Threading the eye of a needle

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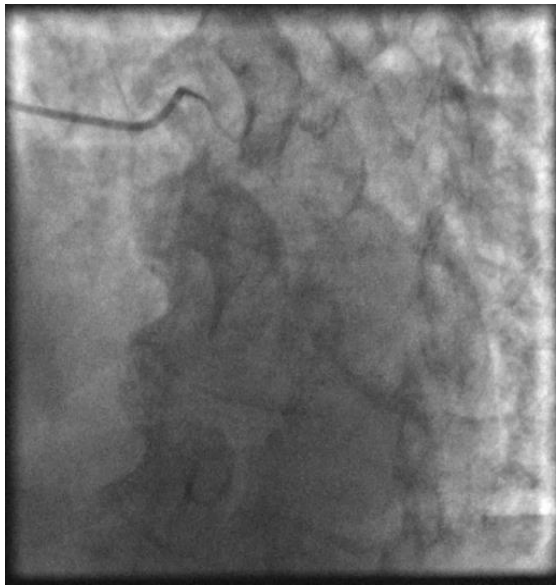
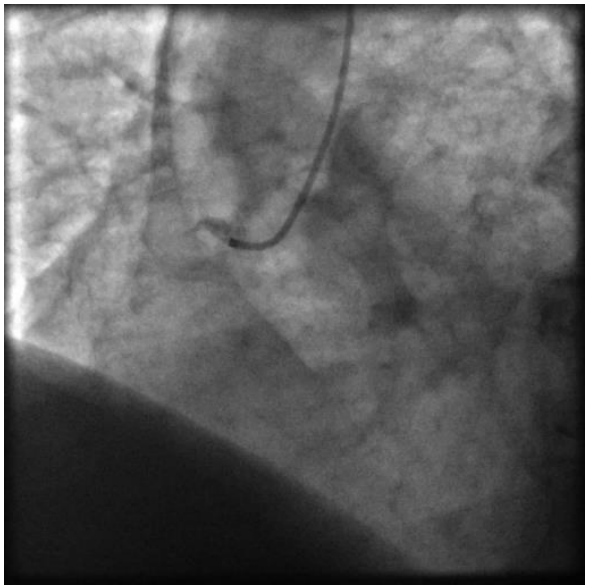
Case History

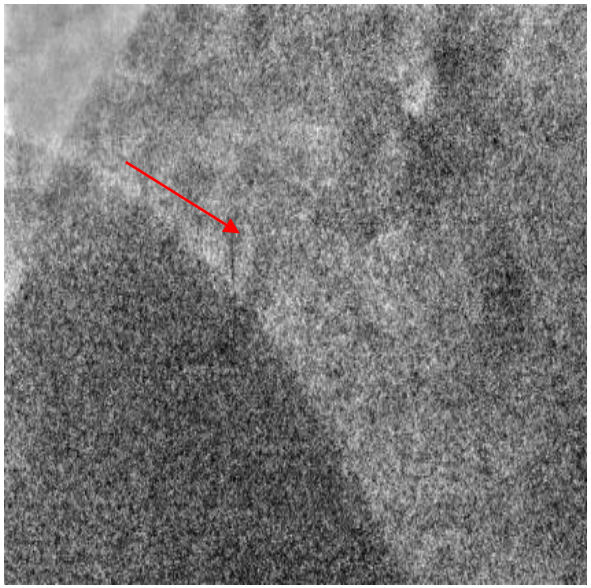
- 78 year old male referred for elective angiogram +/- PCI
- Past History:
  - Recent admission to district general hospital with NSTEMI (T wave inversion in inferior leads, trop 400 ng/L)
    - Also diagnosed with Mycoplasma pneumoniae at the time so commenced on DAPT and discharged for outpatient coronary angiogram
    - Occasional angina since discharge, significant exertional dyspnoea
  - Hypertension
  - Ex-smoker
- 6F RRA access

Coronary angiography and FFR assessment



- FFR to LCx
  - 0.88 at maximal hyperemia with IV adenosine





PCI to RCA

- 6F AL 0.75 guide
- Dye stain noted immediately
- Changed to JR4 guide and Sion Blue wire
- Unable to advance wire further – tactile resistance

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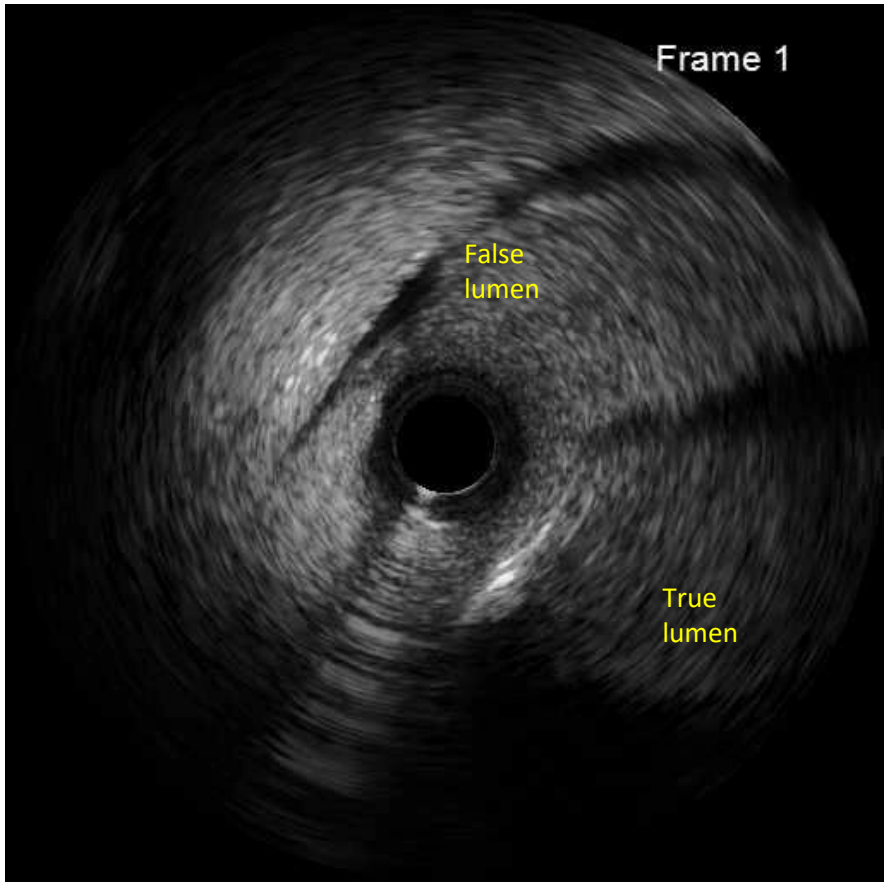
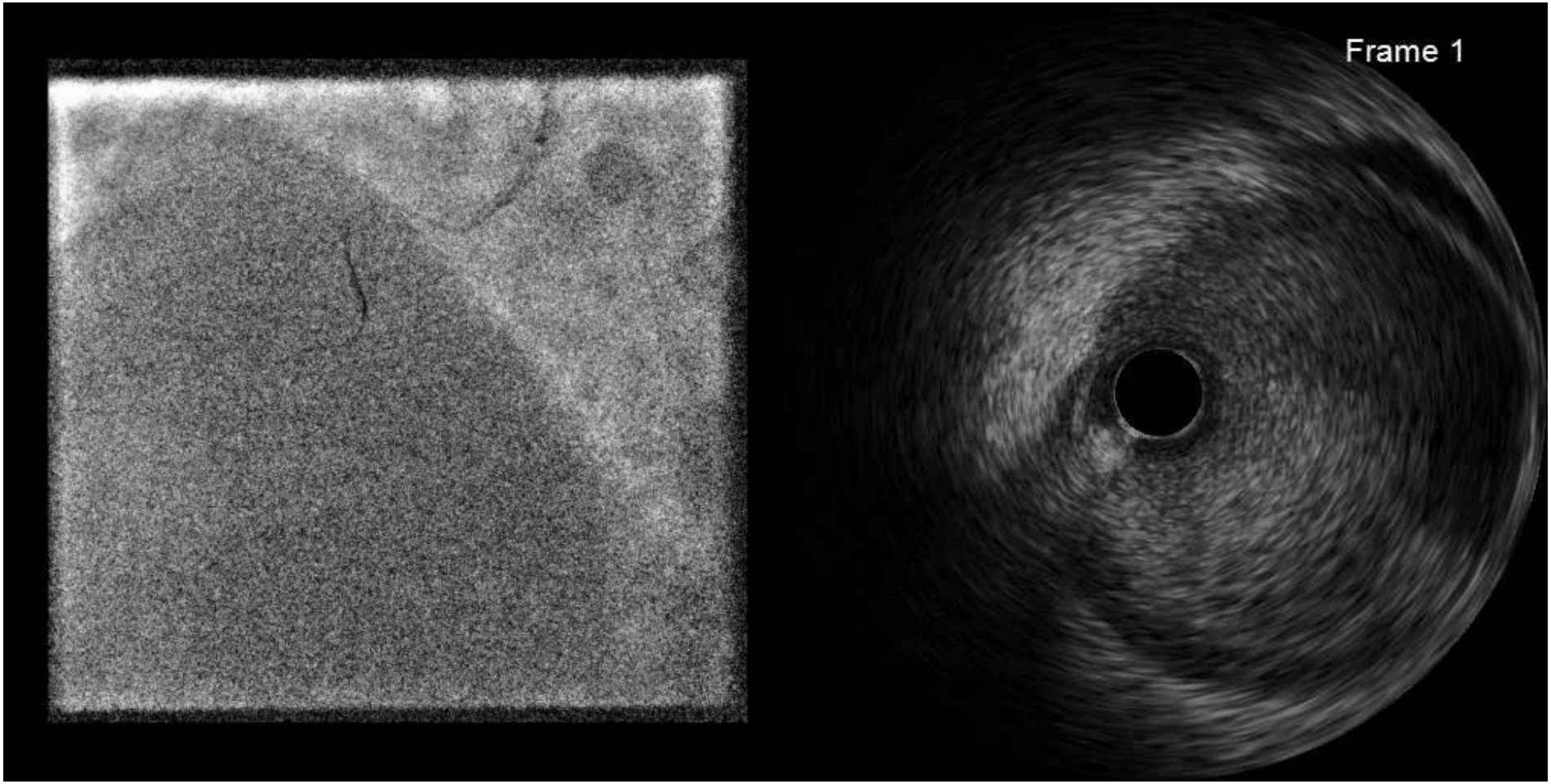
IVUS assessment of wire position

IVUS in mid RCA – wire in false lumen



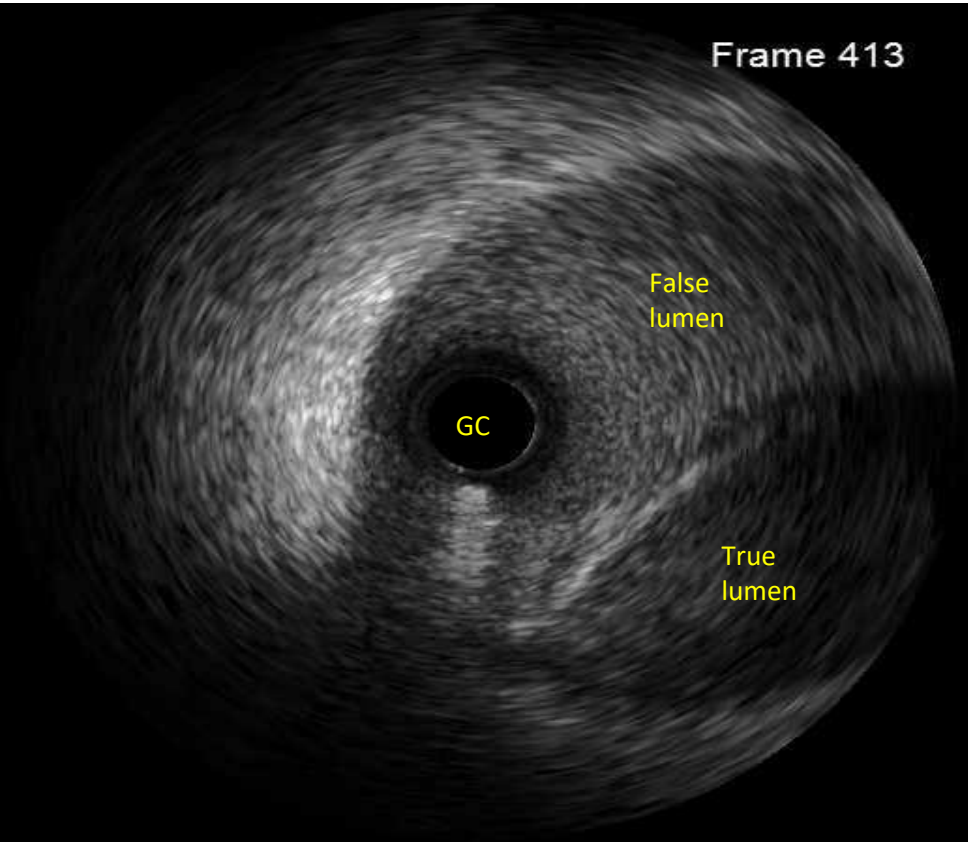
IVUS in proximal RCA – wire in true lumen

Wiring true lumen and using IVUS to evaluate wire position

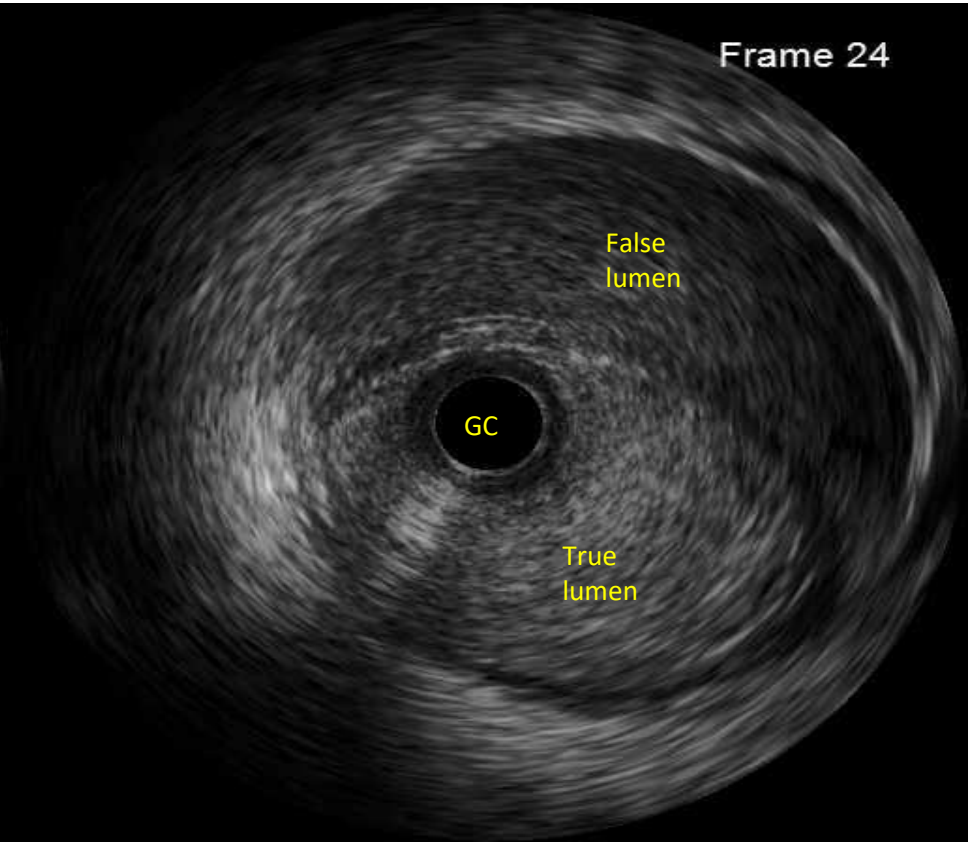


IVUS comparison

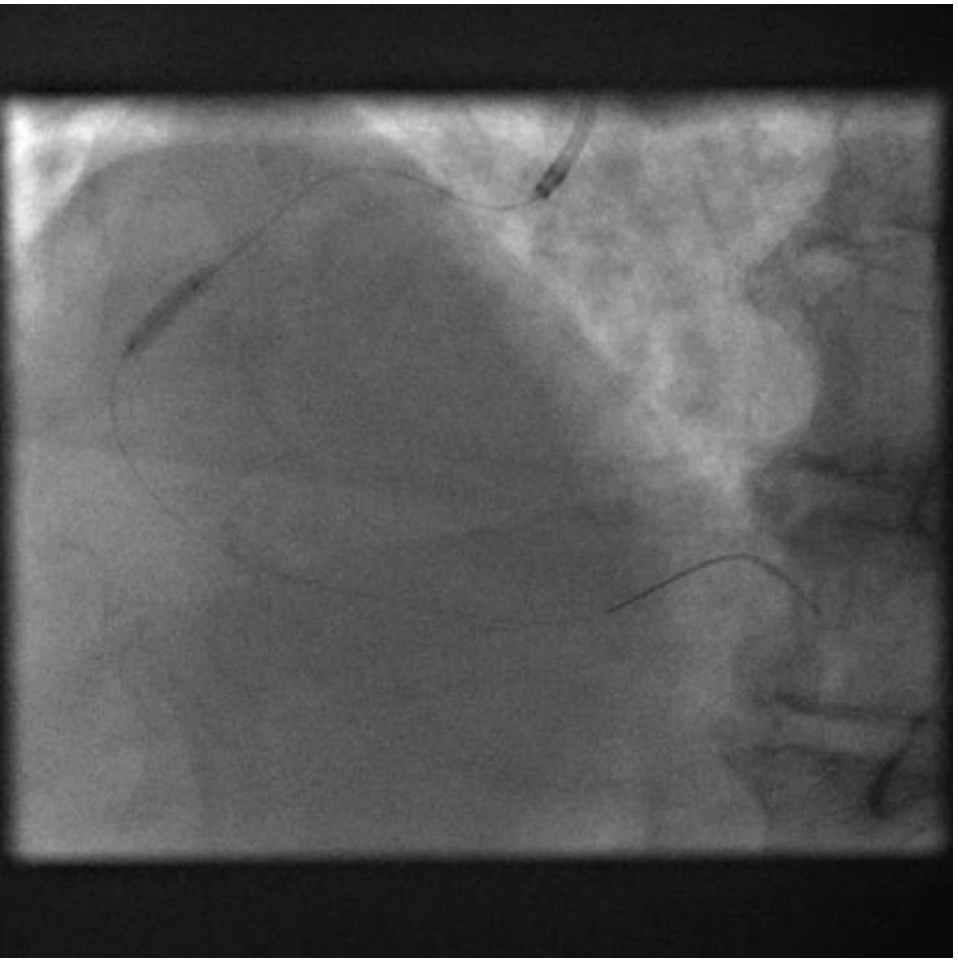
1st IVUS run

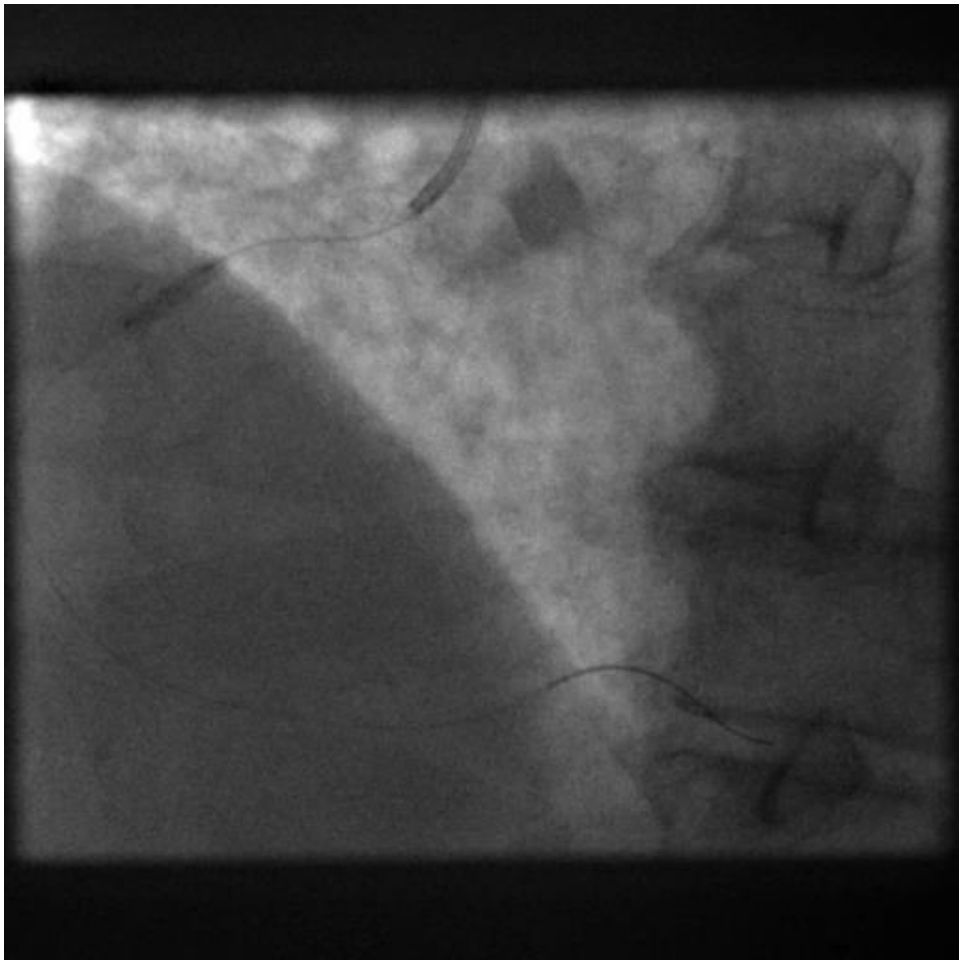


2nd IVUS run

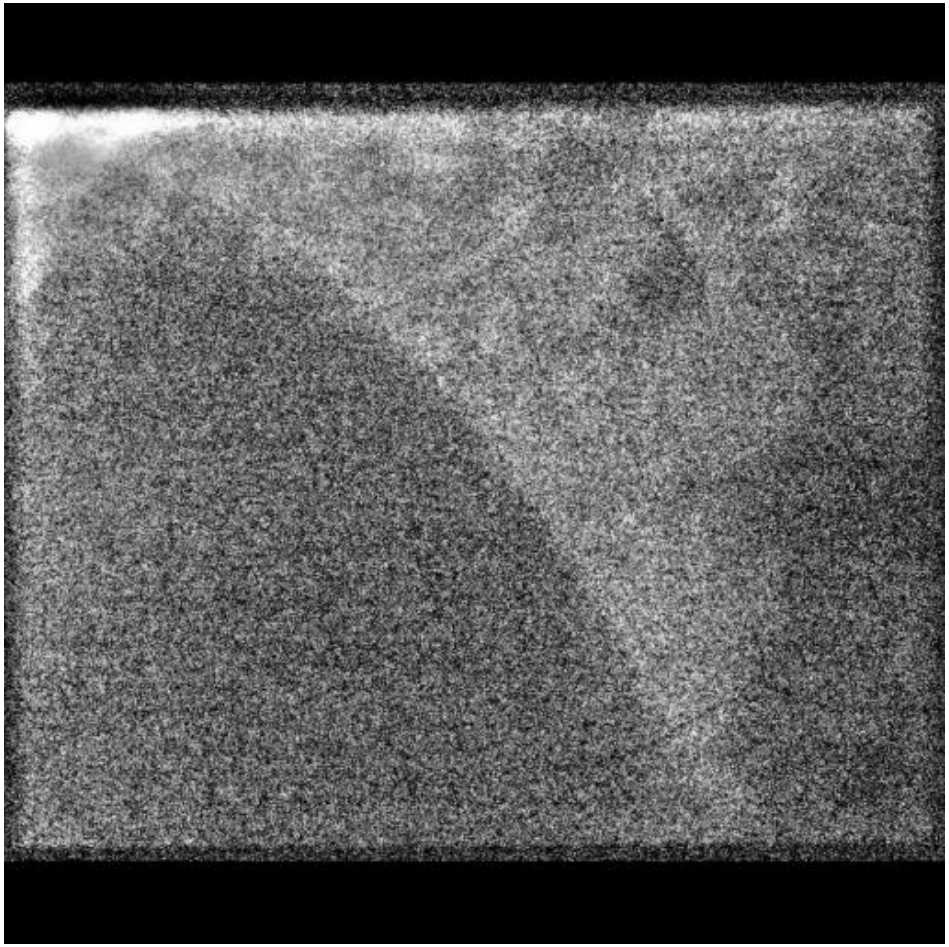


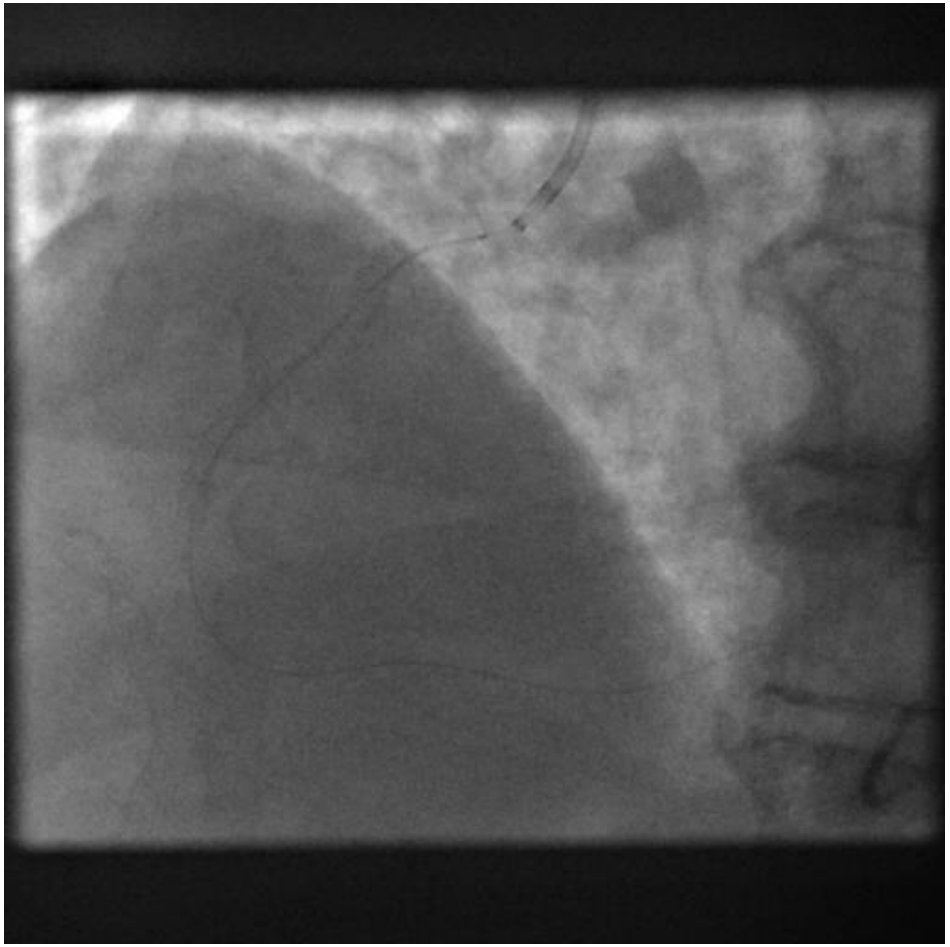
Predilatation with 3.0 x 15 SCB





3.5 x 48 Xience DES to mid RCA





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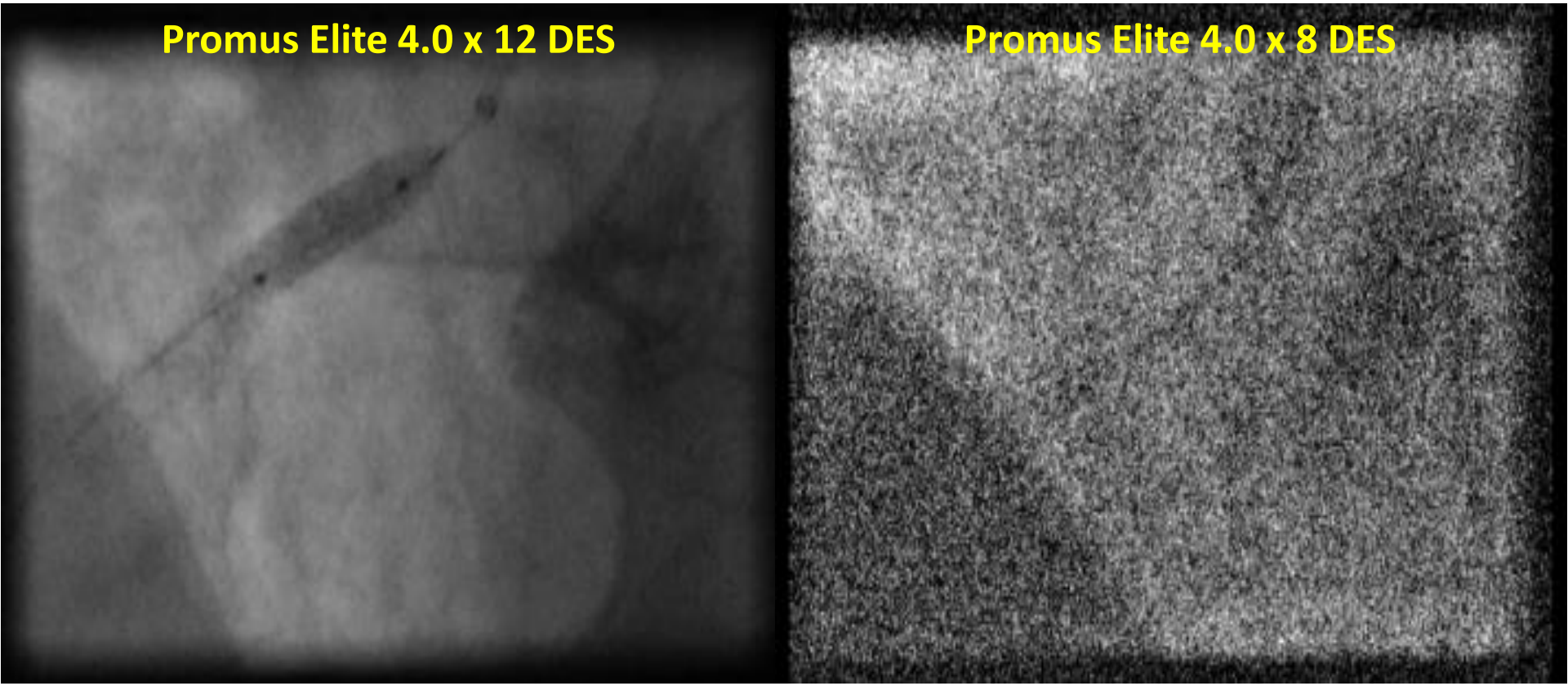
4.0 x 12 and 4.0 x 8 Promus DES to ostial to proximal RCA



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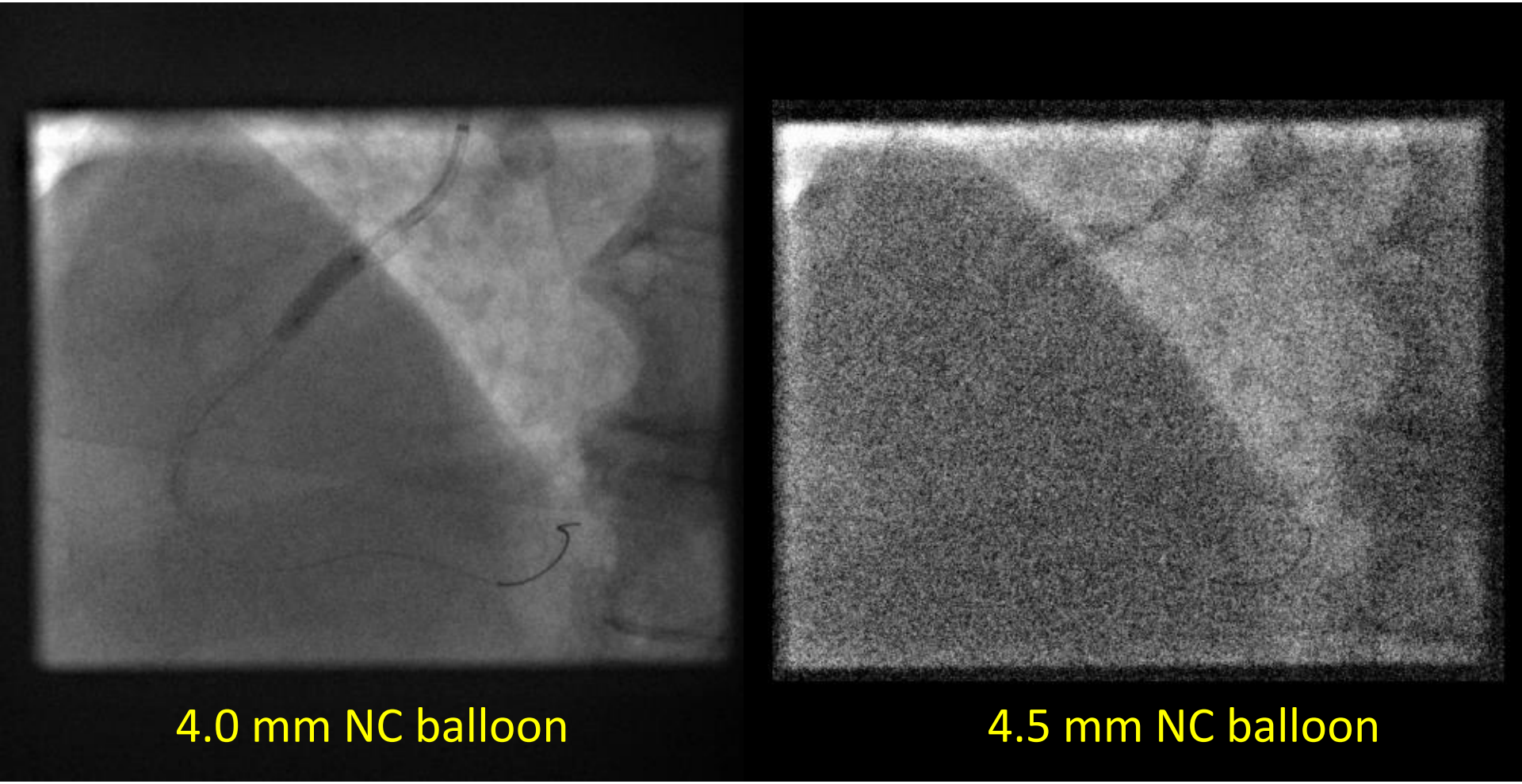
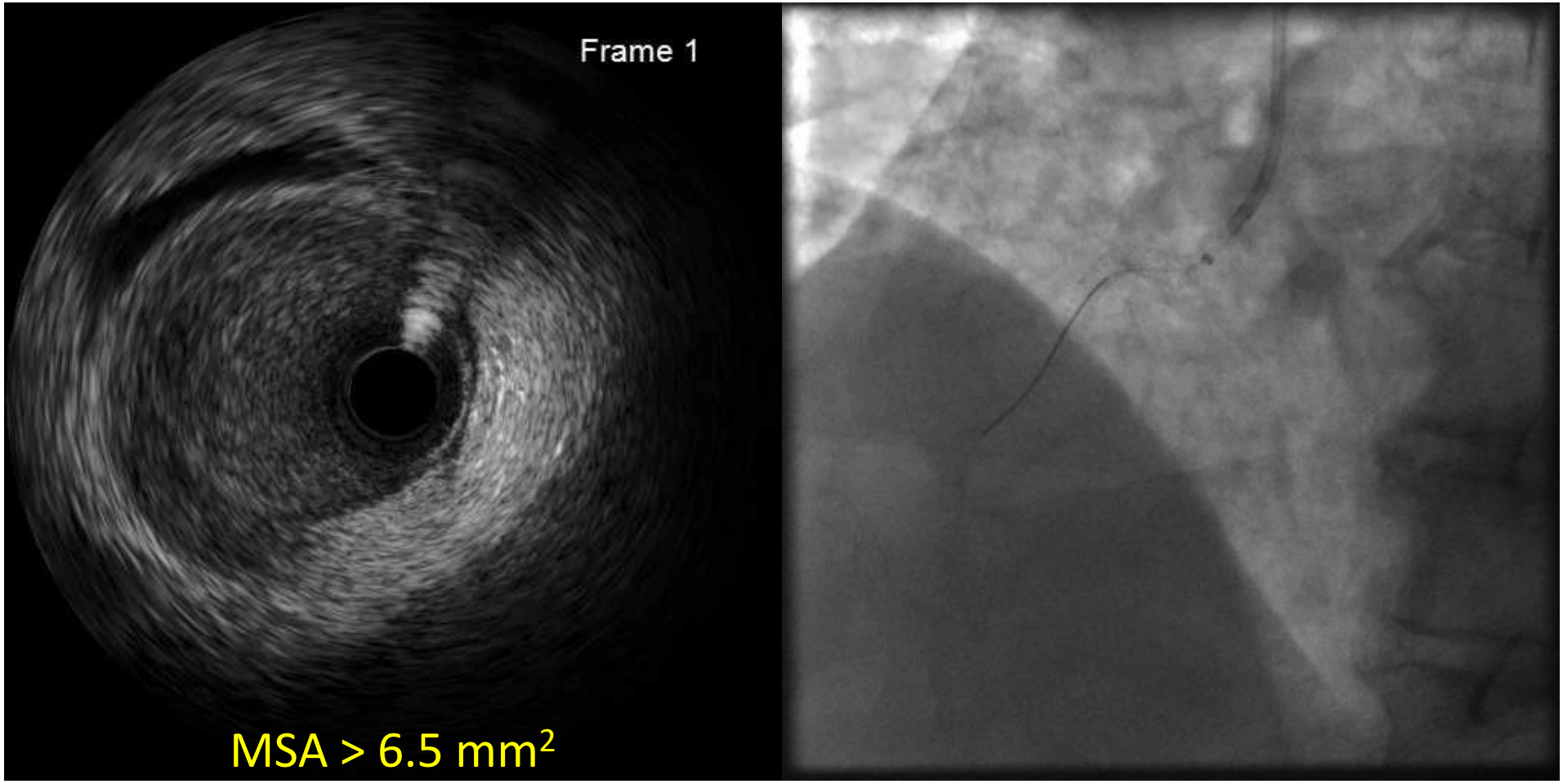
Postdilatation with 4.0 and 4.5 NC balloons



Final IVUS and Angiographic Appearance



Iatrogenic coronary artery dissection

- Uncommon (<0.2%) but potentially catastrophic complication
- Usually from catheter manipulation or forceful contrast injection
- Risk factors:
  - Atherosclerotic or calcific ostial diseae
  - Catheter shape e.g. Amplatz
  - “Shepherd’s crook” – steeply angulated proximal RCA
  - Underlying SCAD
- When it happens, minimize contrast injection and try to wire into true lumen (can be challenging)

Benefits of using IVUS in this case

- Reduced utility of tactile feedback with severe calcified proximal lesion
  - IVUS helped identify we were in false lumen
  - Tactile feedback alone can be misleading
- IVUS assisted with identification of transition point in proximal vessel to assist with rewiring into true lumen
  - Could also place IVUS in false lumen to facilitate true lumen wiring
- Assessment of vessel size, stent length and extent of false lumen/intramural haematoma in absence of contrast injection
- Assessment of stent apposition