Primary Angioplasty to the High Risk Distal Left Main and Proximal Left Anterior Descending Artery Occlusion

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2nd COMPLEX PCI
Make It Simple!
Technical Forum: A to Z

Khoo Teck Puat Hospital
Alexandra Health

Disclosure/Conflict of Interest

- Nil

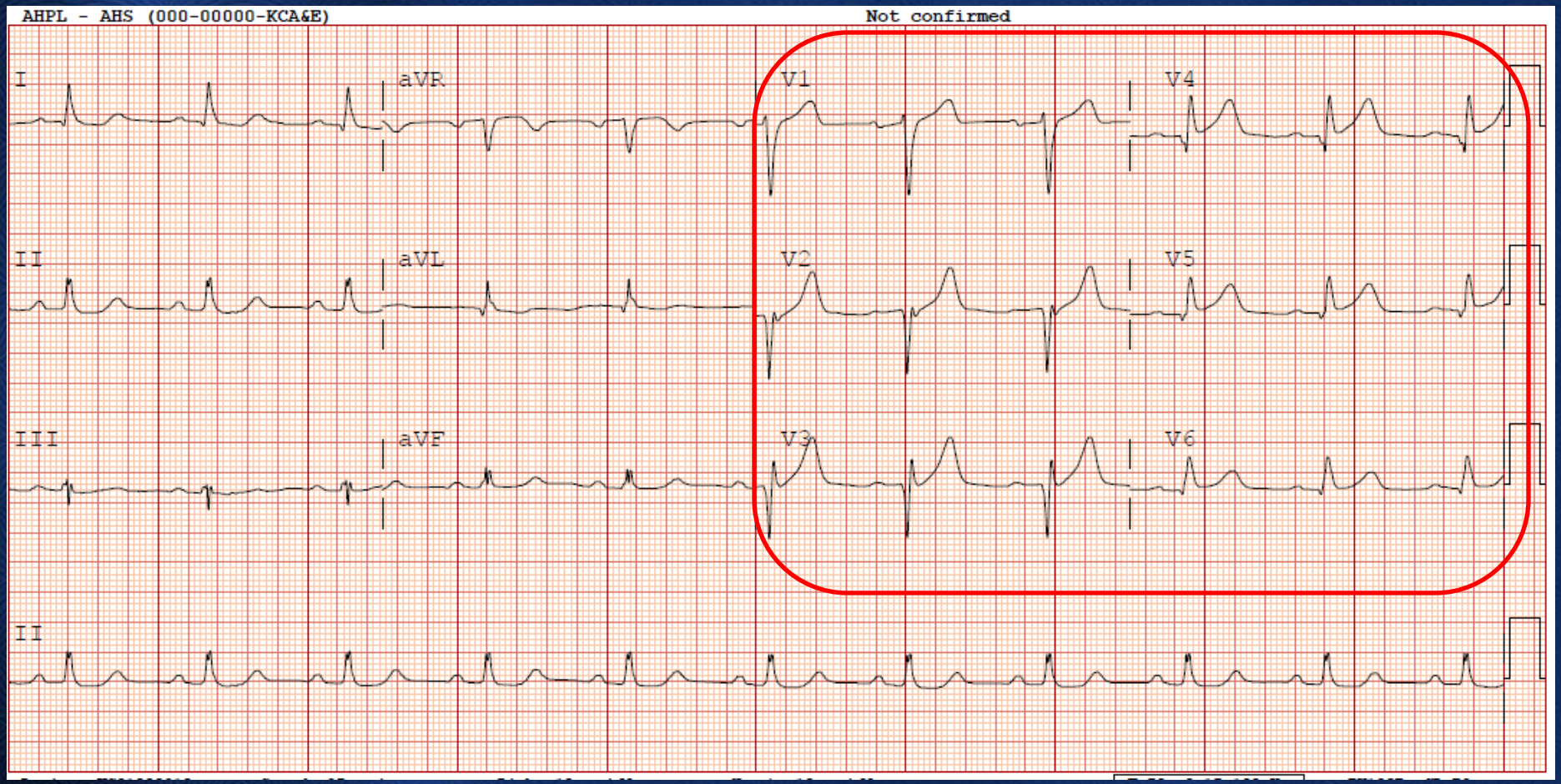
Patient History

- 59 yr, male.
- Cardiac risks: chronic smoker, hypertension.
- Chief Complaint
  - Retrosternal chest pain radiating to neck about 1hour.

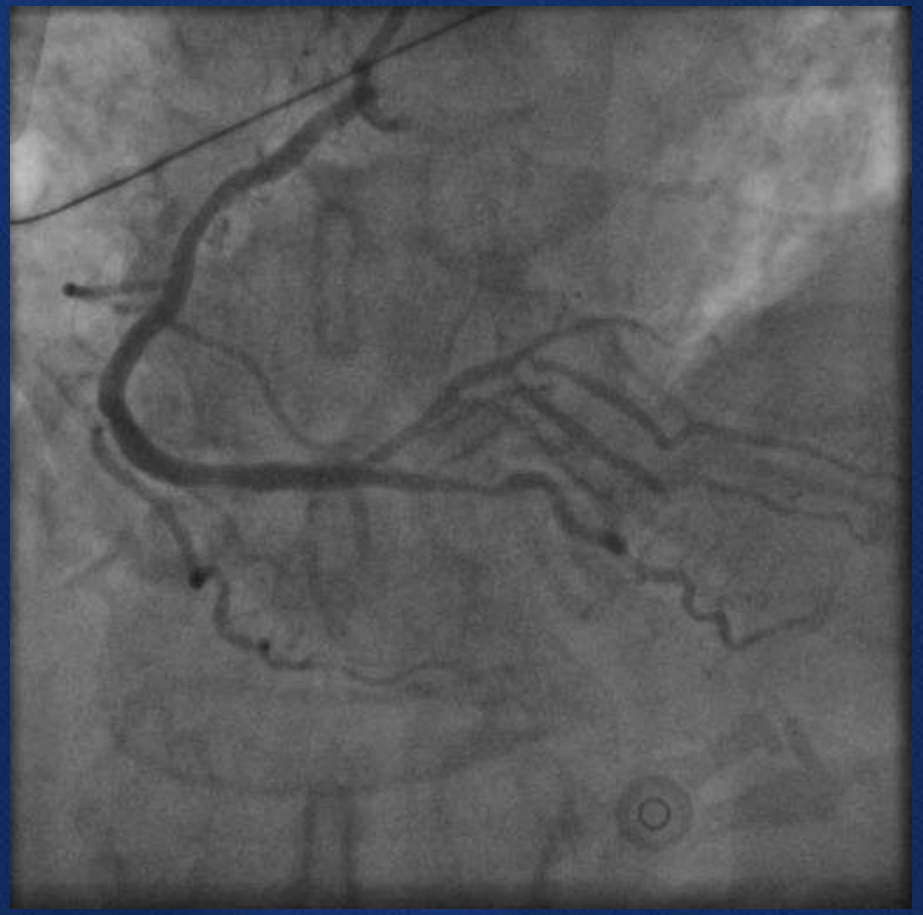
- Vitals
- BP 95/70mmHg, HR 94/min, Oxygen Saturation 98% on air.

0955AM – Activated Cath Lab for Primary Angioplasty

- Dx: Anterolateral ST-elevation Myocardial Infarction

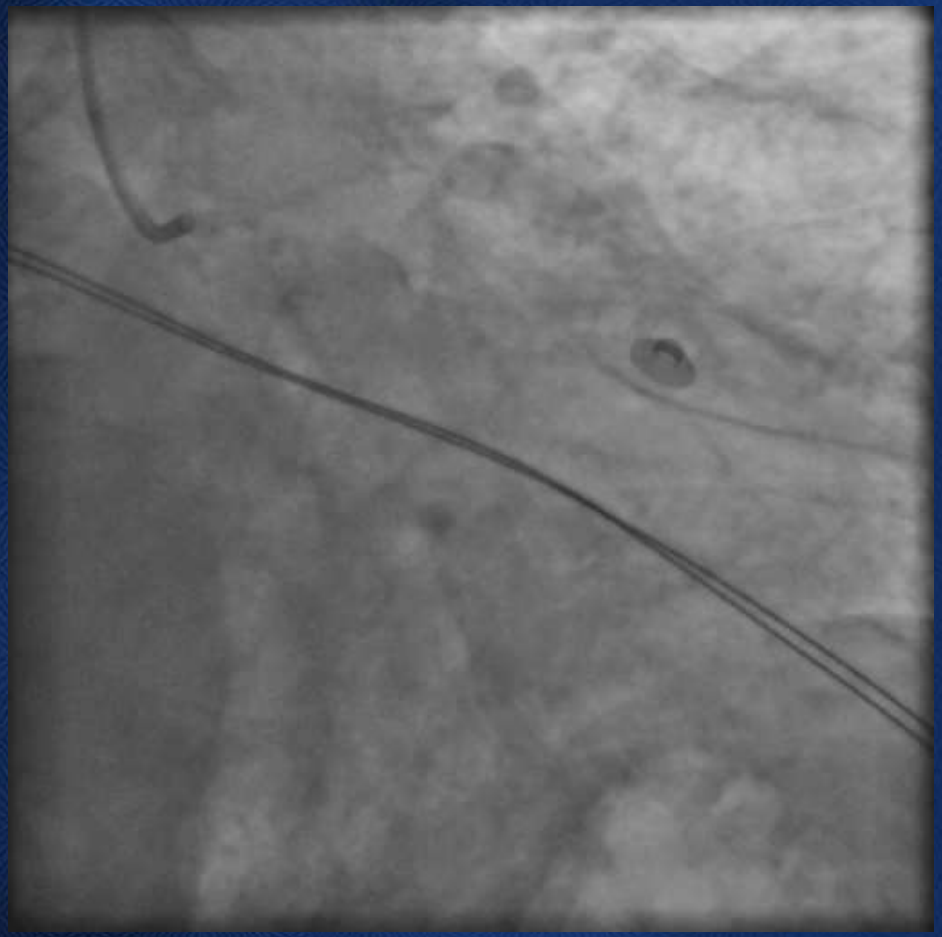


6 Fr Right Radial Approach; 100mcg IA GTN
IL3.5 guiding catheter

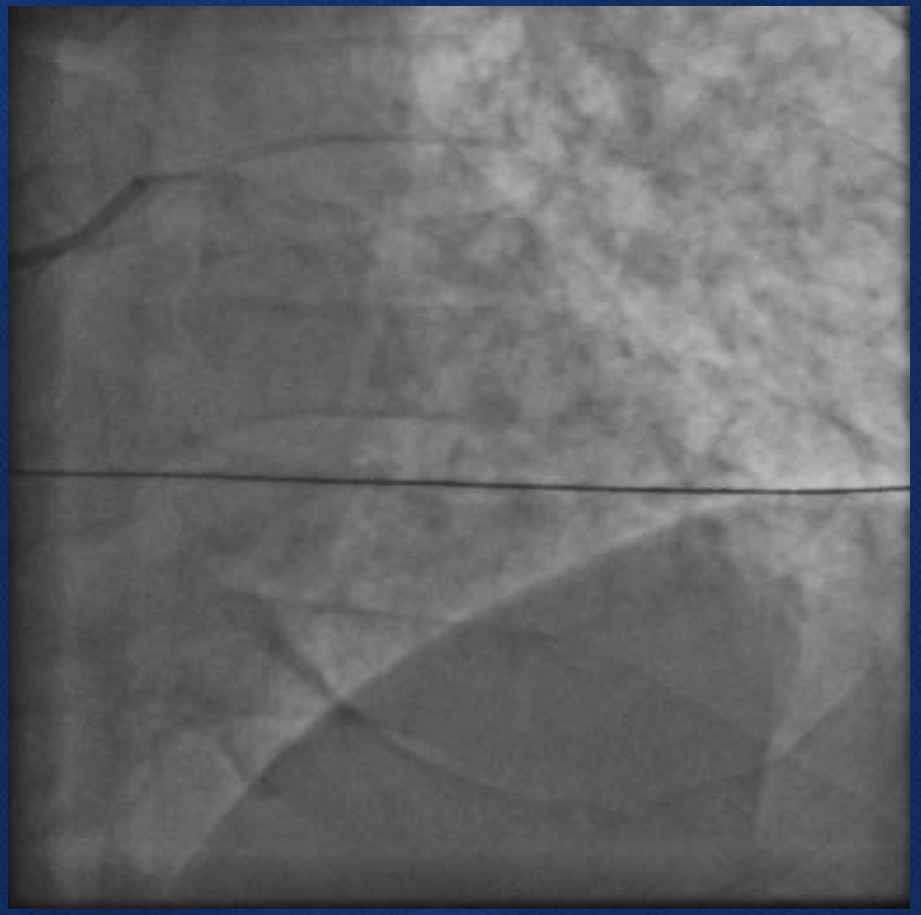


Right coronary artery shots

Left Coronary

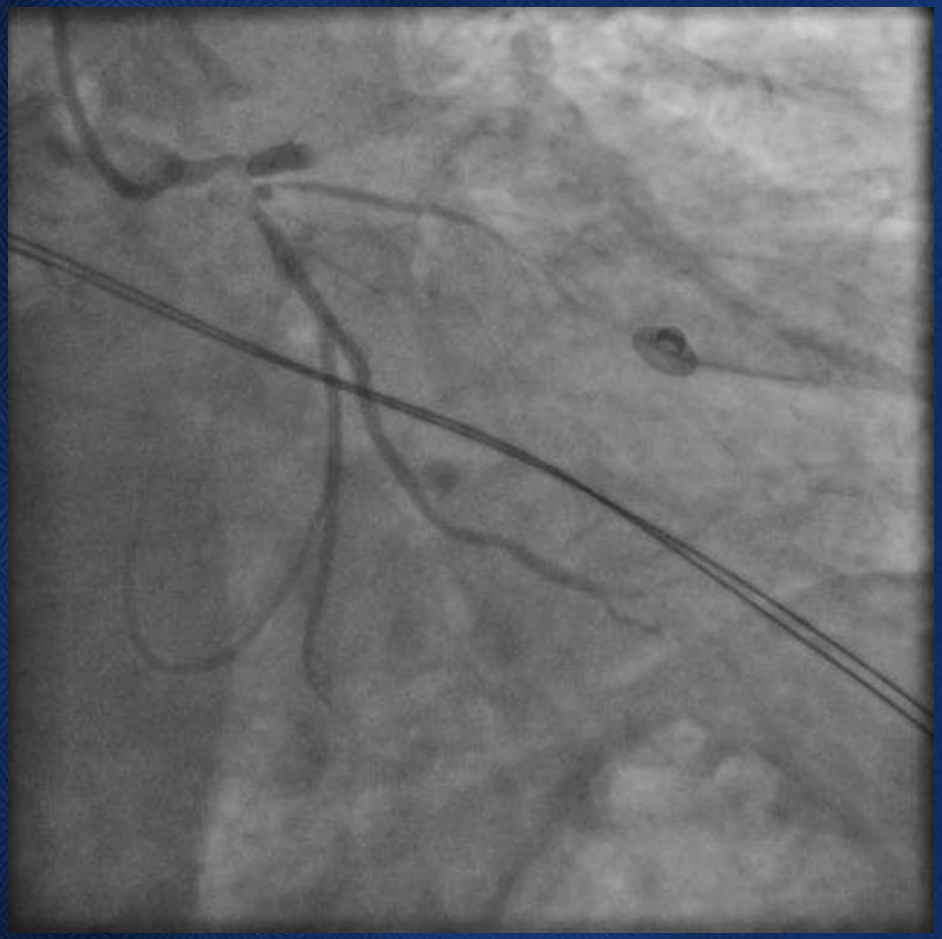


RAO Caudal



Cranial View

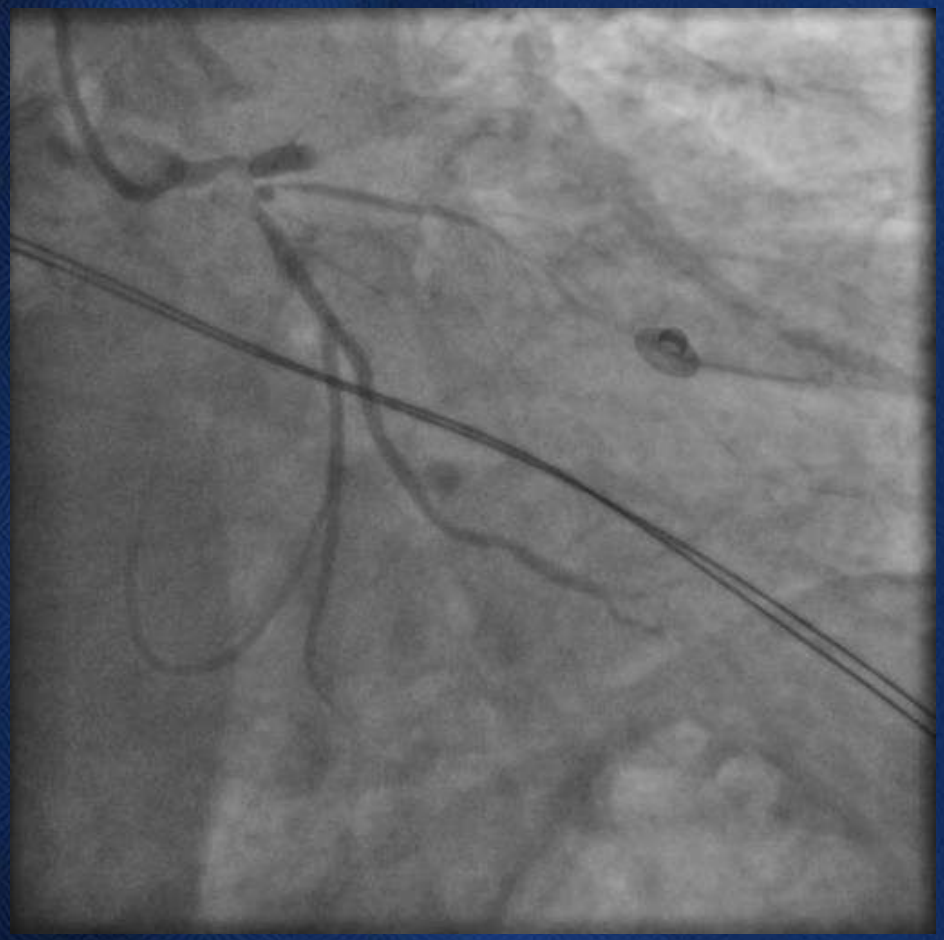
Clinical Condition Deteriorated



- Oxygen Saturation 89% on 10L
- Reduced level of consciousness
- BP 86/69 (Dopamine 10mcg/kg/min started)
- Stat IV 40 mg Frusemide

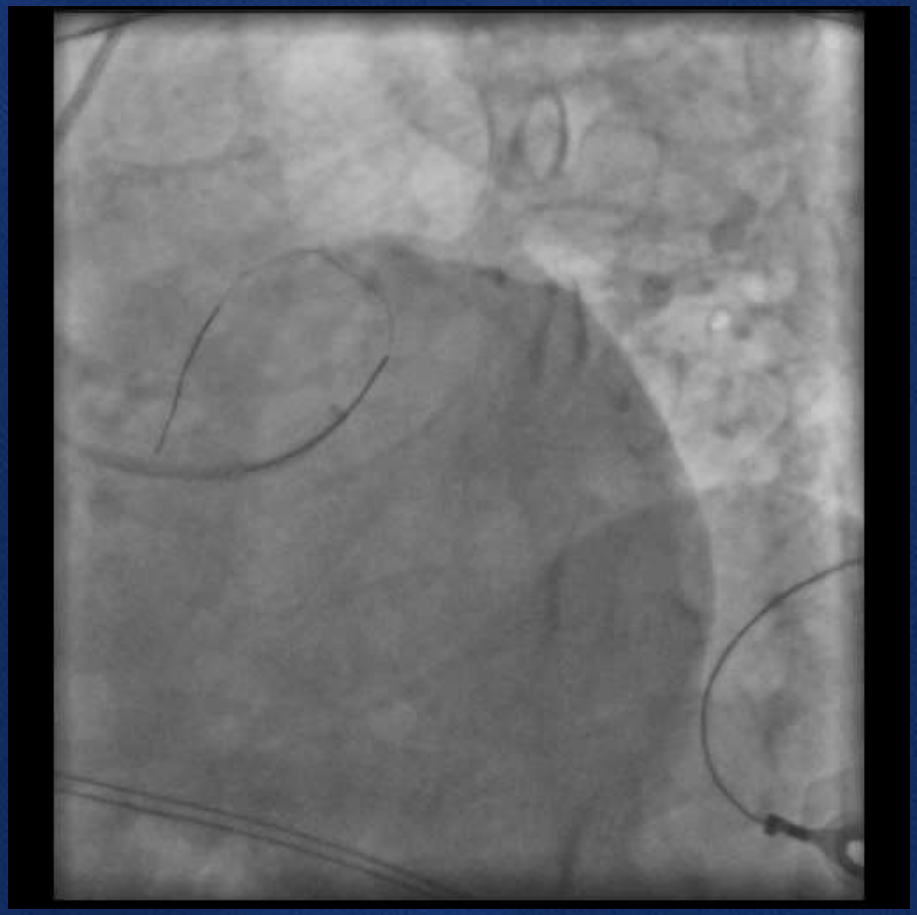
- Activated airway team.
- Activated ECMO team.

What to do next

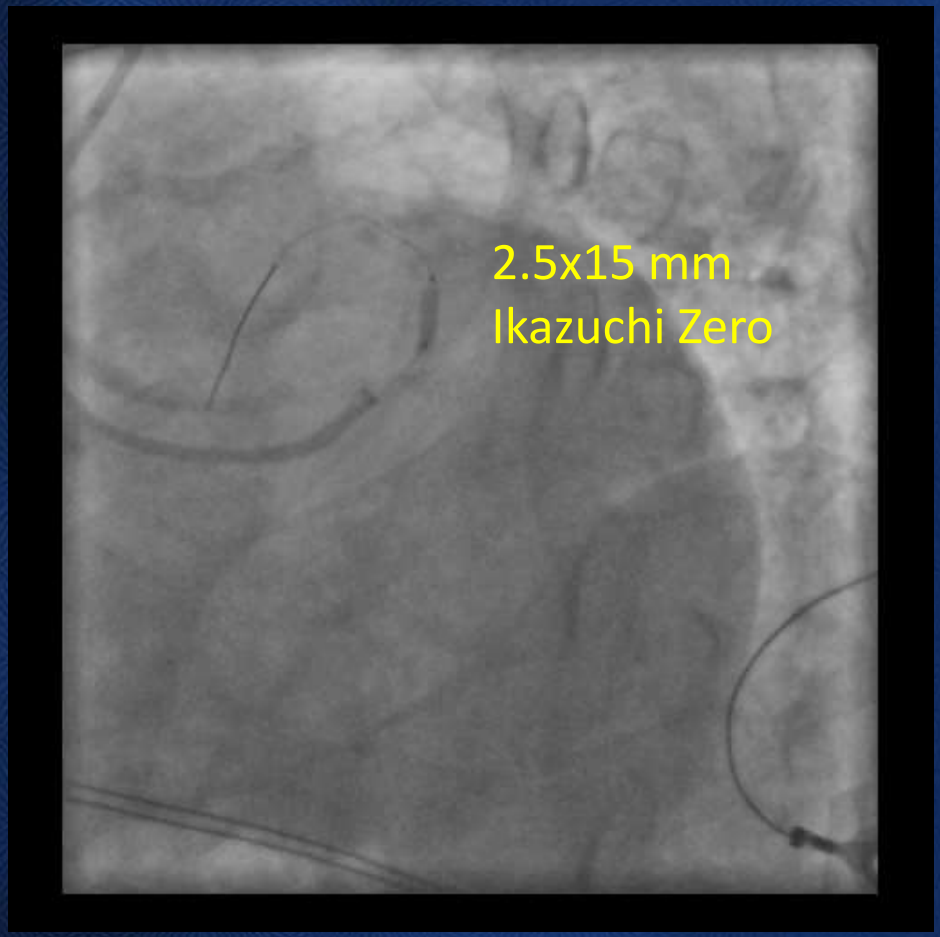


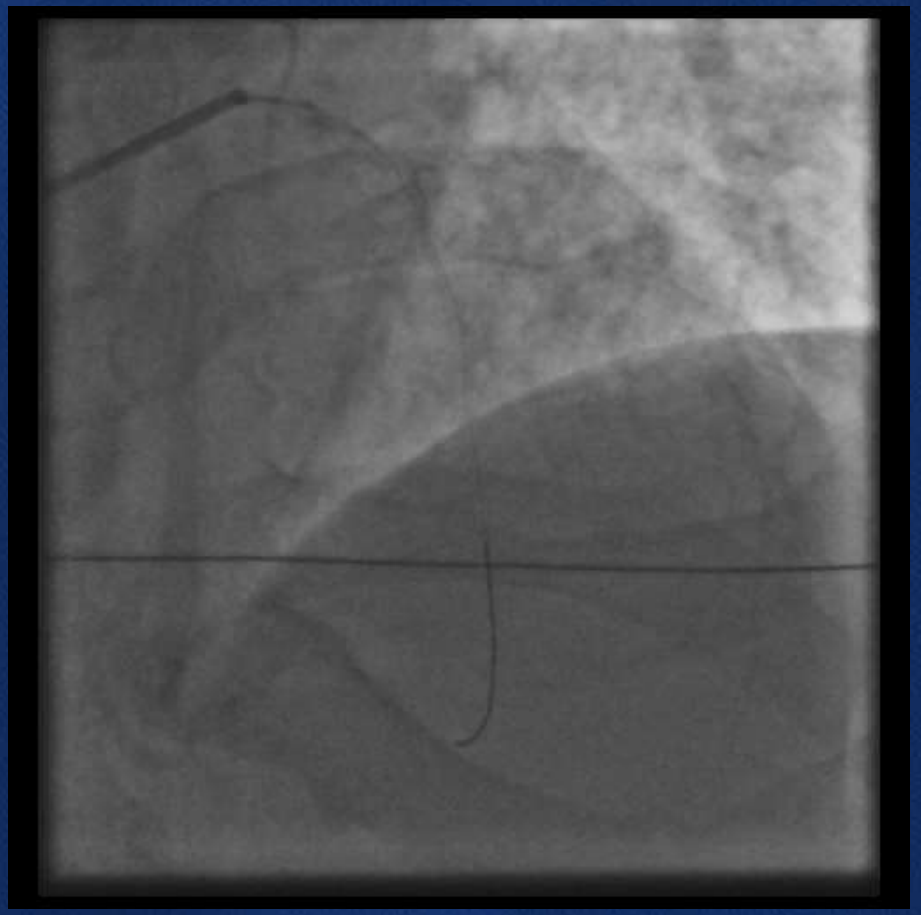
- ? Immediate PCI to LM-LAD
  - Balloon/Aspiration
  - Stent
- ? IABP first
- ? Switch to 7 or 8 Fr femoral

Decided to PCI. 100mcg IC Phenylephrine. 7000 IU heparin.

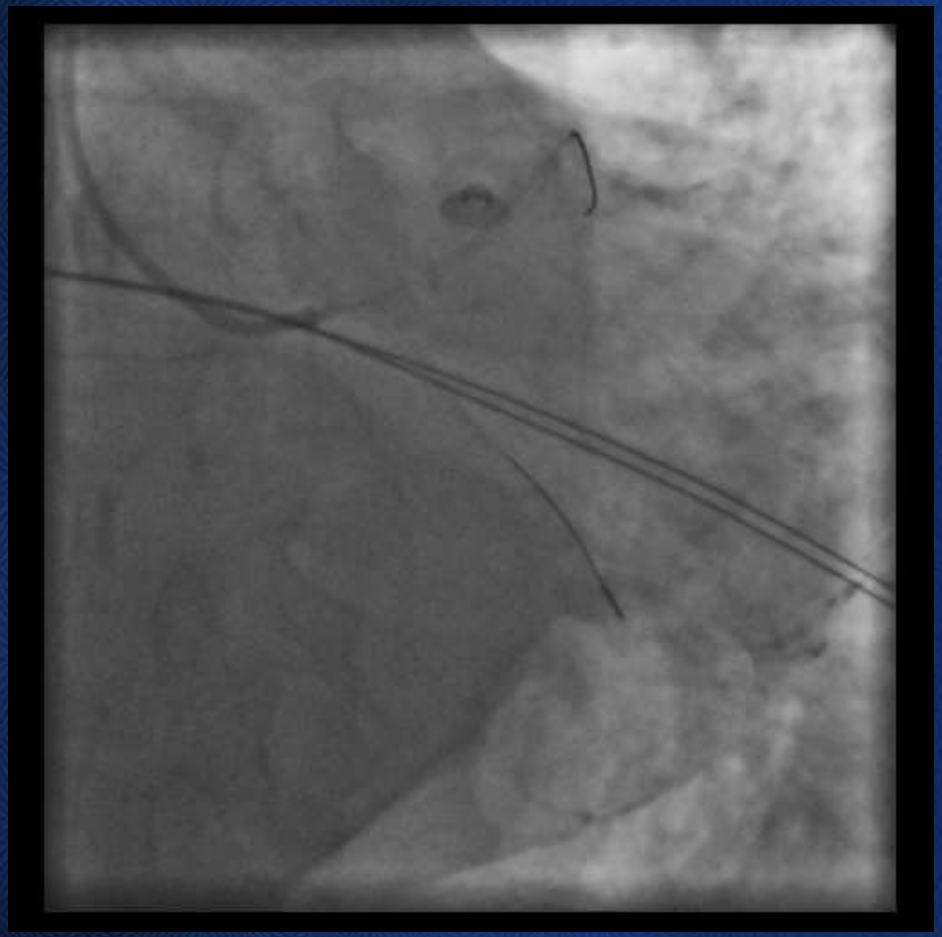


0.014” Sion Blue wire to LAD. Sion wire was not easy to advance into LCX. Decided to balloon distal LM to LAD and re-attempt with different wire curve.



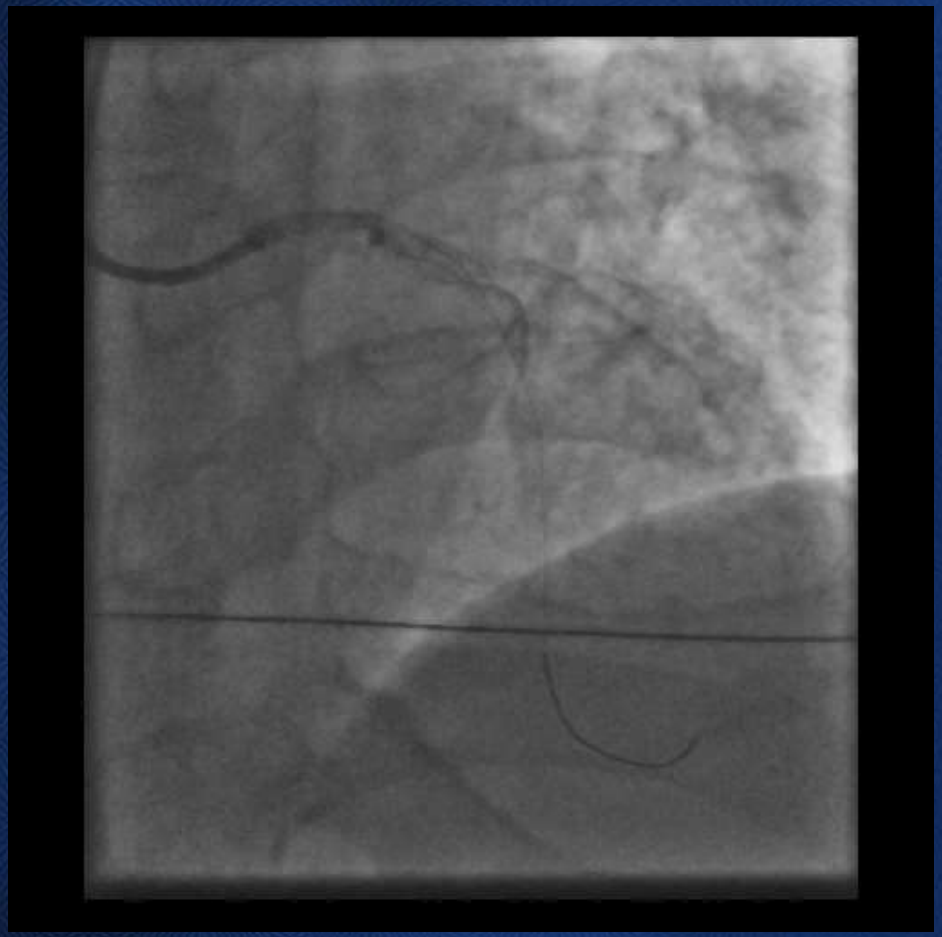


TIMI 2 flow to distal LAD was achieved

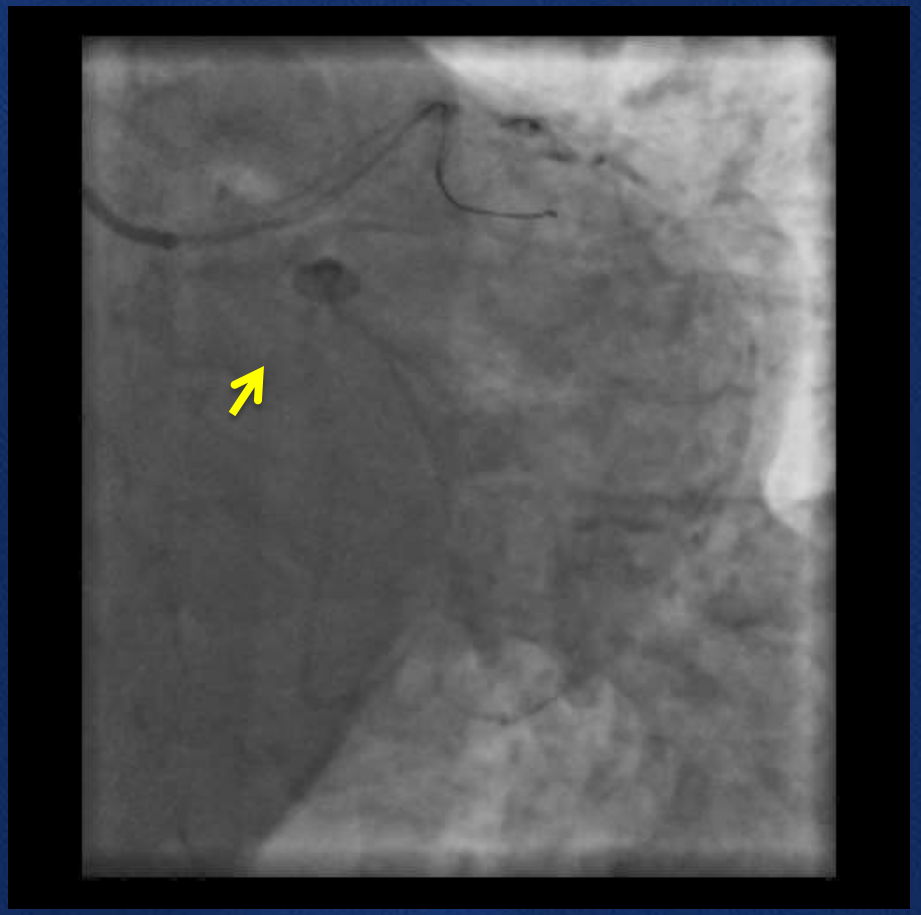


Sion wire was able to advance into LCX after predilatation

Stent from LAD into ostial LM with 3x38mm Resolute Onyx stent (DES)

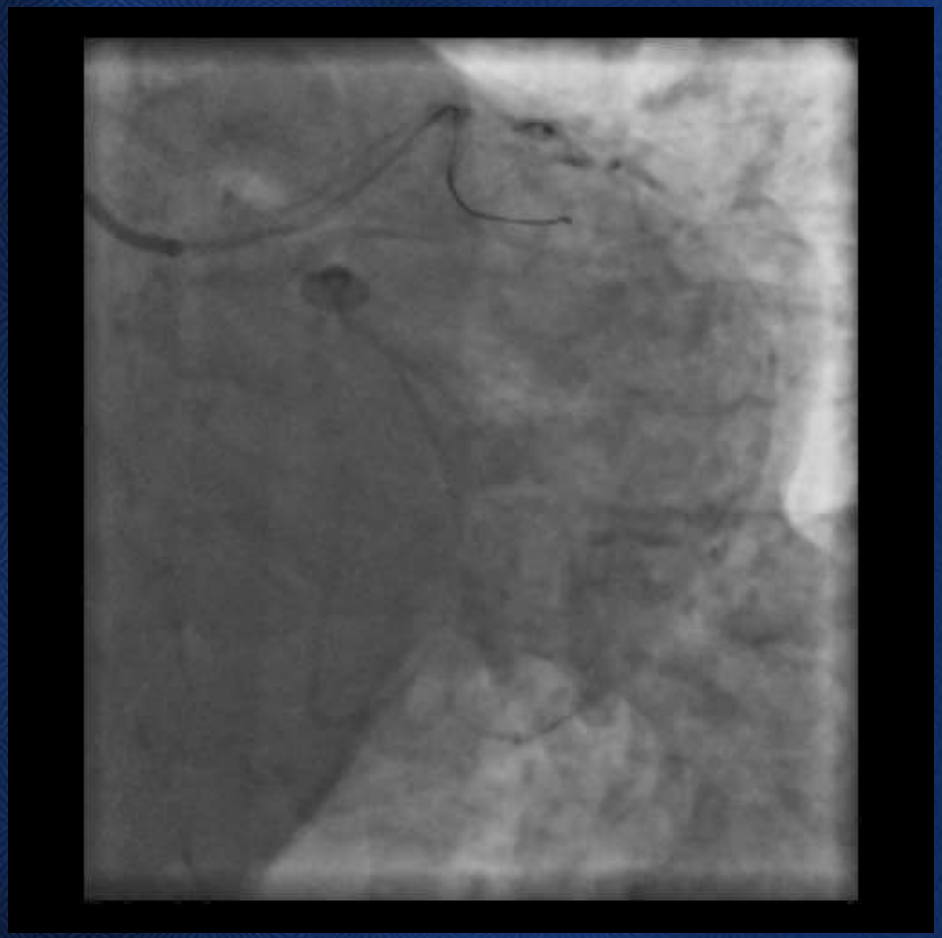


TIMI 2-3 flow in LAD



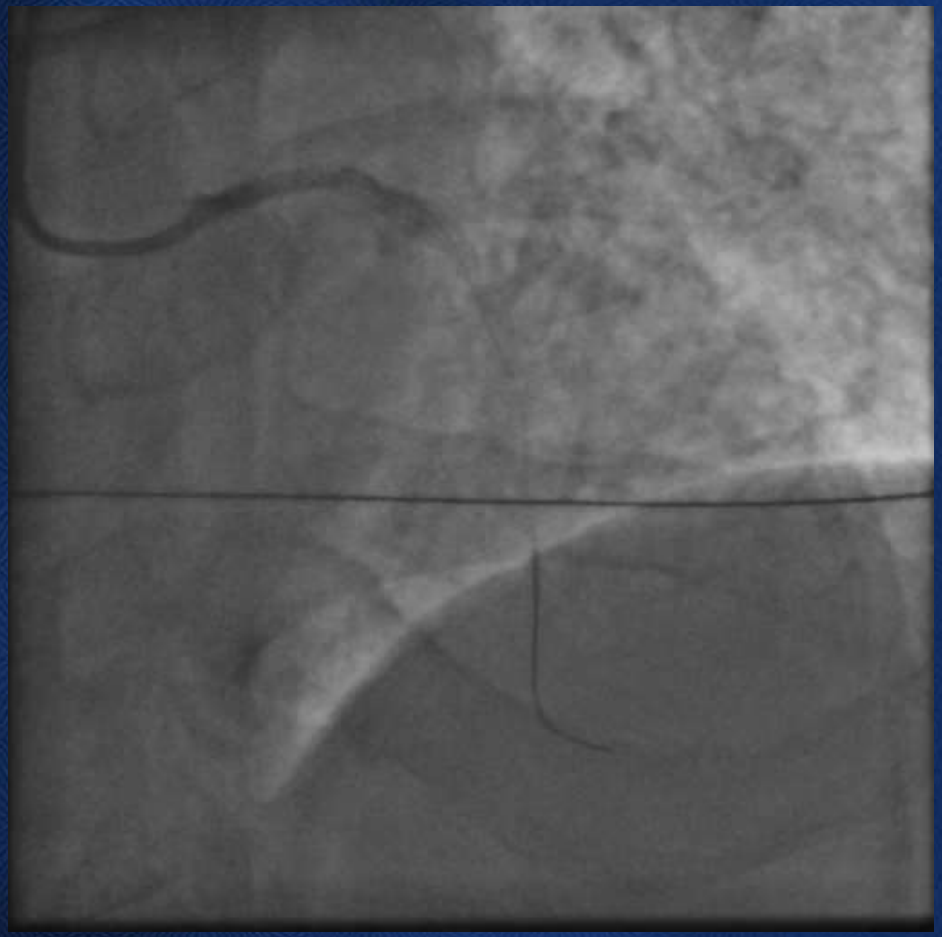
LCX wire removed but was not able to wire into LCX easily

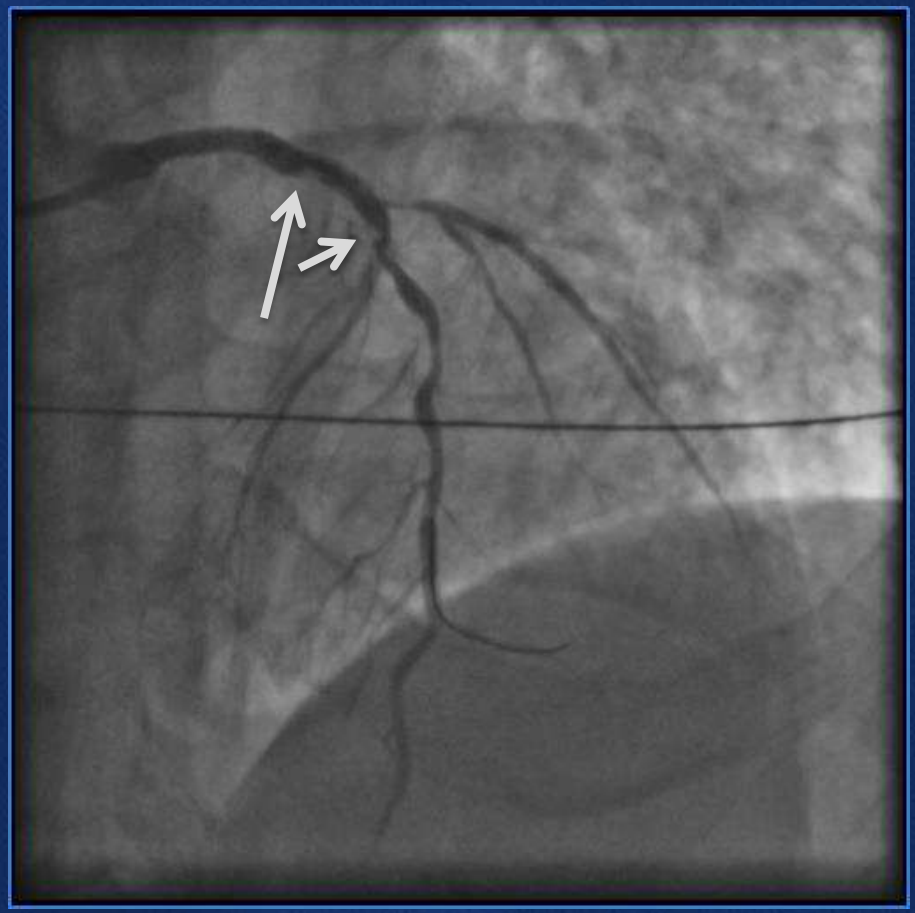
Airway team began Intubation
BP 67/52, no peripheral pulse palpable, Oxygen 79%



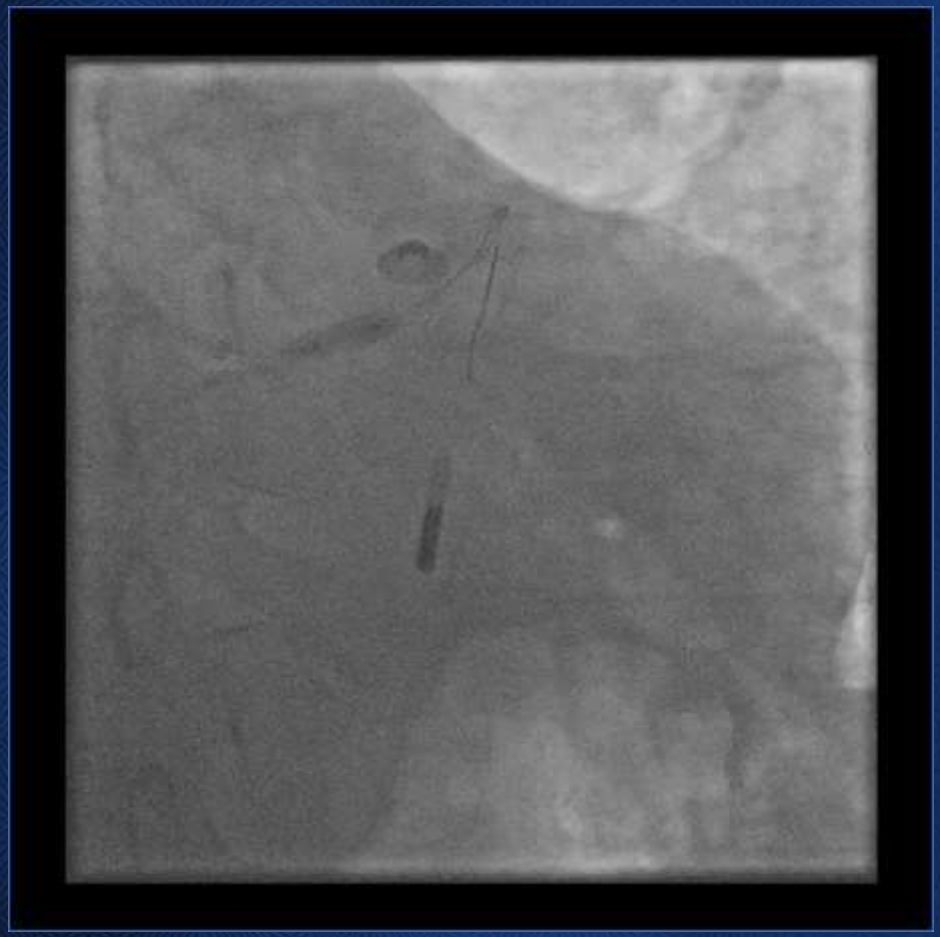
- Administered 100mcg IC Adrenaline
- BP increased to 131/100
- 8 Fr RFA sheath inserted
- 40cc IABP inserted
- Airway secured ~ 20mins.
  - 2 further doses of 50mcg IC Adrenaline to maintain BP.

Angiography after successful intubation and IABP

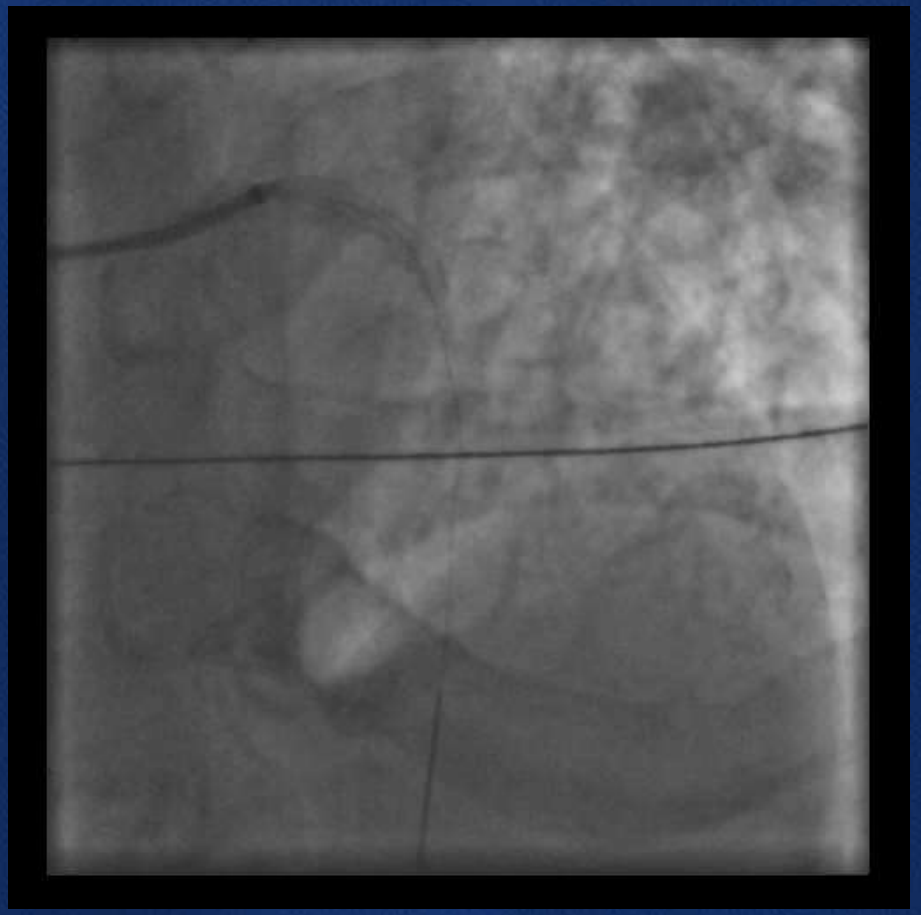




Observed filling defects in the LM-LAD stent, lost LCX branch completely.

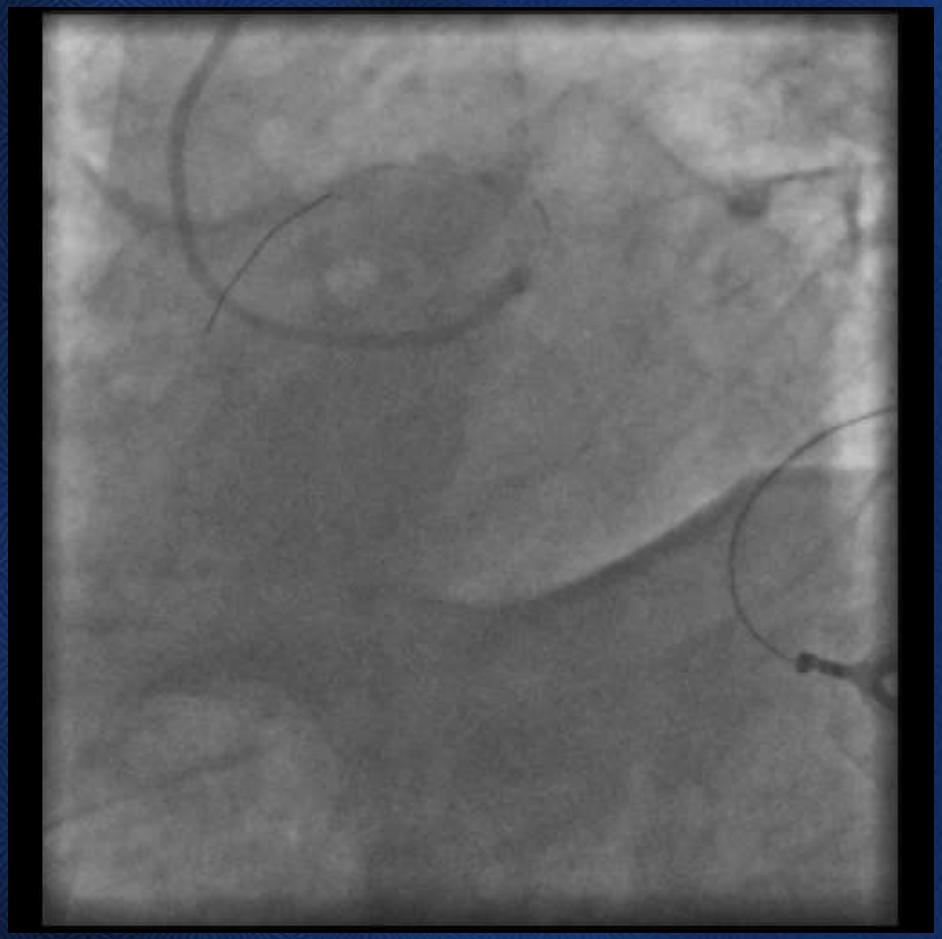


3.5x8 mm NC Emerge balloon to dilate inside stent.



Filling defect resolved.
5mL IC Integrilin was administered

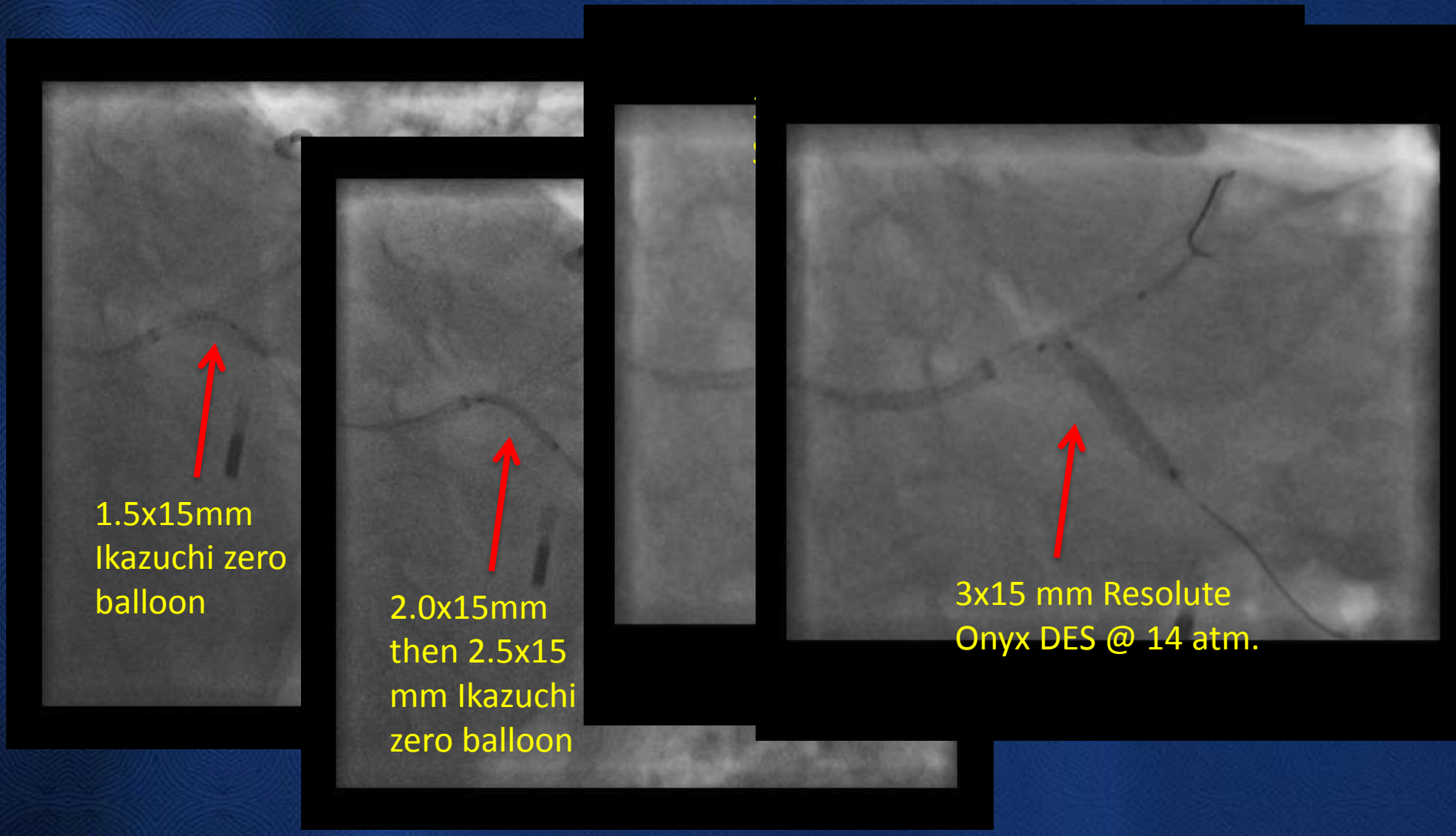
Wiring into the jailed LCX

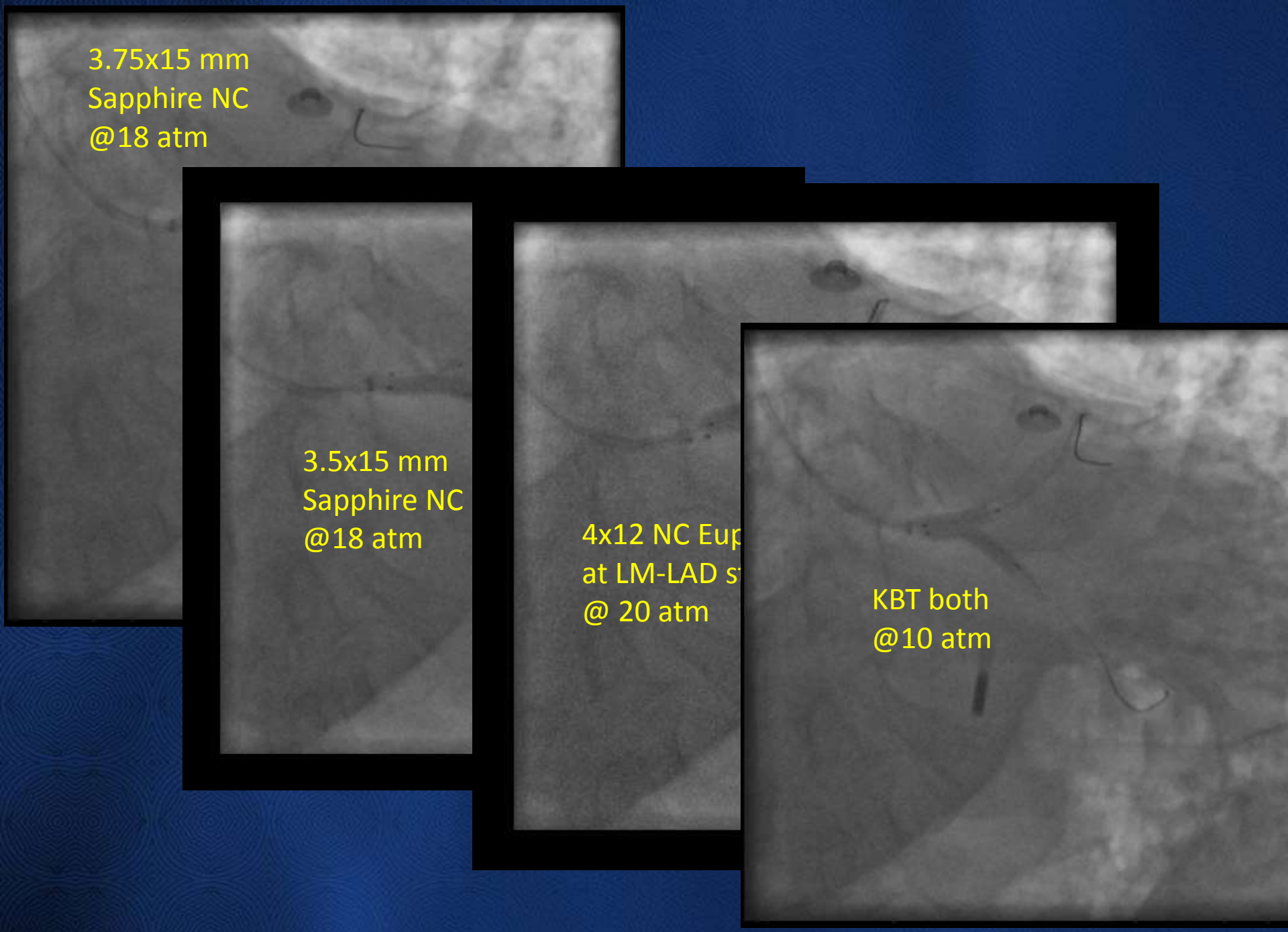


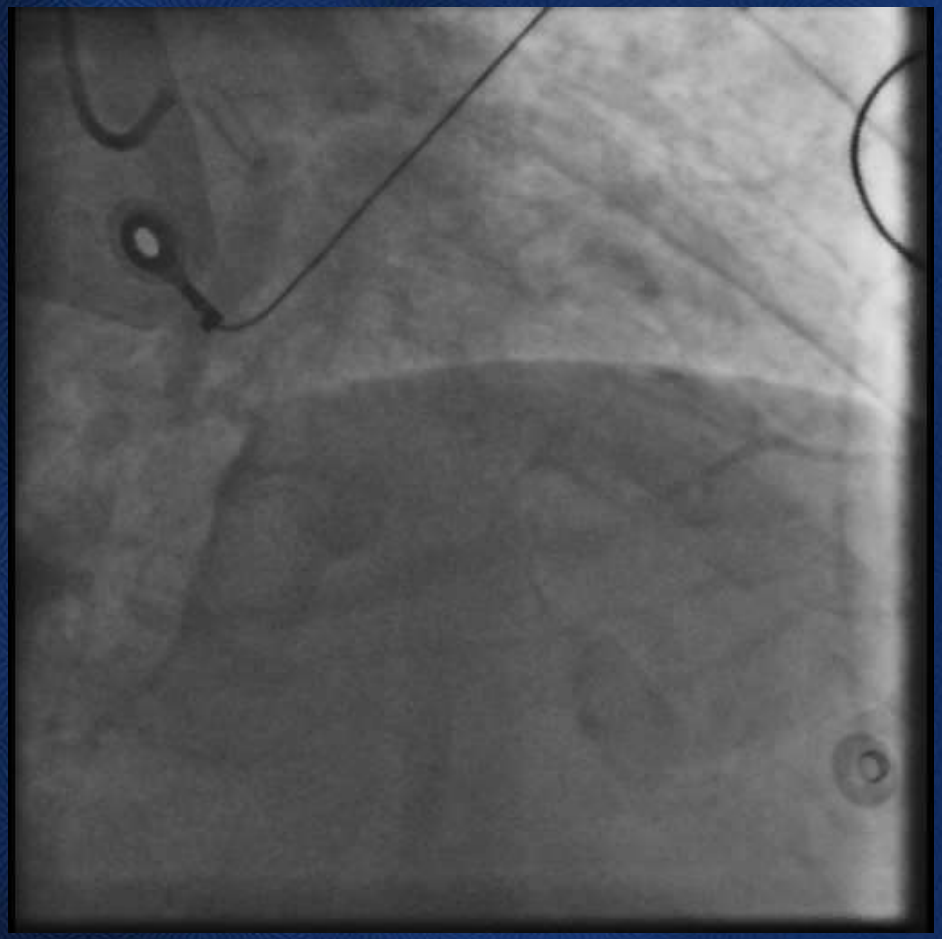
Sion and Sion Black wires both failed.

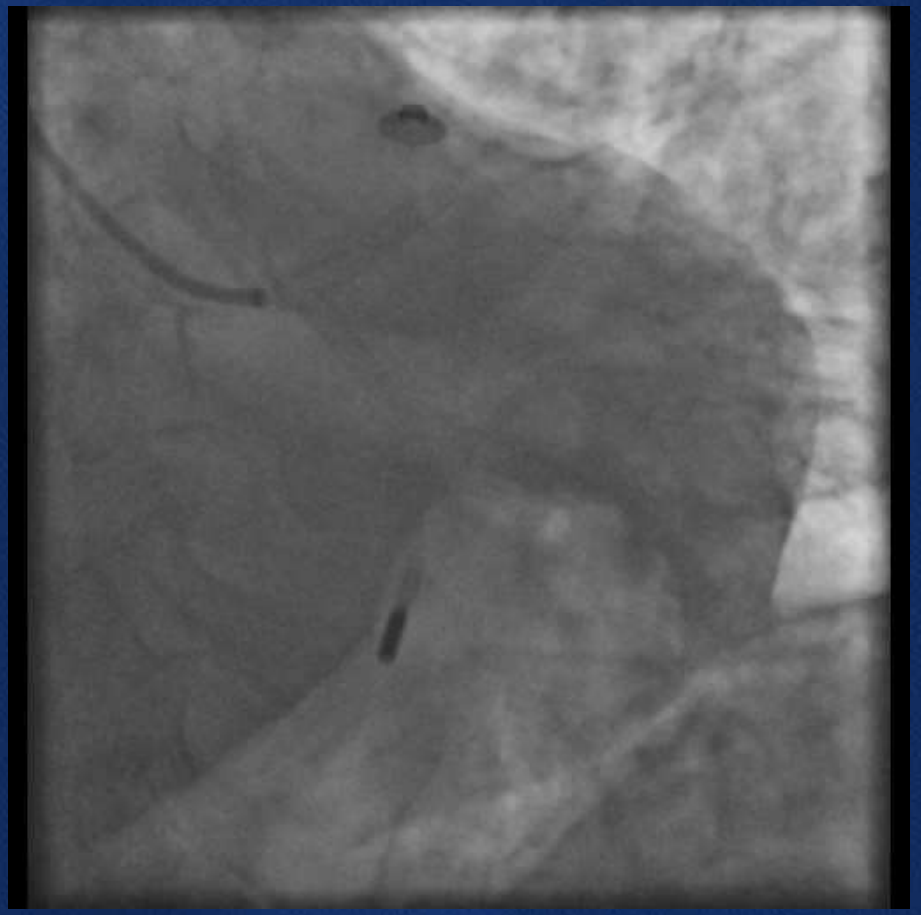
Used PT2MS guidewire.

TAP


1.5x15mm Ikazuchi zero balloon
2.0x15mm then 2.5x15 mm Ikazuchi zero balloon
3x15 mm Resolute Onyx DES @ 14 atm.

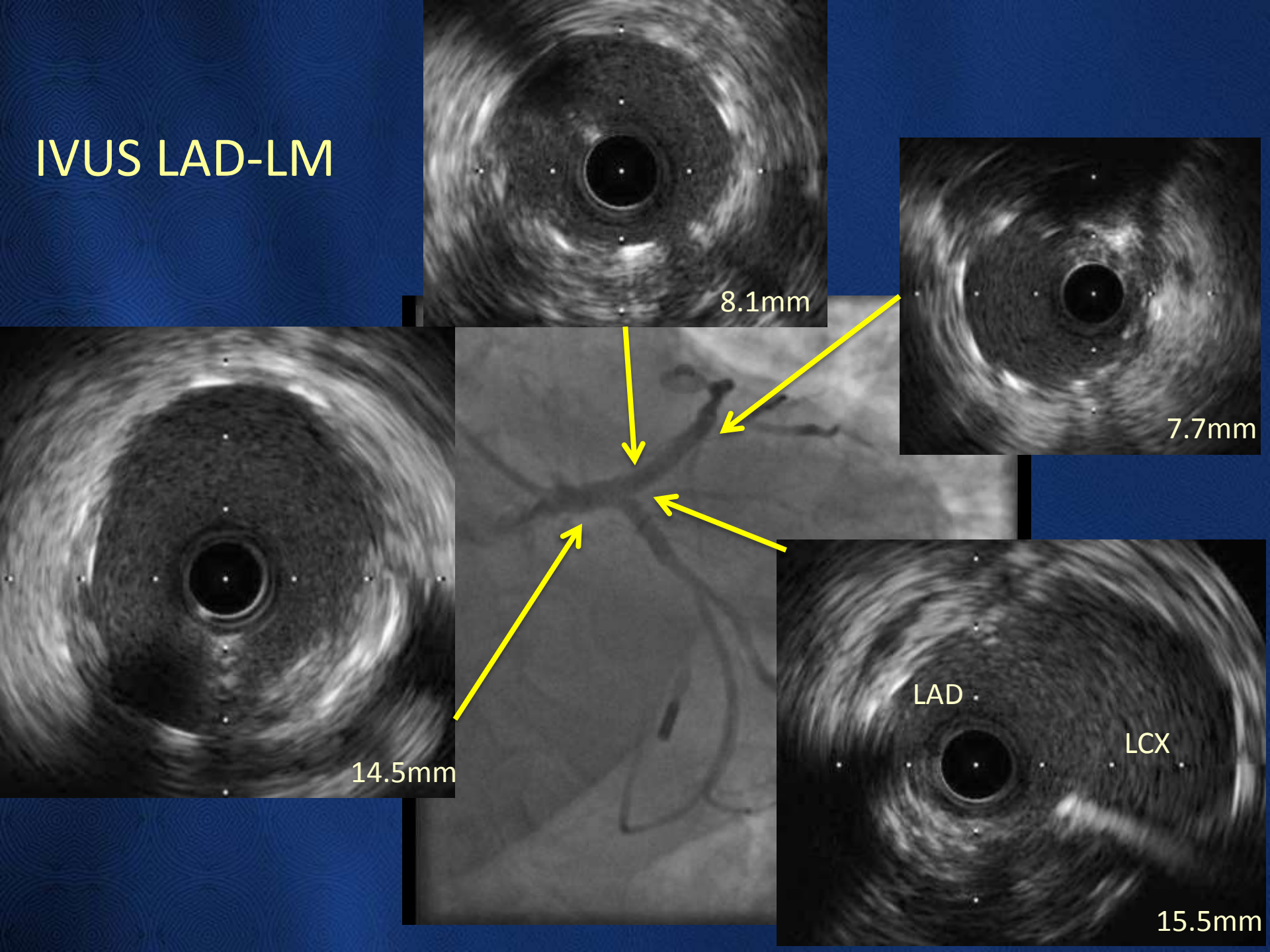

3.75x15 mm
Sapphire NC
@18 atm
3.5x15 mm
Sapphire NC
@18 atm
4x12 NC Eup
at LM-LAD s
@ 20 atm
KBT both
@10 atm



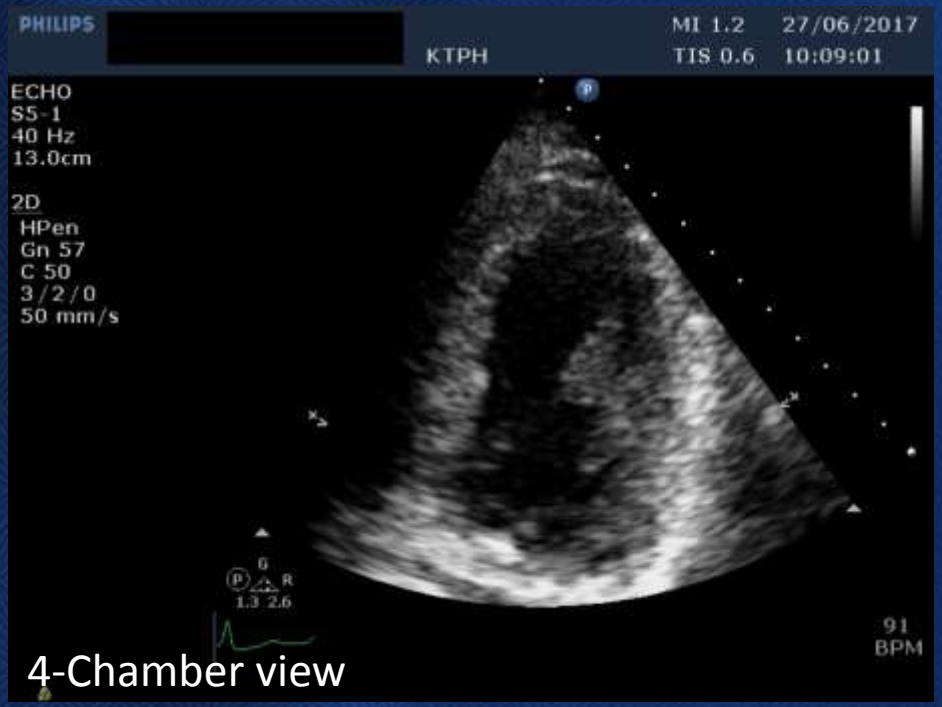


Another bolus of 5mL IC Integrilin was administered at end of procedure

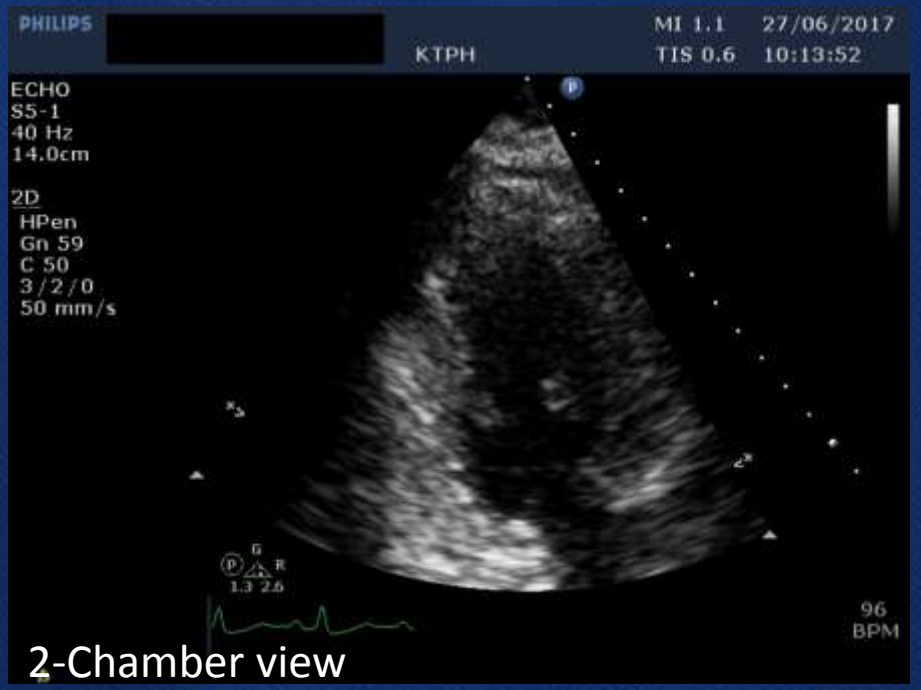
IVUS LAD-LM



Echocardiography – LVEF 55%



4-Chamber view



2-Chamber view

- Extubated in Day 2.
- Discharge uneventfully in Day 6.

Learning points for this case

- 1. Early airway protection – intubation.
- 2. Medication inotrope support
  - Bolus of IV/IC Adrenaline/Epinephrine ~50-100mcg for boost of blood pressure. 0.1-0.5ug/kg/min IV infusion.
  - Higher dose may result in ventricular stunning.
- 3. Mechanical haemodynamic support
  - IABP
  - ECMO
  - IMPELLA (if available)
- 3. LM procedure – *to make it simple*
  - 7 Fr access
  - Technique consideration: if 2-stents strategy → Mini-crush or DK crush to avoid loss of any branch.

Thank you for your attention