

Retrograde balloon crossing overcome  
antegrade delivery failure for a heavily  
calcified chronic total occlusion.

St.Mary's Hospital

Kensuke Oe, Kenji Sadamatsu

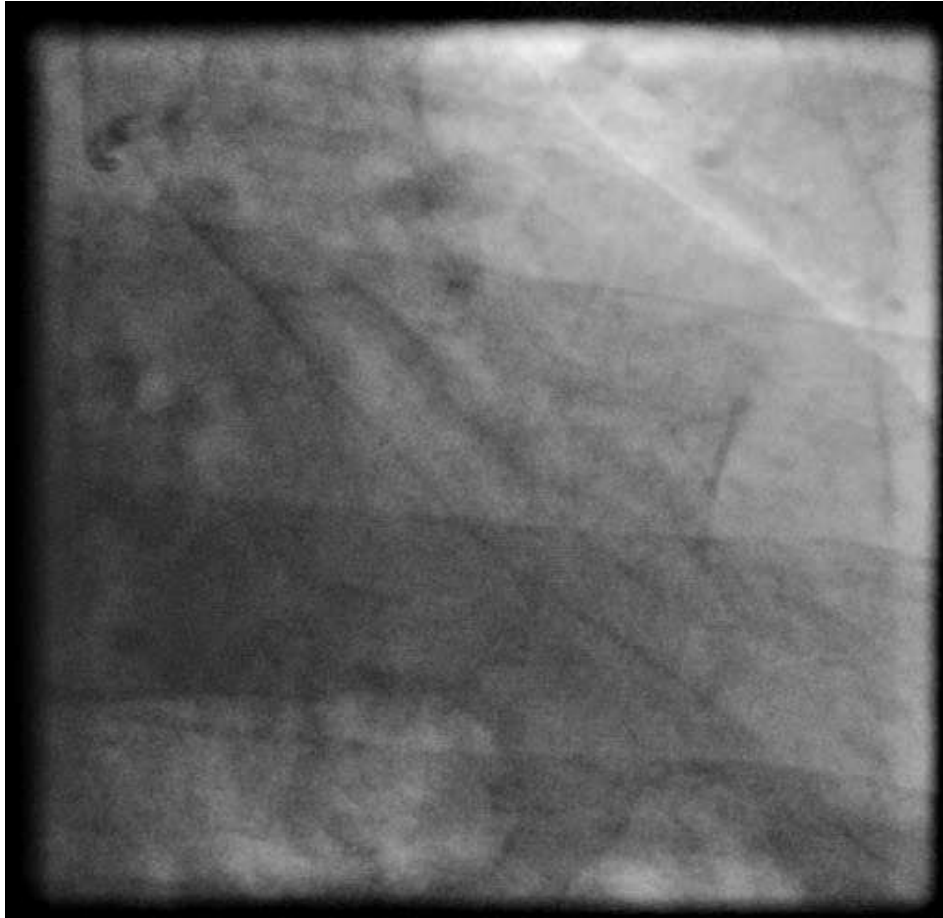
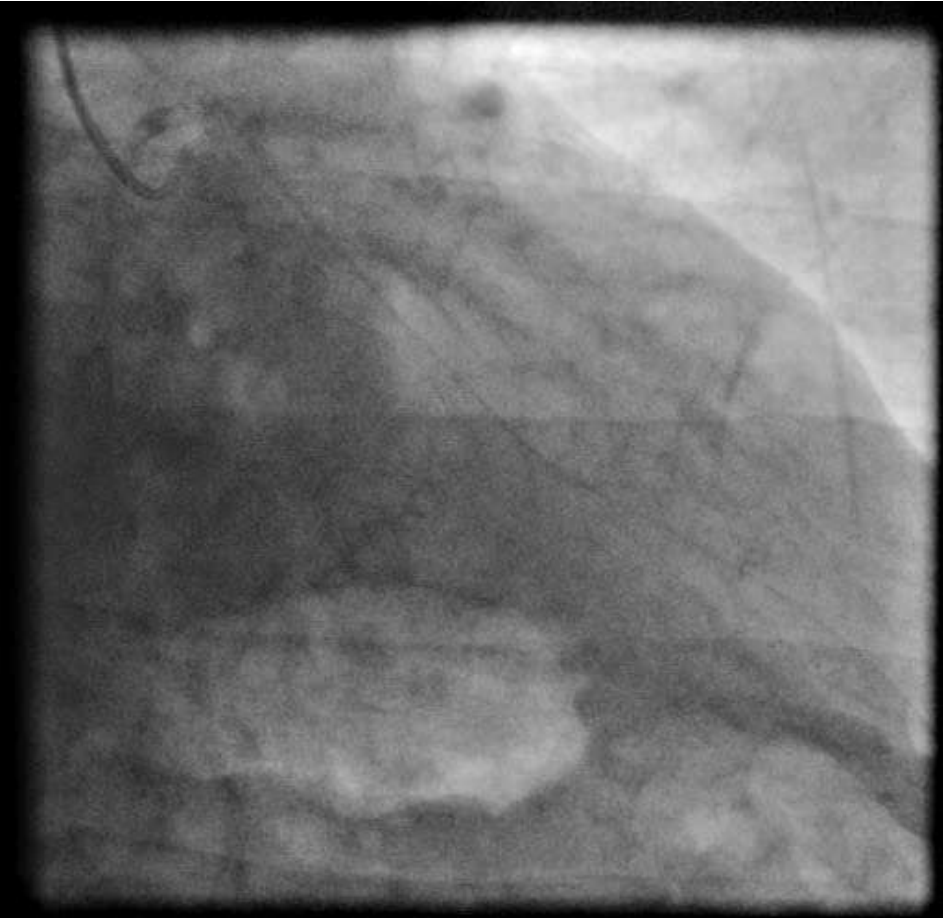
Speaker's name: Kensuke Oe

I do not have any potential conflict of interest.

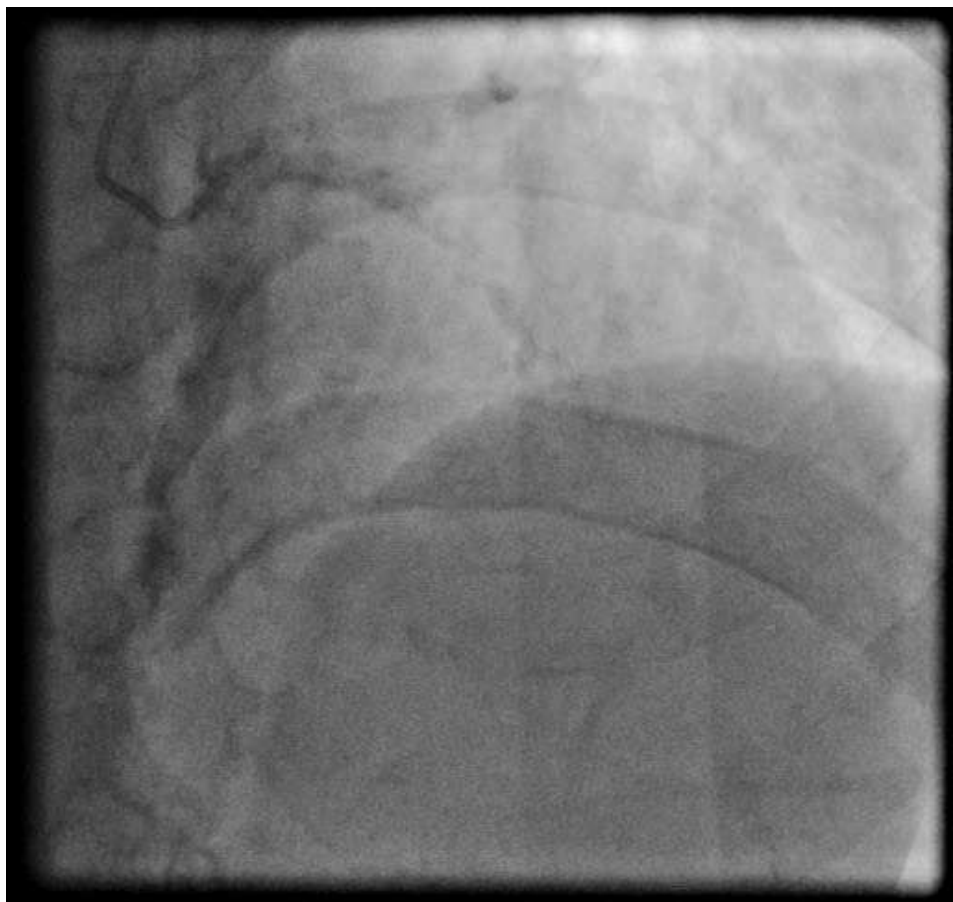
# Case Presentation

- A 68-year-old man.
- He was admitted to our hospital because of effort angina.
- He was previously undergone coronary intervention for chronic total occlusion in the left anterior descending artery and failed.
- Coronary risk factors
  - ✓ Hypertension ✓ Diabetes mellitus
  - ✓ Dyslipidemia

CAG RAO/CAU



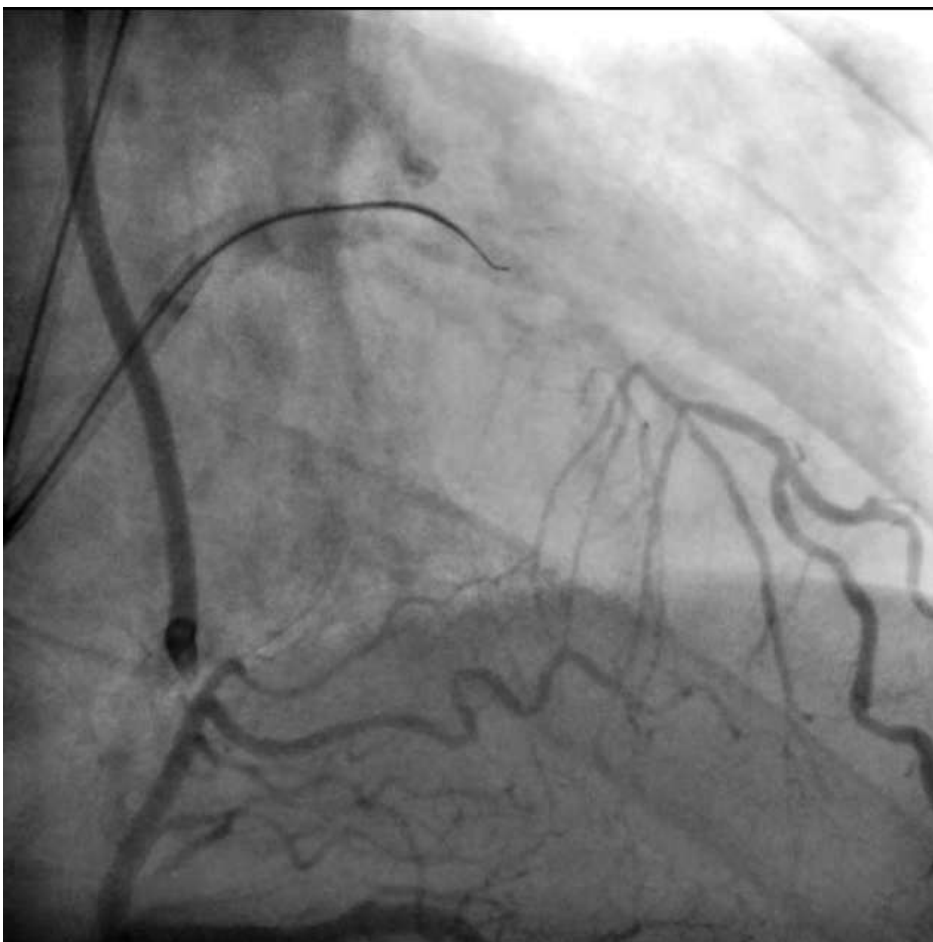
CAG AP/CRA



# CAG bidirectional

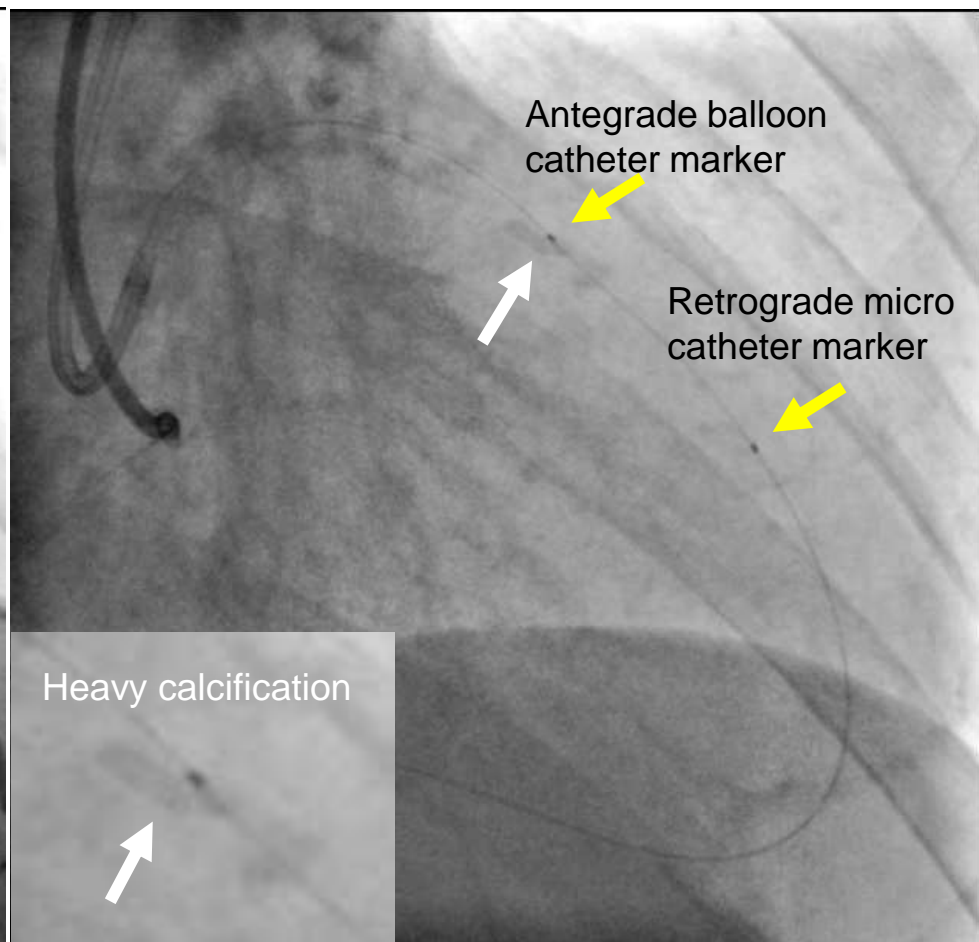


<LCA>G.C.:8-french EBU3.5, M.C.:Corsair Pro  
G.W.:XTR, Gaia Second, Conquest Pro



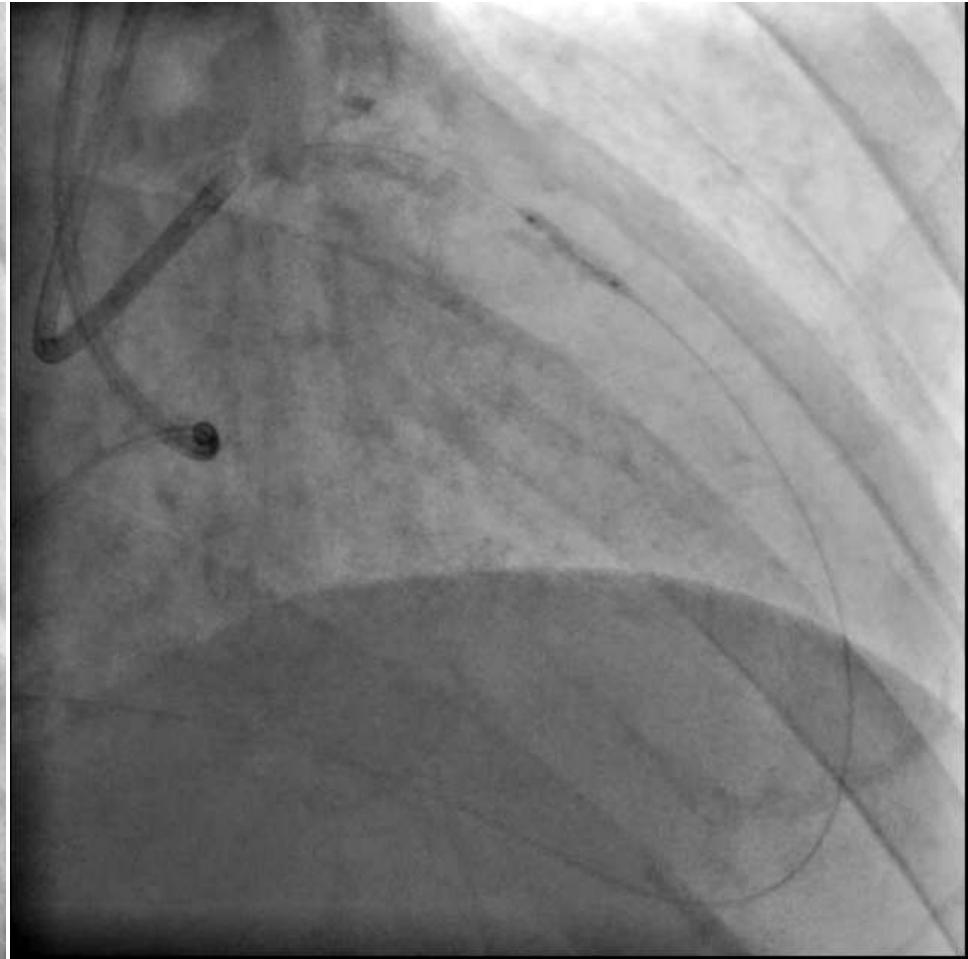
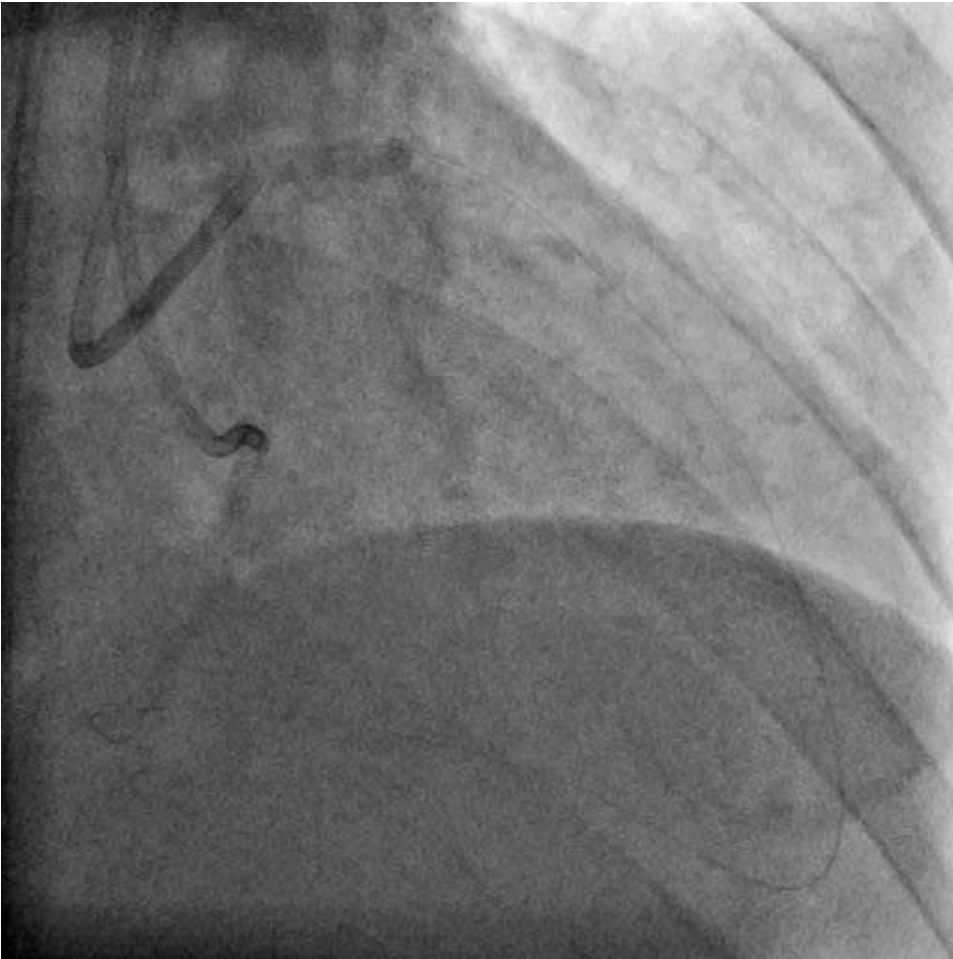
Failed antegrade guidewire crossing.

<RCA>G.C.:7-french AL1.0, M.C.:Finewire GT  
G.W.:SUOH03, Gaia Second, RG3



Heavy calcification prevent the antegrade balloon catheter crossing, in spite of wire externalization.

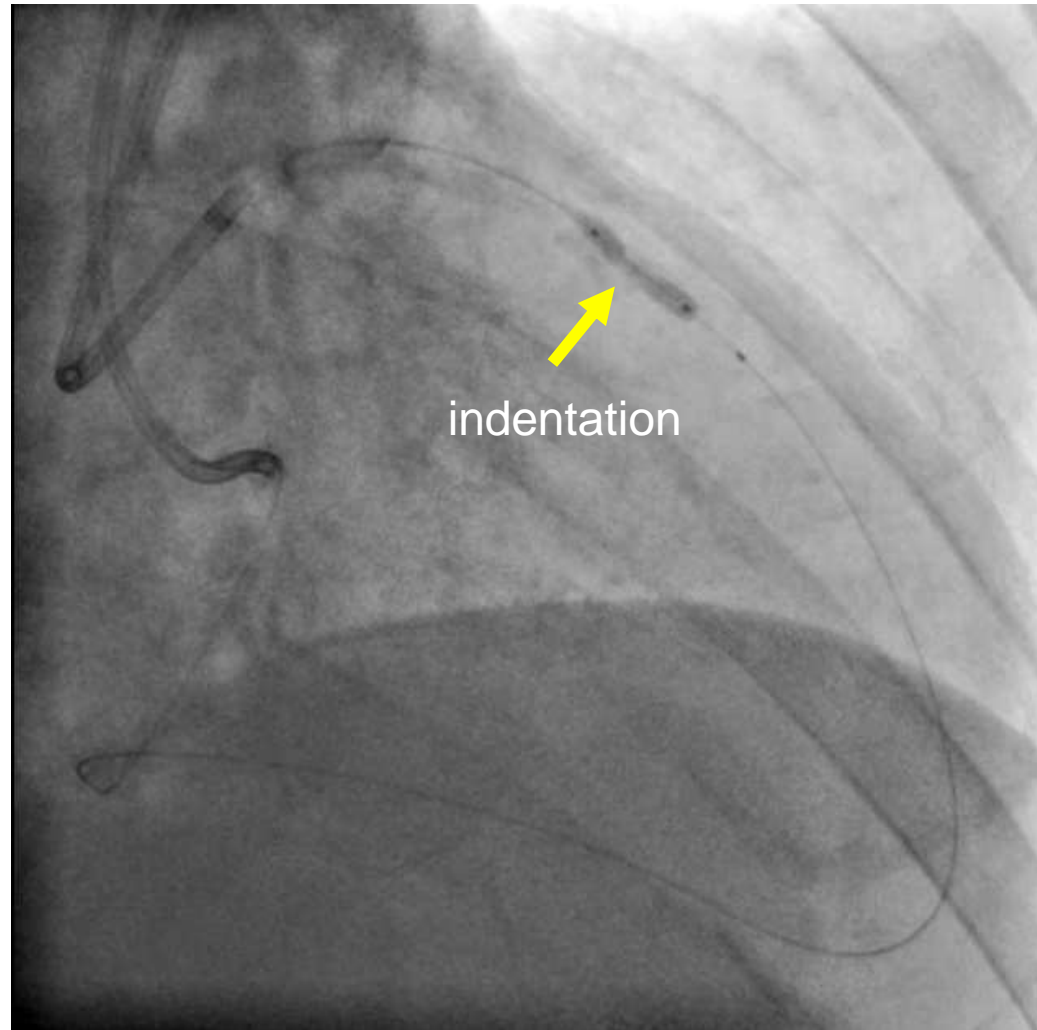
# Retrograde balloon catheter crossing.



Traveller2.0x12mm



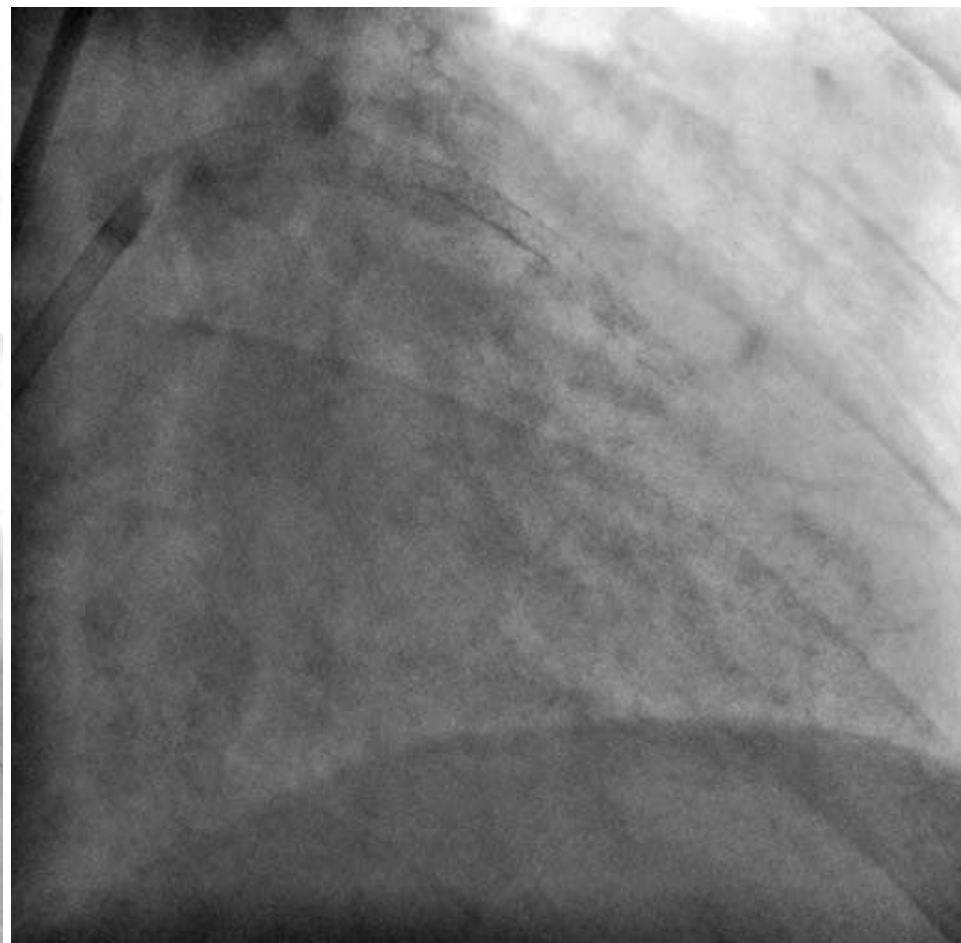
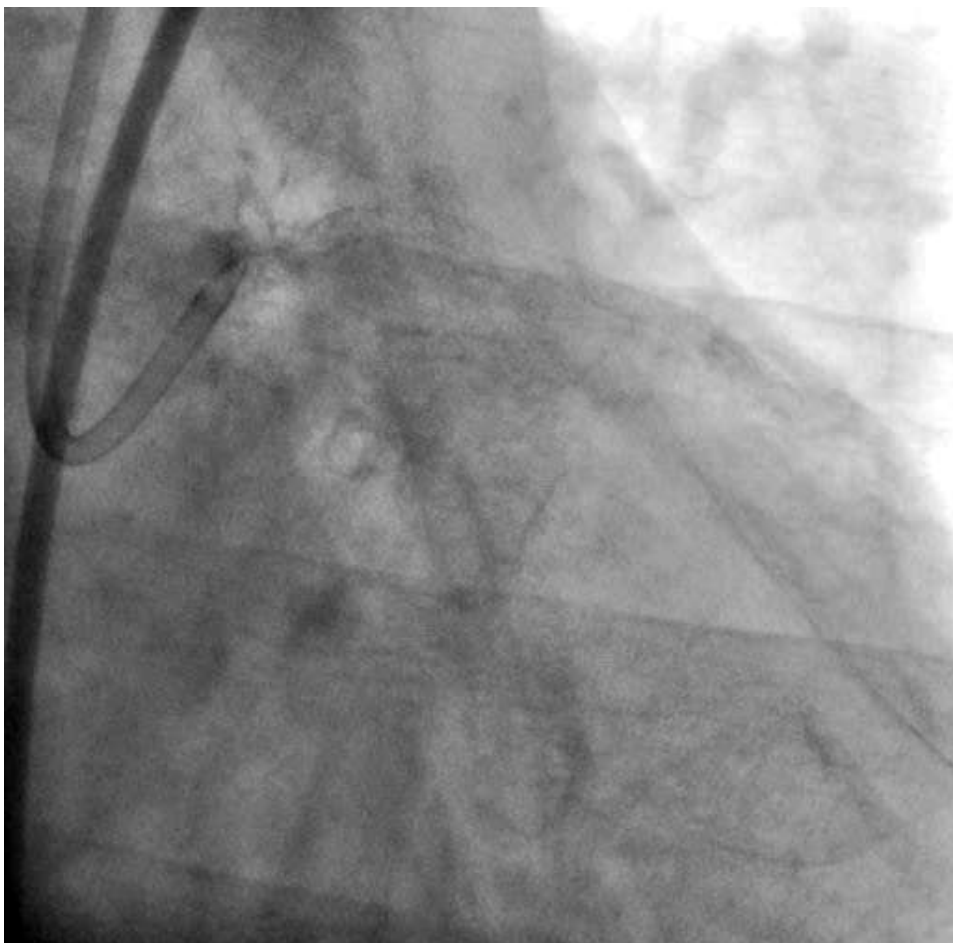
## Antegrade balloon catheter crossing.

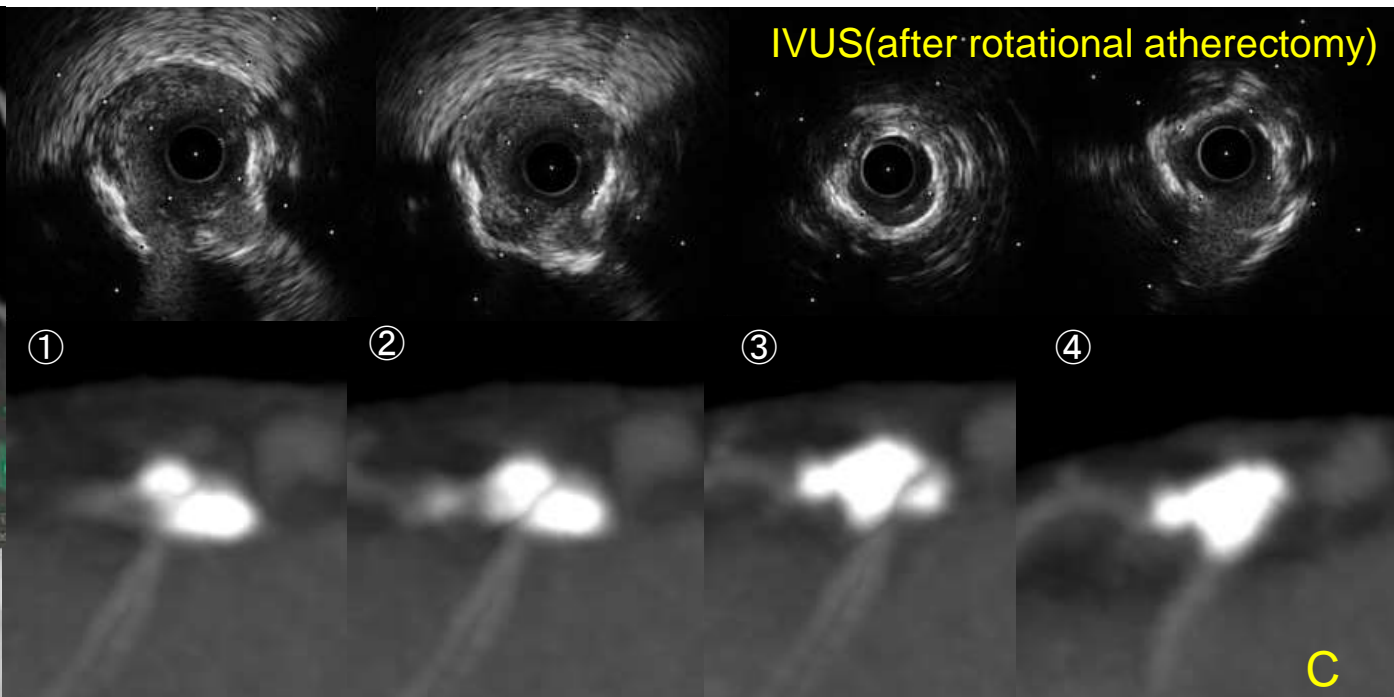
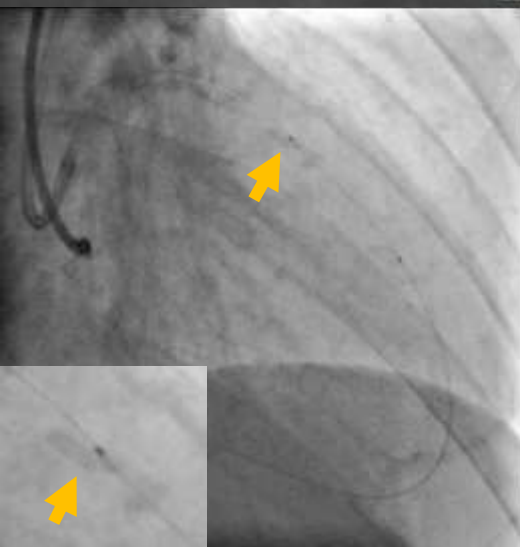
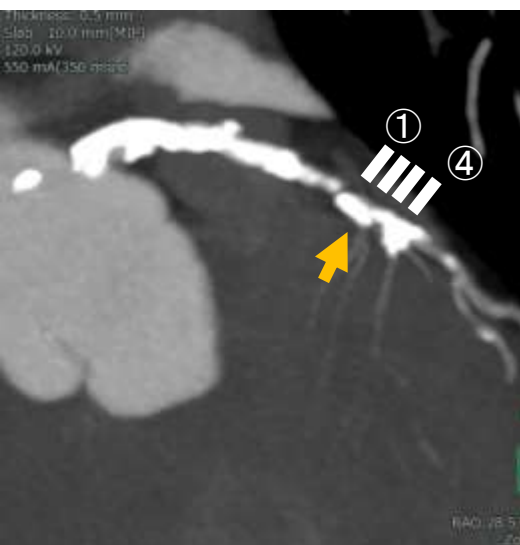


- Checked all intraplaque wire tracking by IVUS.
- Using rotational atherectomy device.
- Deployed 3 drug-eluting stents.

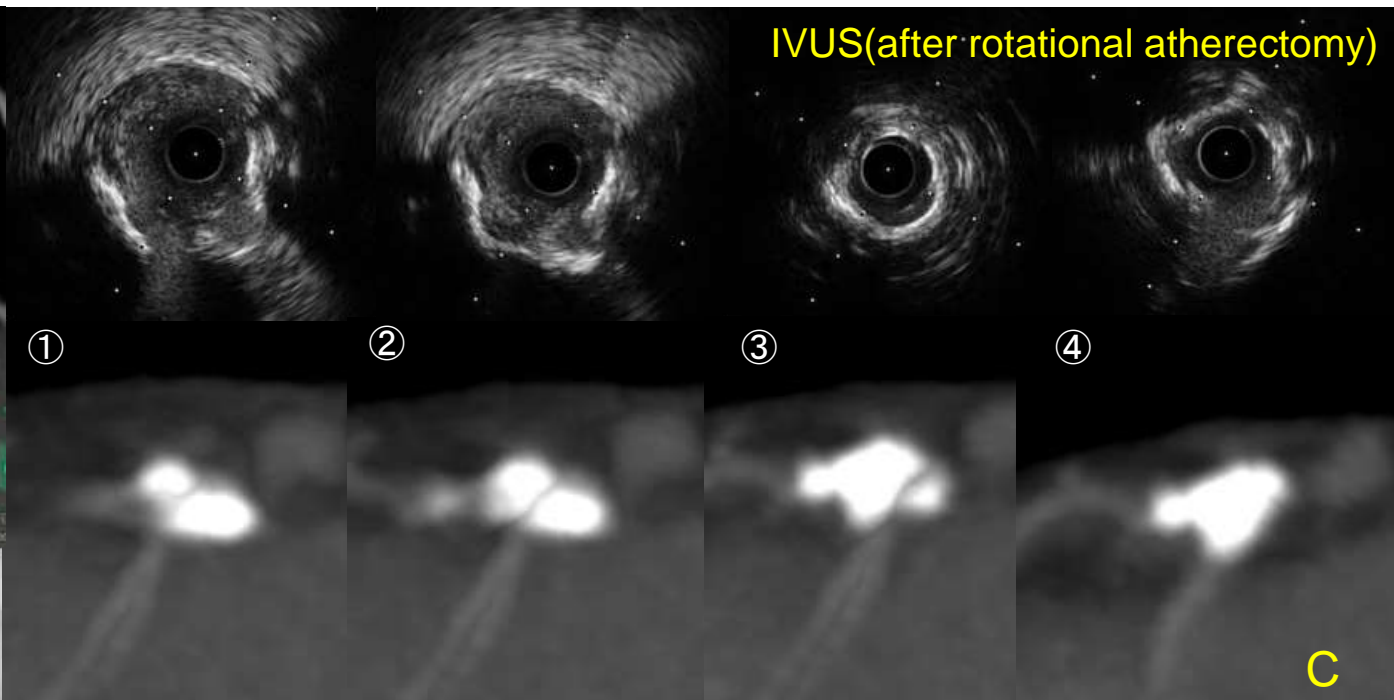
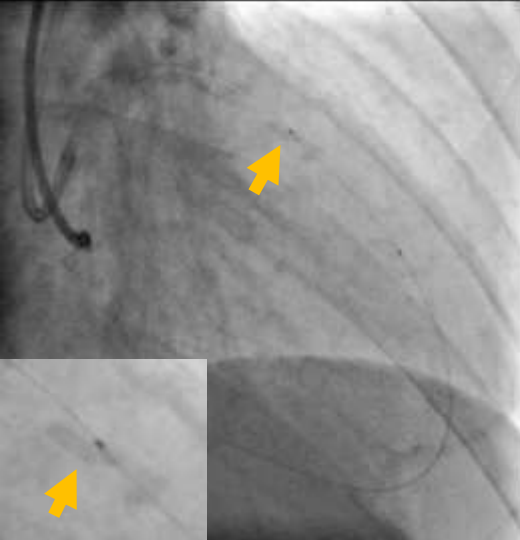
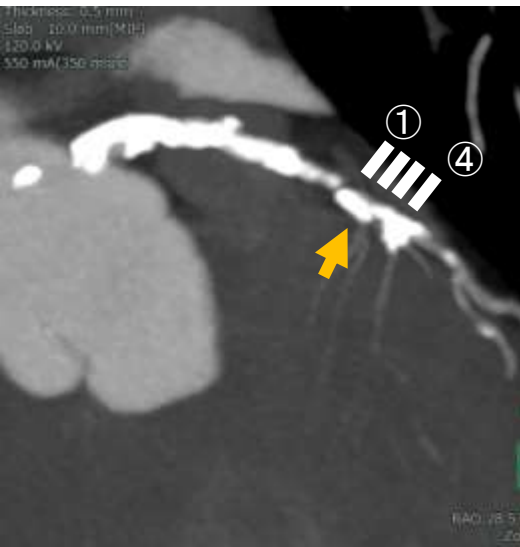
NC Traveller 2.5x12mm, 30atm.

Final result



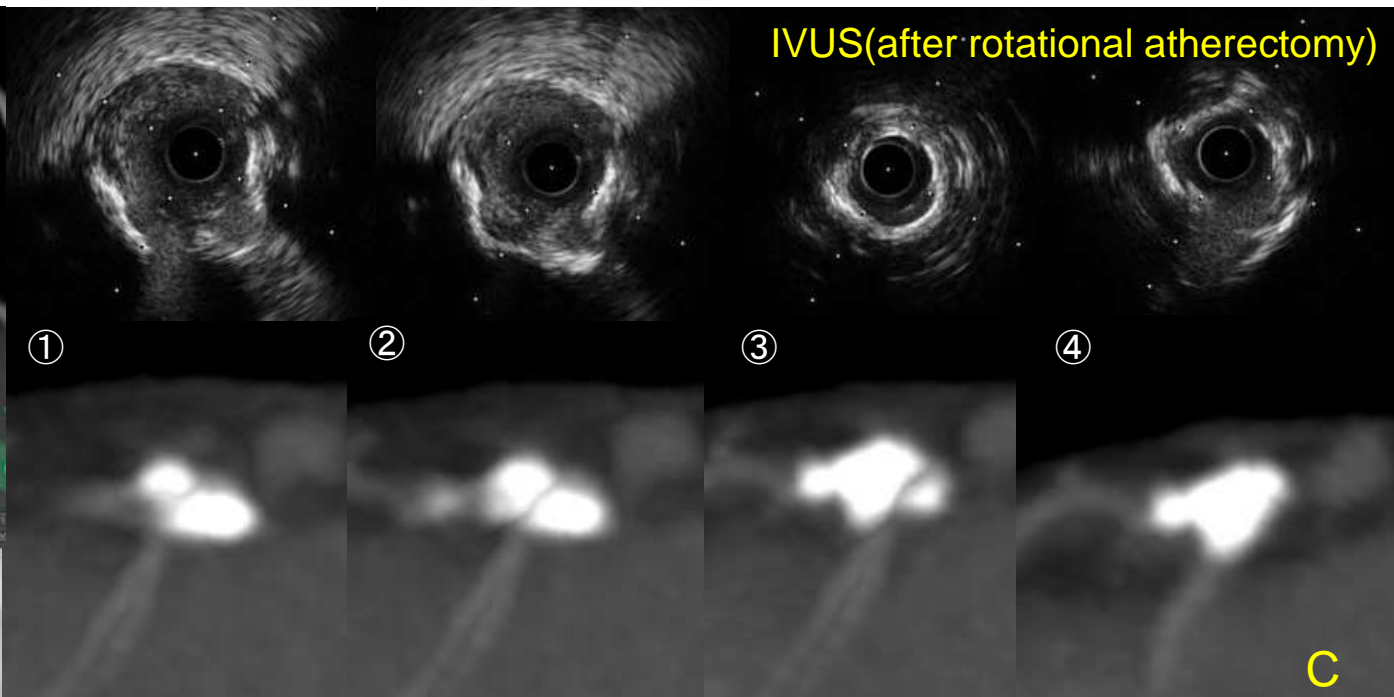
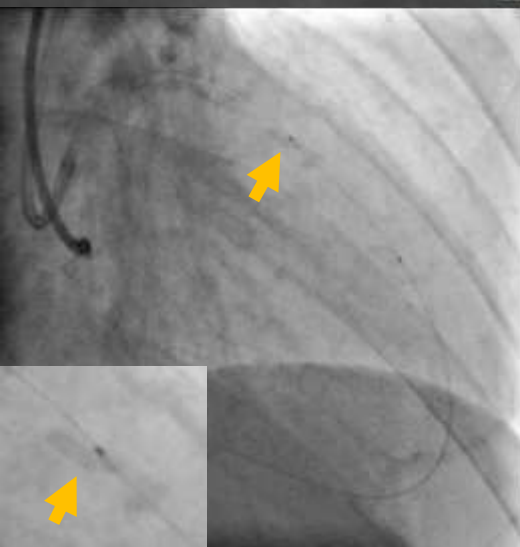
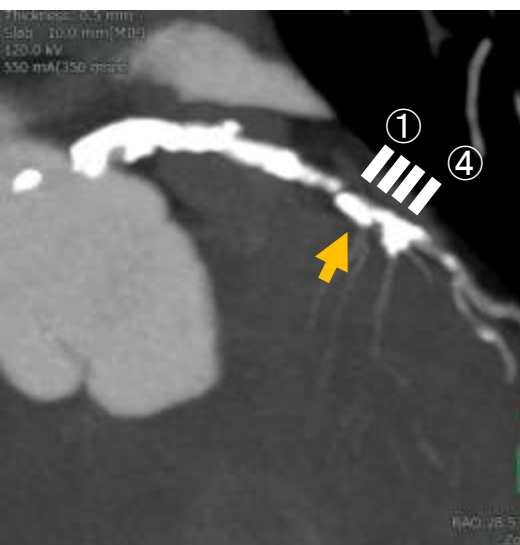


- Diffuse calcification in the LAD.
- Two blocks of calcium mass at the bifurcation of the septal branches.
- Proximal calcium was distributed at the myocardial site.
- Distal calcium was occupied almost the entire vessel area.

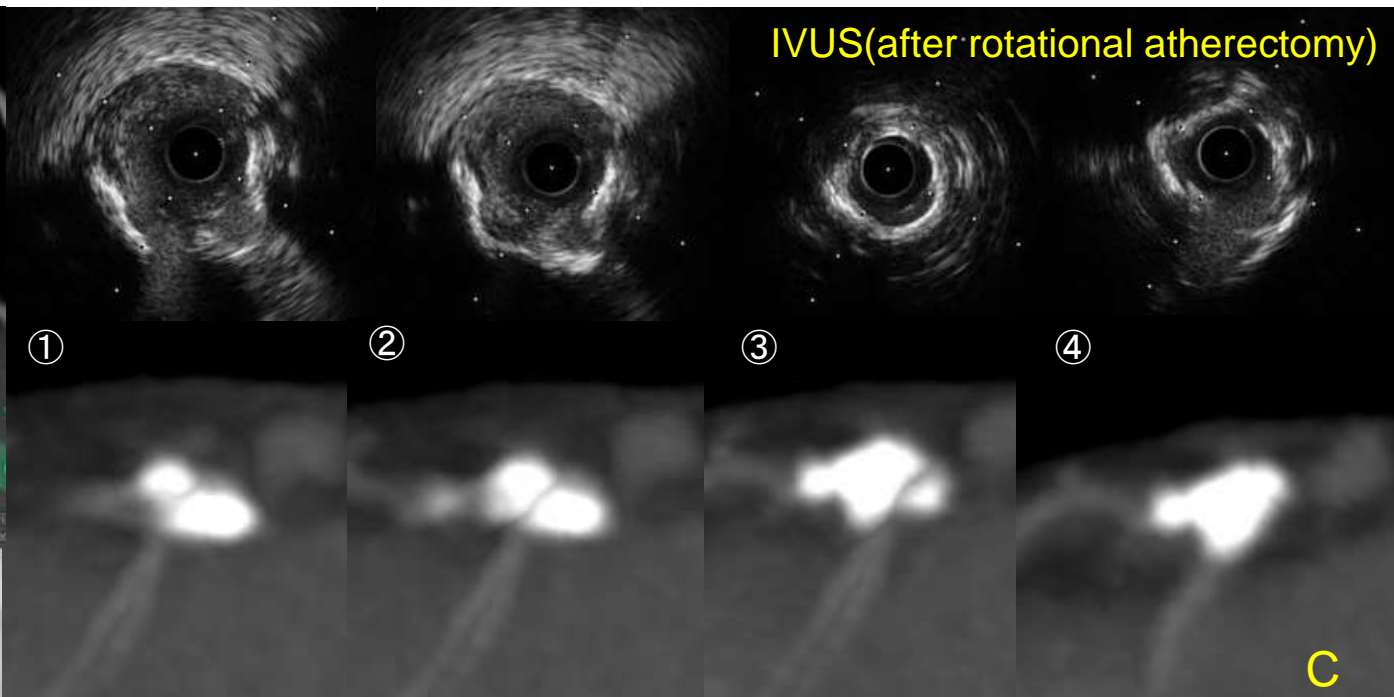
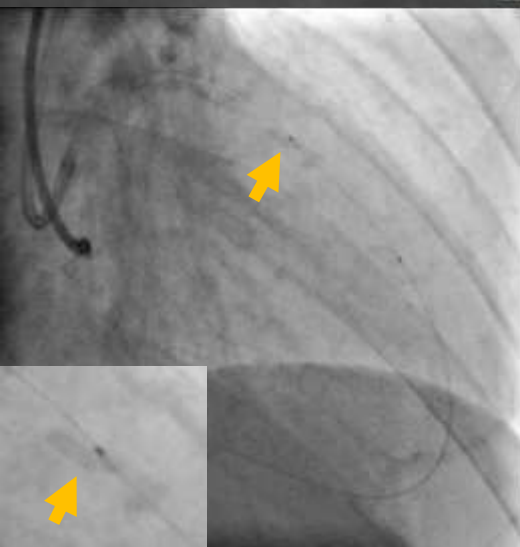
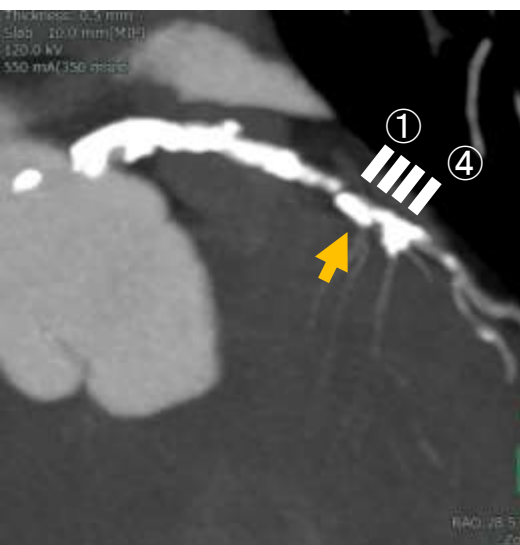


Why the balloon could pass only from retrograde?

- From antegrade, the transition from an eccentric calcified lesion to a circumferentially area of heavy calcification might prevent the tip of the balloon catheter.



- Changing the direction, which reversed the distribution of calcium for the balloon passage, helped the balloon tip slip through the calcium.



- The long calcified lesion in the proximal LAD might reduce the antegrade pushing force to pass through the occlusion.

# Conclusion

- Heavy calcification may prevent device delivery and result in technical failure in treatment of chronic total occlusions even after successful wire externalization.
- Retrograde delivery might enable successful balloon crossing through calcified lesions.