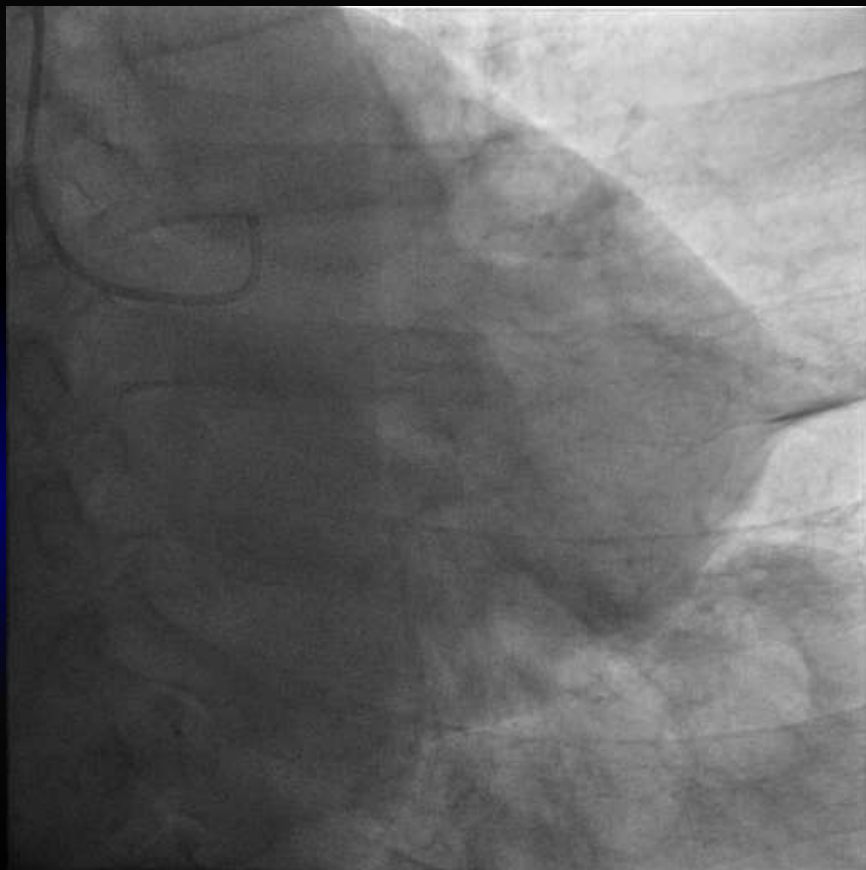
# CAG



Collateral from RCA to LAD and Lcx



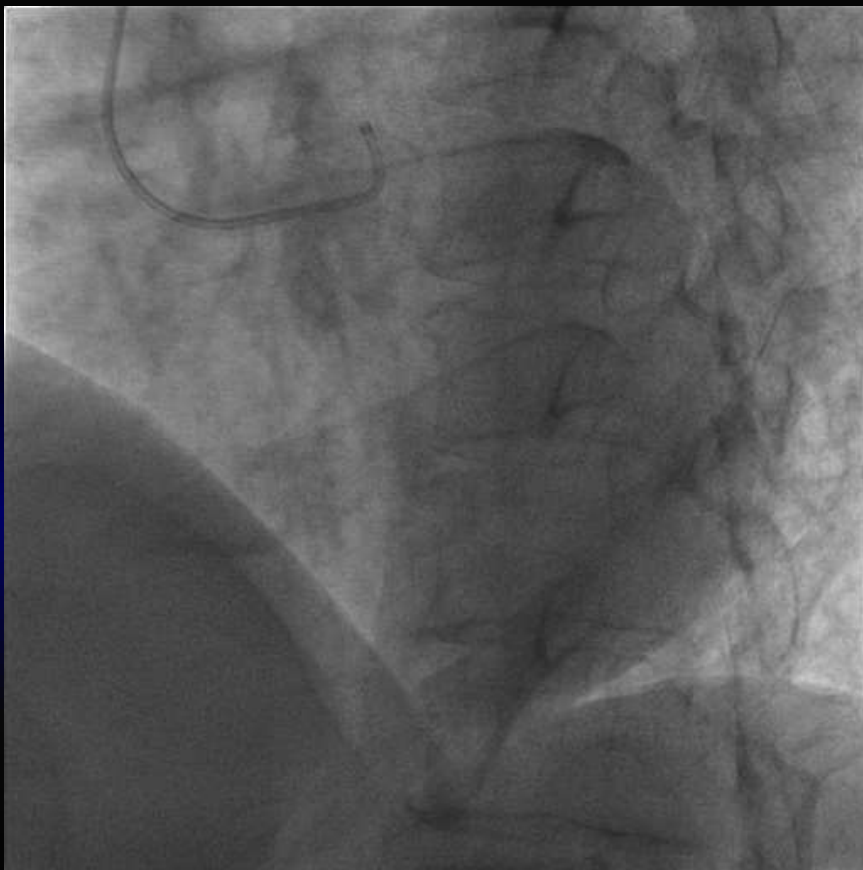
# CAG



LAD self-antegrade collateral



# CAG





# Tentative Diagnosis

- CAD with TVD, LAD: CTO, diseased and dominant diagonal branch. Lcx-d: 99% stenosis. RCA: focal stenosis over RCA-PDA

- Syntax score I: 35

- Syntax score II:

CABG refused by patient .....

For reliable results, please do not use your browsers b

### SYNTAX Score II

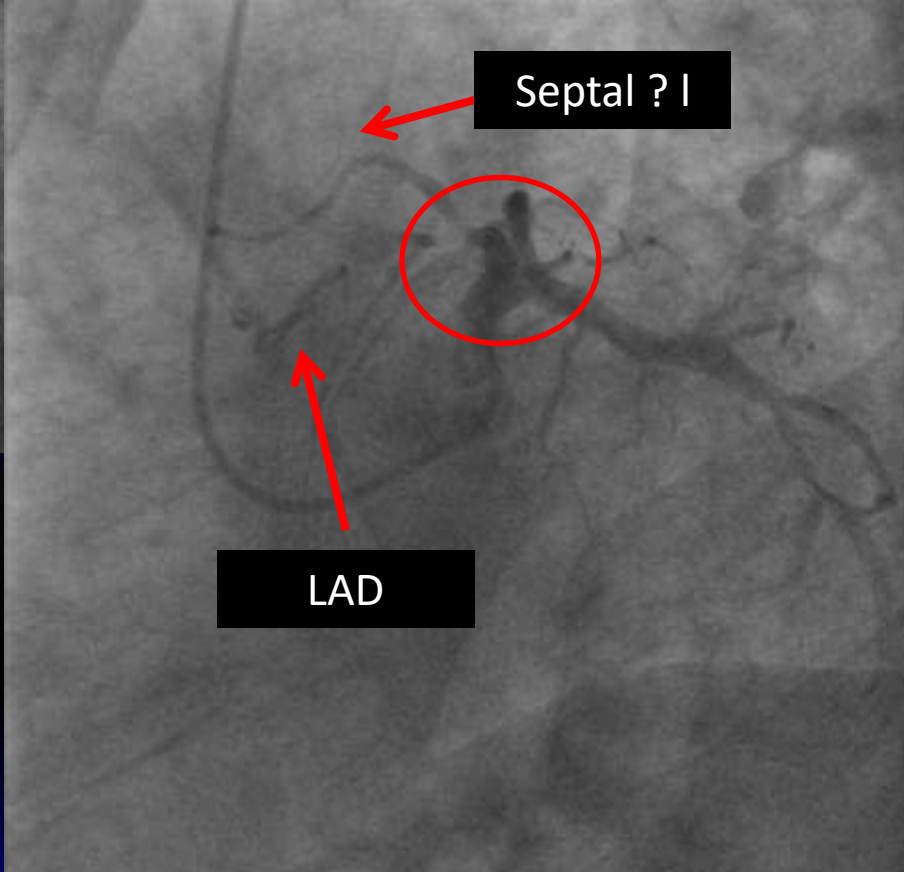
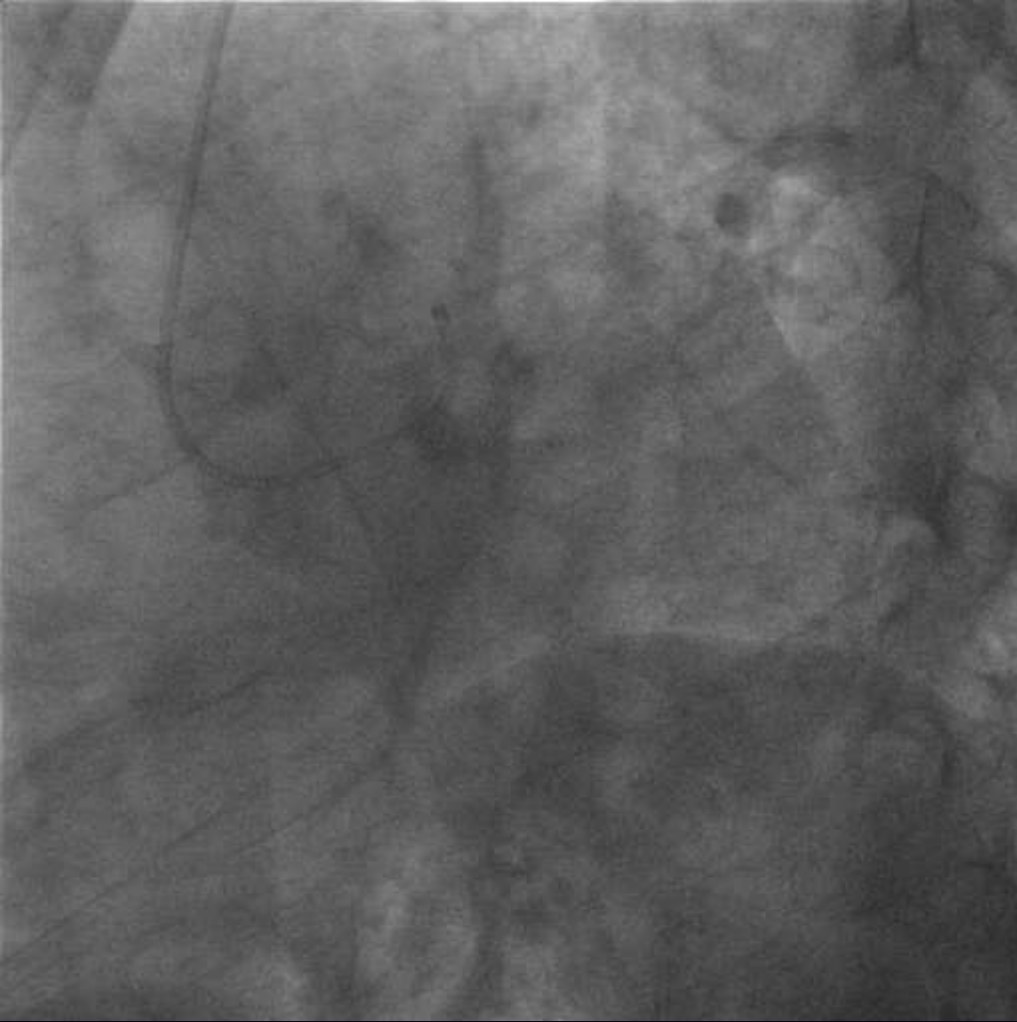
SYNTAX II

*Decision making -between CABG and PCI- guided by the SYNTAX Score II to be endorsed by the Heart Team.*

<b>PCI</b>	
SYNTAX Score II:	29.1
PCI 4 Year Mortality:	6.3 %
<b>CABG</b>	
SYNTAX Score II:	25.3
CABG 4 Year Mortality:	4.6 %

*Treatment recommendation* ⓘ: CABG or PCI

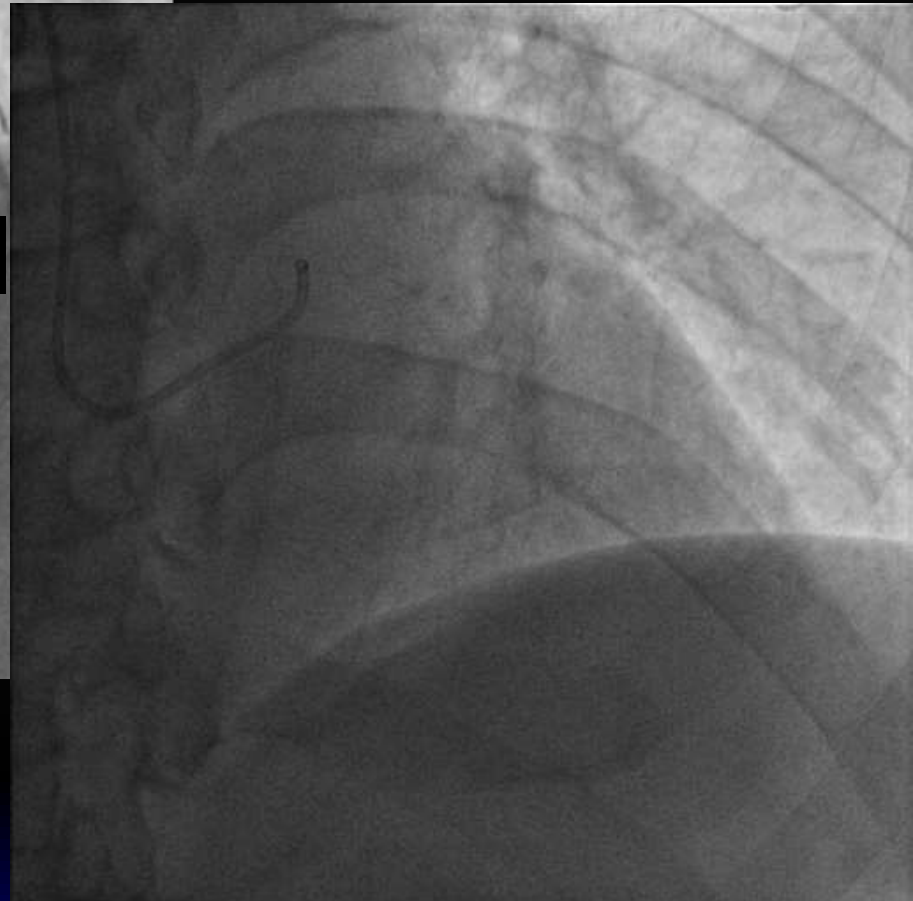
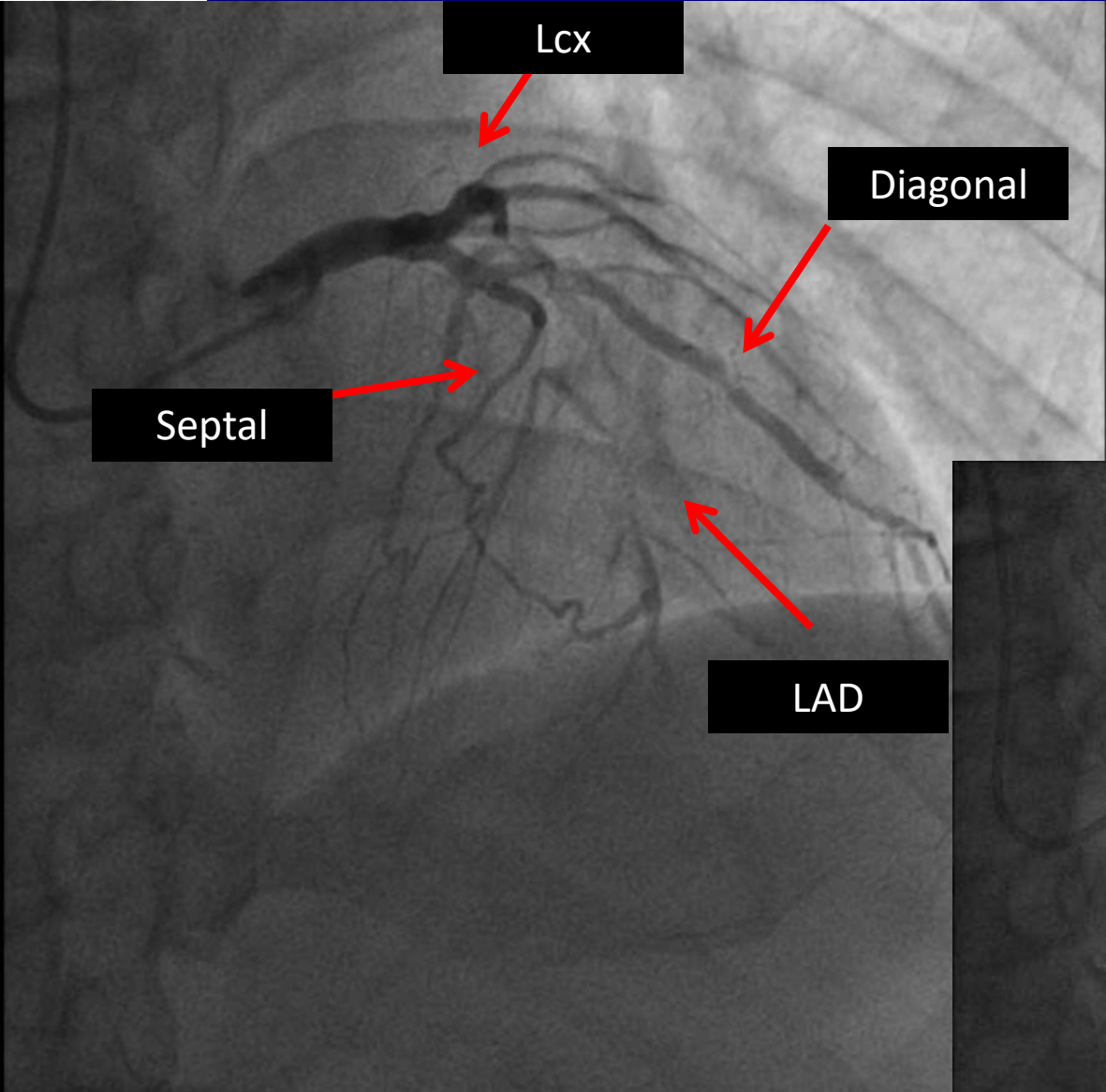




Septal ? I

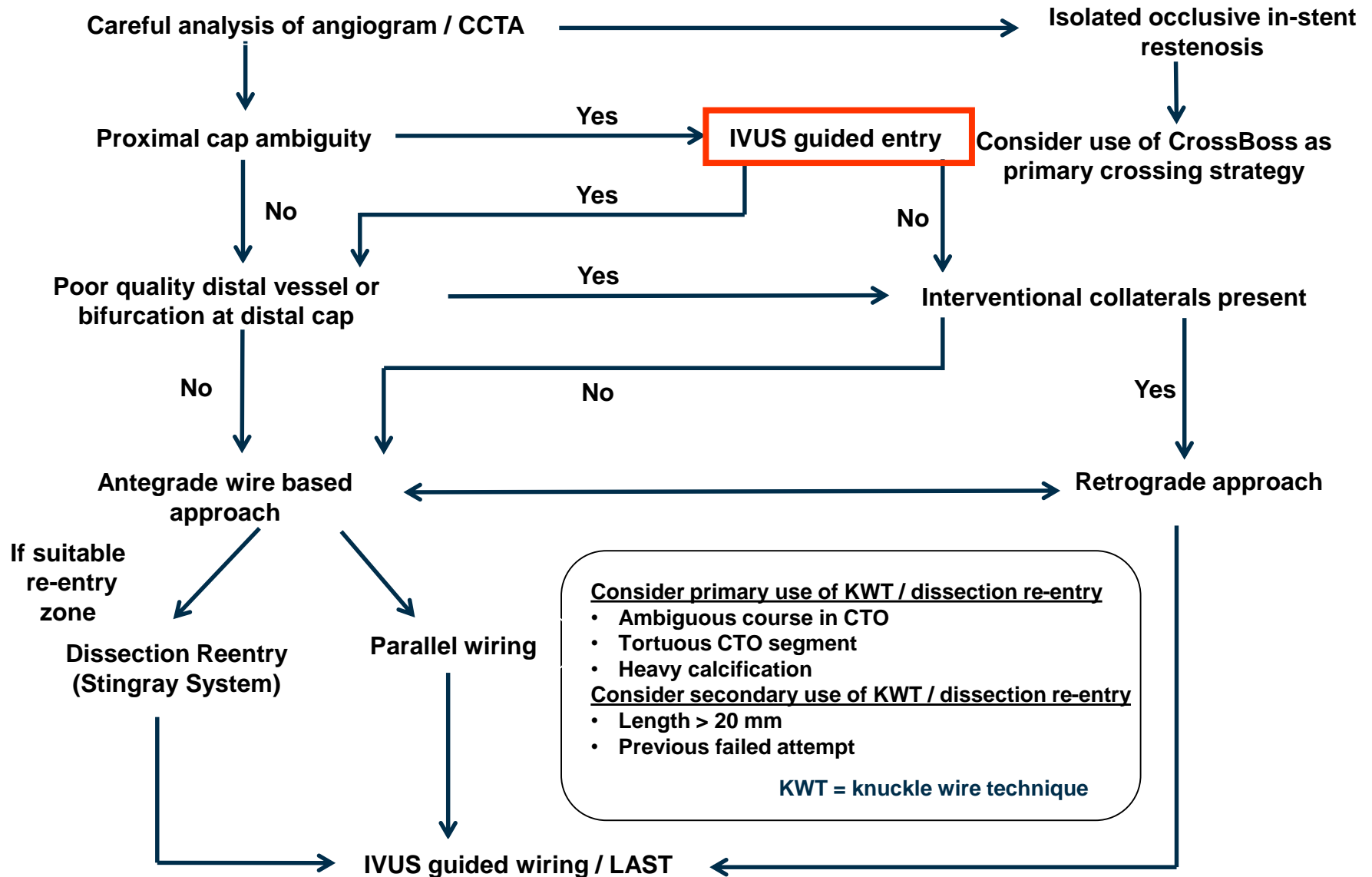
LAD





# Algorithm for CTO crossing from AP-CTO club

J. Am. Coll. Cardiol. Interv., in press

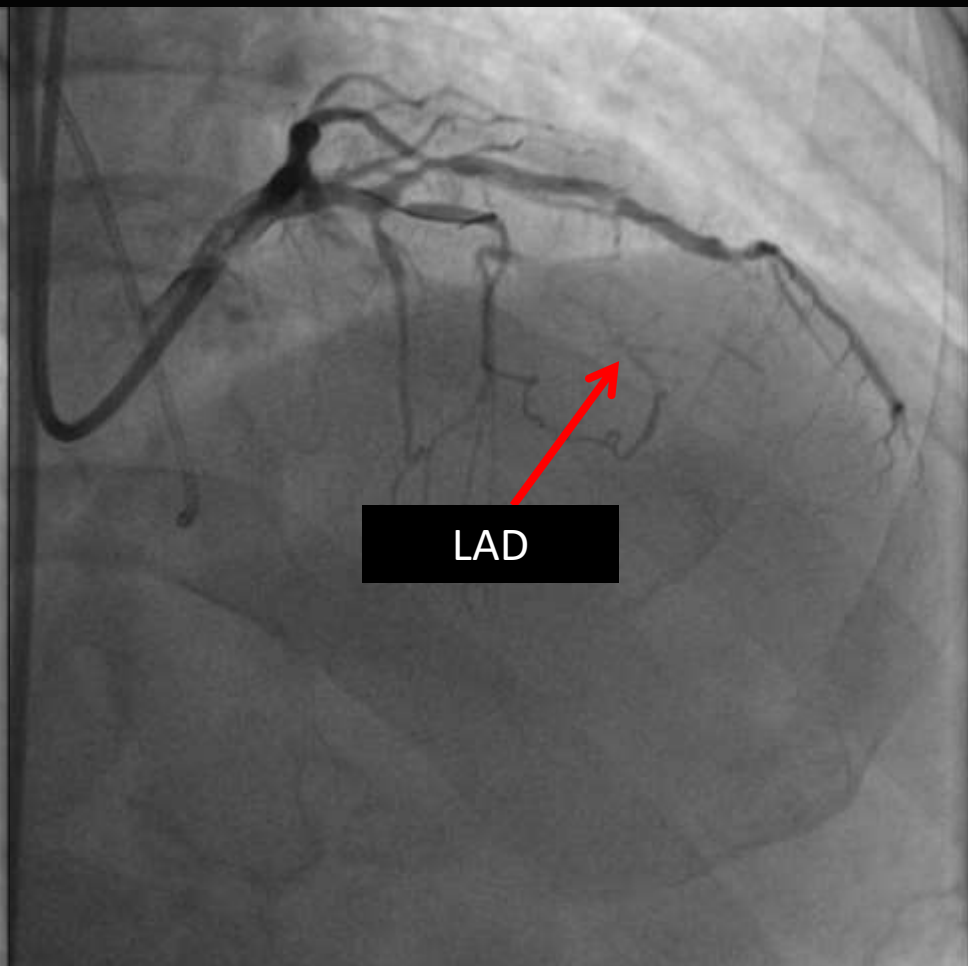
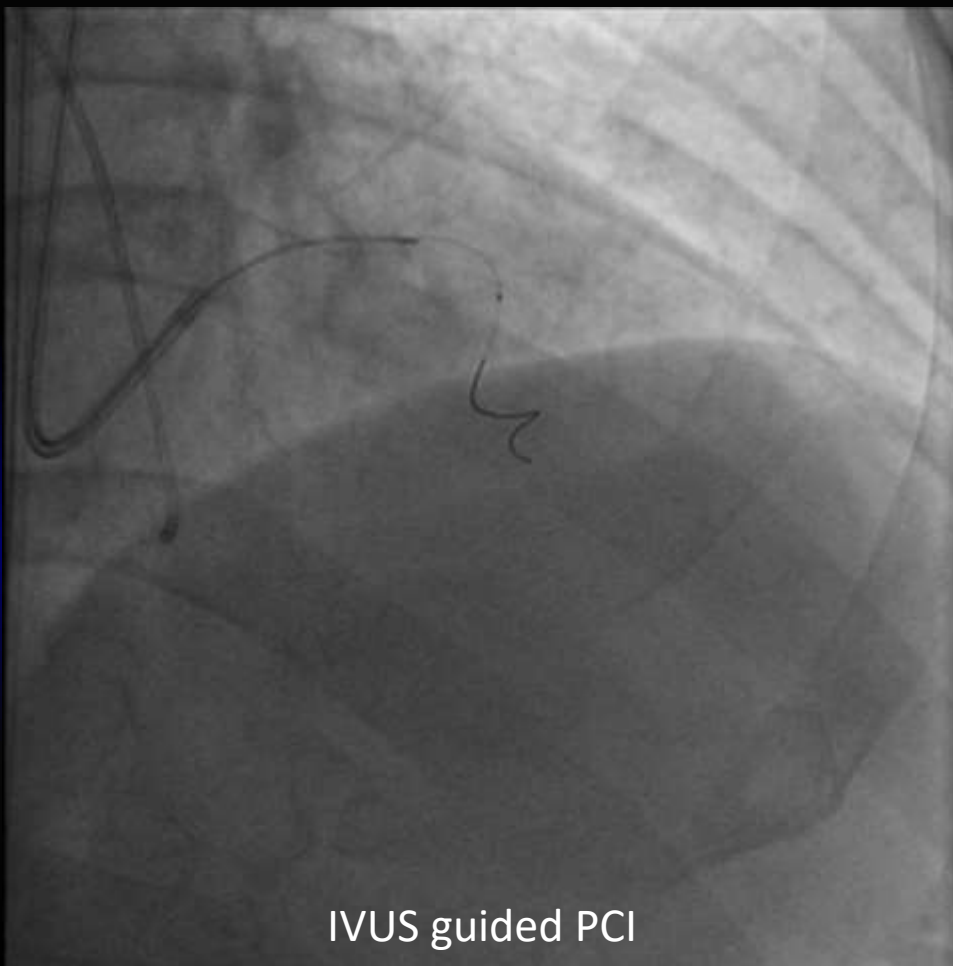


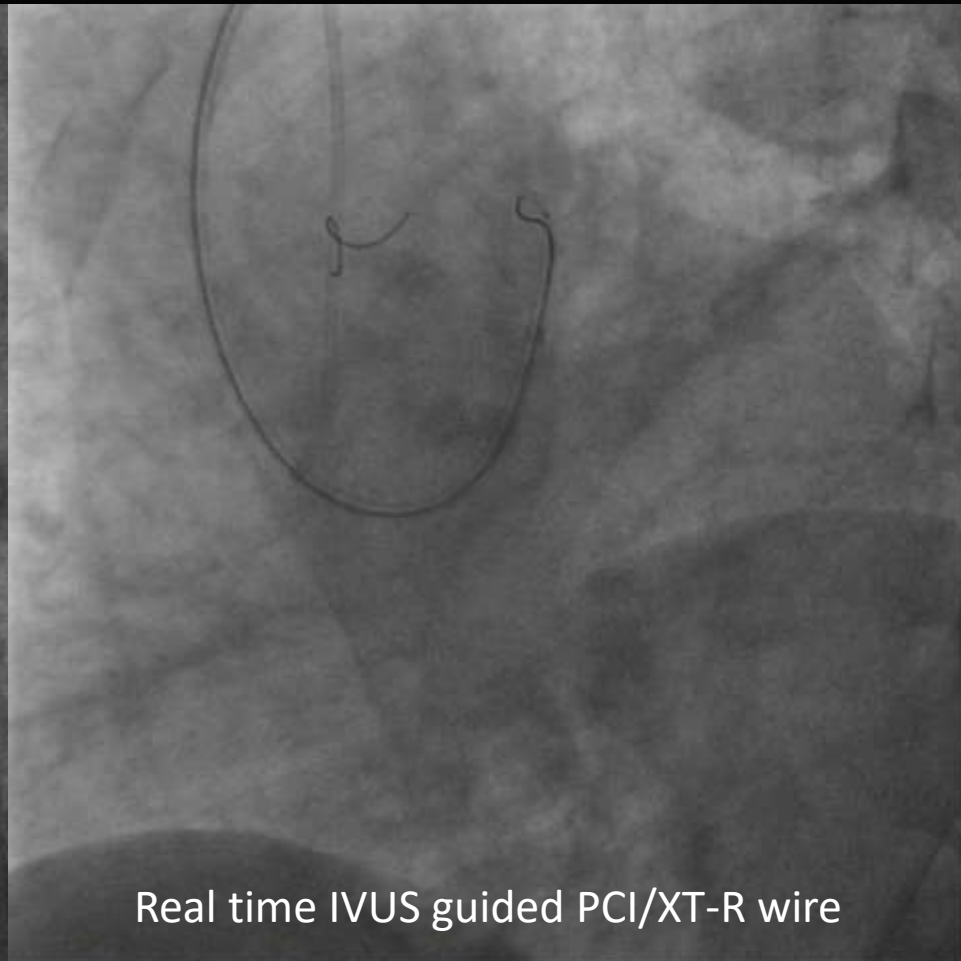
Consider stopping if >3 hours, 3.7 x eGFR ml contrast, Air Kerma > 5 Gy unless procedure well advanced



# My consideration

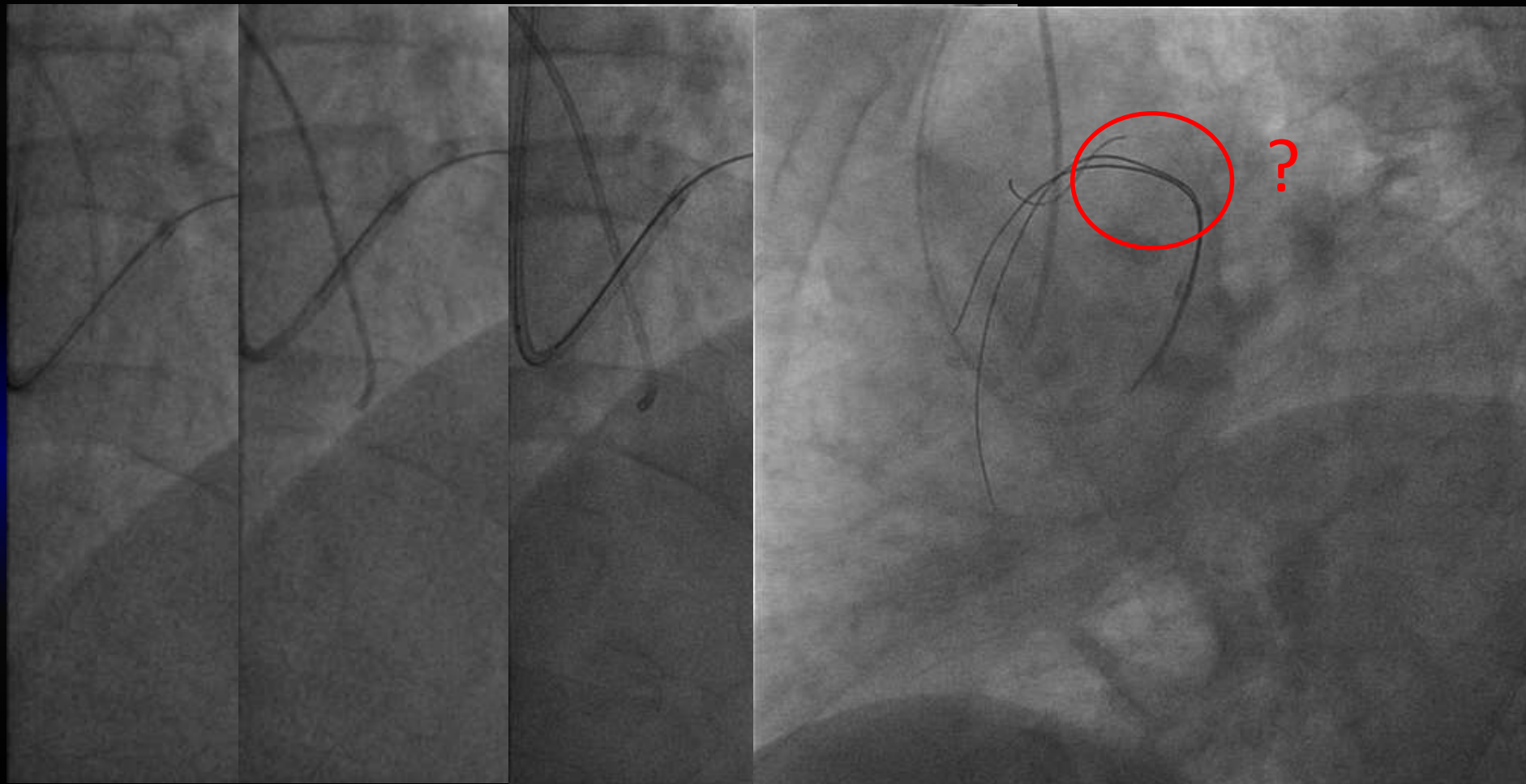
- Antegrade IVUS guided PCI/Retrograde approach
- 8 F EBU, real time IVUS guide, Finecross microcatheter
- Keep diagonal branch open !!!





Real time IVUS guided PCI/XT-R wire

# Gaia 2 due to failed XT-R

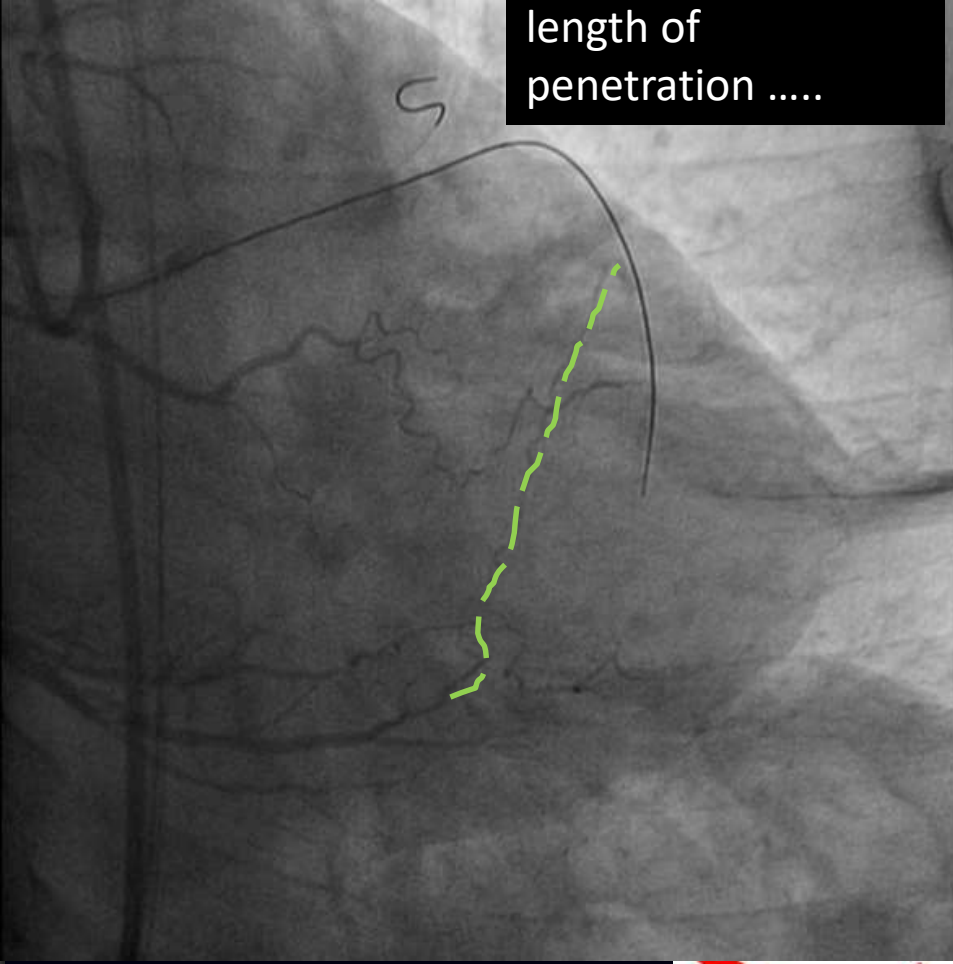
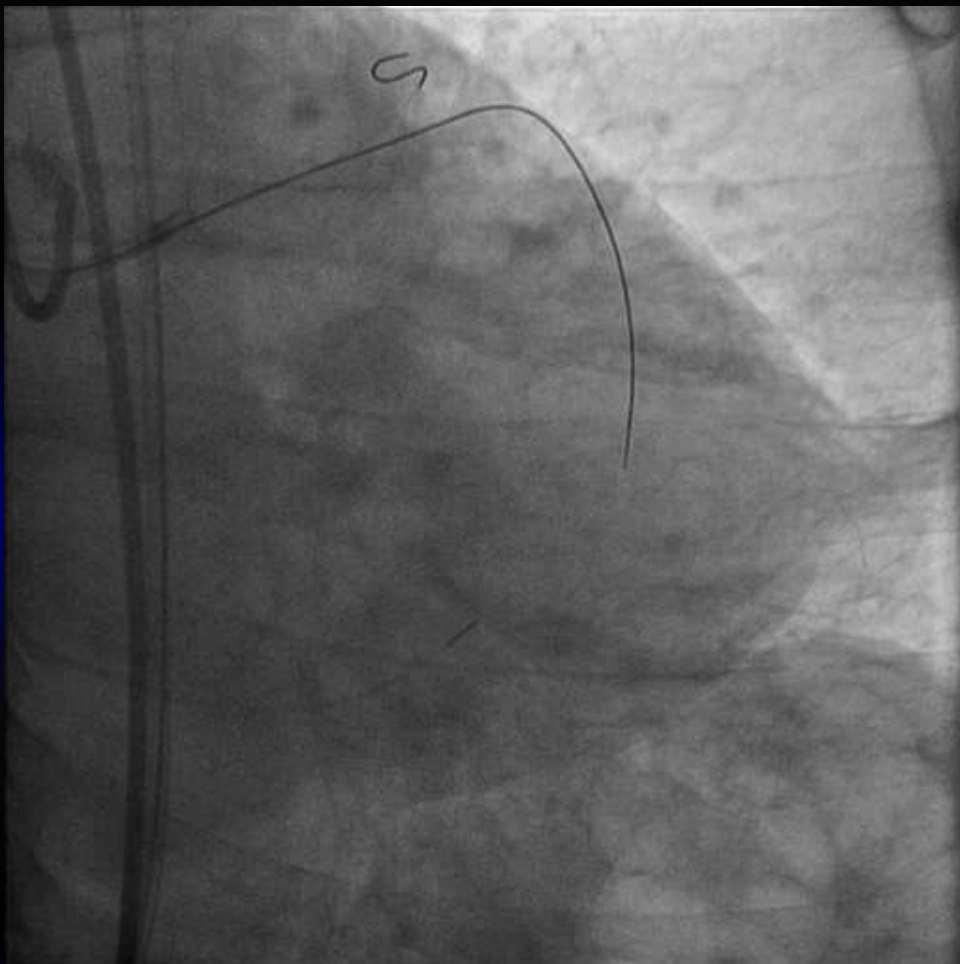


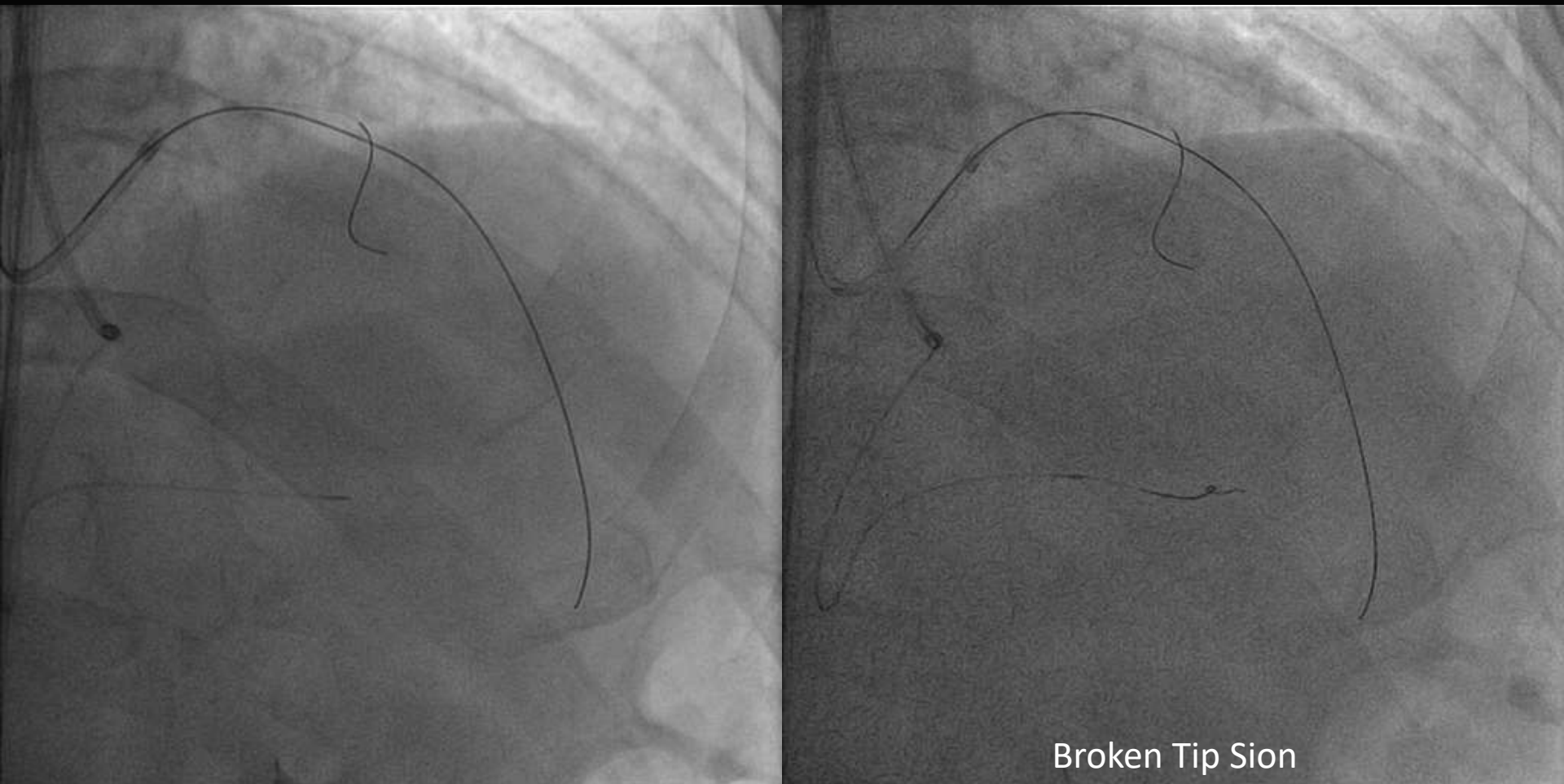
Antegrade wire failed to enter LAD true lumen



# Retrograde approach (SAL 7F for RCA)

But very short length of penetration .....

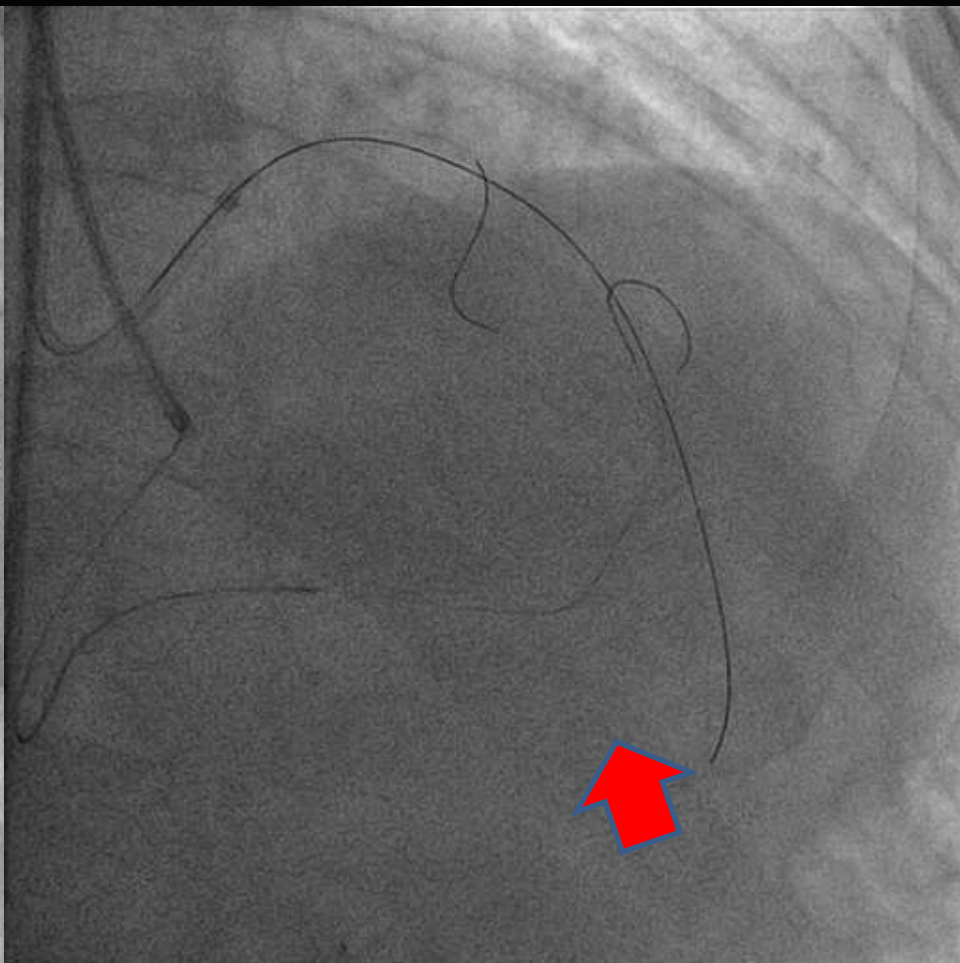
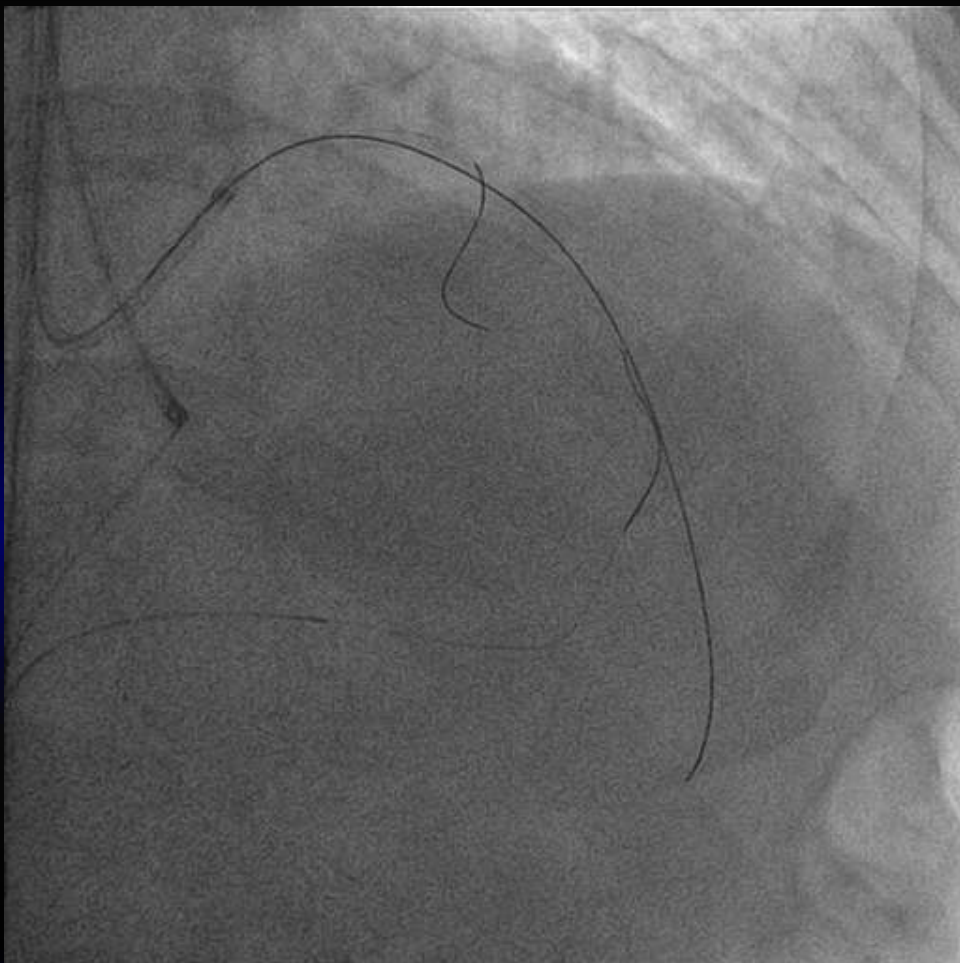




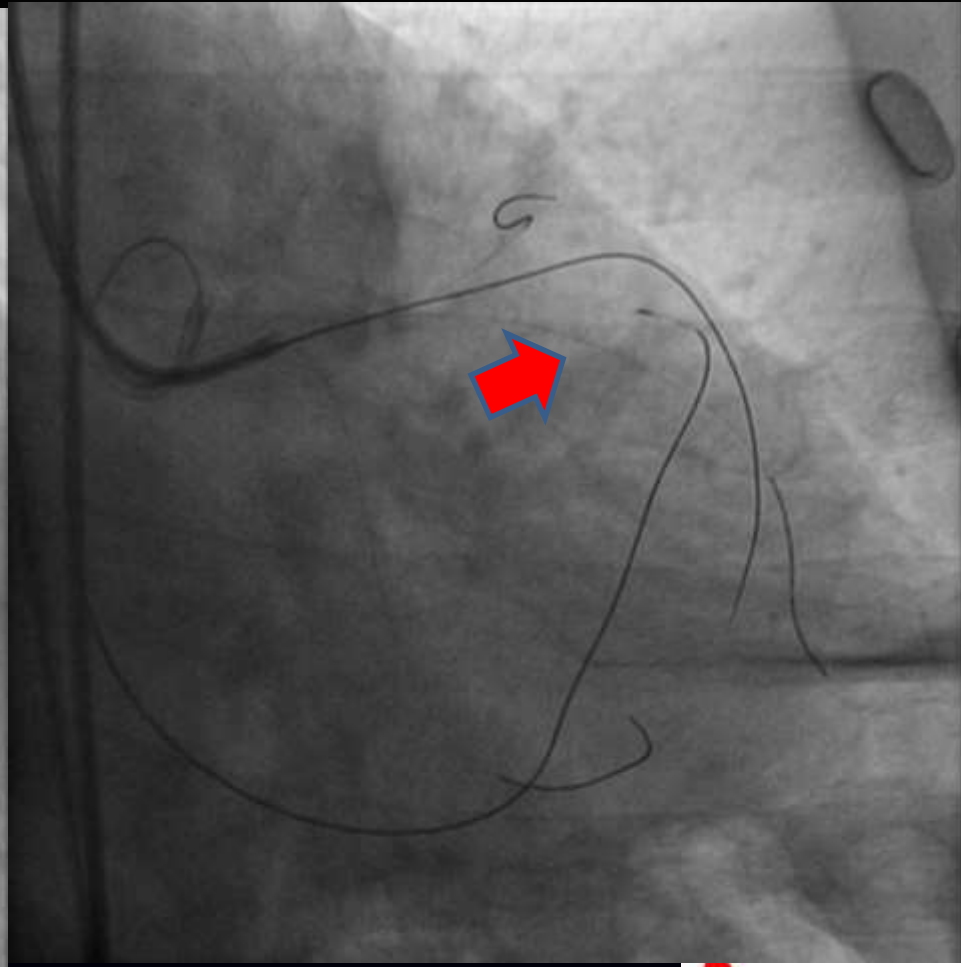
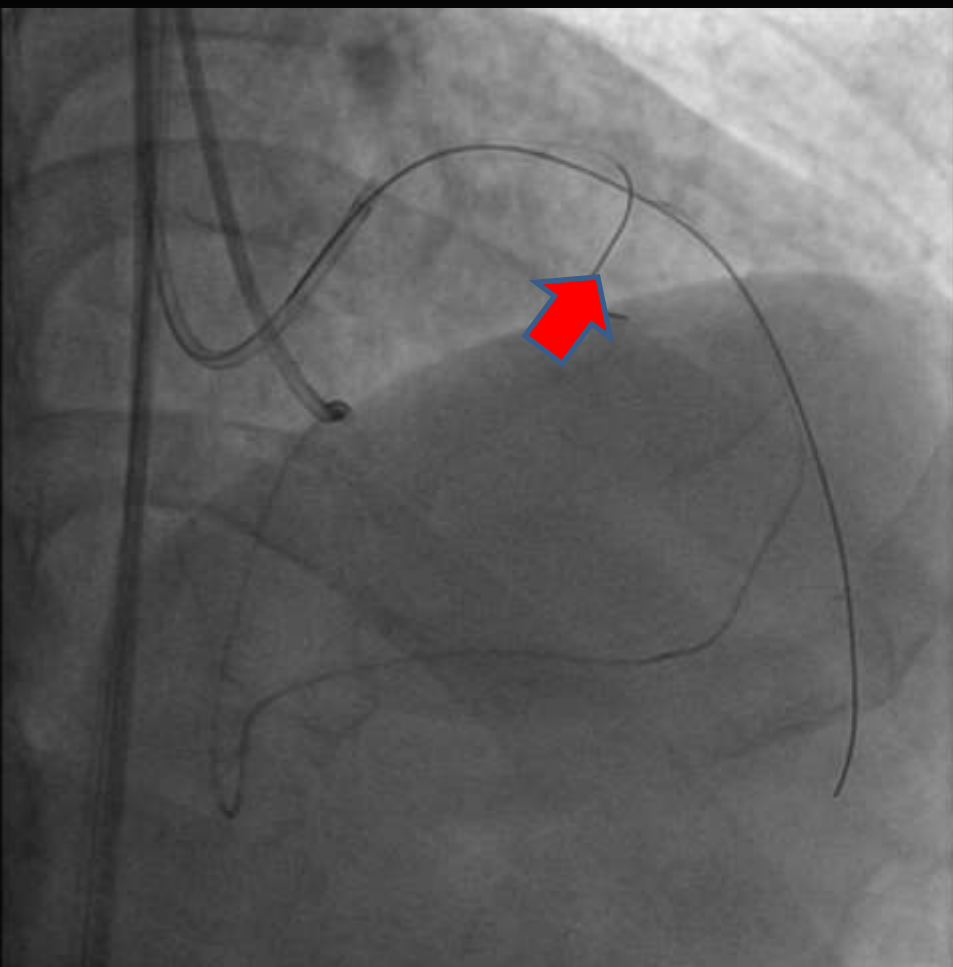
Broken Tip Sion



# Advance Retrograde Caravel

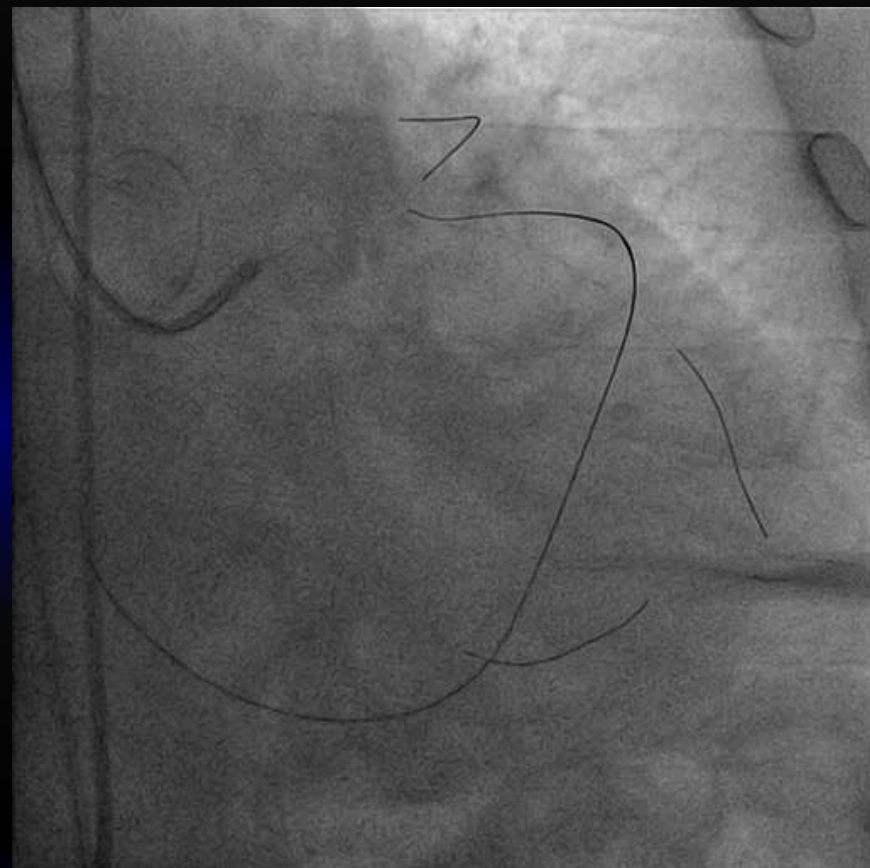
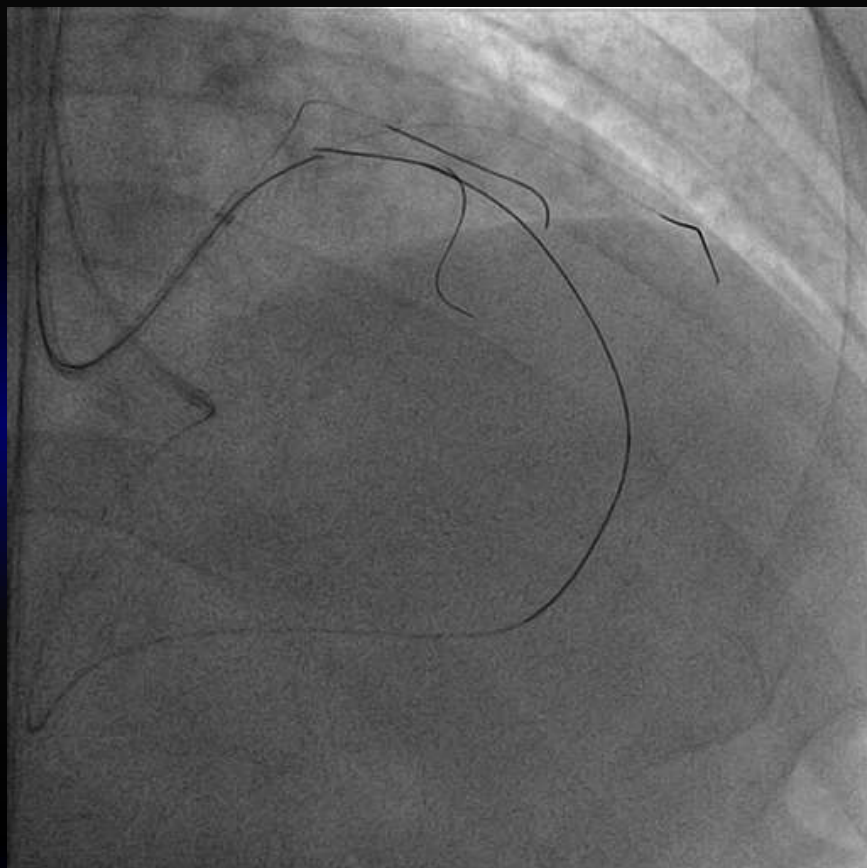


# Retrograde Caravel

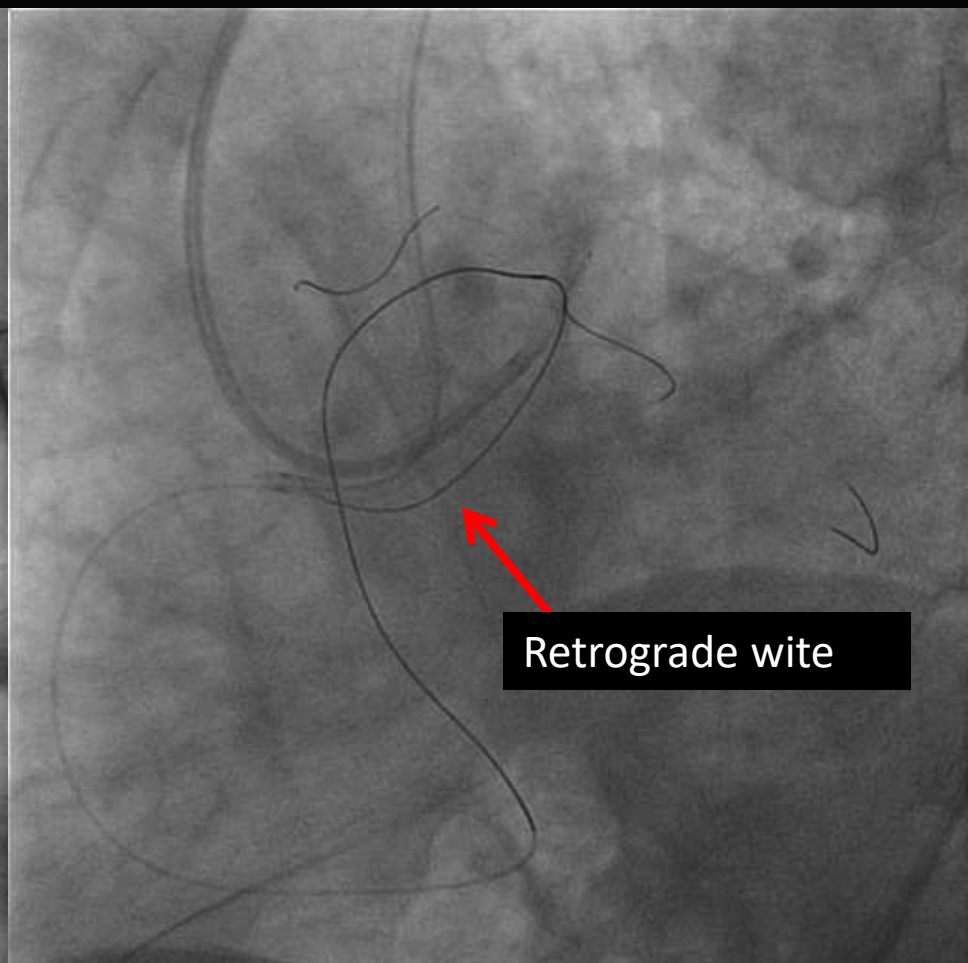
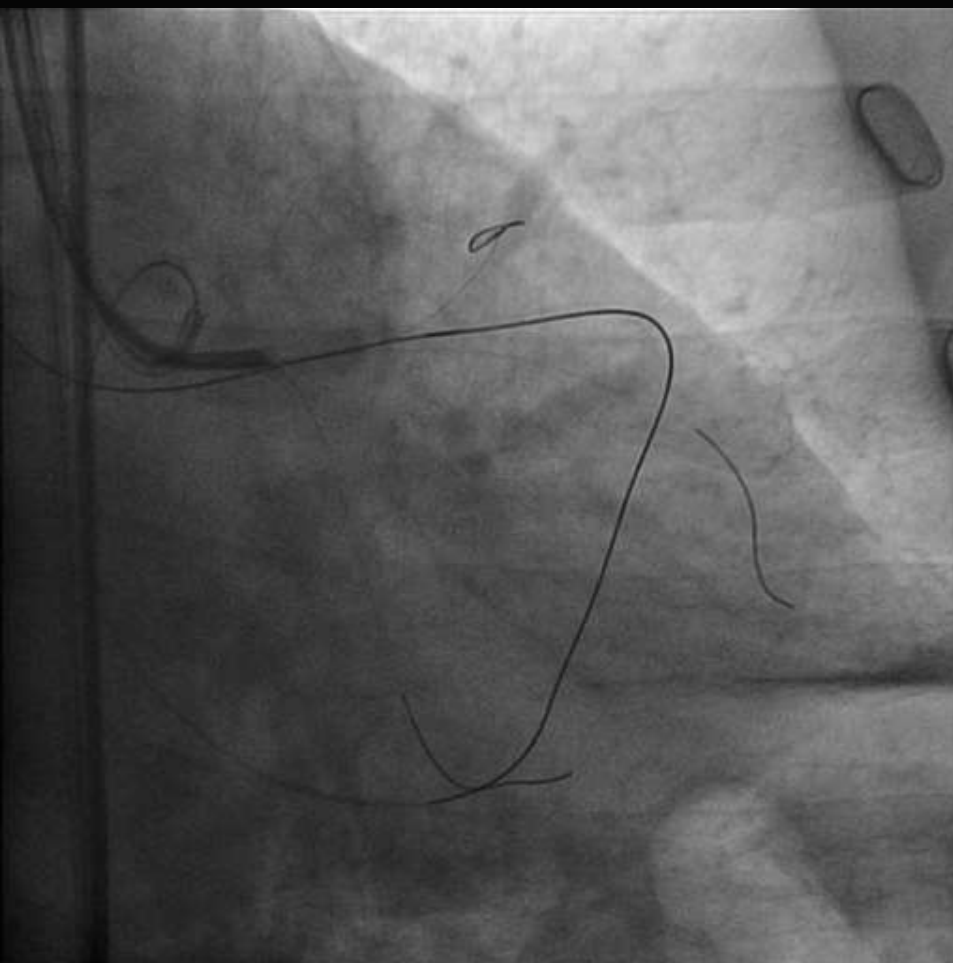




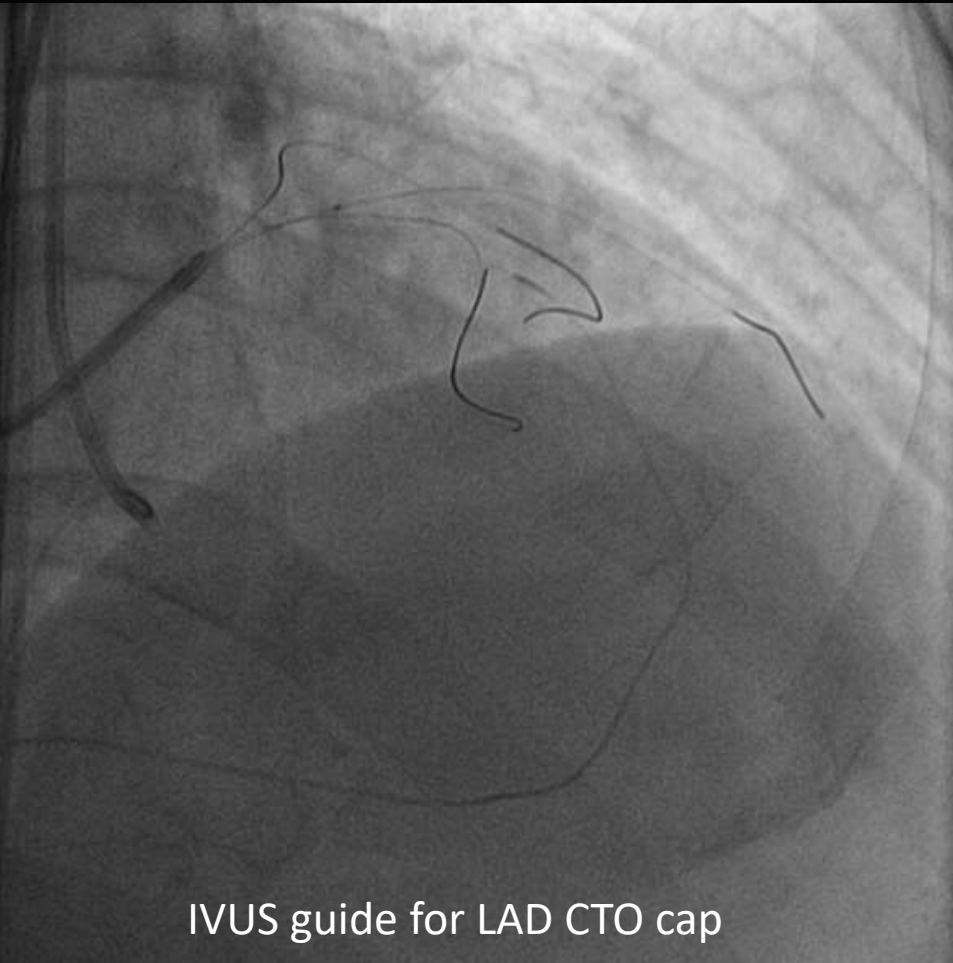
# Retrograde Gaia 2



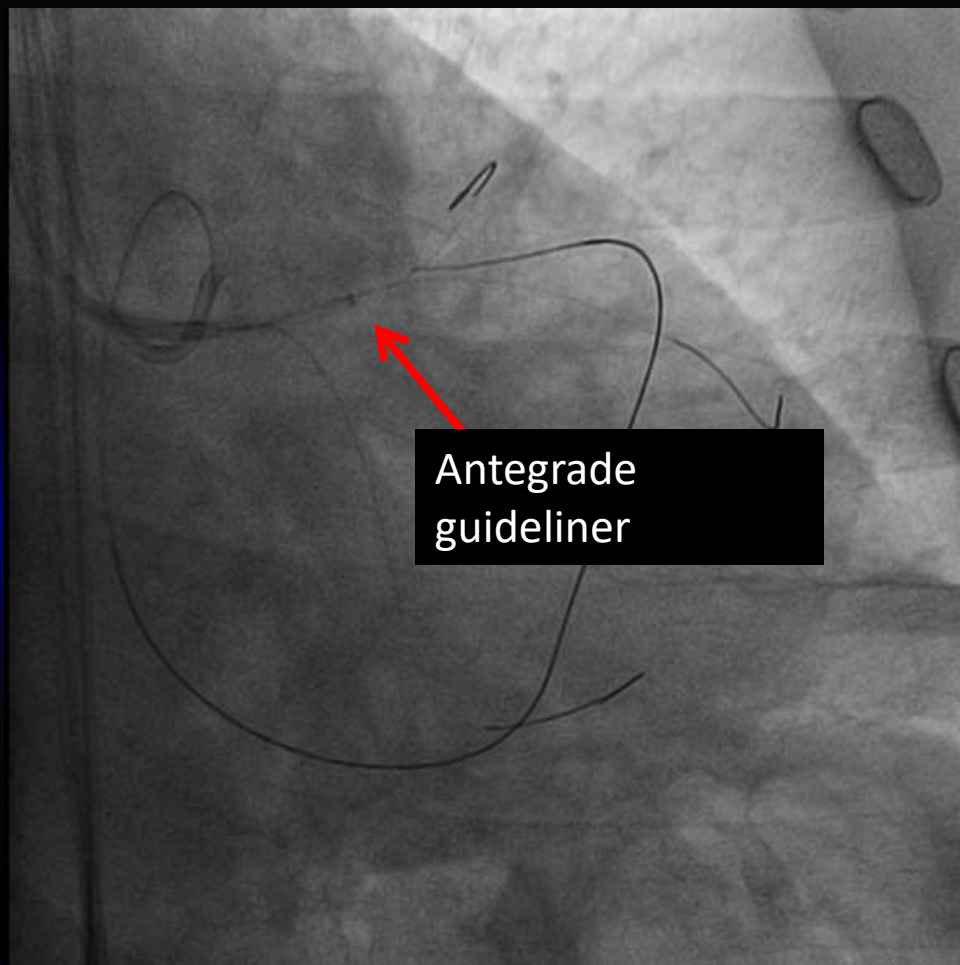
# Retrograde Gaia 2



Wire was not floating.....

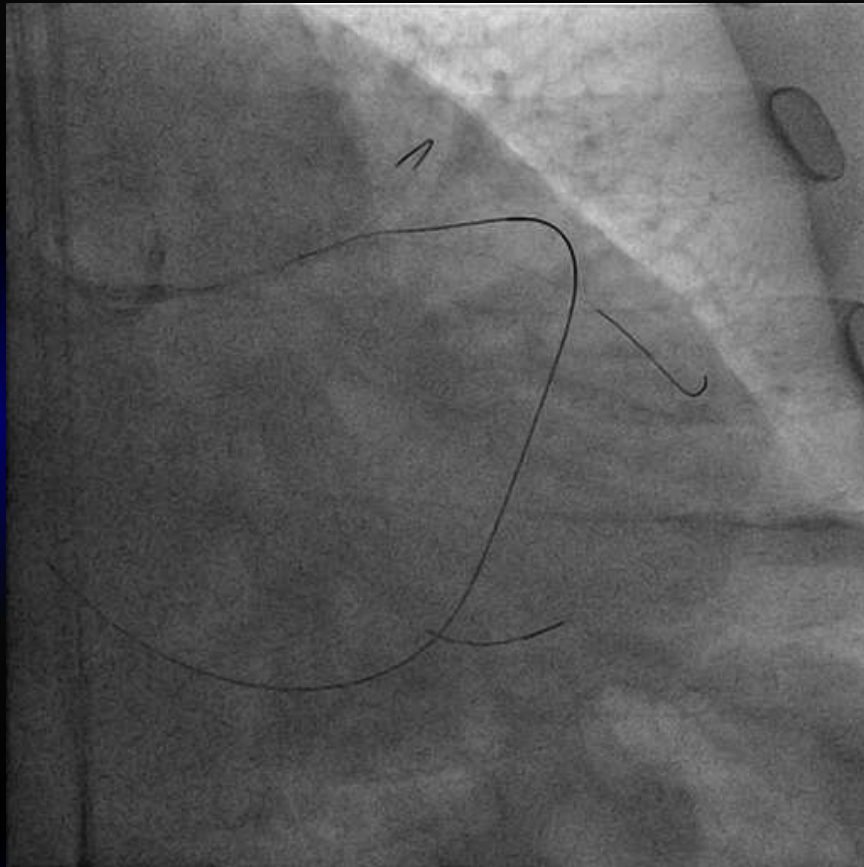


- IVUS as a land mark for retrograde wire (to diagonal branch)
- After serial attempt, we cannot get retrograde wire into aorta or antegrade guide.
- How to do ?

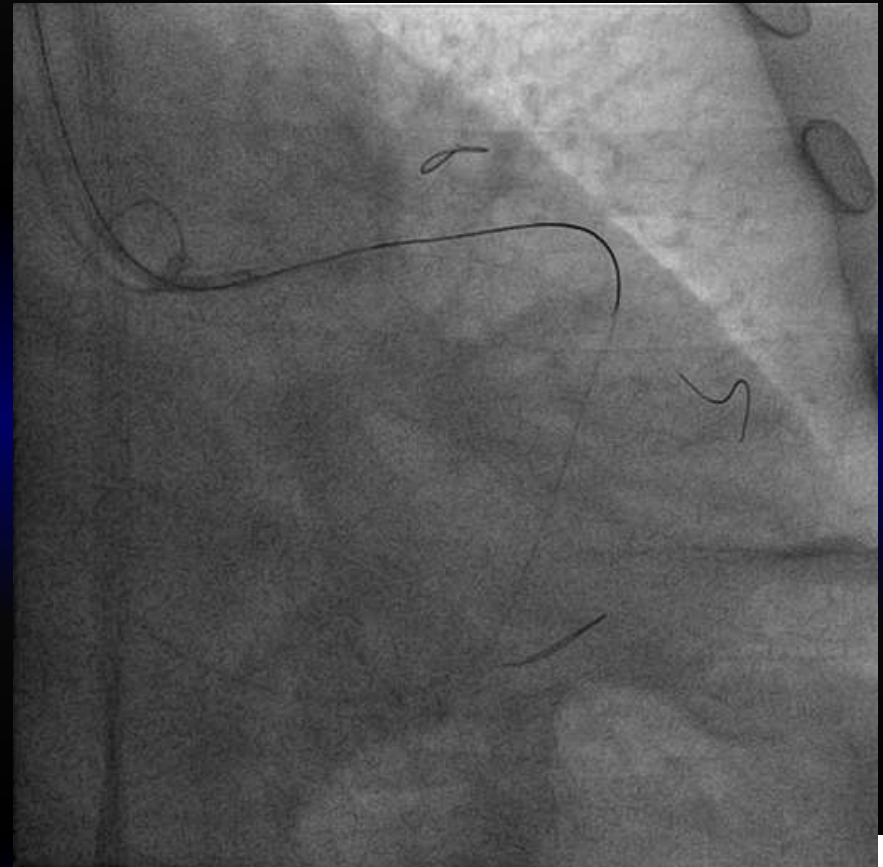




# Retrograde Caravel into guide



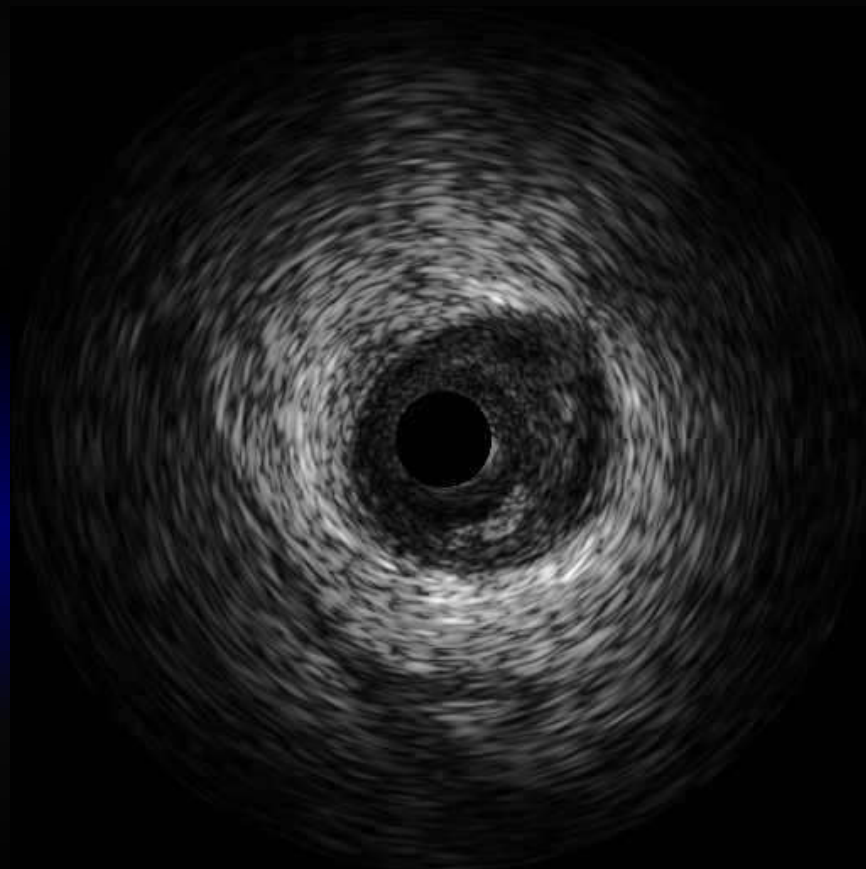
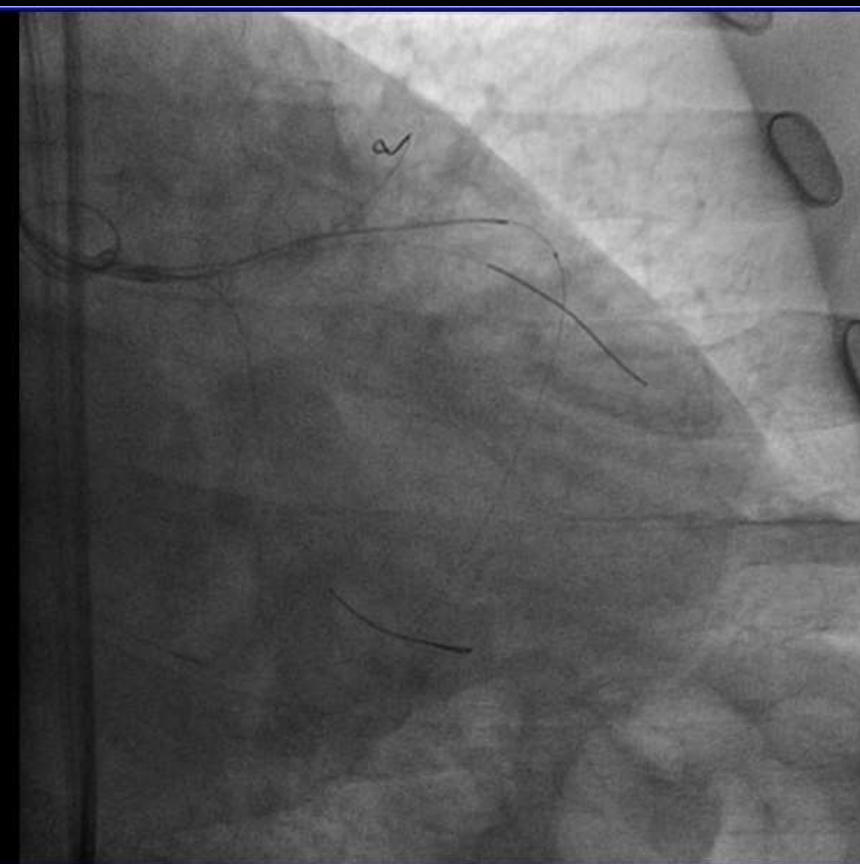
Retrograde wire enter extension guide



Retrgrade Caravel enter extension guide



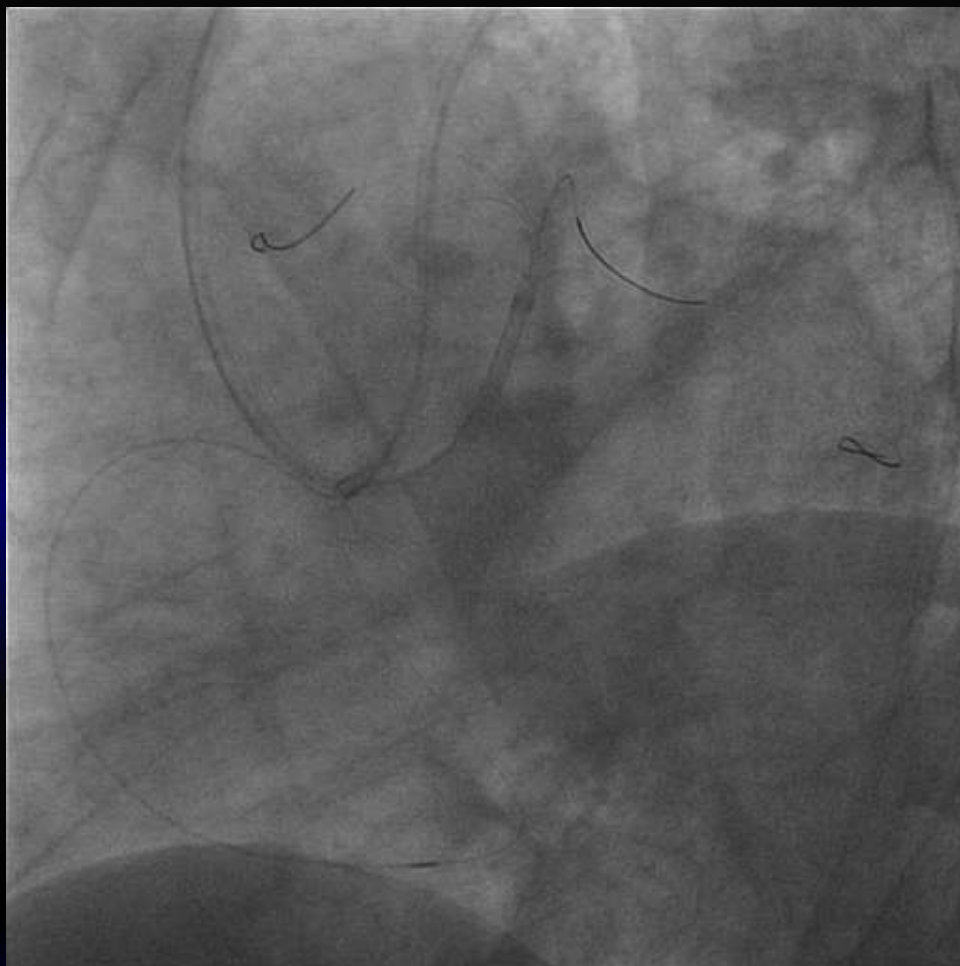
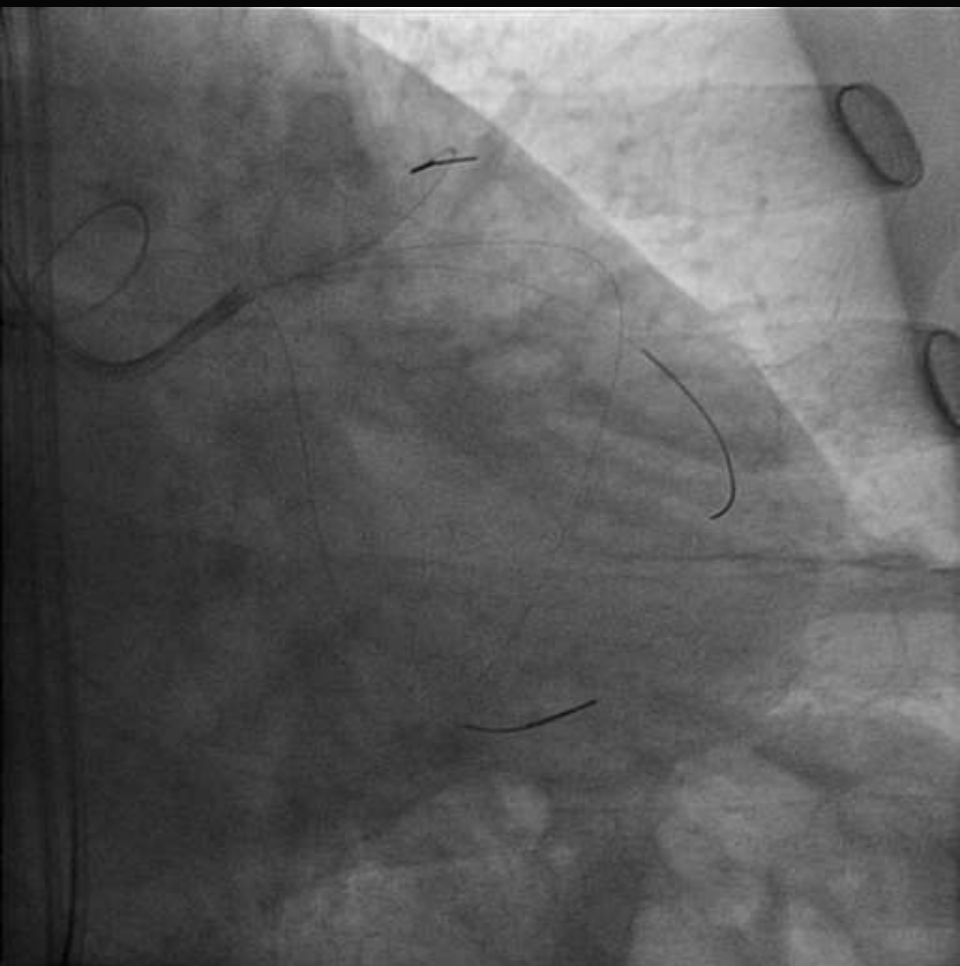
# Antegrade IVUS





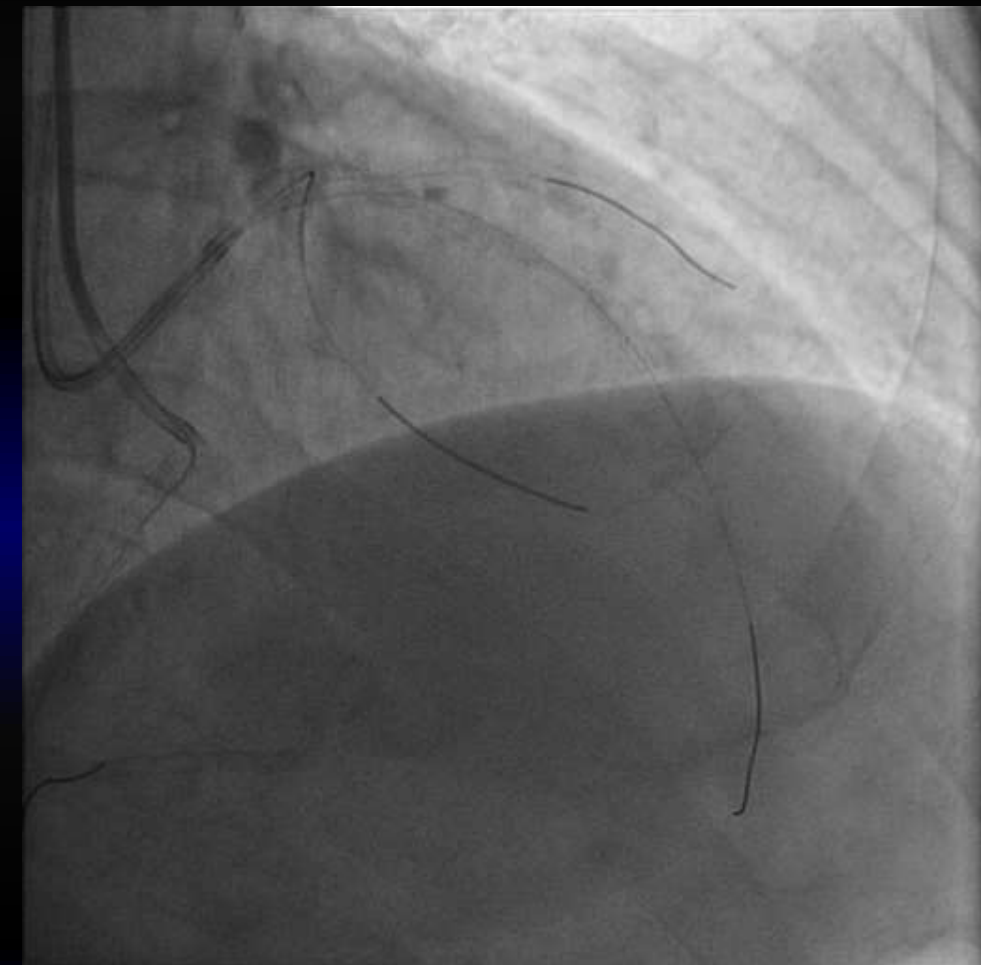


# After 2.0 balloon dilatation



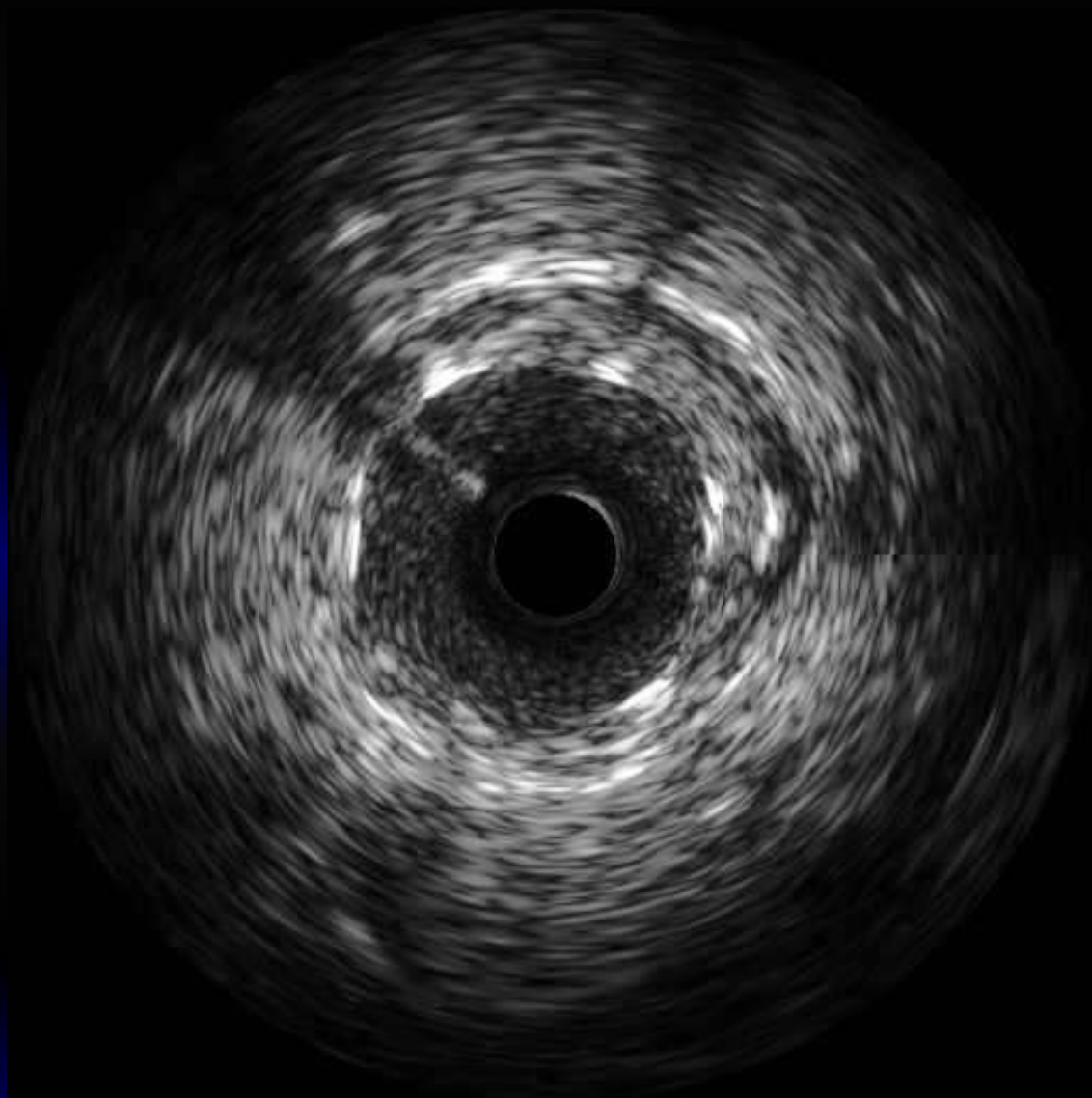


# LCA Final



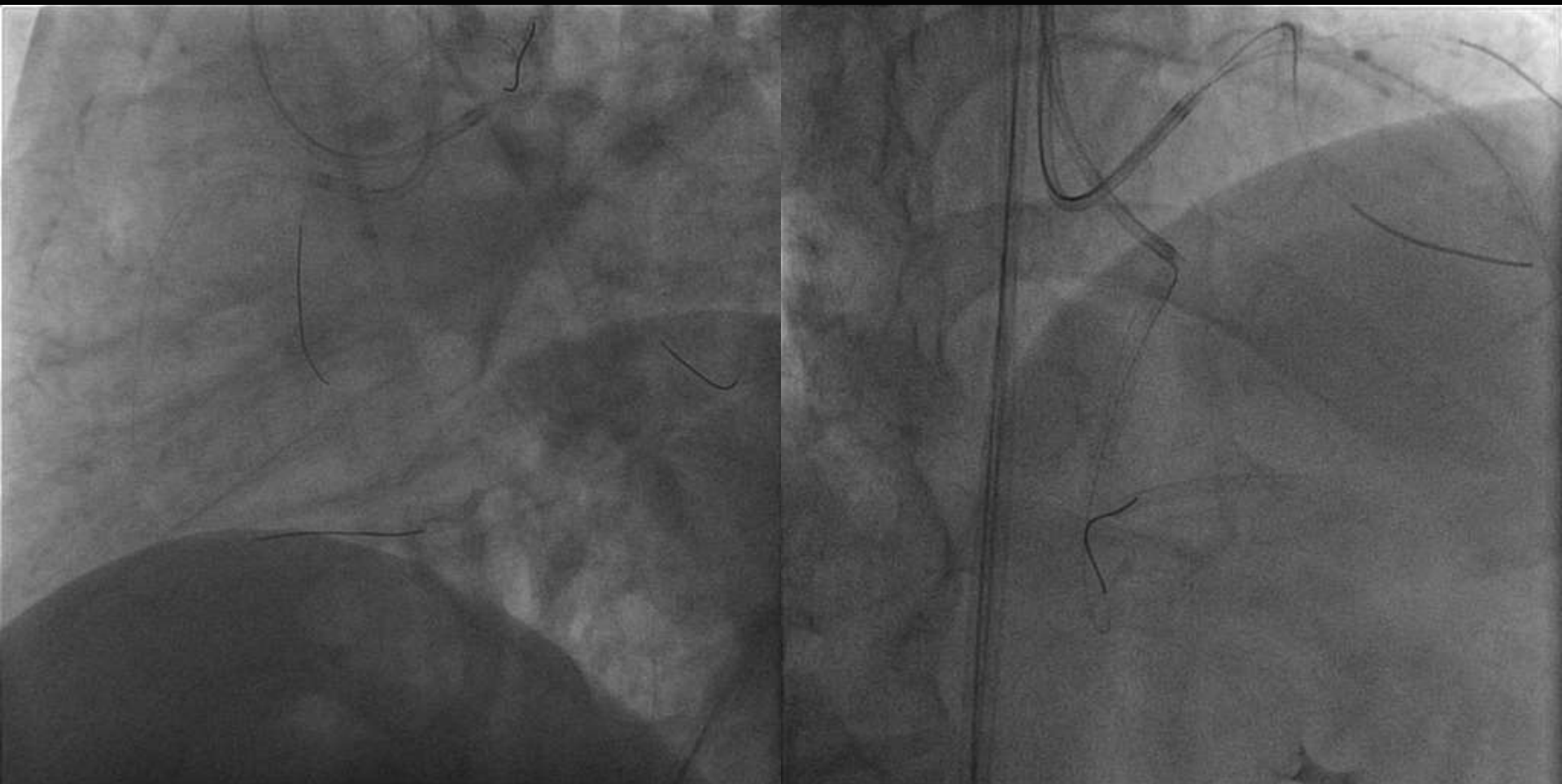


# IVUS of LAD





# RCA Final





# Clinical Course

- Admitted to ICU for close follow up
- Contrast used: 250 ml. Procedure time: 2 hour 30 mins
- Discharged 4 days after procedure.

# Conclusion/Take-home Message

- For Complex CTO intervention, the AP-CTO algorithm is a useful guide for our procedure
- For CTO lesions with short length-of-penetration, be very cautious about retrograde wiring
- Daughter catheter maybe a good tool to ensure true lumen of vessel proximal portion during retrograde approach