High Risk PCI made easy

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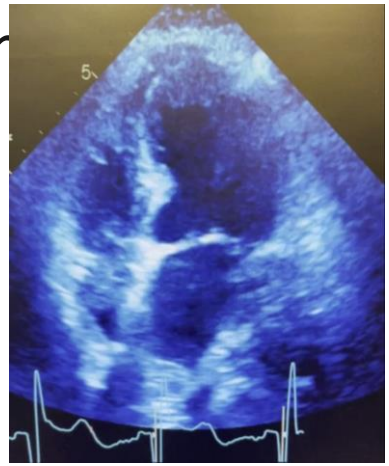
BACKGROUND

- 82 year old lady, presented with NSTEMI
- Co-morbidities: Solitary kidney, hypertension, previous subdural haematoma 2018, COPD
- Angiogram: heavily calcified severe distal LMS , diffuse moderate-severe RCA disease, moderate LCx disease
- Echocardiogram- mod-severe LVSD (EF~35%)
- Surgical turn down and for medical managem



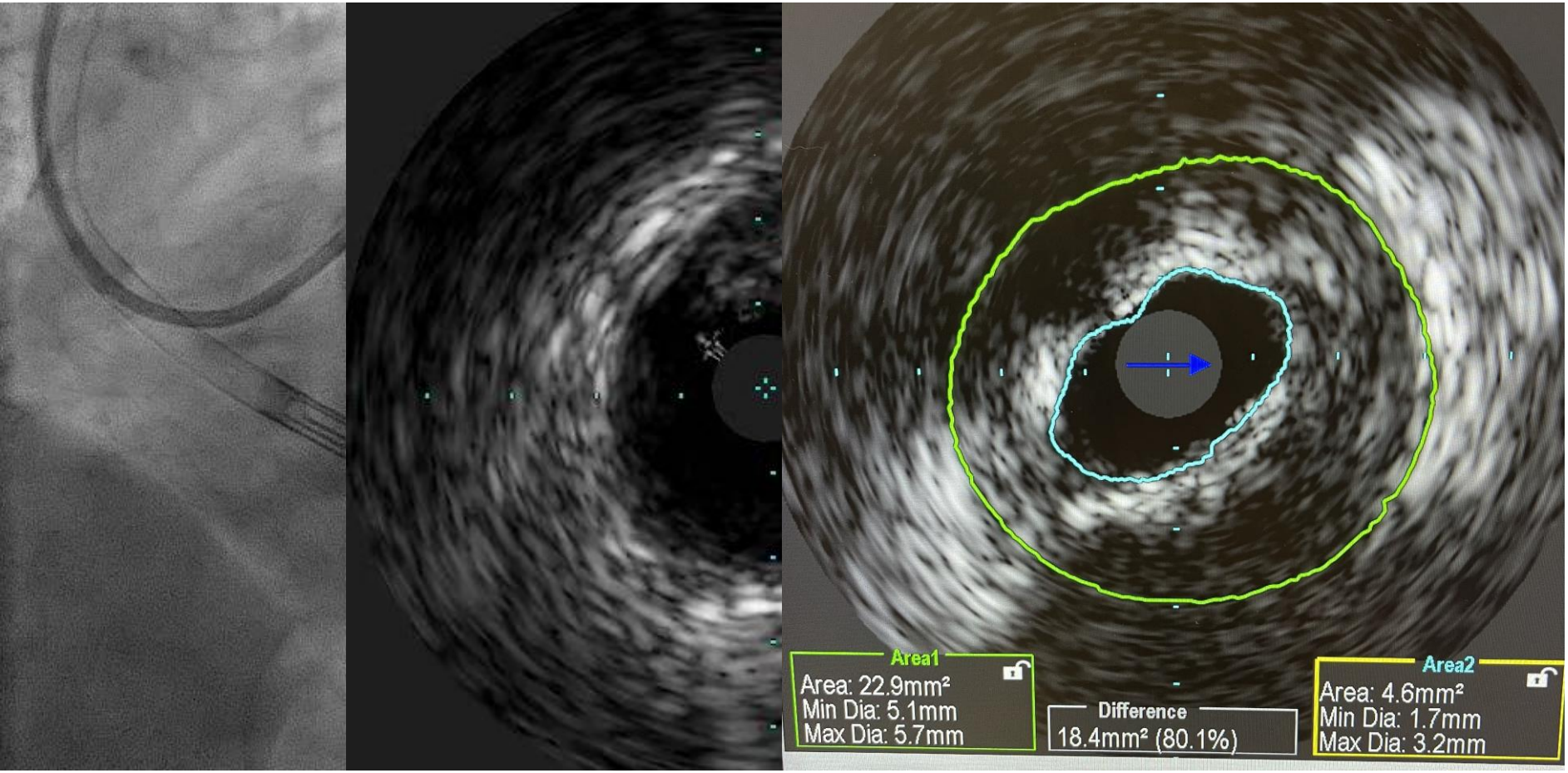
ANGIOGRAM

- Despite 3 different anti-anginals, patient remained at CCS Class IV at one year
- Re-discussed at MDT → accepted for high risk PCI

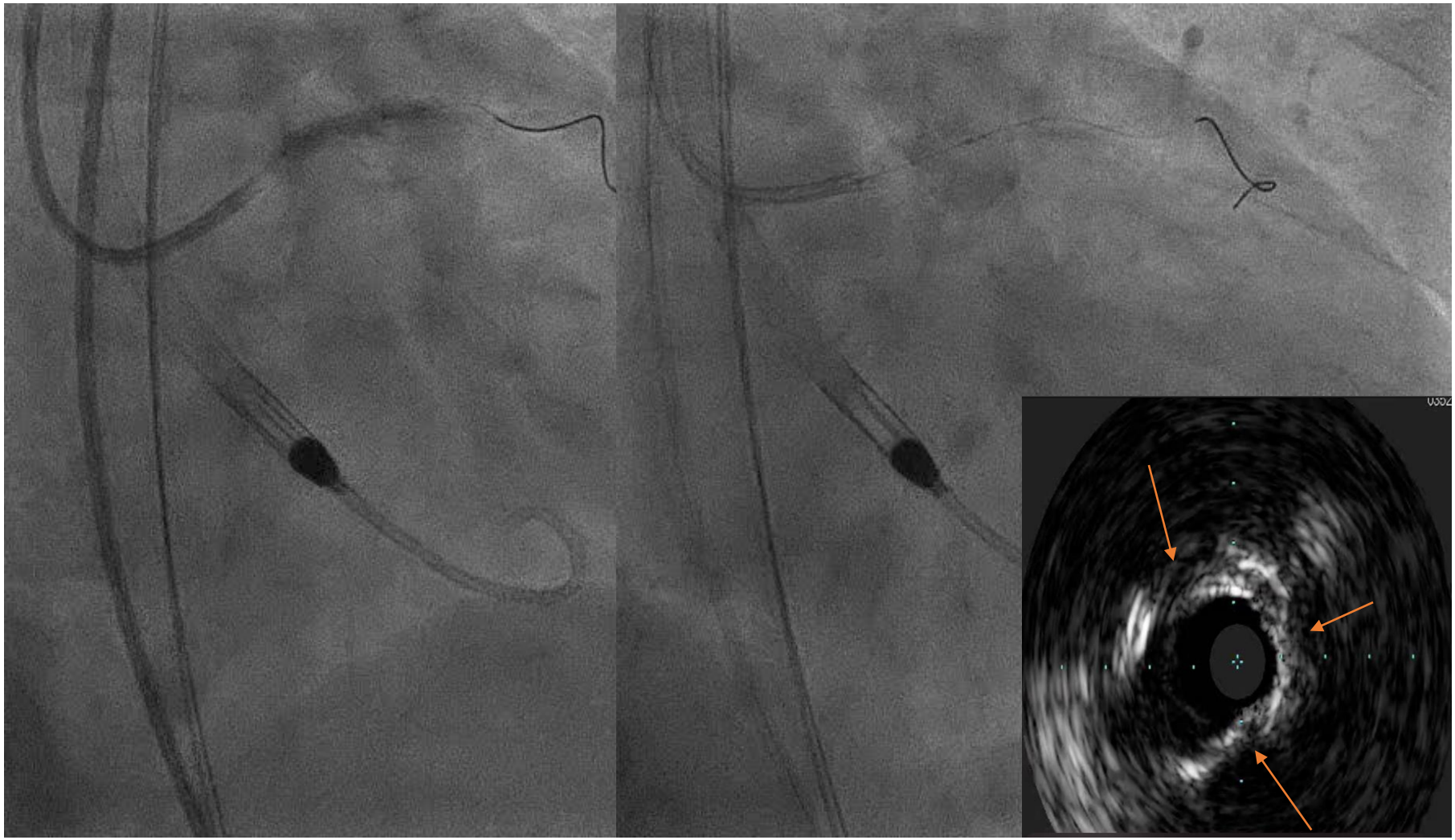
Strategy?

- Haemodynamic support –Impella CP
- Femoral approach
  - Surgical cut down (due to calcified CFA)
  - Impella (Single Access Technique)
- Intravascular imaging
- ?Calcium modification

IVUS


Area1
Area: 22.9mm²
Min Dia: 5.1mm
Max Dia: 5.7mm
Difference
18.4mm² (80.1%)
Area2
Area: 4.6mm²
Min Dia: 1.7mm
Max Dia: 3.2mm

Calcium yielded with Intravascular Lithotripsy



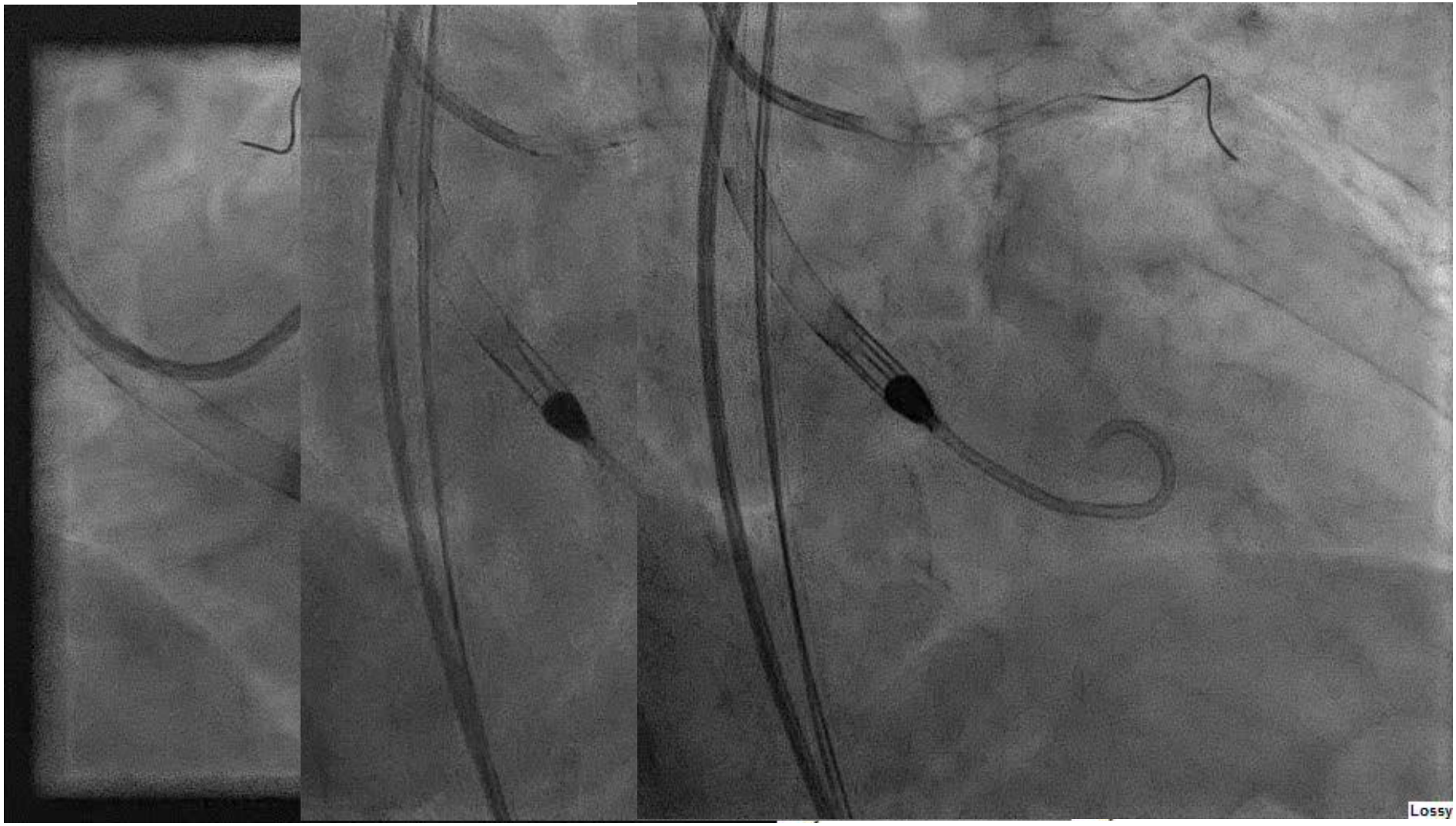
Stable cardiac output with Impella in situ

A

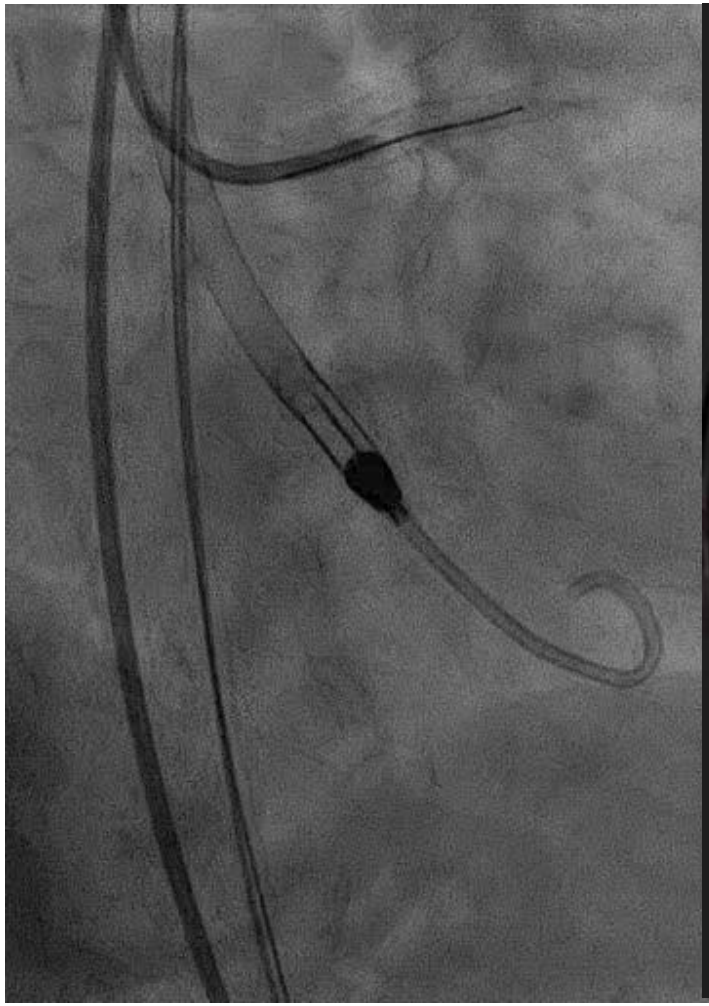
B

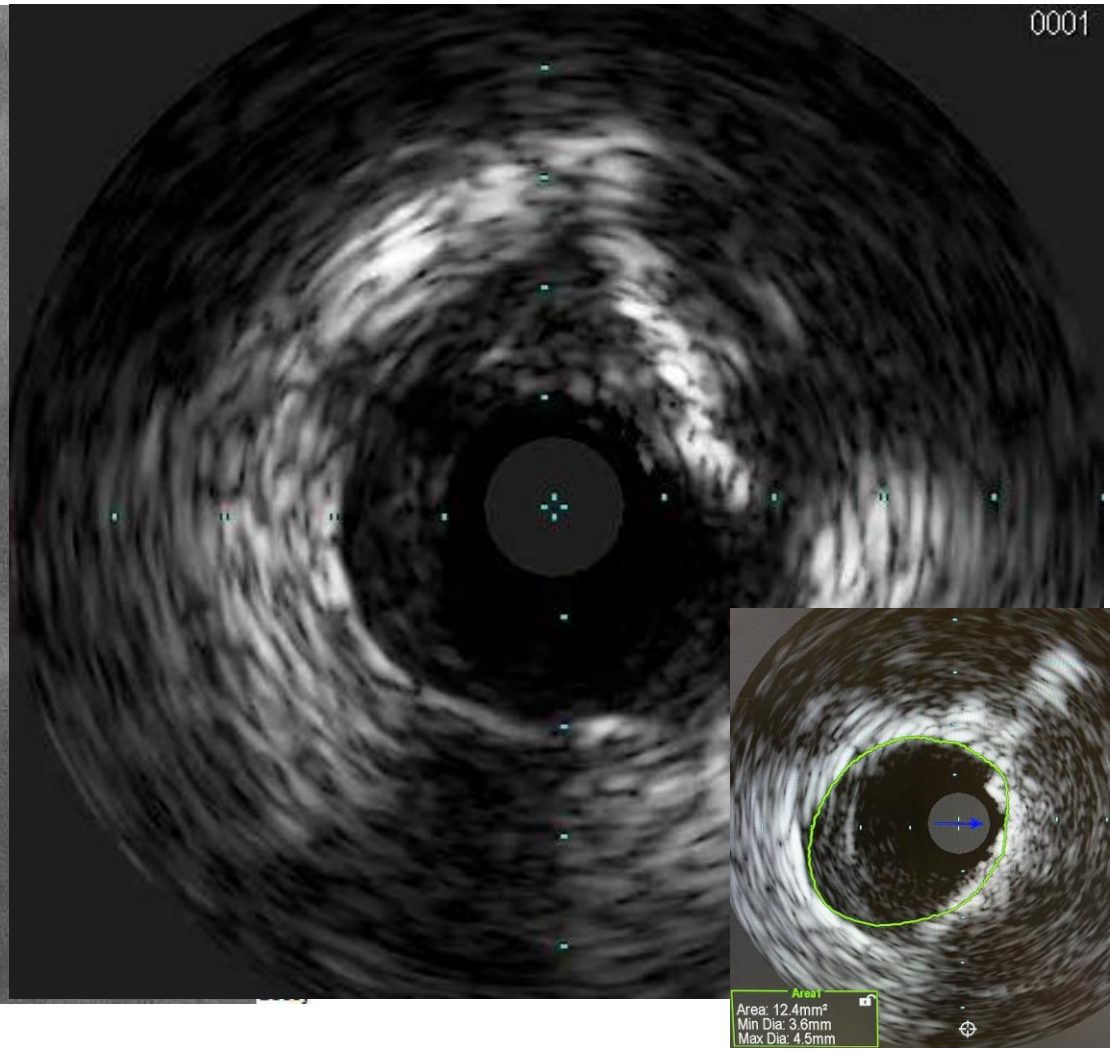
Significant reduction in amplitude of aortic pressure waveform due to ischaemia affecting LV contractility noted during IVL balloon inflations (as shown on the red trace in image B)
Impella maintains cardiac output(arrowheads) and MAP

3.5x18 mm drug eluting stent deployed
Post-dilated with 4.5 mm NC balloon



FINAL RESULT





SUMMARY

- Use of Impella enabled PCI in complex unprotected LMS disease in a patient with significant co-morbid status and severe LVSD
- Intravascular imaging is essential in complex intervention
- Adequate calcium modification improves patient outcome
- Facilitation of vascular access/closure (hybrid approach) by surgeon lowers risk of vascular complications
- Final outcome – translates to significant patient benefit