

Pitfalls in Left Main PCI : **How to avoid and how to treat the consequences**

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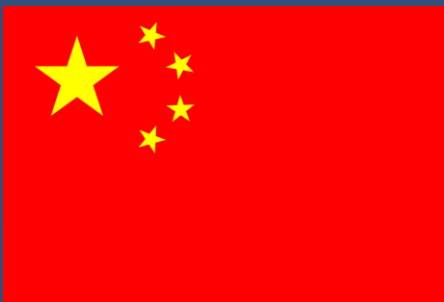
Disclosure

- Nothing to disclosure

Which stent technique is better in LM bifurcation PCI ?

Two stent

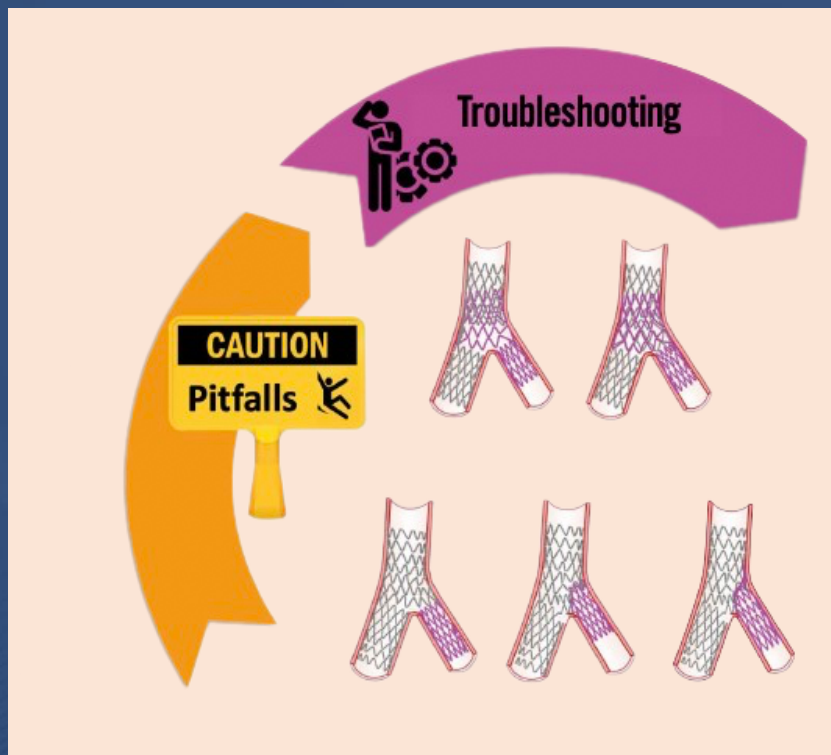
Provisional Stent



Which stent technique is better in LM bifurcation PCI ?

Avoid pitfalls and achieve optimal goals matter !

Two stent

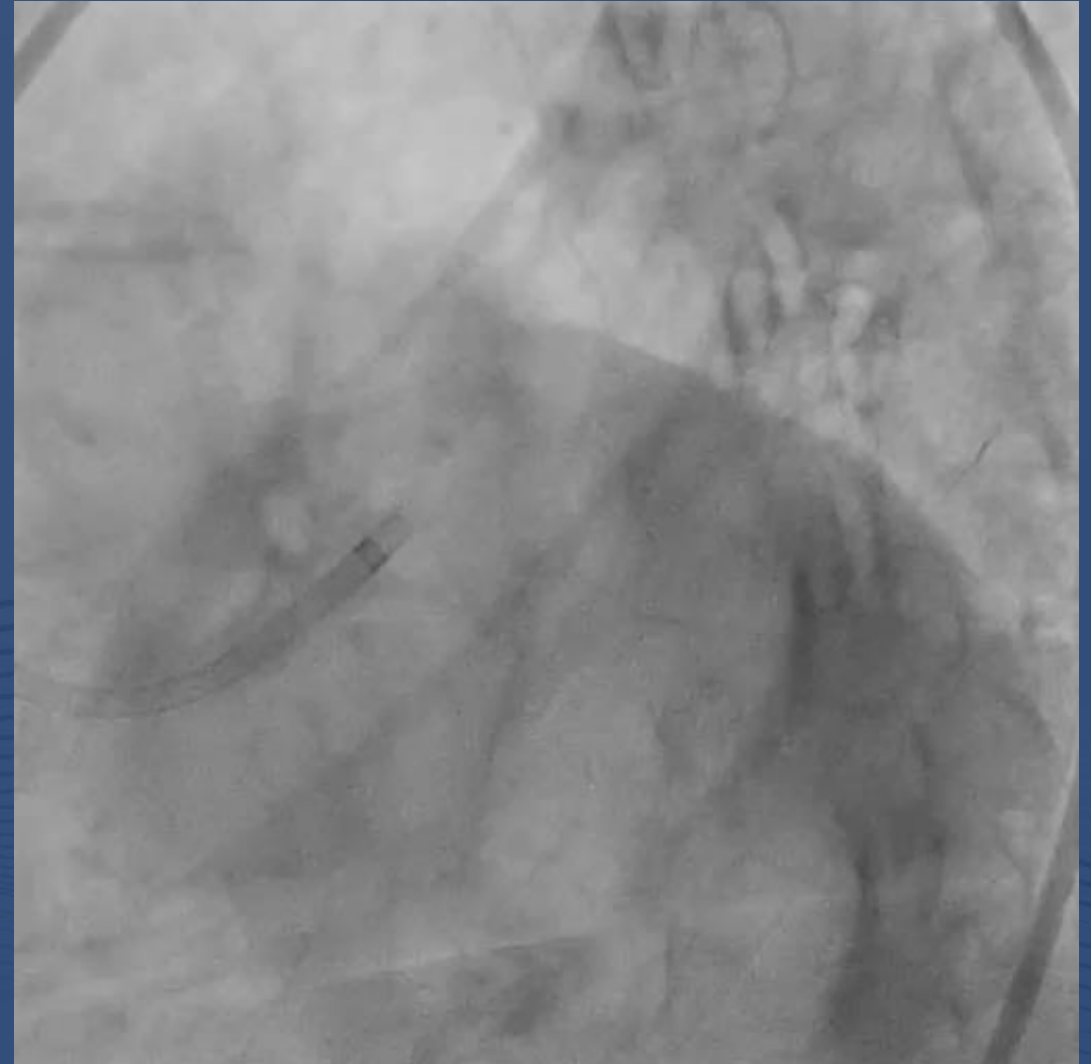
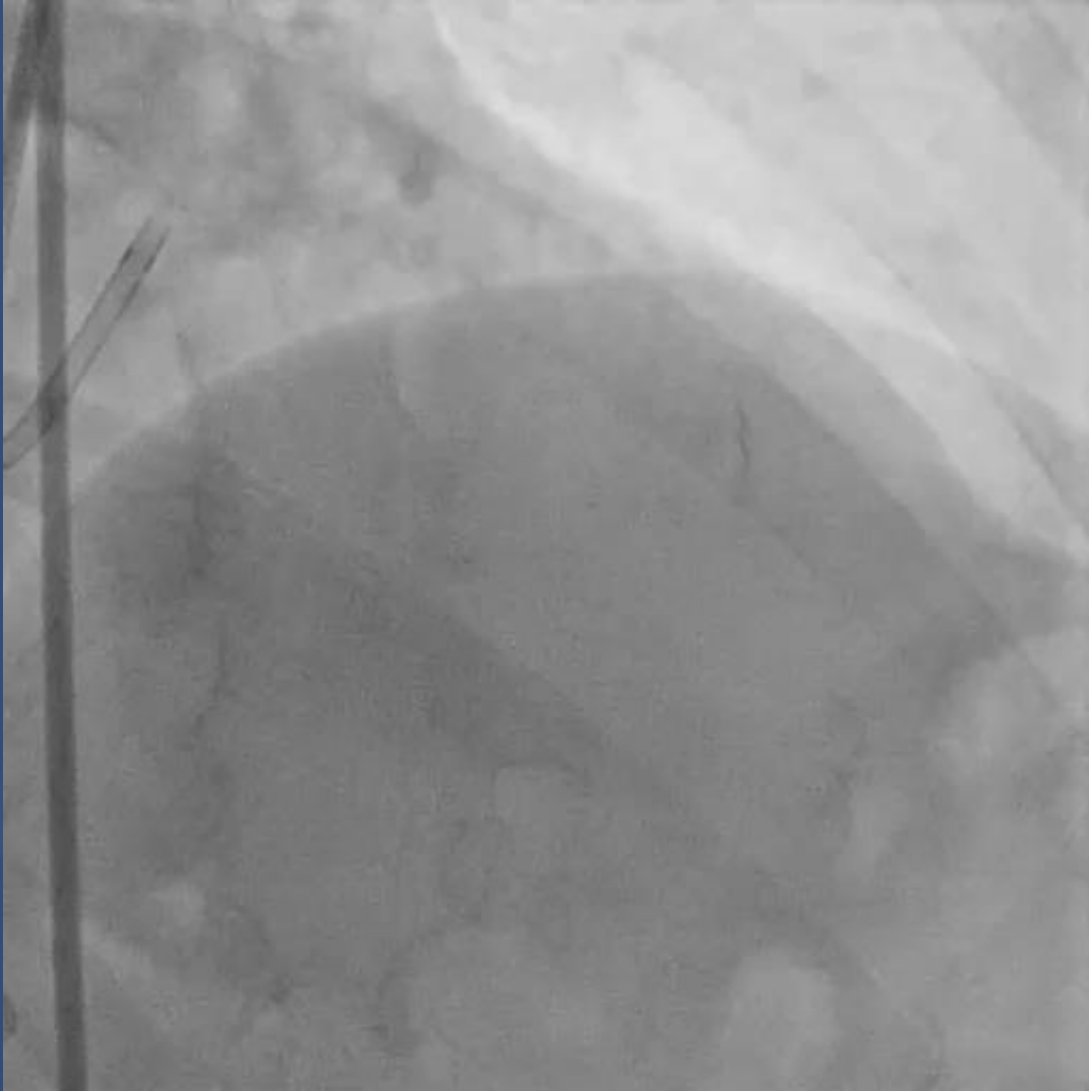


Provisional Stent

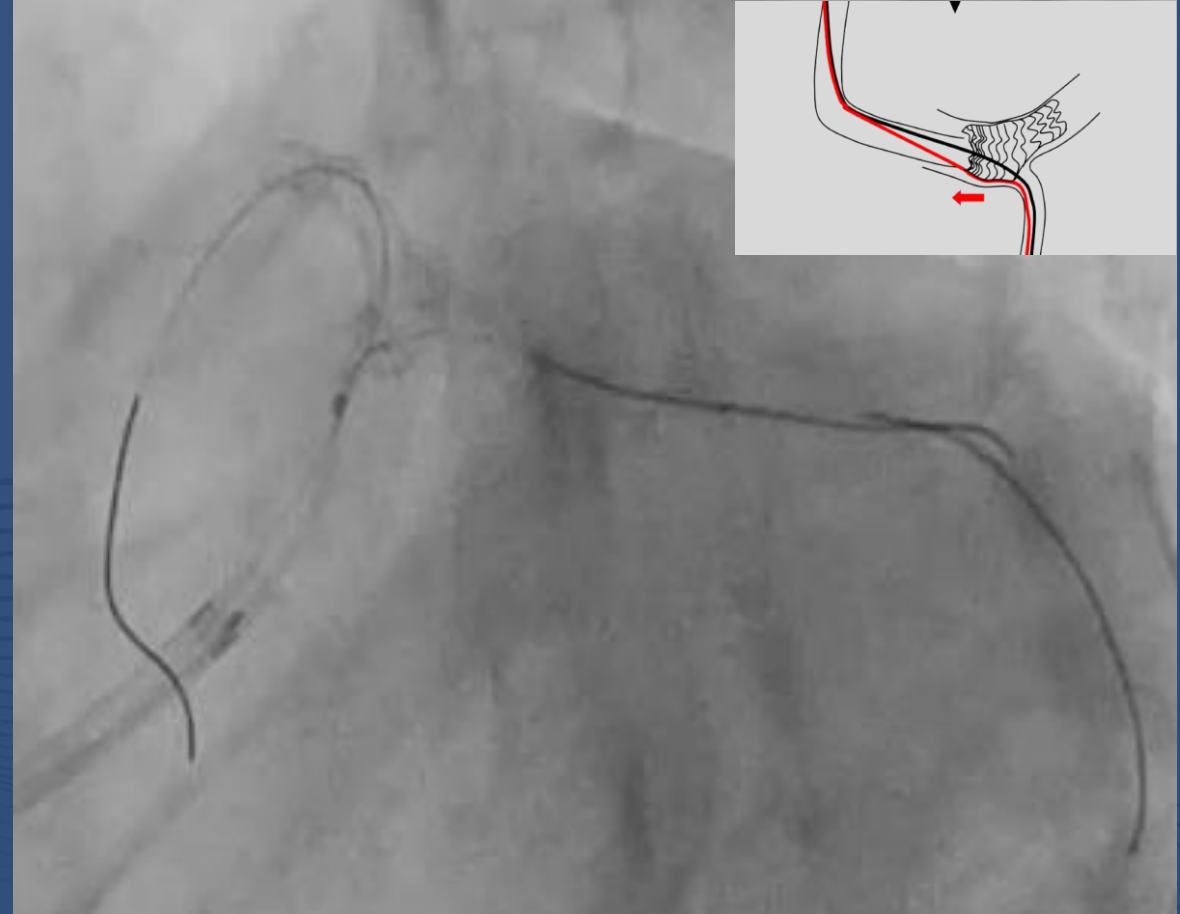


#Case 1

Diagnostic angiography



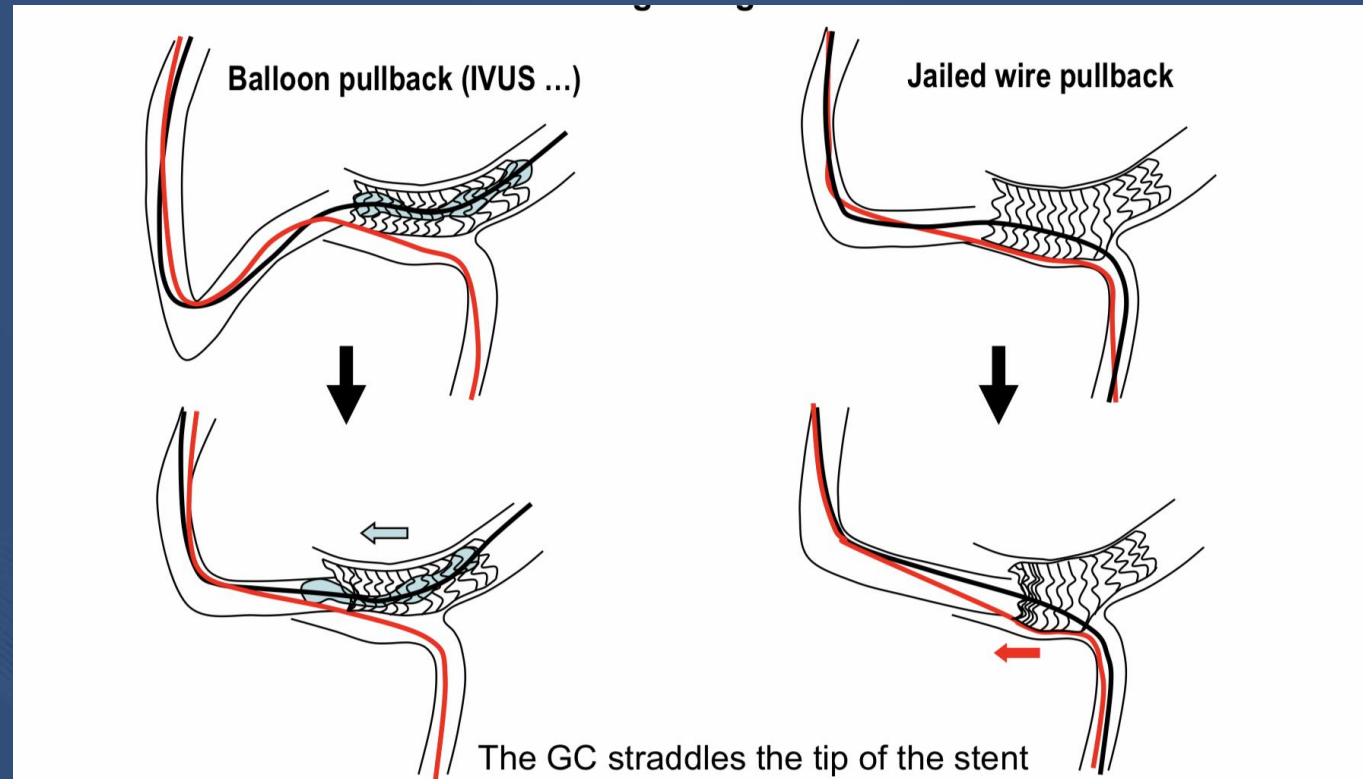
Longitudinal Stent Deformation during DK crush



Longitudinal Stent Deformation

- **The mechanism**

- Forward movement of the GC after pulling back of a partially deflated balloon, IVUS/OCT or the jailed wire



Longitudinal Stent Deformation

- **The mechanism**

- Forward movement of the GC after pulling back of a partially deflated balloon, IVUS/OCT or the jailed wire

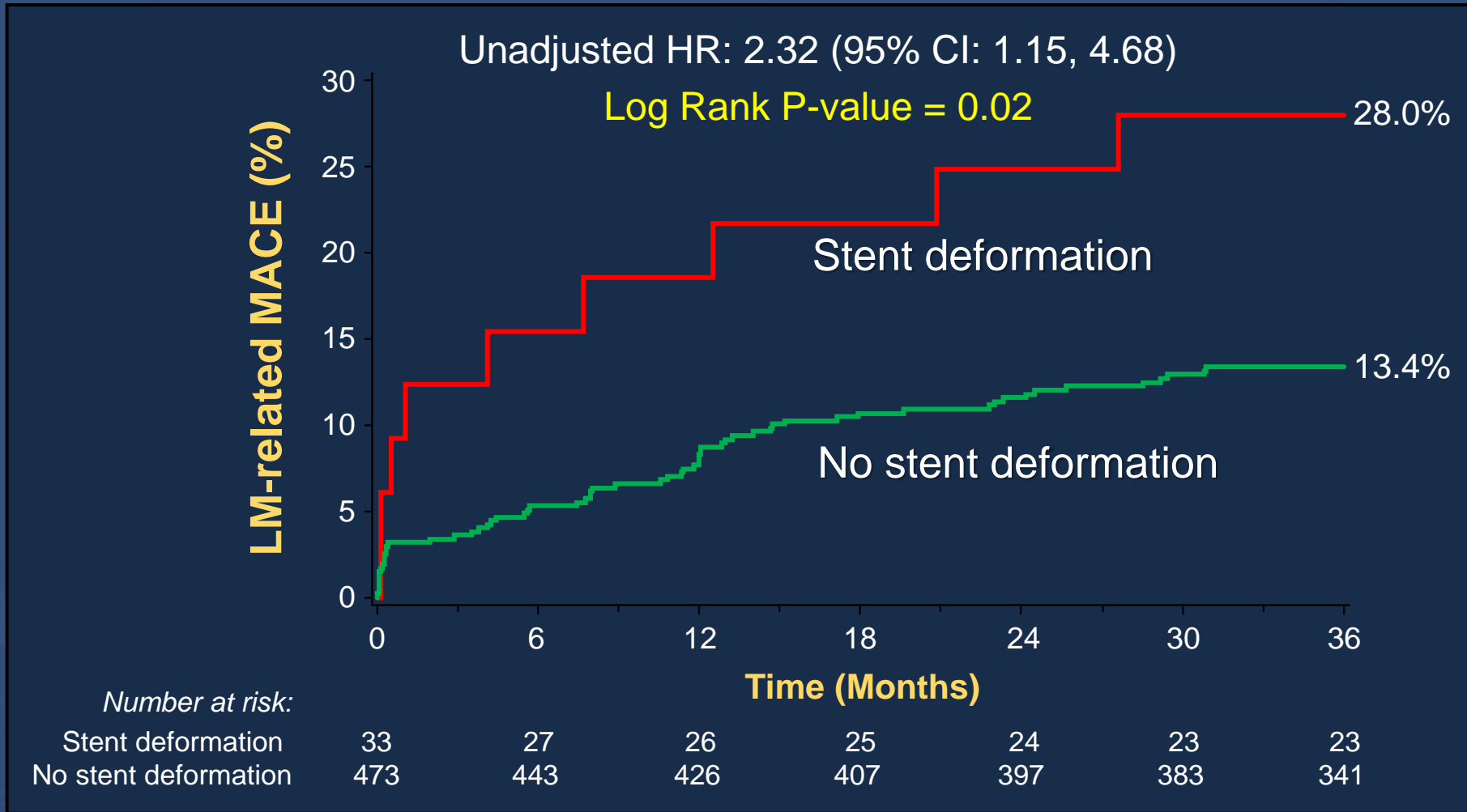
- **How to fix it**

- Correction by POT
- Additional stenting (stent in stent) if required

- **How to avoid**

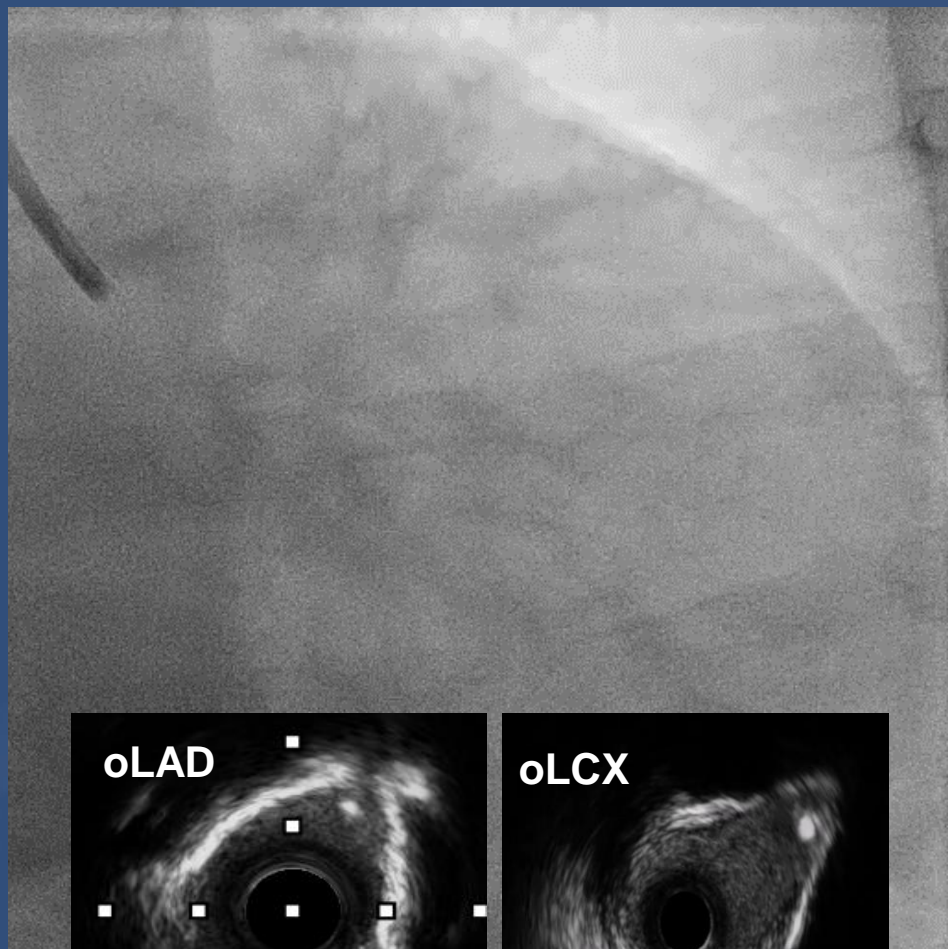
- Wait for full balloon deflation before retrieve the stent balloon
- Awareness of GC interaction on device withdrawal
- Retrograde traction of GC to minimise risk of deformation

3-Year Left Main-Related Major Adverse Cardiac Events*



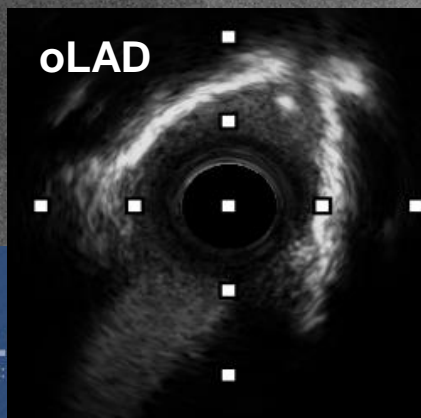
#Case 2

- 62 yo/F; CVRF : HT, dyslipidemia
- NSTEMI, VT
- Preserved LVEF



Rotablation

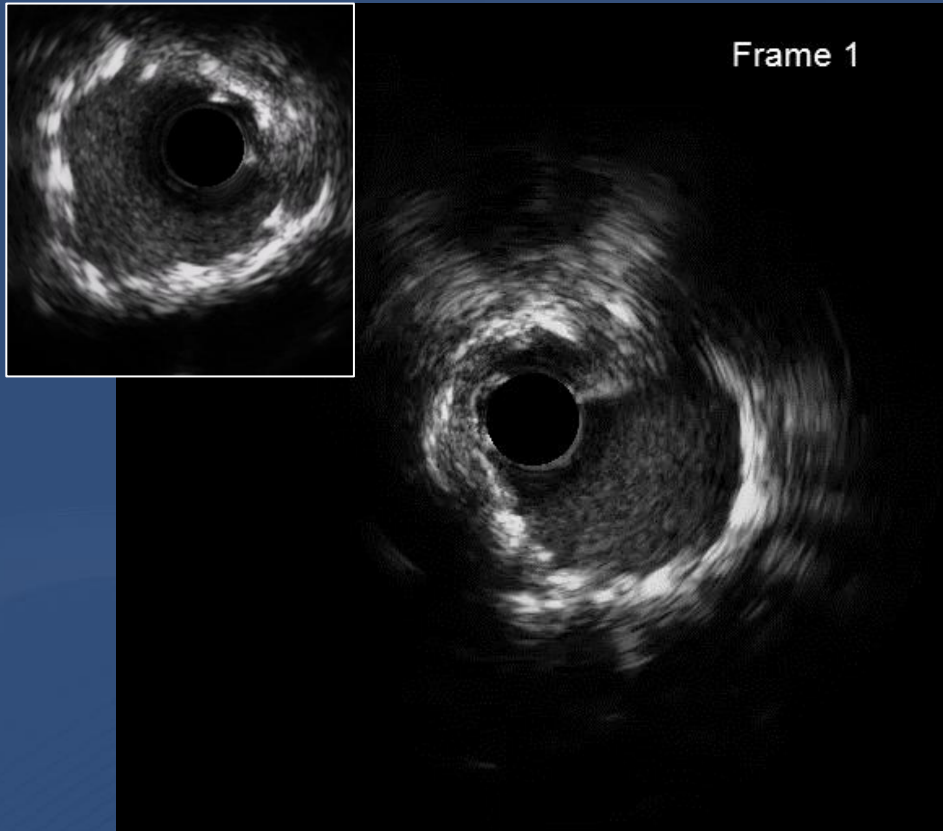
Burr size : 1.75 mm 150-130 K RPM



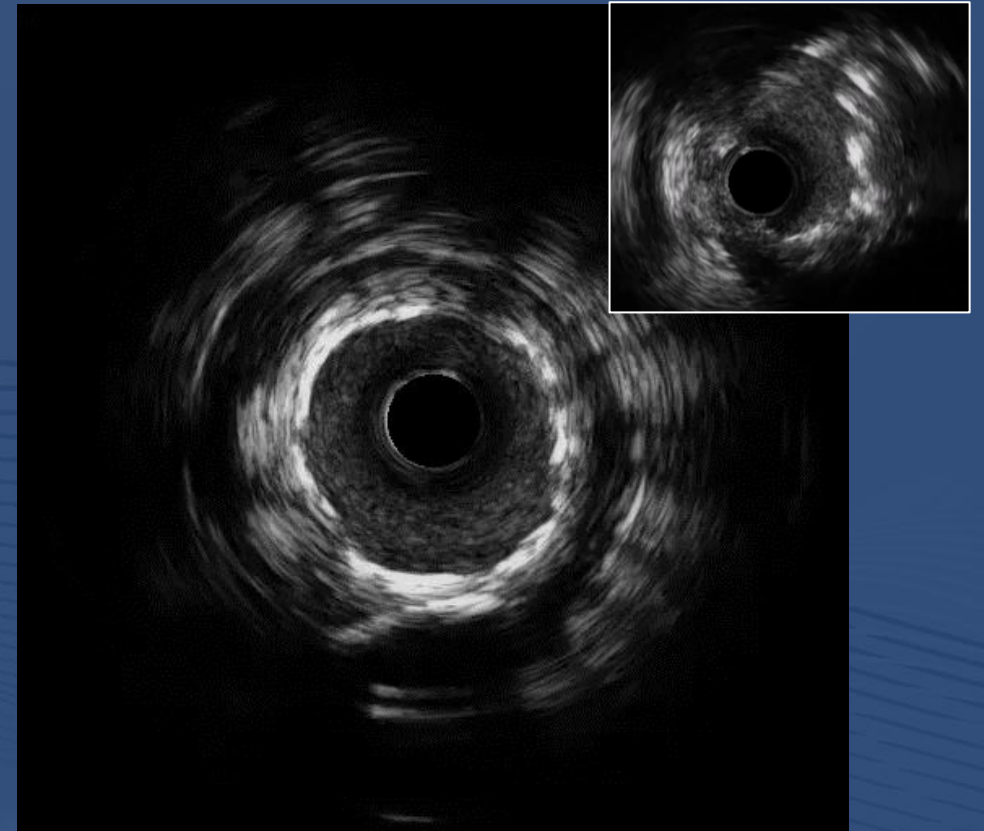
IVUS findings after TAP

LCX-LM (DES 4.0/33 mm)/LAD-LM (DES 3.5.30mm)

LAD IVUS



LCX IVUS



Non-optimal ostial LCX stent

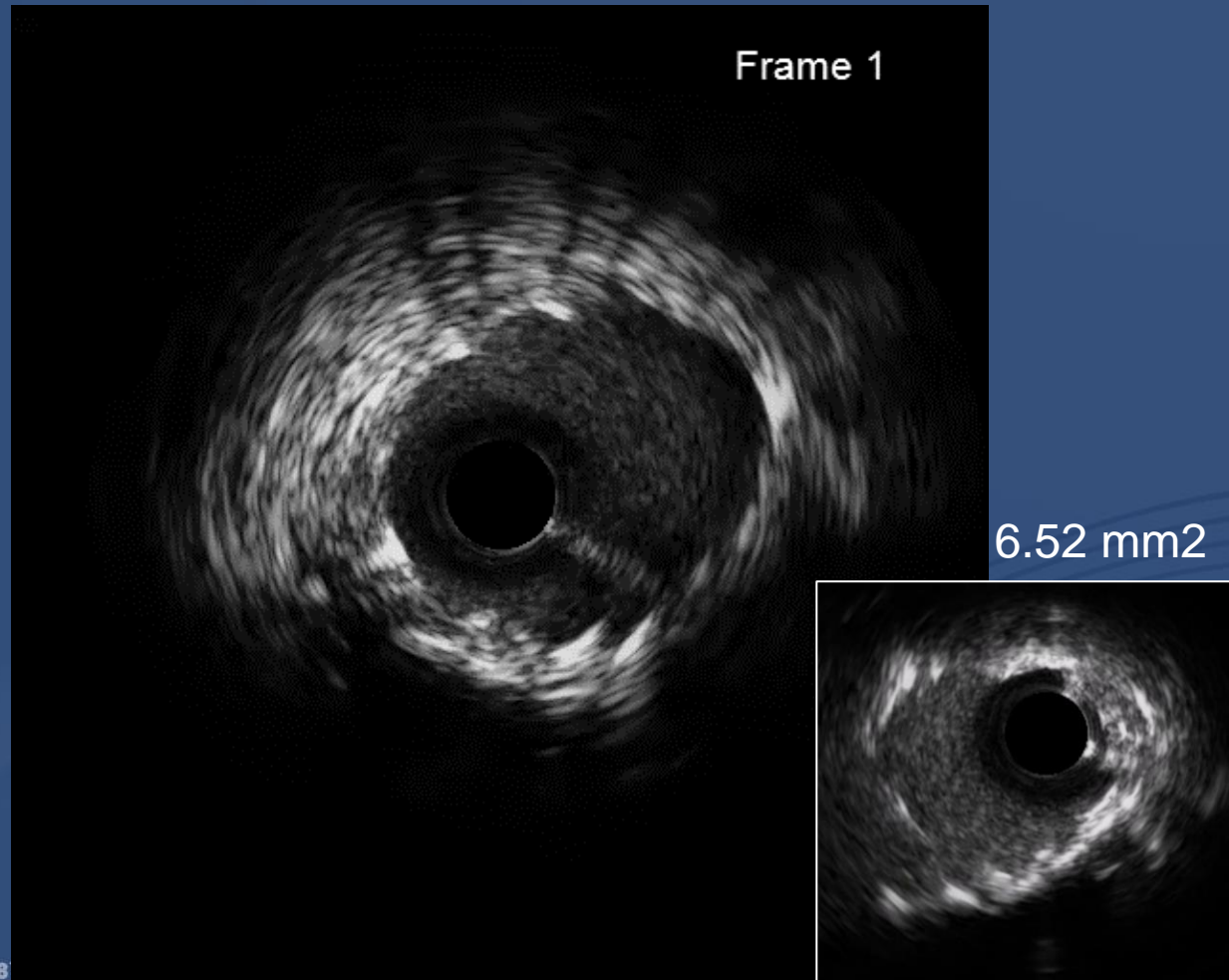
Sequential balloon dilation and repeat KBI with simultaneous deflation



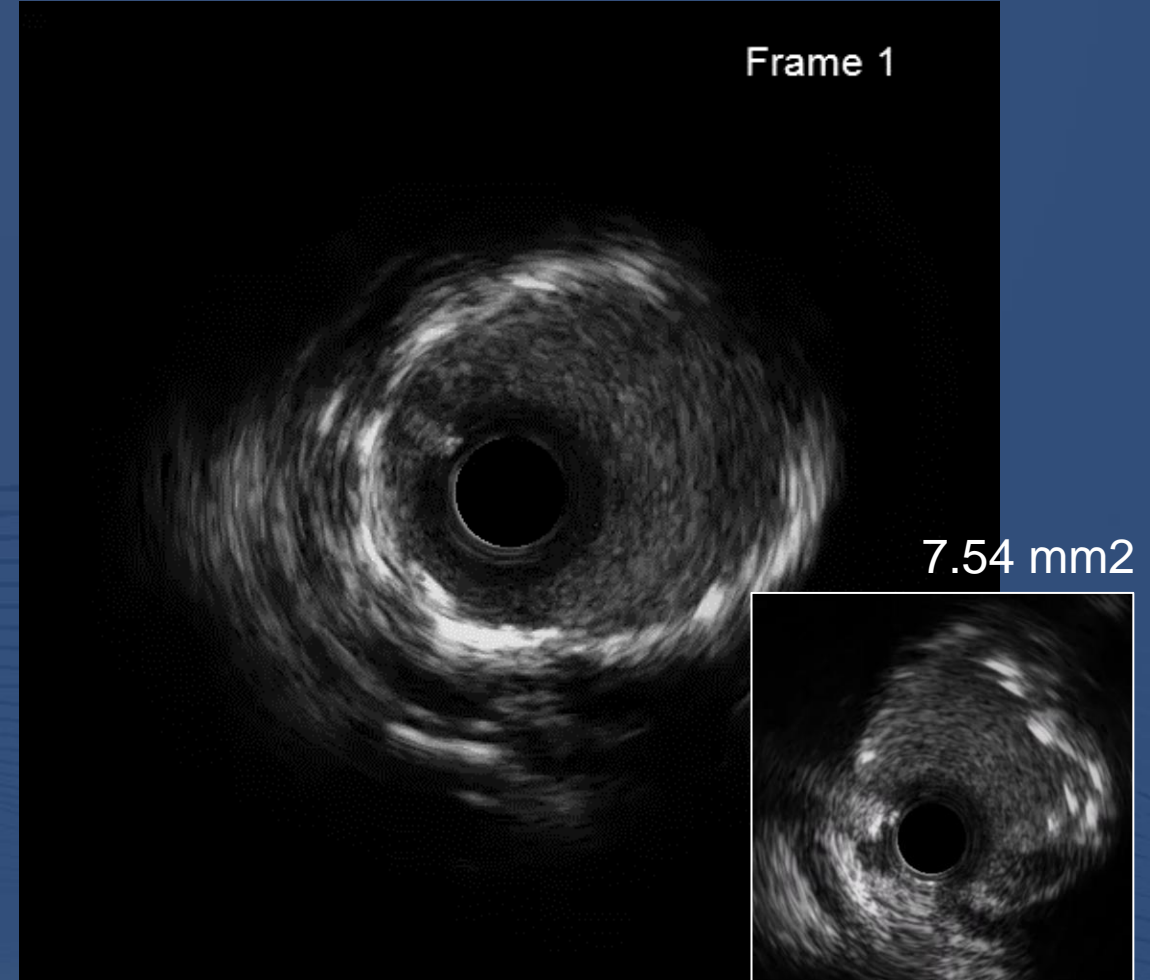
Re-POT with balloon far from carina



IVUS LM-LAD

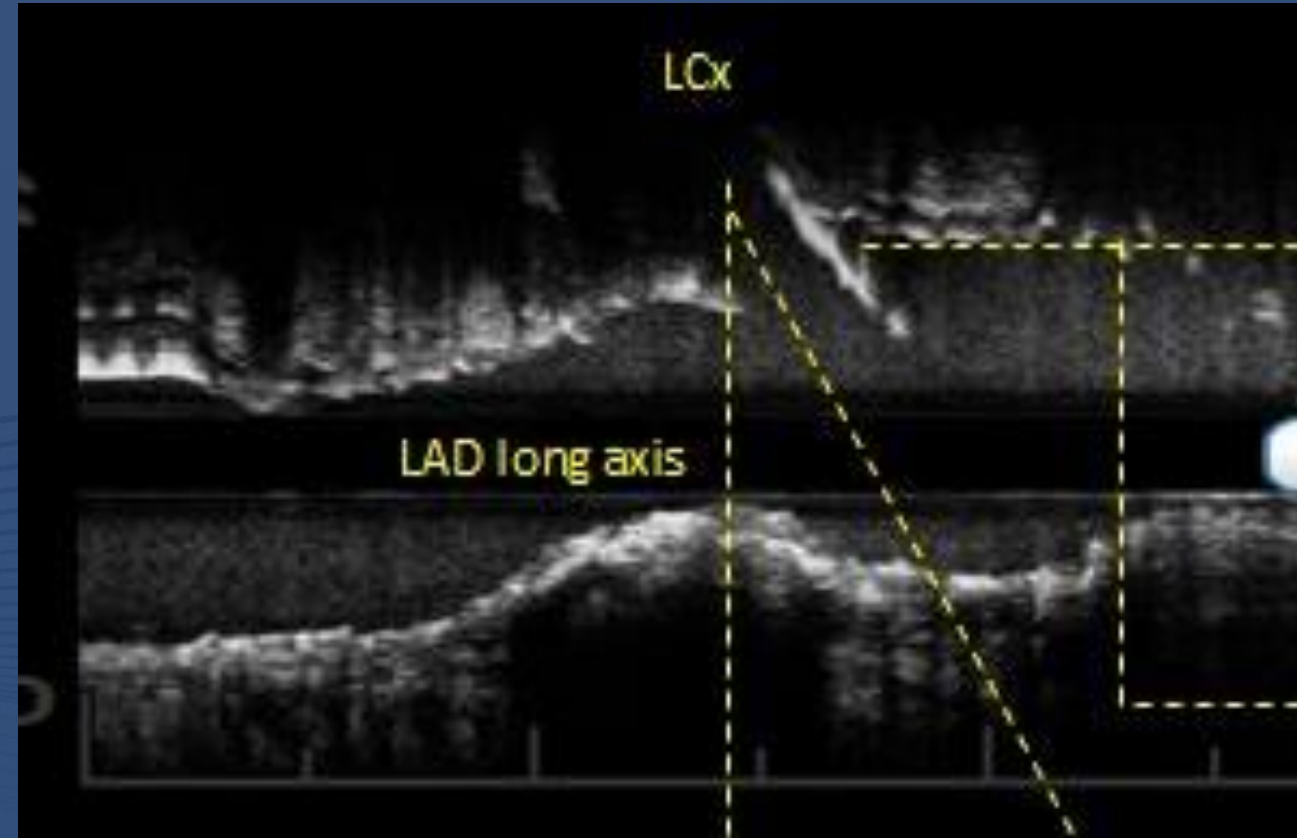
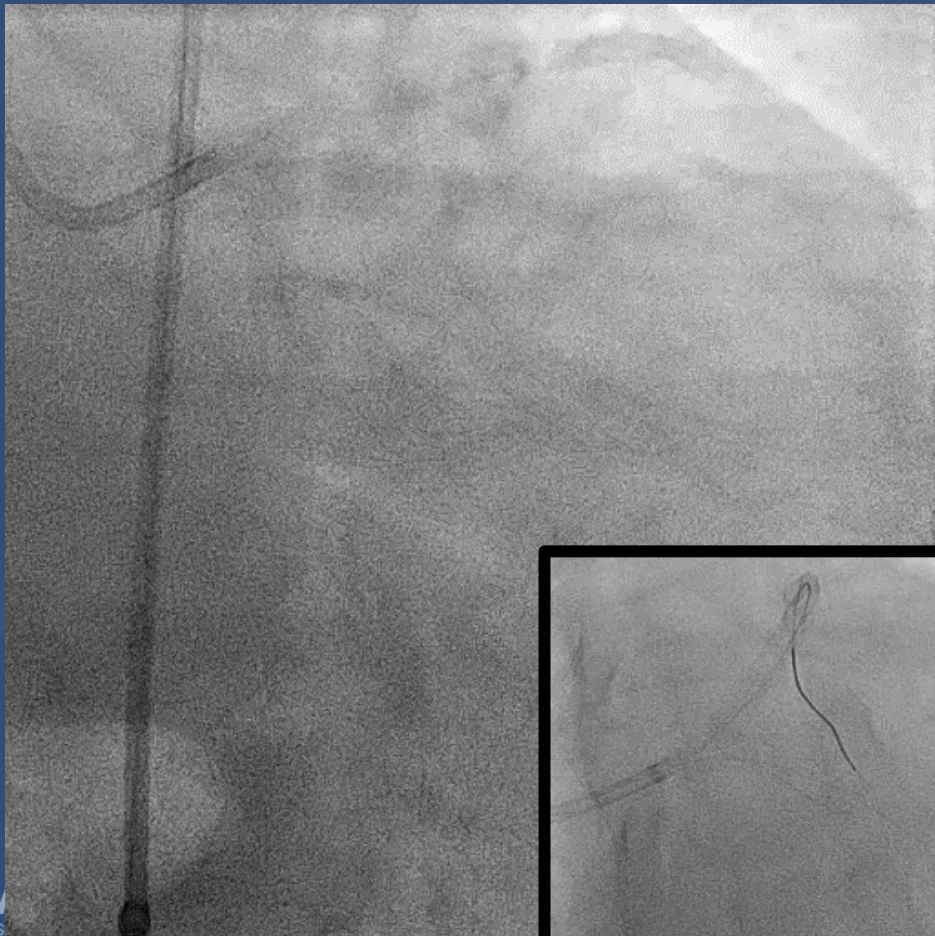


IVUS LM-LCX



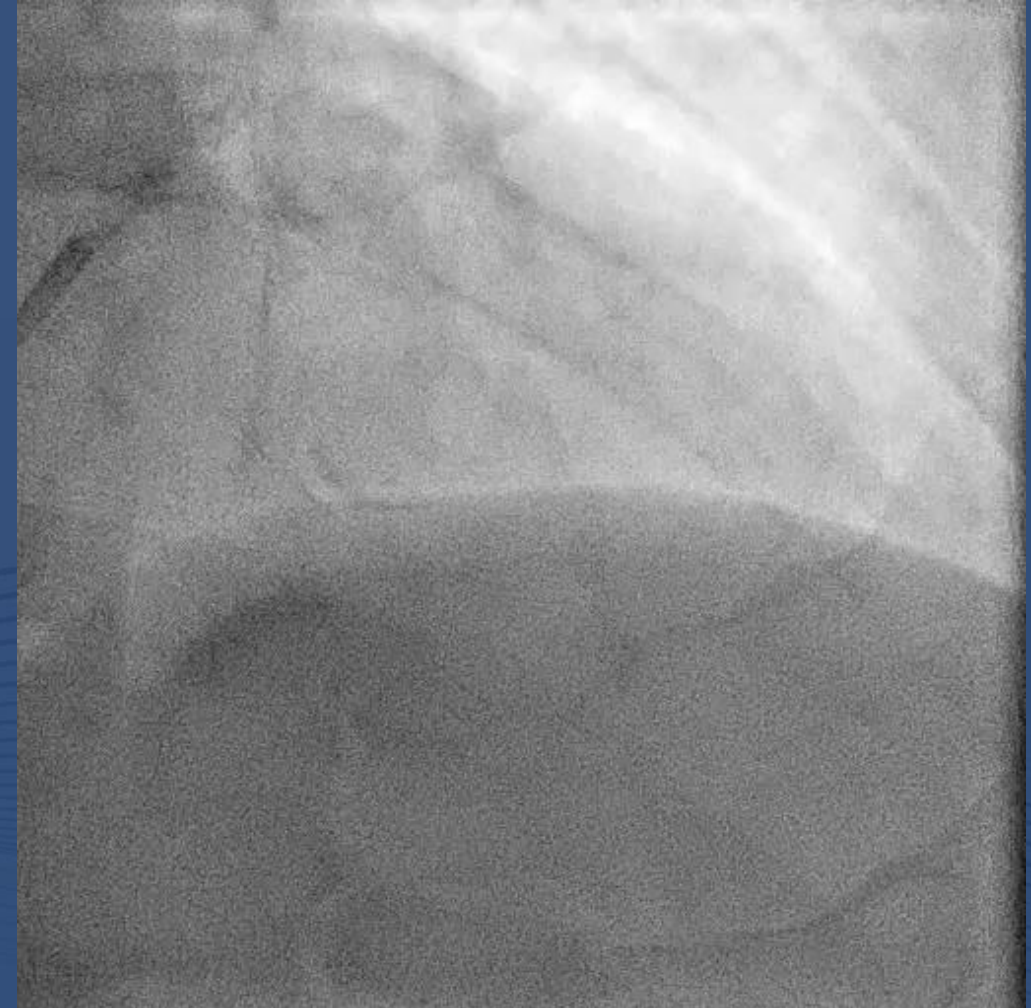
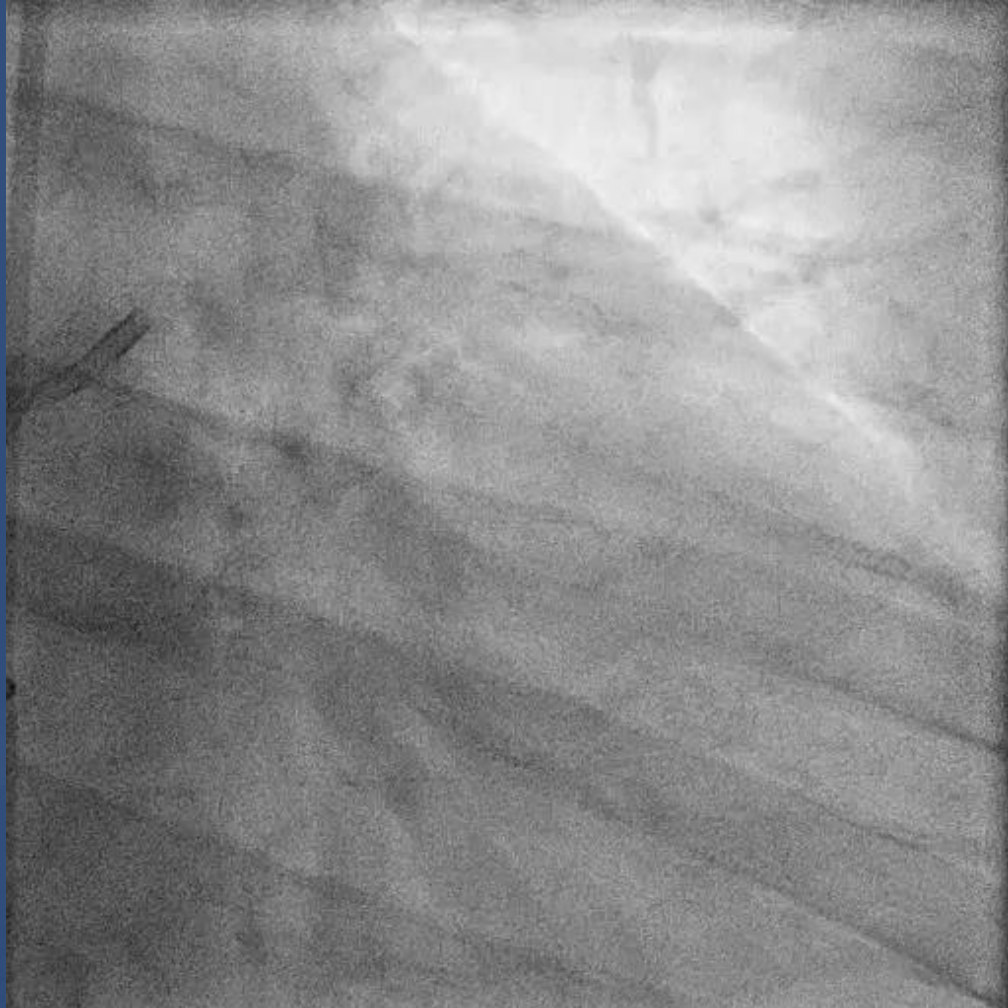
Successful TAP technique

IVUS study

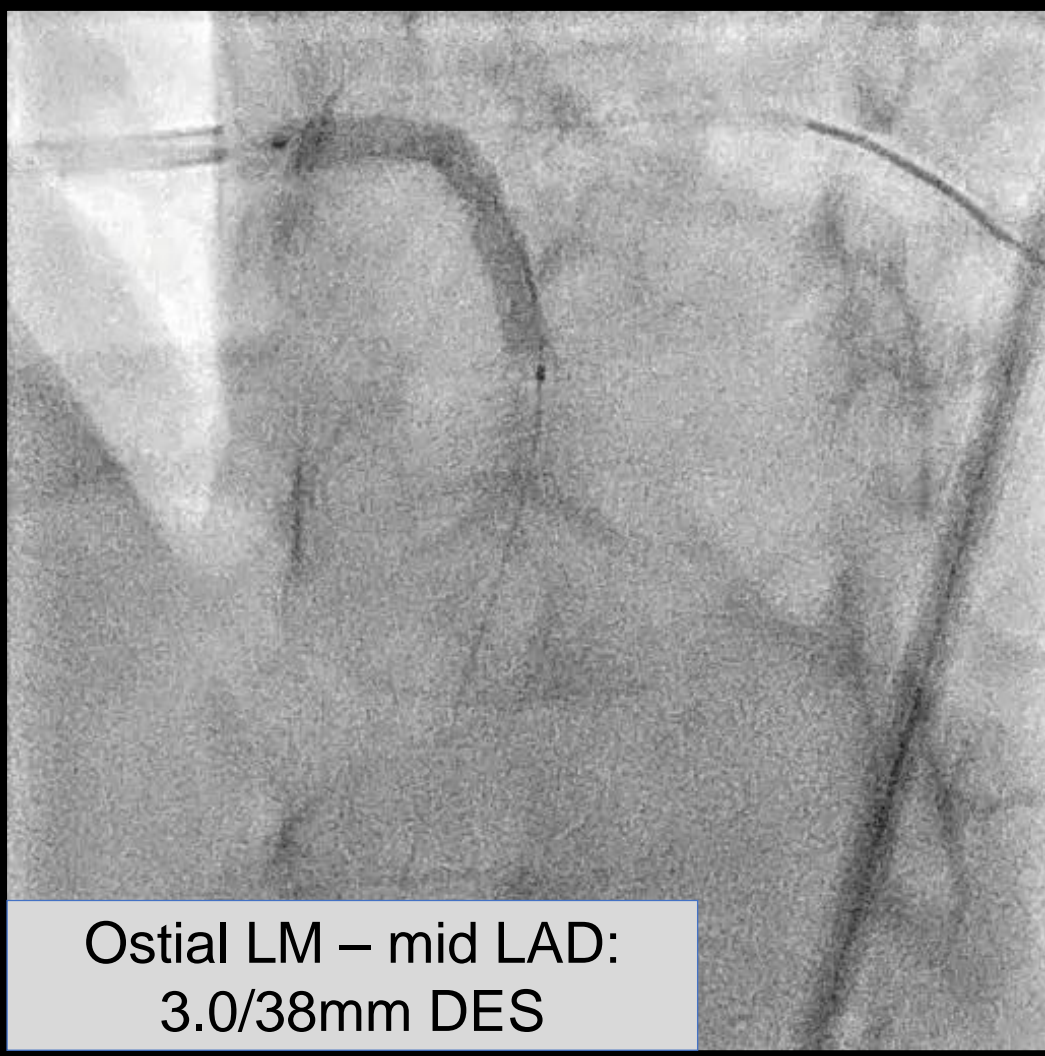


Case 3

Diagnostic Angiography



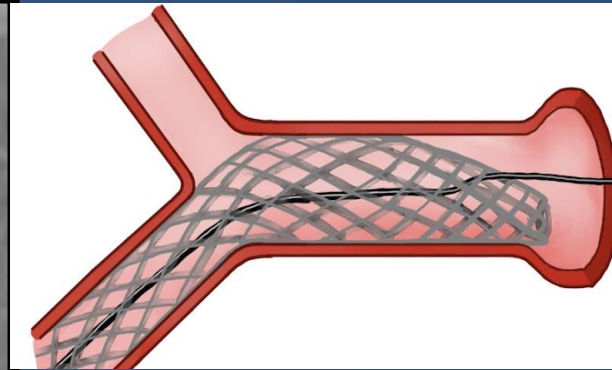
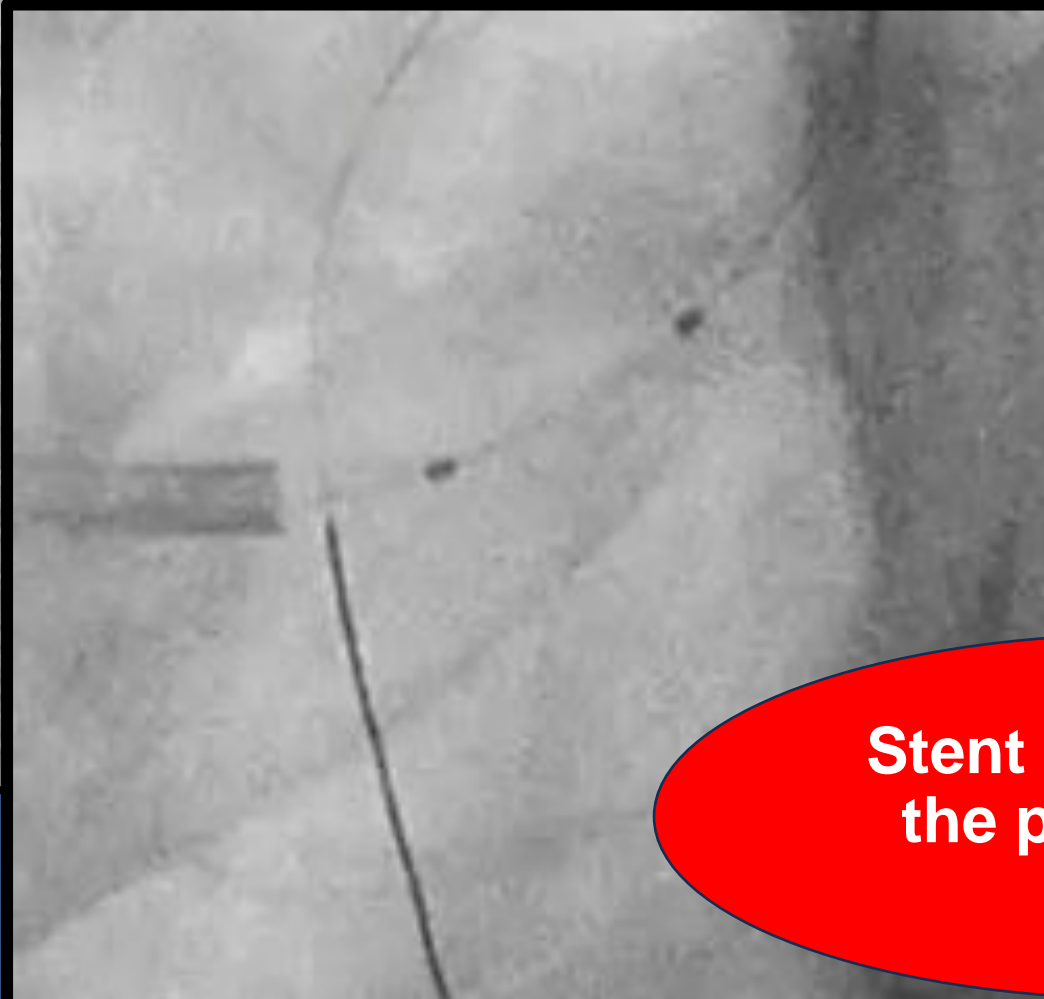
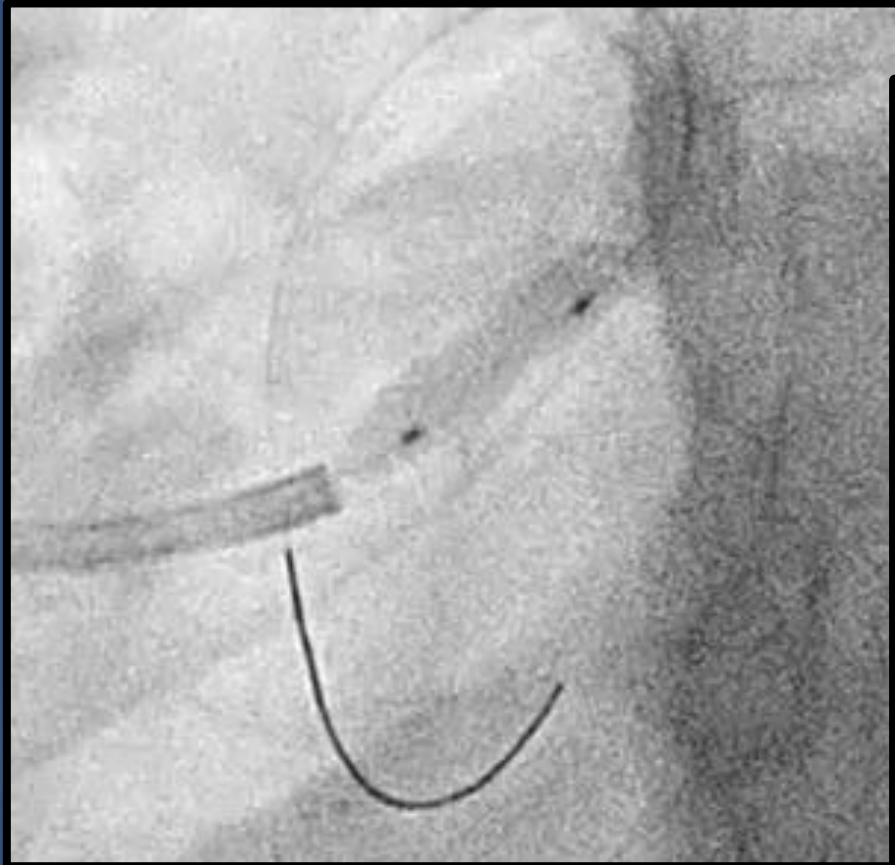
LM-LAD Crossover Stenting



Both GW of LAD/LCX were unintentionally pulled out!

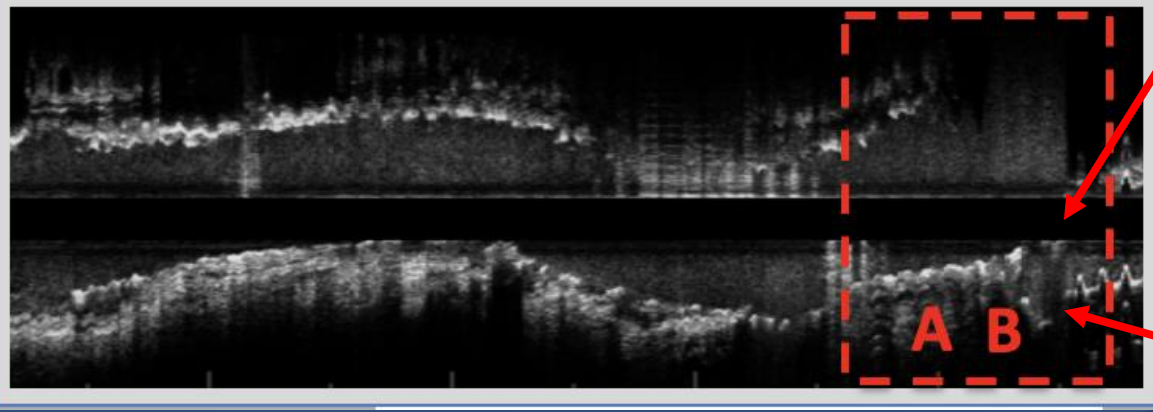
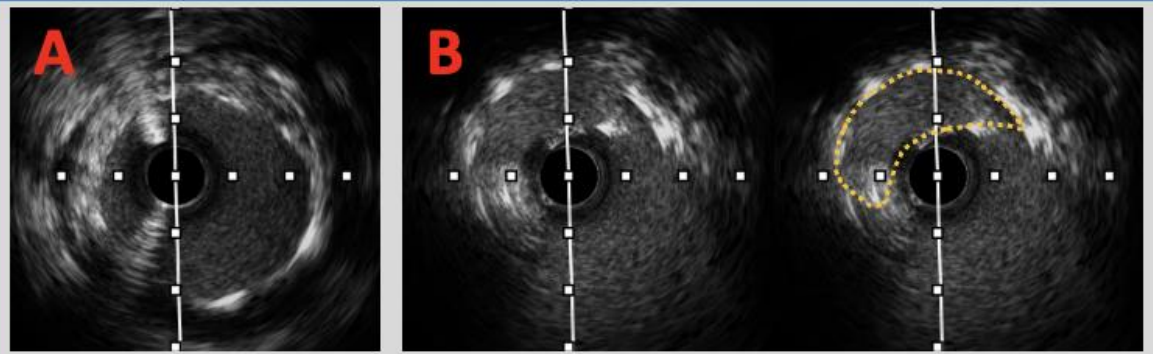
Watch your wire !

Rewiring and POT (NCB
4.5 mm)



**Stent deformation at
the proximal stent
segment**

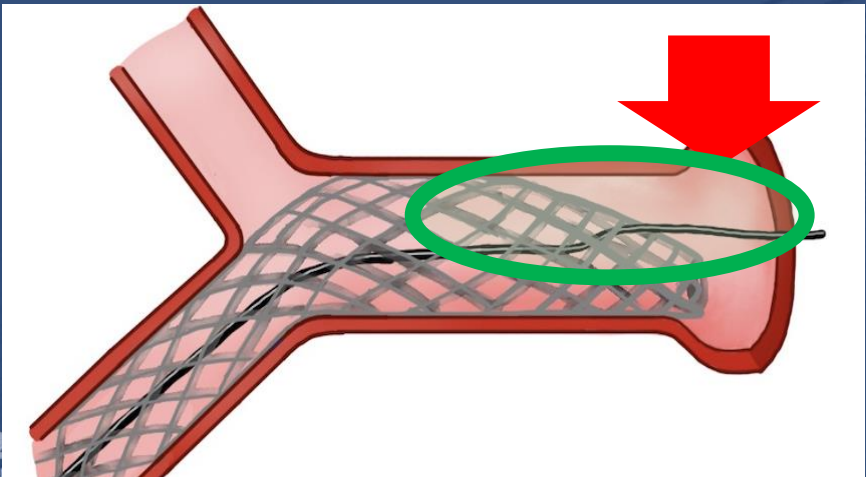
IVUS study



Stent deformation at ostial

False entry point of ostial wiring (abluminal)

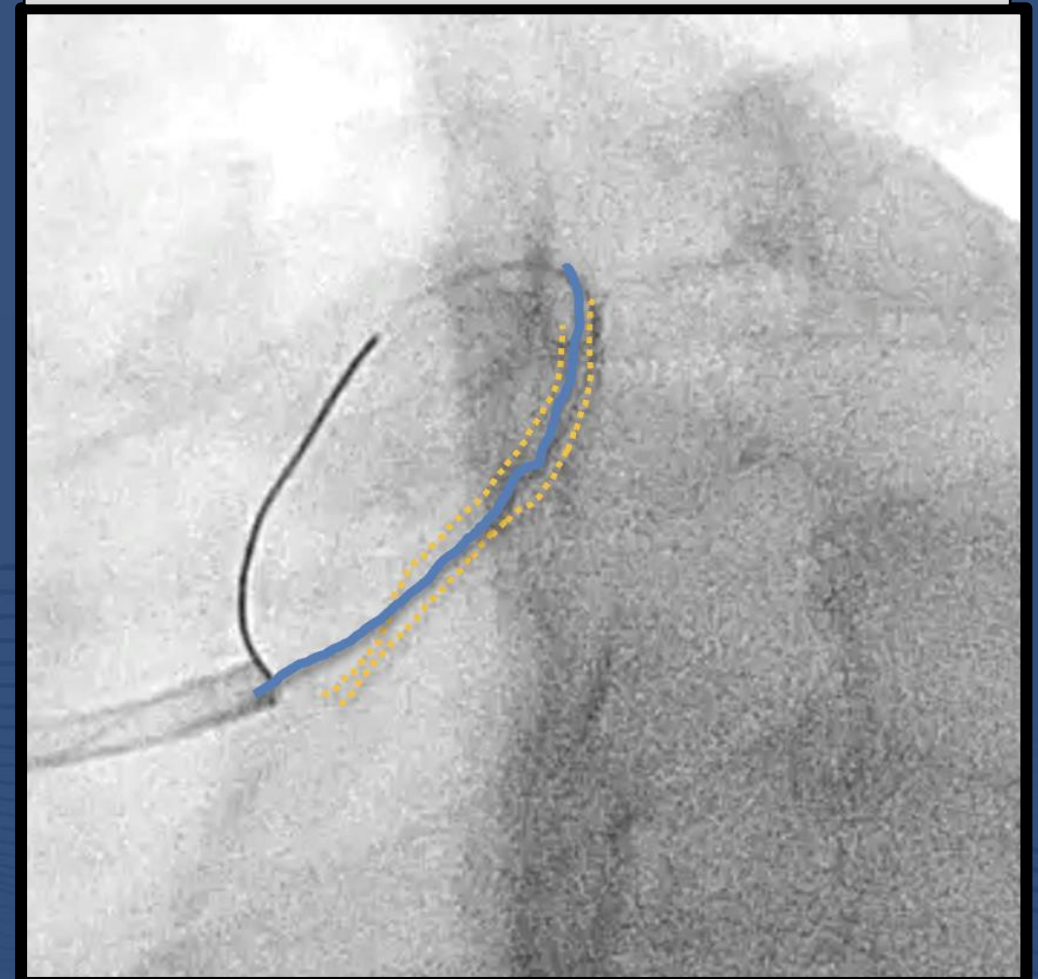
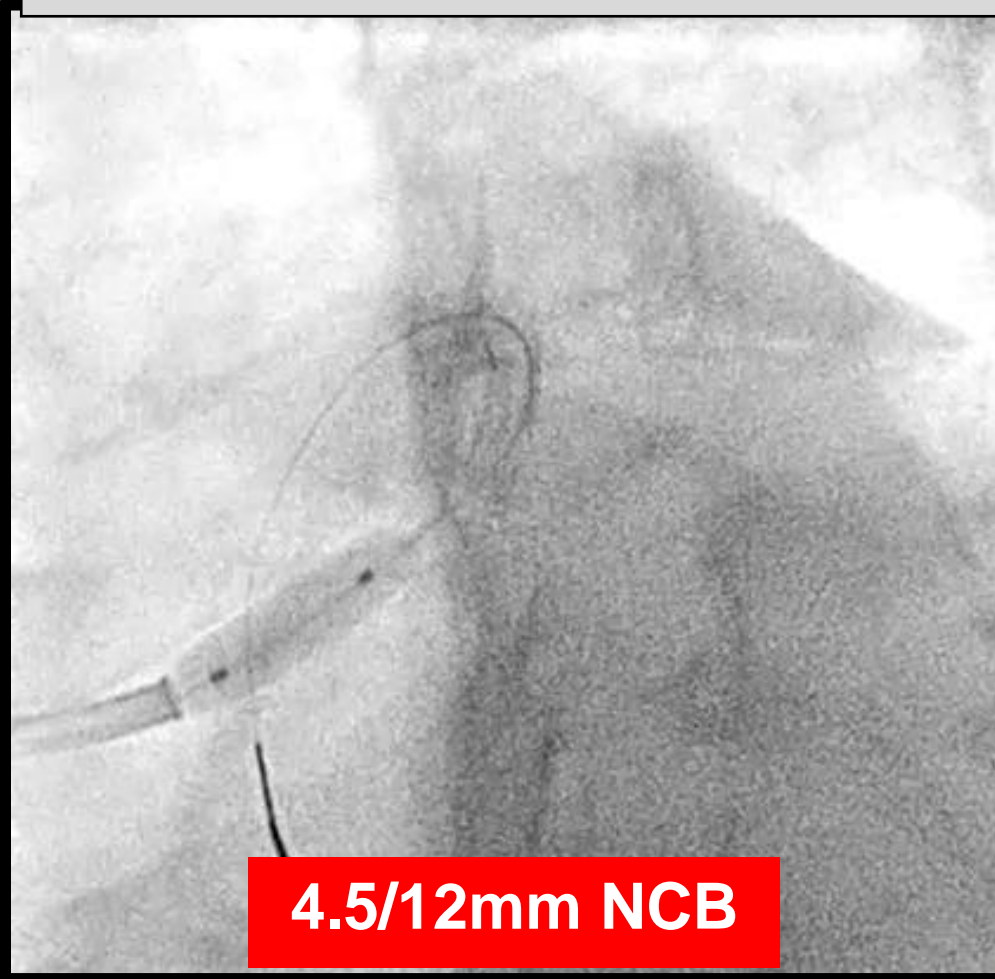
False wiring length: 4.2 mm



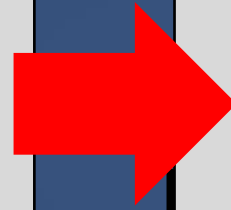
Balloon crush at proximal stent segment



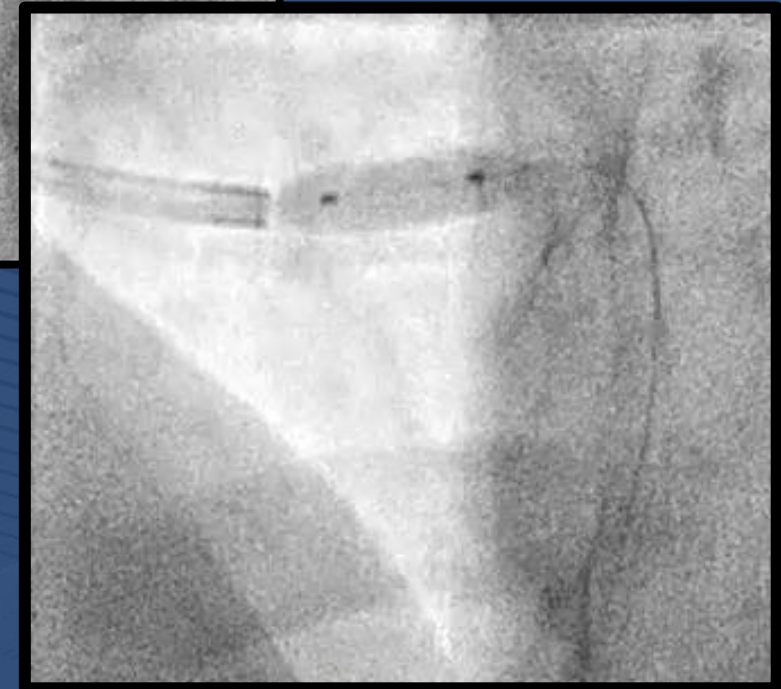
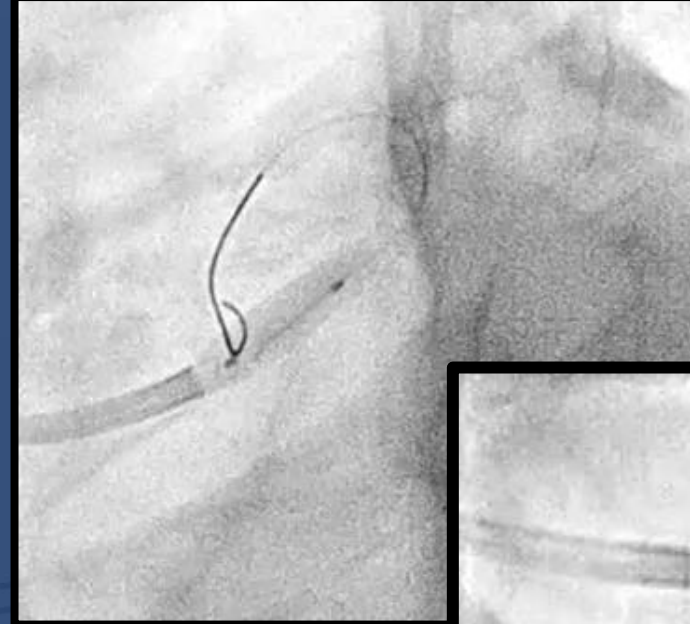
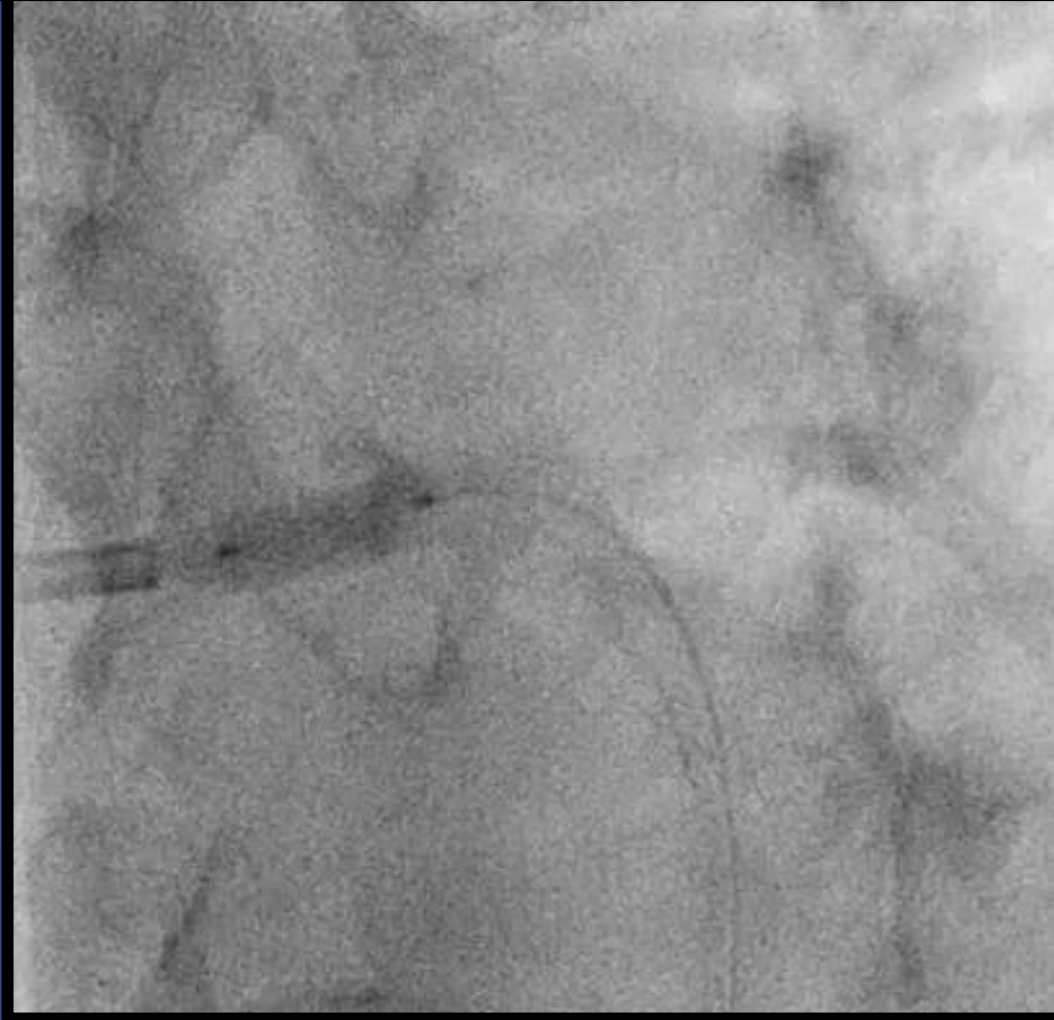
Crushed proximal stent segment



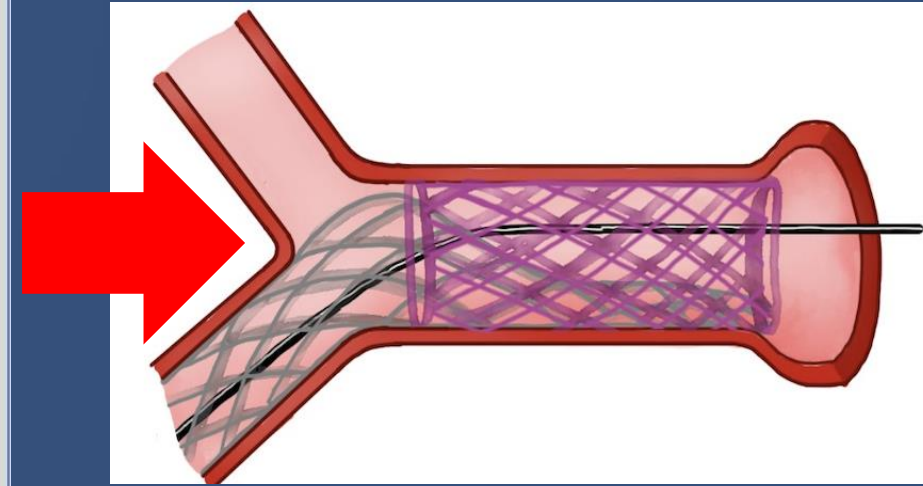
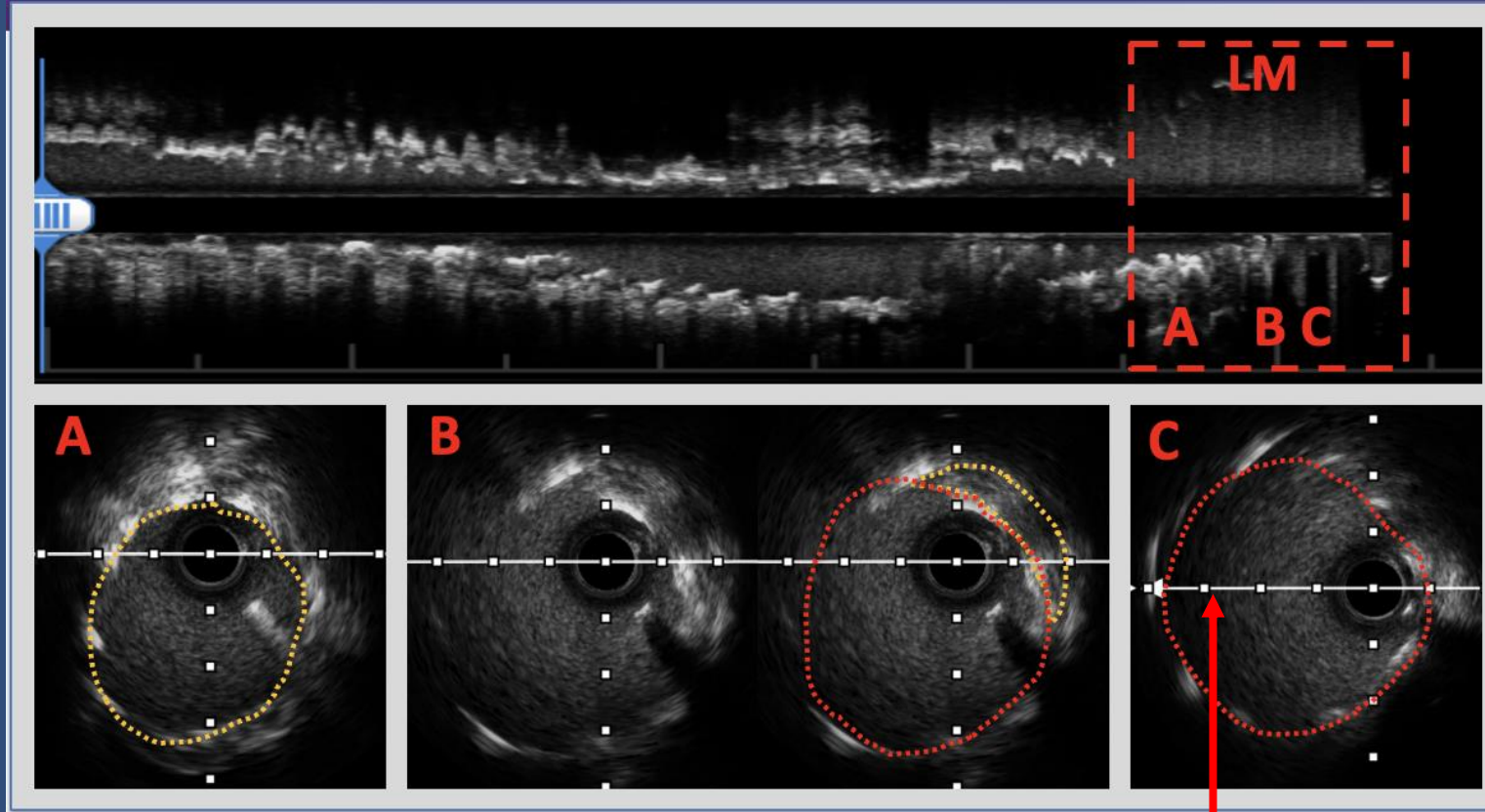
**Stenting at ostial – shaft LM
4.0/9mm DES**



**POT and ostial flaring
4.5/12mm NCB**

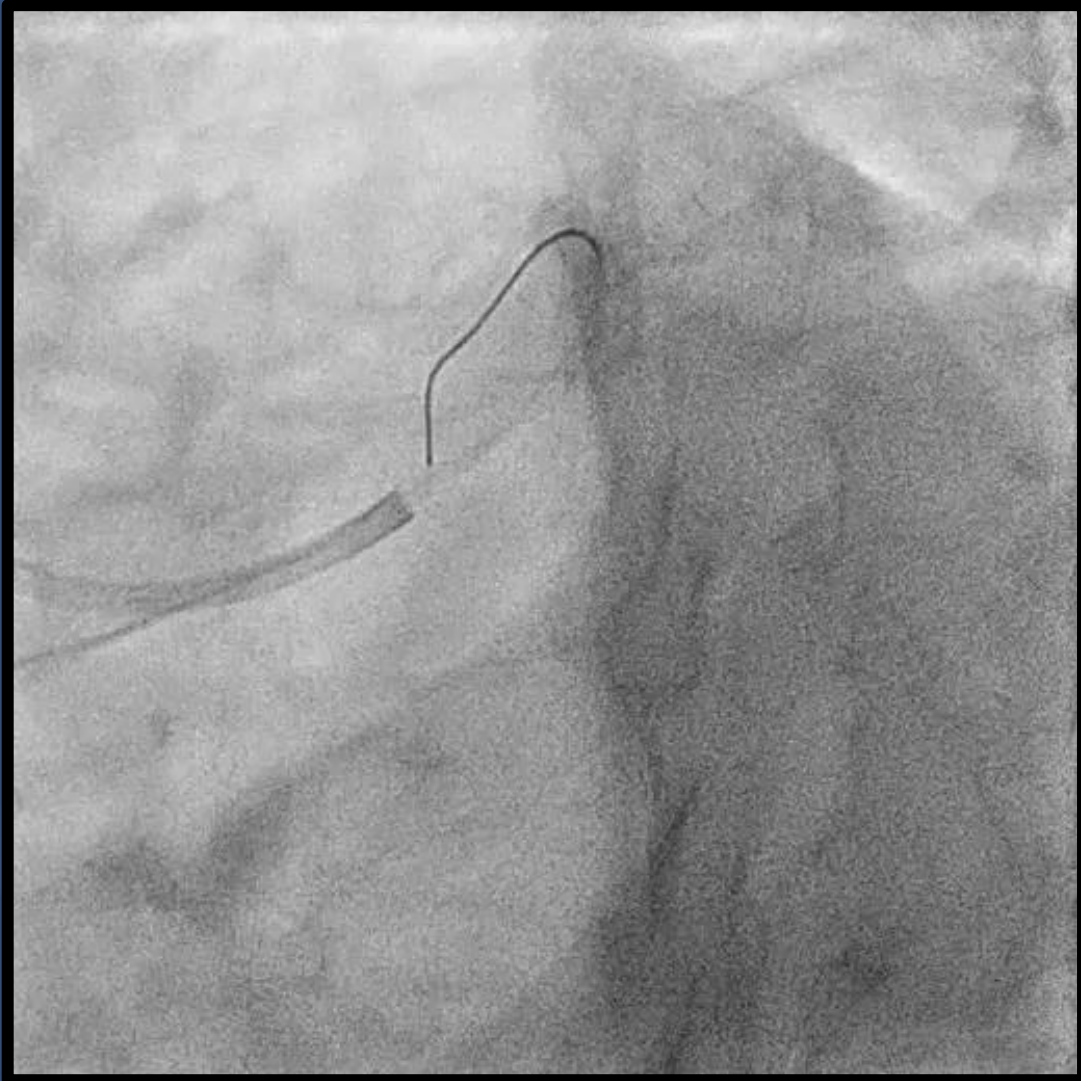


Final IVUS study

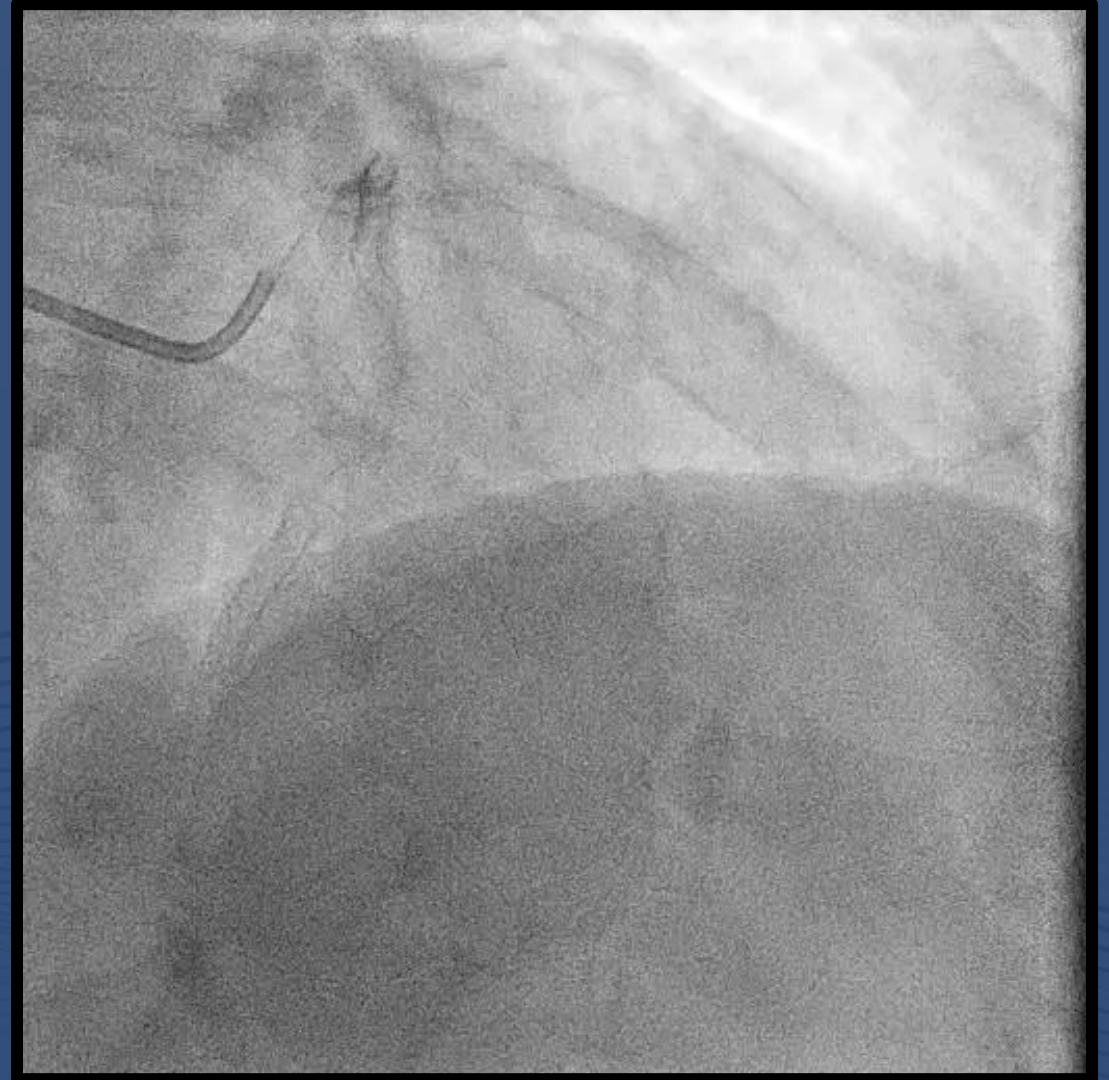


Triple layer with good apposition

Final results

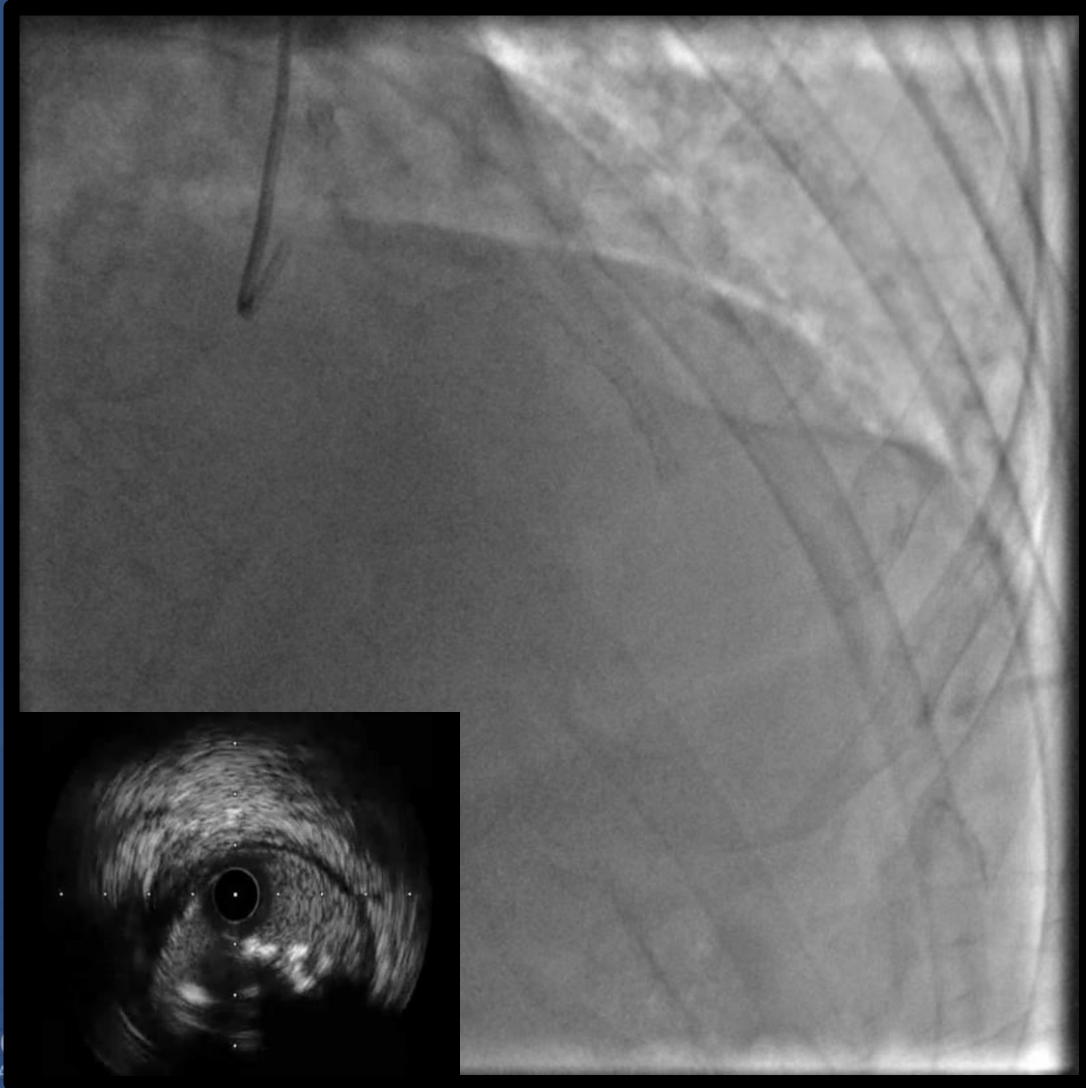


One year follow – up



#Case 4

Diagnostic Angiography

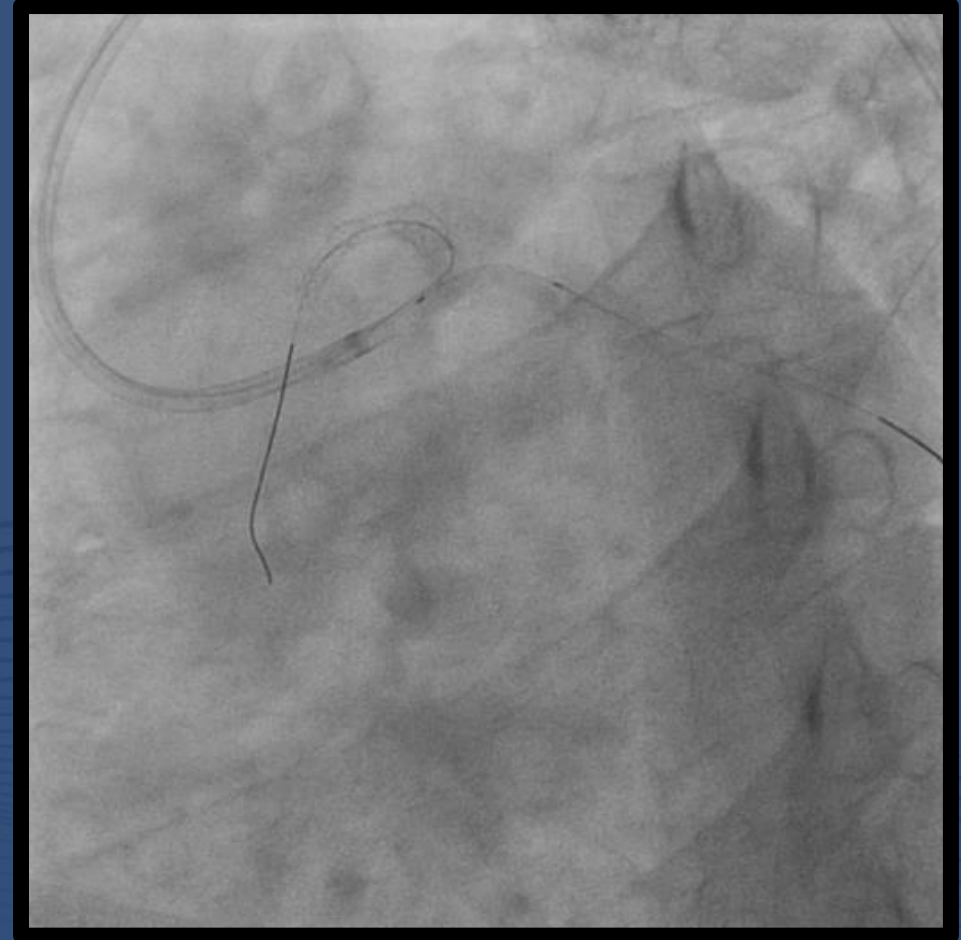


Rotational atherectomy to the LM-LCX route 1.75 mm burr at 180 K rpm

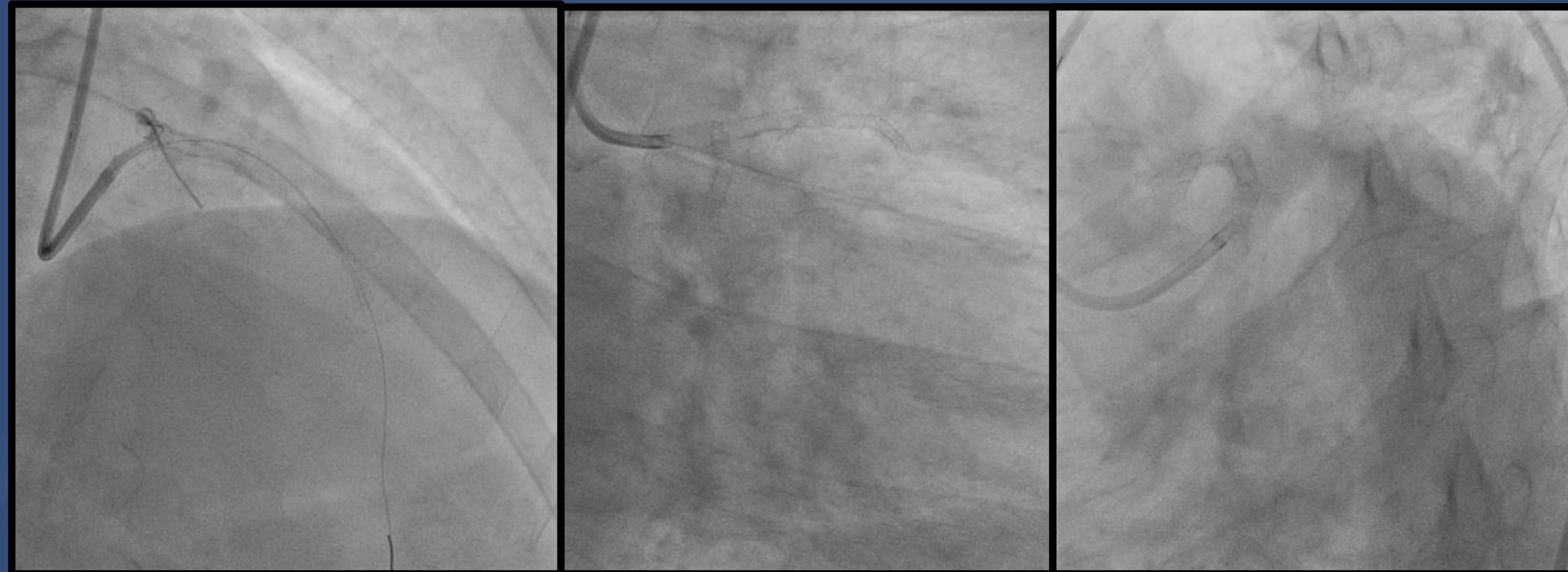


Predilation

2.5x15 mm Score flex balloon to LAD dan LCX

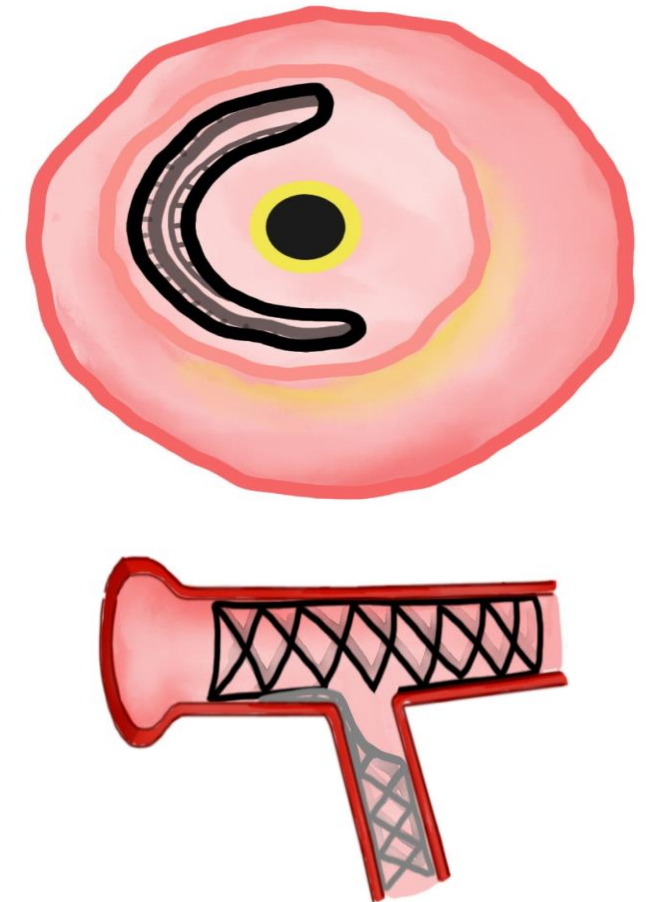
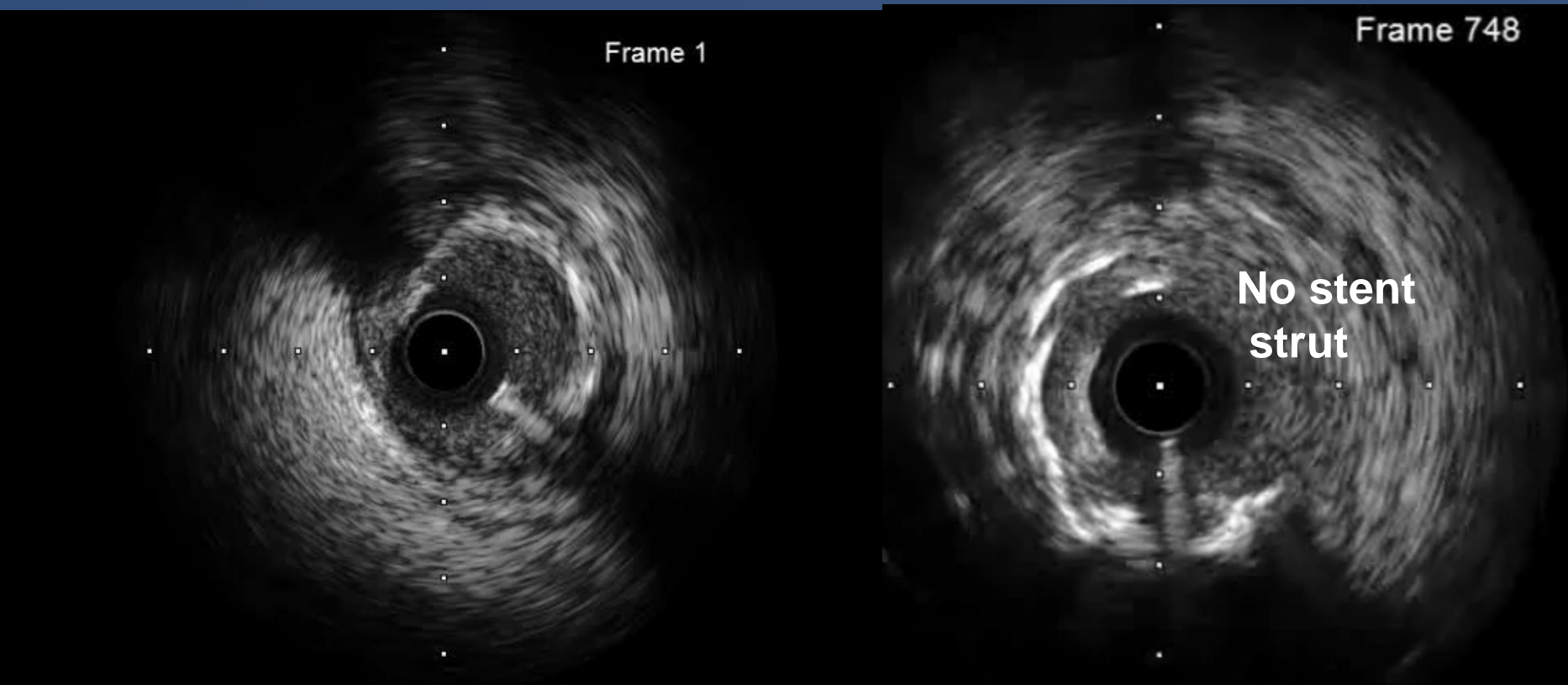


Final Shot after DK crush stenting



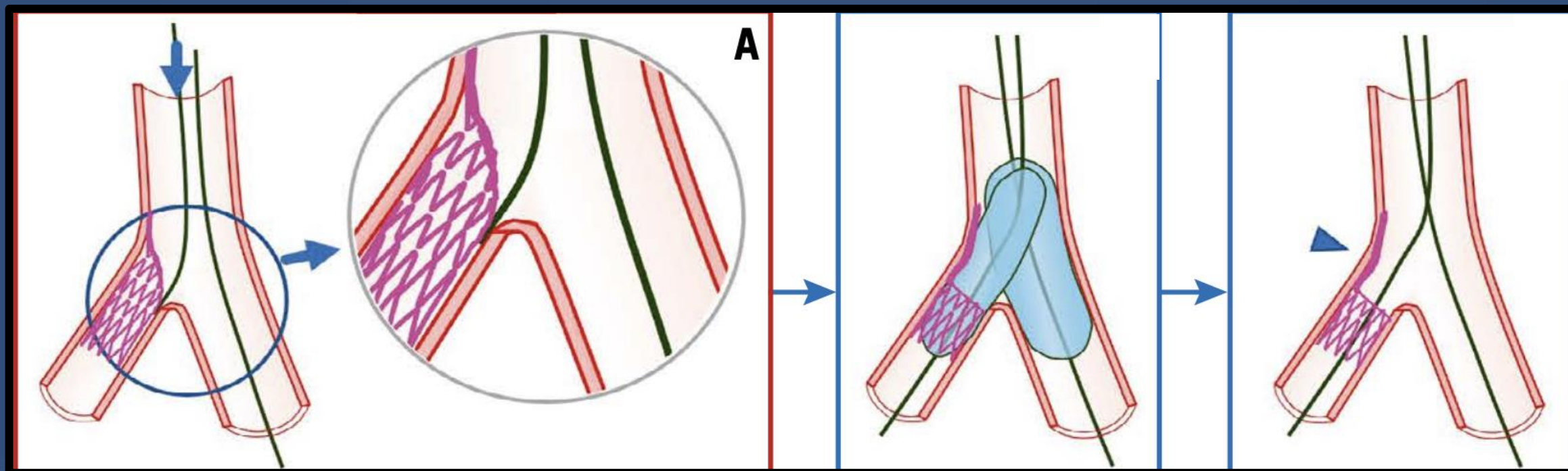
LCX Post-DK Crush IVUS at LCX

What's wrong ?



Prox LCX stent was pushed towards the lateral SB wall

Distal Abluminal Rewiring



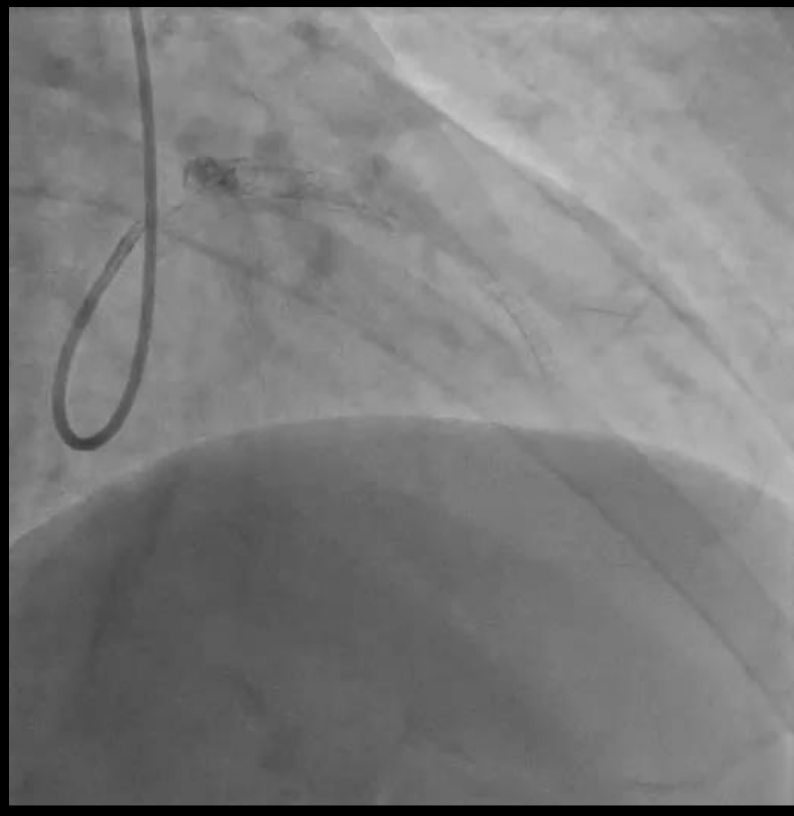
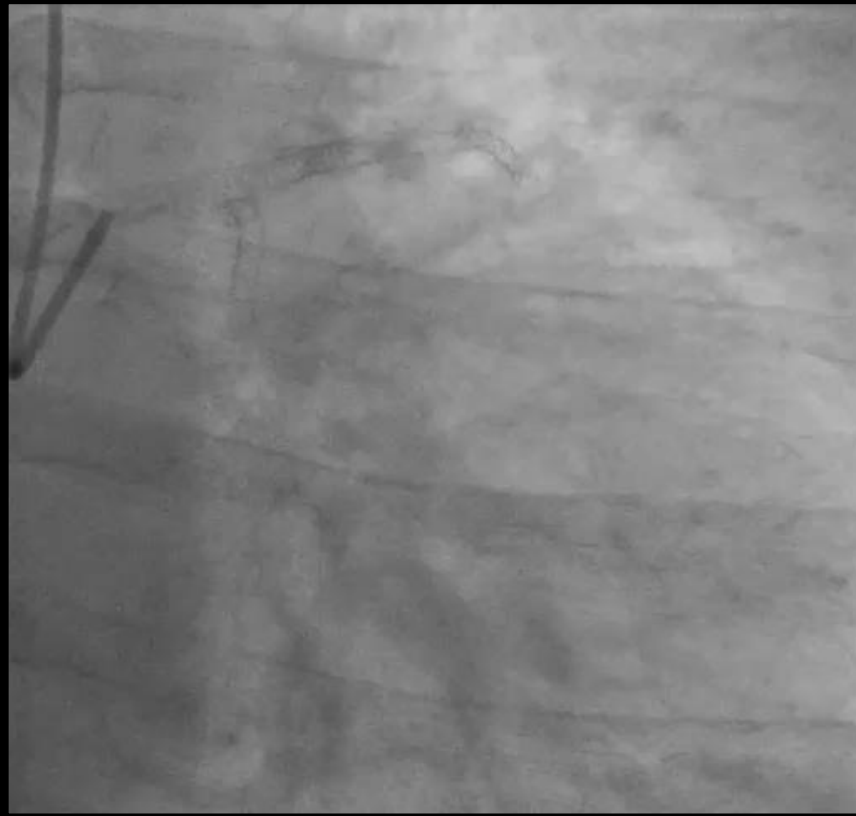
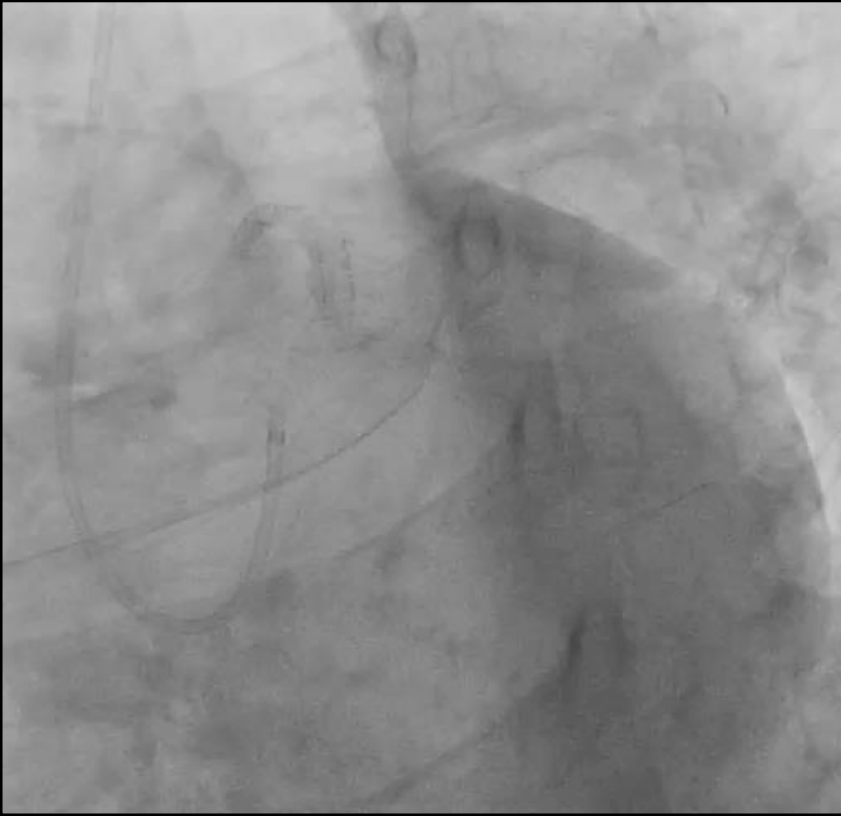
Distal Abluminal rewiring

KBI

After KBI

KBI may lead to struts of the prox LCX stent being pushed towards the lateral SB wall

7 Months Later

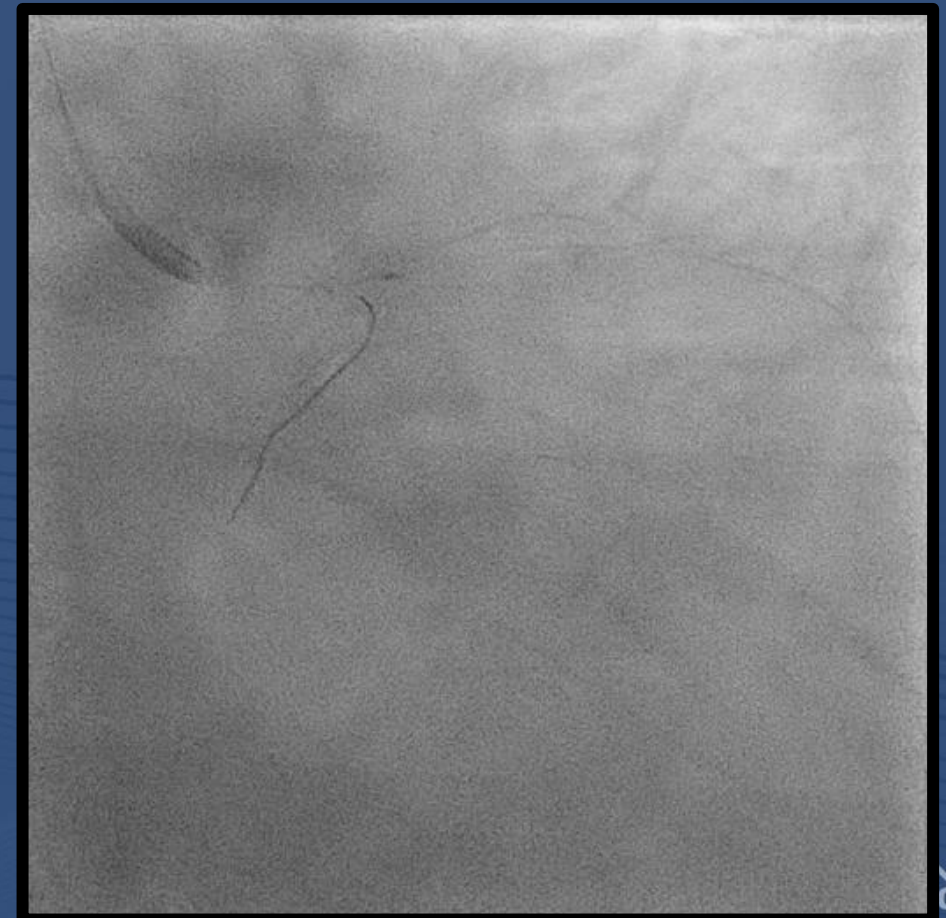


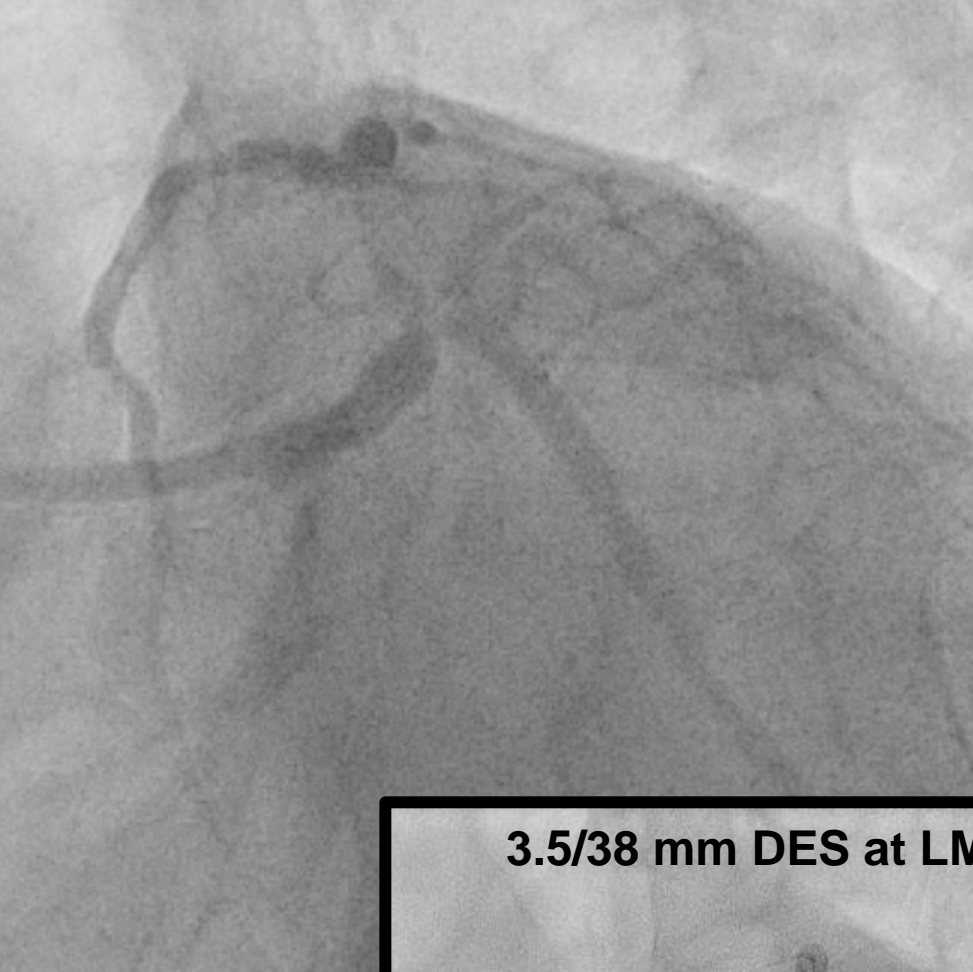
How to Avoid Abluminal Wiring

- Deep engage the GC
- Knuckle wire
- Pull and redirect the distal MV wire
- Dual lumen microcatheter

Intracoronary imaging is the gold standard in recognition of abluminal rewiring

Crusade guided rewiring to LCX





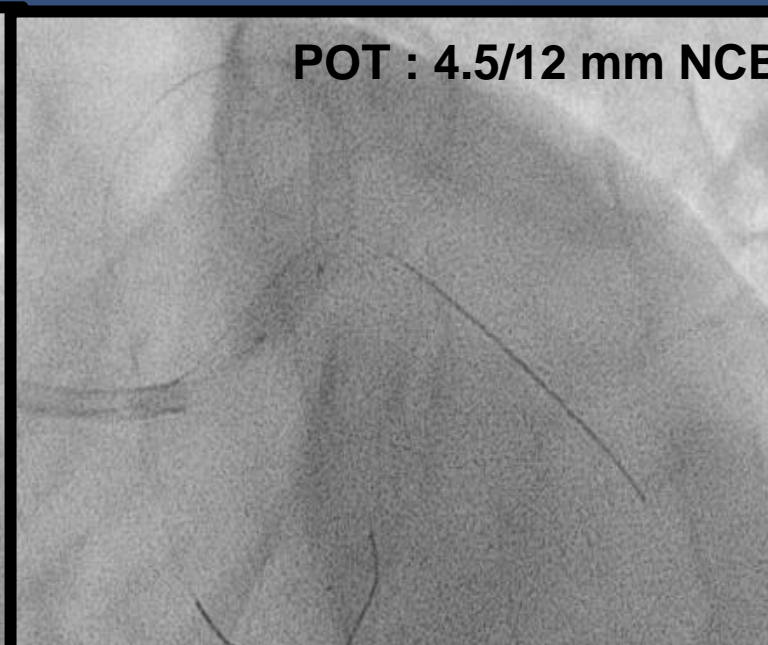
Case 5

Chasing optimal SB rewiring

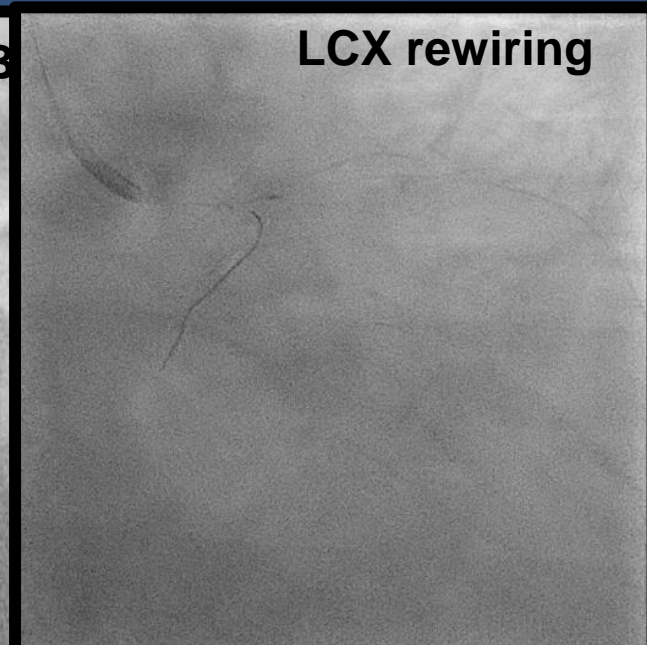
3.5/38 mm DES at LM-LAD



POT : 4.5/12 mm NCB

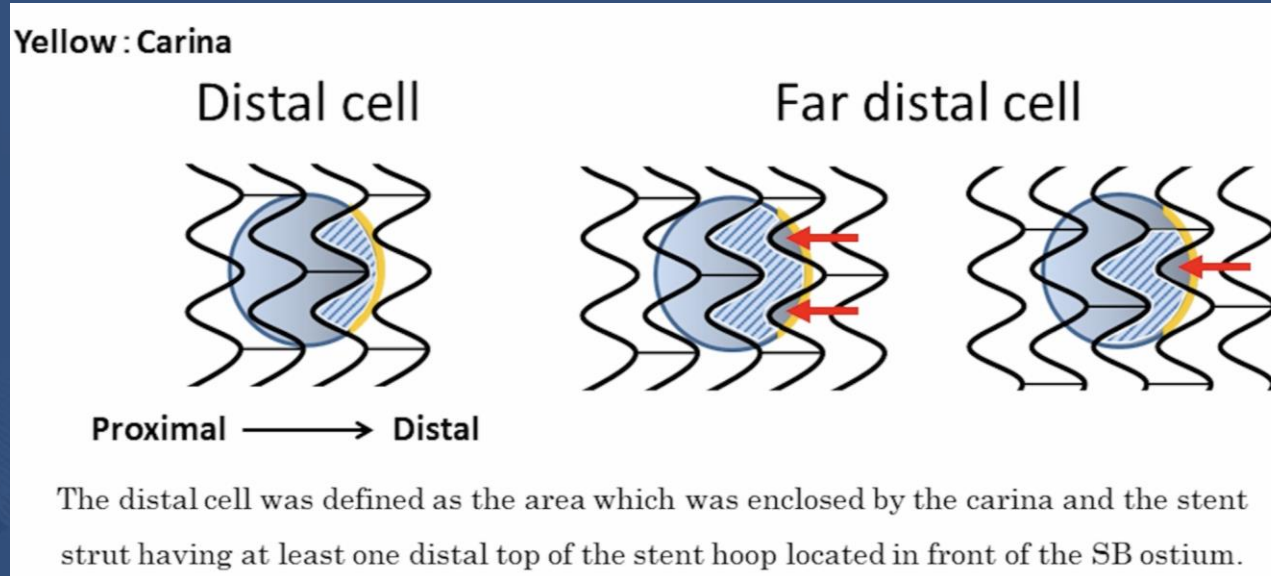


LCX rewiring

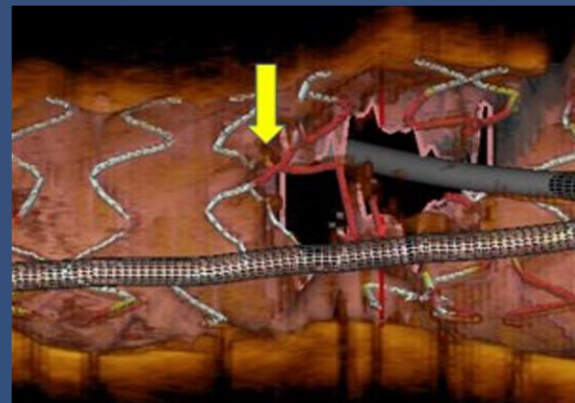
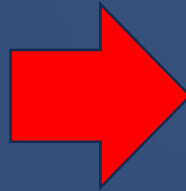
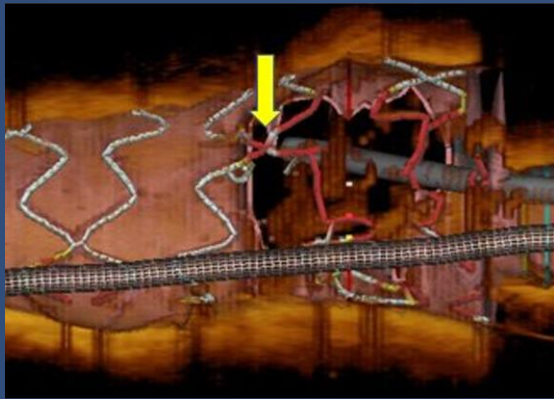


A distal cell is (not) always an optimal cell

- OCT reports revealed incomplete jailed struts removal even if the KBI is performed with recrossing point in the distal cell.
- KBI can cause severe stent deformation if recrossing points occur in the far distal area.



3D-OCT to avoid pitfall of SB recrossing

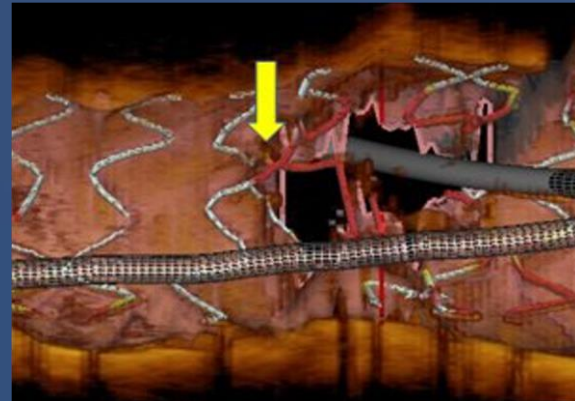
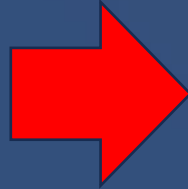
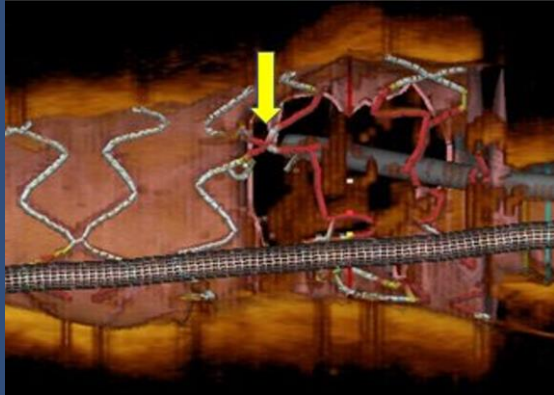


- Link-Connecting type
- GW recrossing point at prox cell

Rewire to optimal strut

Optimal guide wire recrossing

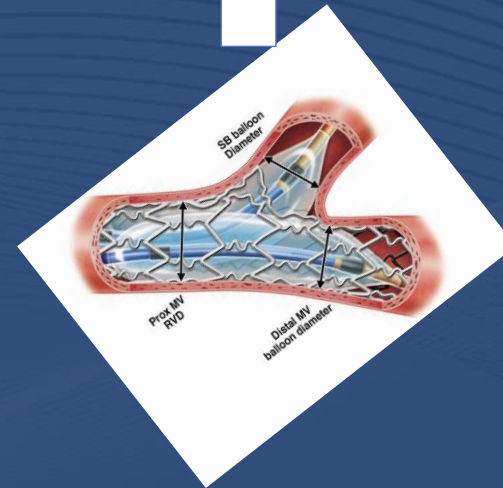
Optimal Guided Wire Recrossing



Rewire to optimal strut



- No/minimal jailed strut
- Large SB orifice area



Take home messages

- Bifurcation PCI entails multiple steps and can be challenging to perform
- Awareness of the potential pitfalls and solutions can help to minimise the “pain”, while maintaining the “gain”.
- Intracoronary imaging can aid to avoid the pitfalls and optimised the procedure