



HKSTENT @ TCTAP 2023

Case Sharing

STEMI Requiring MCS

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Disclosure

- No conflict of interest

Case 1

- 66-year-old male
- Quit smoking 15 years ago
- Otherwise unremarkable past health

- Acute onset chest pain while jogging

- ECG: aVR STE, diffuse STD

On Arrival to Cath Lab

- BP 100/60 mmHg
- HR 65 bpm
- Cool peripheries

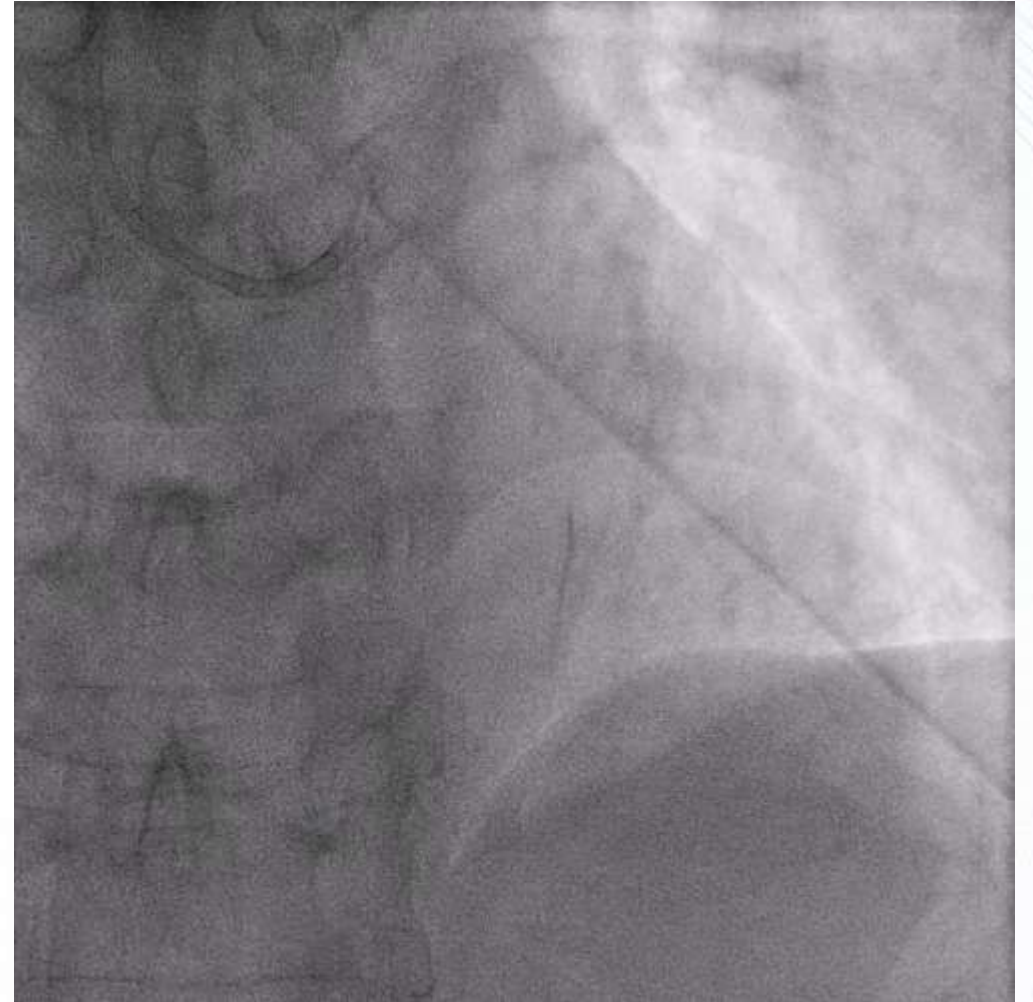
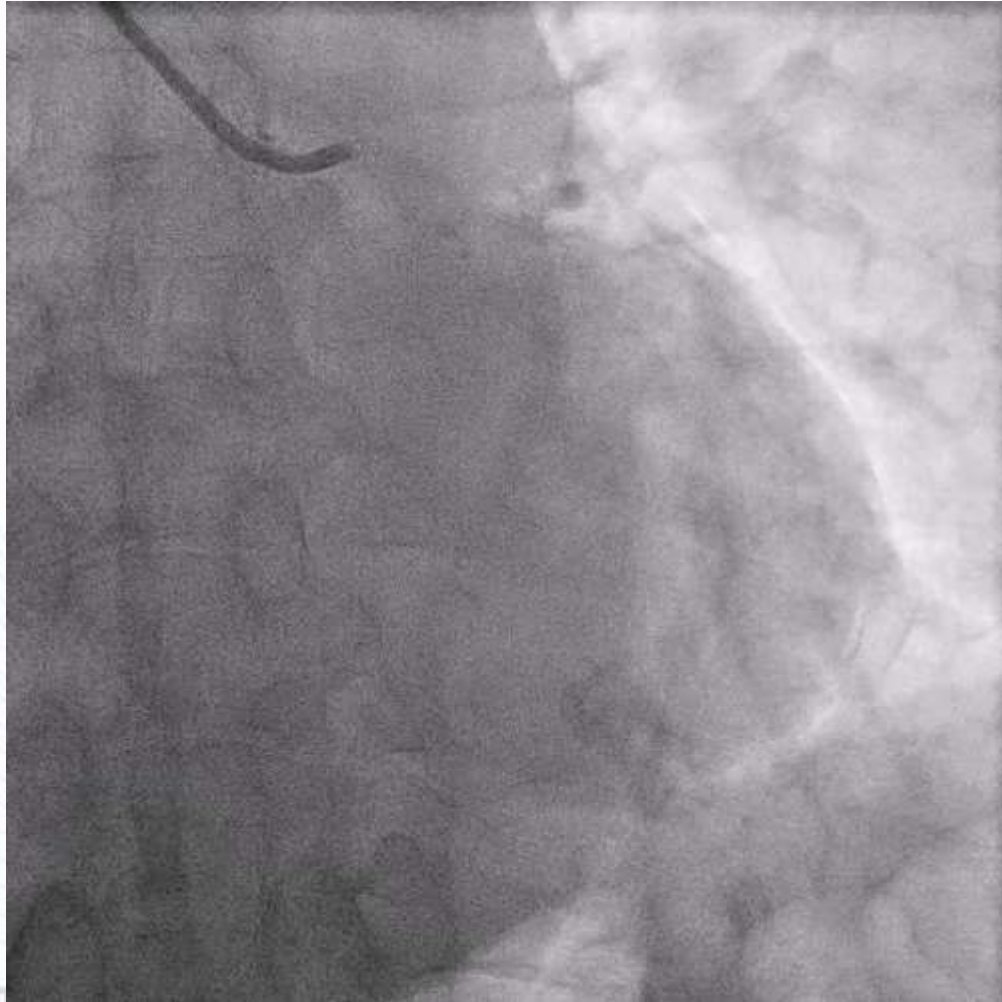
- No blood test result available
- Bedside echo: LVEF 40%

- 7Fr RRA access
- 3Fr RCFA access

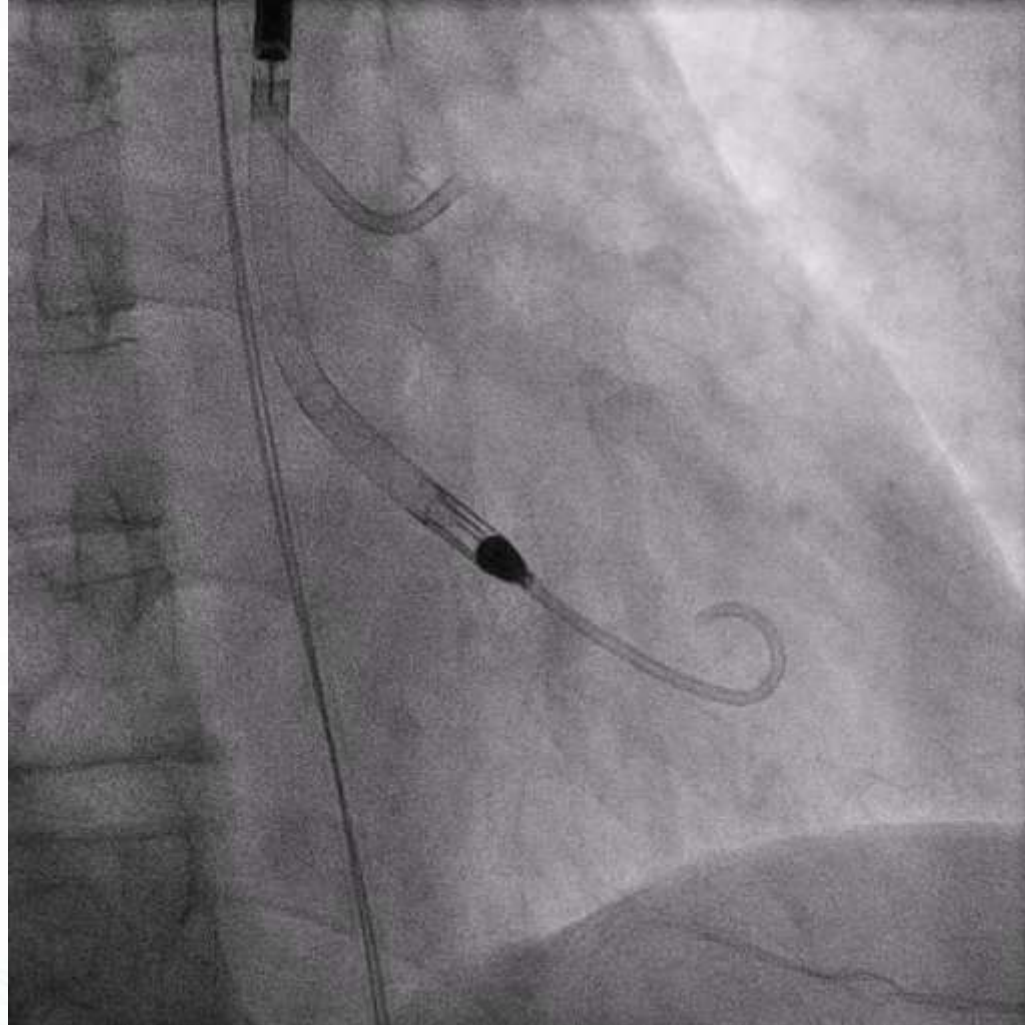
- LVEDP 30 mmHg



LCA Angiogram



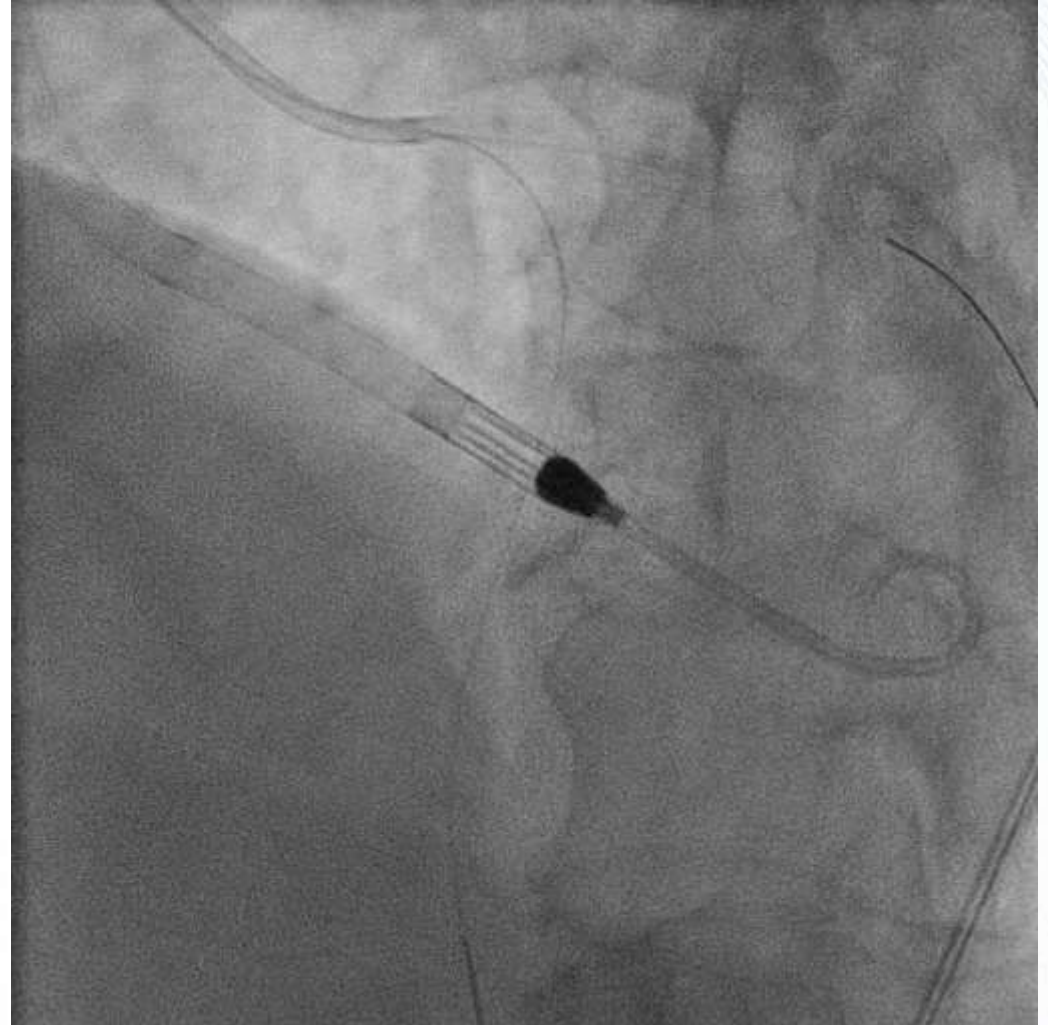
Impella CP Implanted before PCI



RFA access

- serially dilated to 14Fr
- pre-closed with Proglide

Final Angiogram



Progress

- At the end of the procedure
 - BP 110/60 mmHg, HR 70 bpm (Dopamine 5 mcg/kg/min)
 - LVEDP 20 mmHg (measured)
 - Cardiac index (Fick's): 3.5 L/min/m²
- Successfully weaned off Impella inside cath lab
- Groin closure by Proglide (pre-closed) + AngioSeal
- Patient discharged on day 5: LVEF on discharge 50%

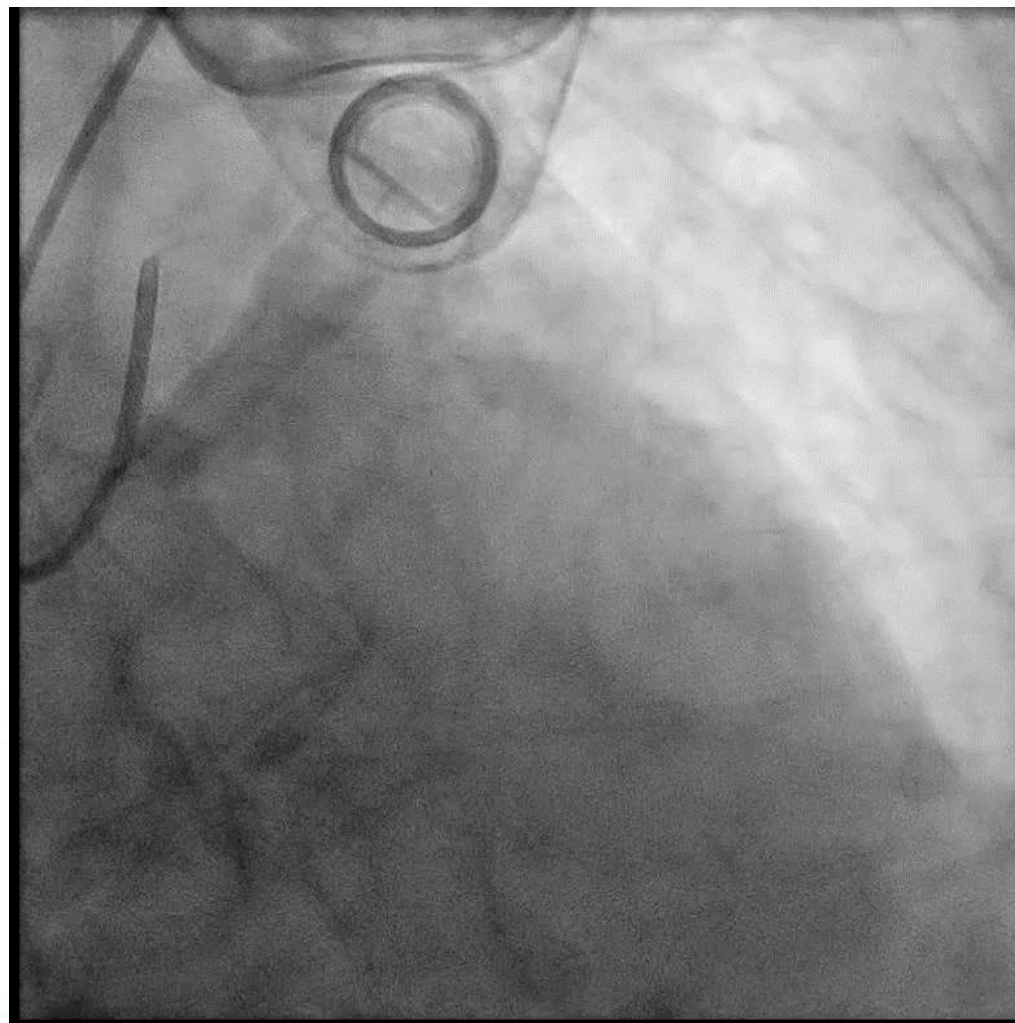
Case 2

- 81-year-old female
- History of hypertension
- Chest pain onset likely >8 hours prior to presentation
- FMC → AED time: **150 minutes**

Admission Details

- Clinical status
 - Active chest pain
 - BP 115/75, HR 95, RR 16, SaO2 94%
 - ECG: SR, anterior STE
- Laboratory work up
 - Hs-Troponin 503
 - Lactate 2.0

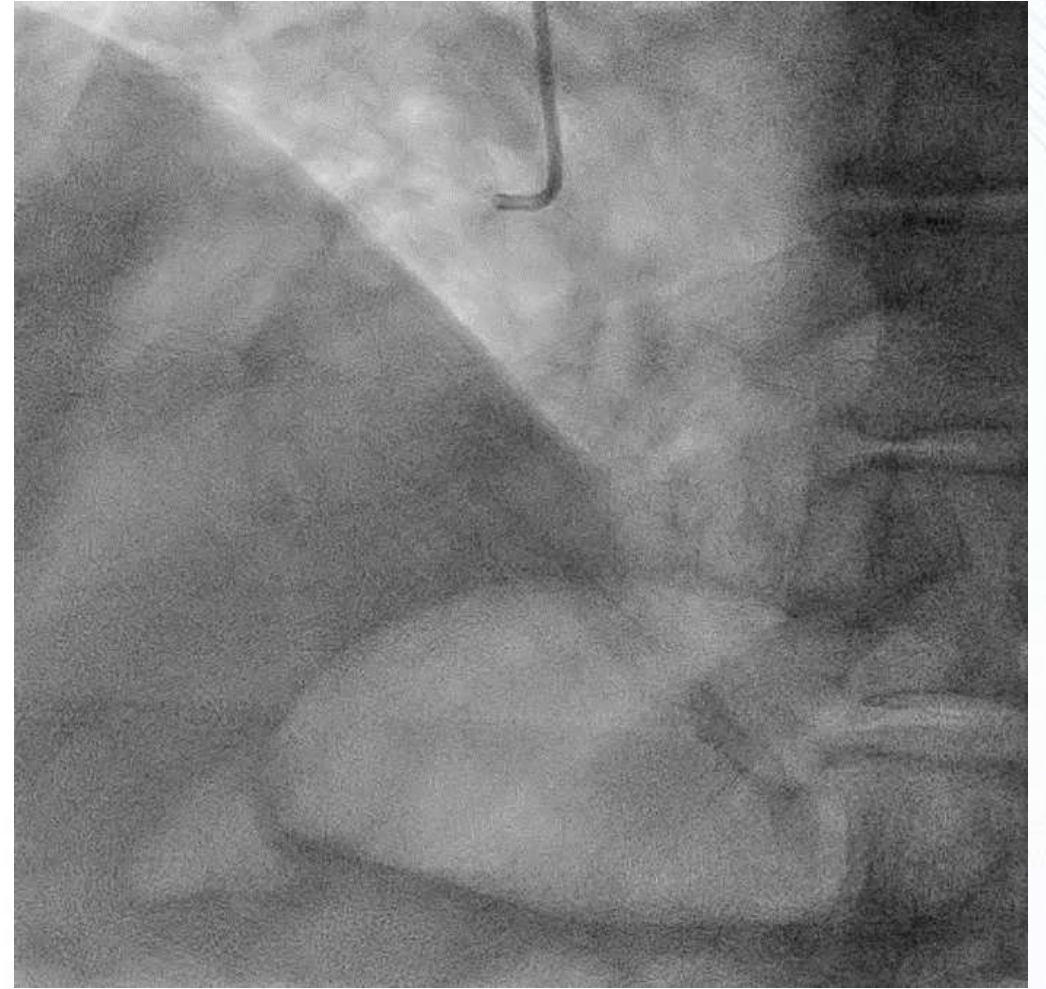
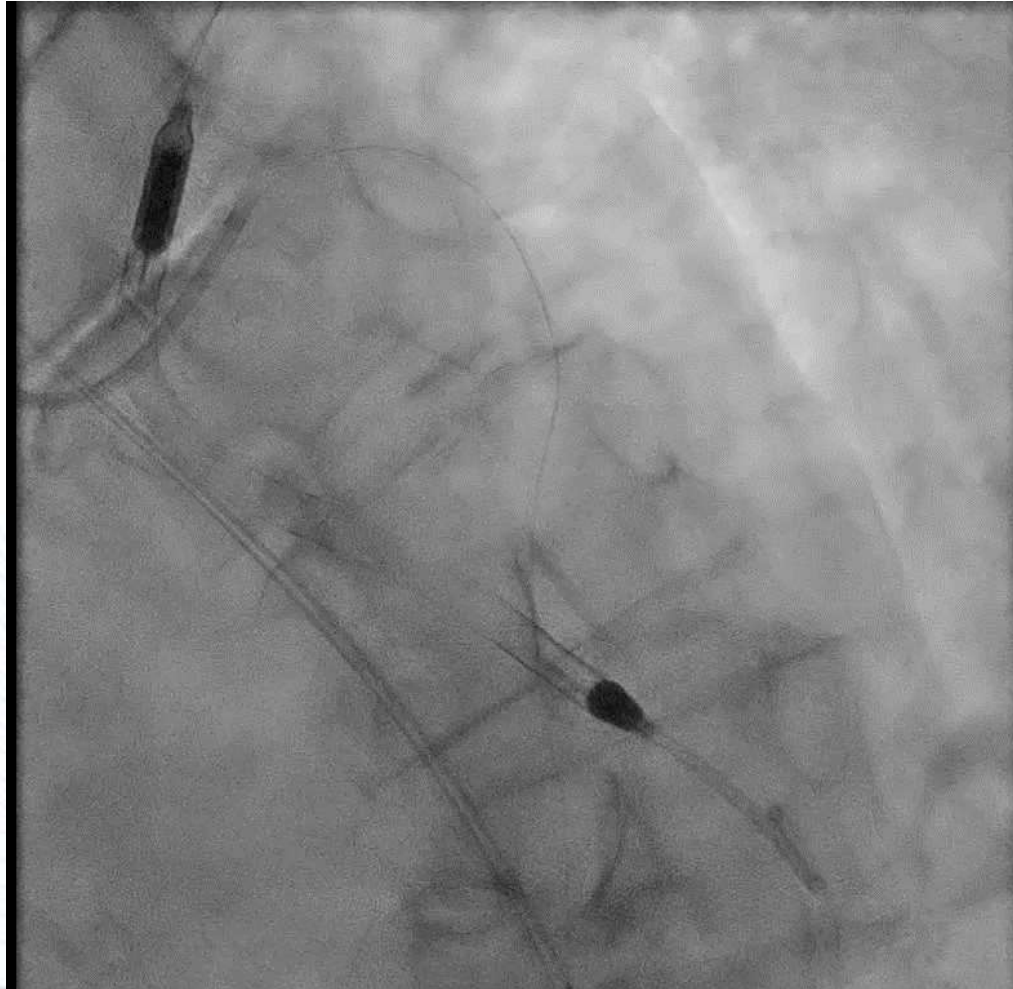
Initial Angiogram



Plot Thickened in Cath Lab

- With the second puff of contrast, BP crashed to 60/40 with immediate O2 desaturation in to the low 80s → intubated
- Immediate RCFA access obtained and Impella CP placed
- Wire crossed the lesion and 3.0x18mm DES placed
- PA catheter placed and Impella on P8
 - RA: 12mmHg; Wedge: 17mmHg; C/I: 2.1 L/min/m²

Post-PCI Angiogram



Complication Management

- Expanding right groin hematoma during transfer from cath lab table
- Impella CP removed and re-placed via a 16Fr sheath in RCFA
 - antegrade 6Fr sheath placed in right SFA to preserve RLE perfusion
- Device removed in cath lab 2 days later

Dry Closure



Outcome

- Echo: EF of 30% with anterior and lateral wall hypokinesis
- Mixed shock related to pneumonia and sepsis
- Hemolysis, thrombocytopenia, and AKI
- Terminally extubated and passed away after 1 week at CCU

Pertinent Questions

- Who?
- When?
- Which?
- How?

Pre-PCI vs Post-PCI

How long will
revascularization or
MCS implantation
take?



Will patient
decompensate
during PCI?

Any issue with
access site?

Personal Thoughts

- Coronary anatomy
 - if complex, go for MCS first
- Hemodynamic status
 - if in doubt, perform RHC
- Access site
 - establish additional access site even if not for MCS upfront

Safety

- Access site management
 - Fluoroscopy + Ultrasound guidance
 - Micropuncture set
 - Pre-close
 - SHiP
 - Dry closure

- Complication management

Conclusion

- STEMI with cardiogenic shock: high mortality and morbidity
- Use of mechanical circulatory support
 - who? (patient selection)
 - when? (before or after PCI)
 - which? (different devices available)
 - how? (team based, algorithmic, safety)
- More data needed on appropriate use of MCS in AMI-CS

