

STEMI complicated by cardiac arrest

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- 48 year old male with **VF arrest**
 - Presents to ER as an out of hospital cardiac arrest
 - At restaurant, witness report seizure like activity, then slumped in chair
 - EMS arrival: somnolent, then arrested, initial rhythm VF, multiple shocks, 4 mg epinephrine and 300 mg amiodarone
 - Arrival to ER with ongoing CPR in PEA arrest

Cardiac risk factors: none

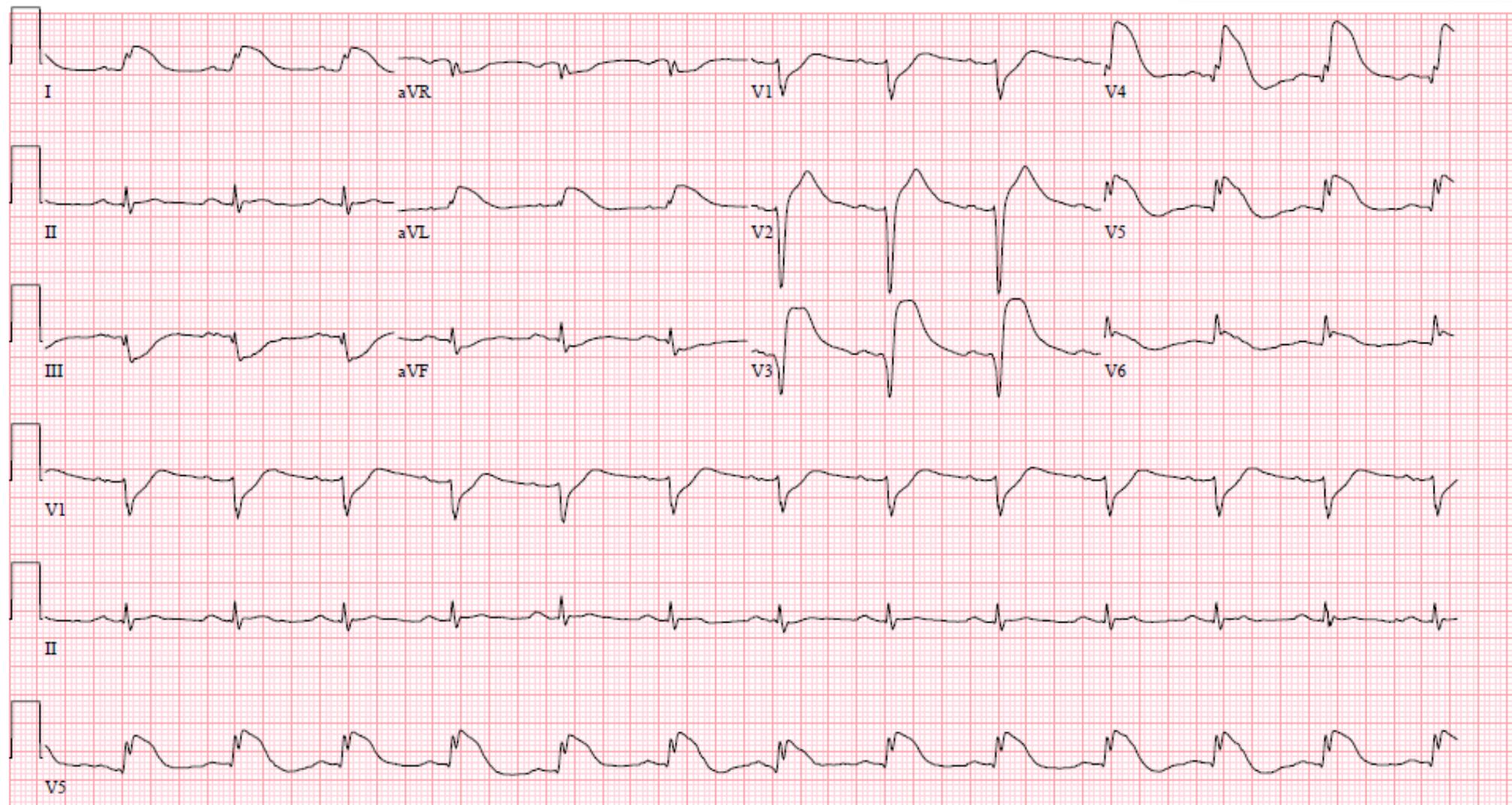
Pertinent PMH: none

Case

- Given age and initial rhythm, CT surgery involved
- VA-ECMO started with ongoing CPR (door to ECMO initiation 30 minutes)
- Afterwards noted to have spontaneous respirations and blood pressure 140/90 mmHg



Presenting ECG



Case

- Presenting troponin: 0.18
- Lactate: 6.3

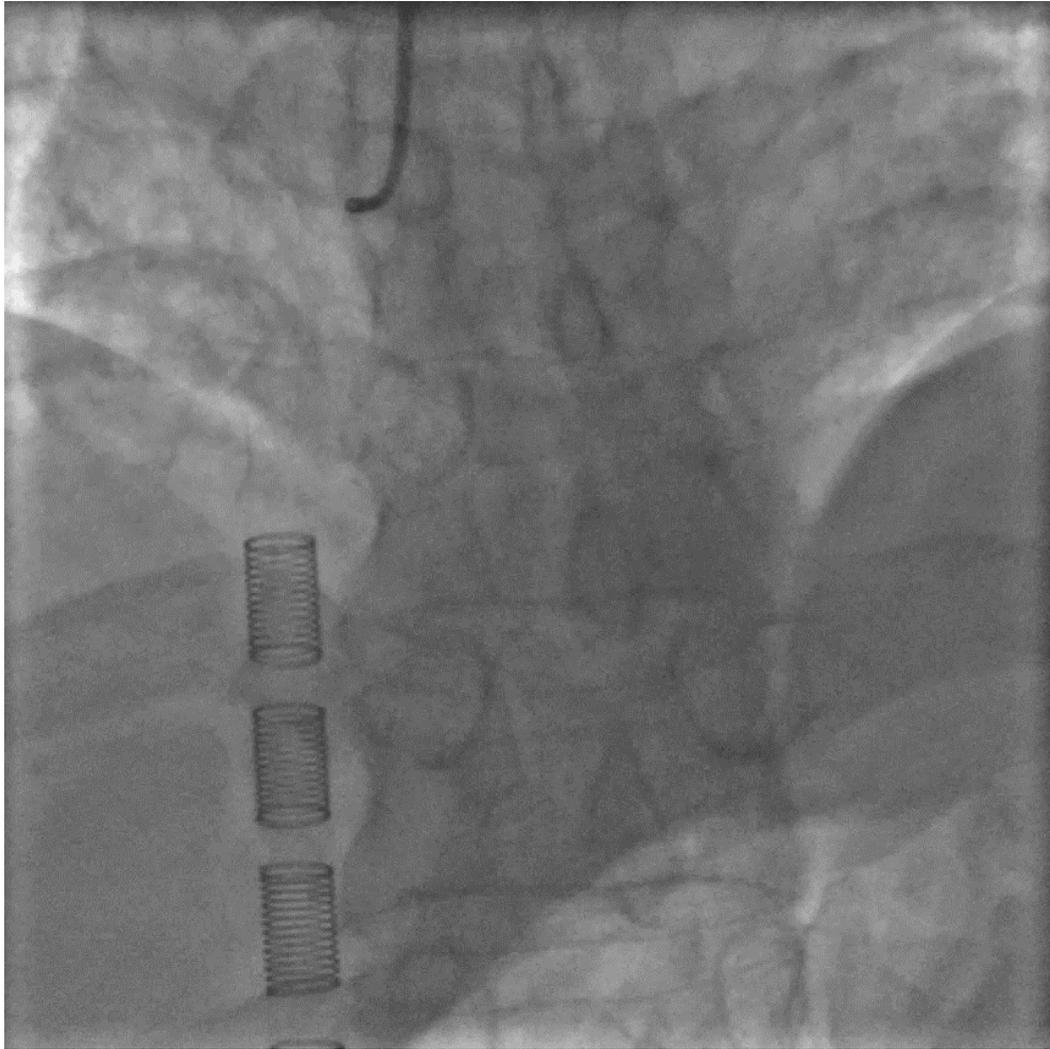
- Taken emergently for coronary angiography



Presenting echocardiogram



Diagnostic angiogram

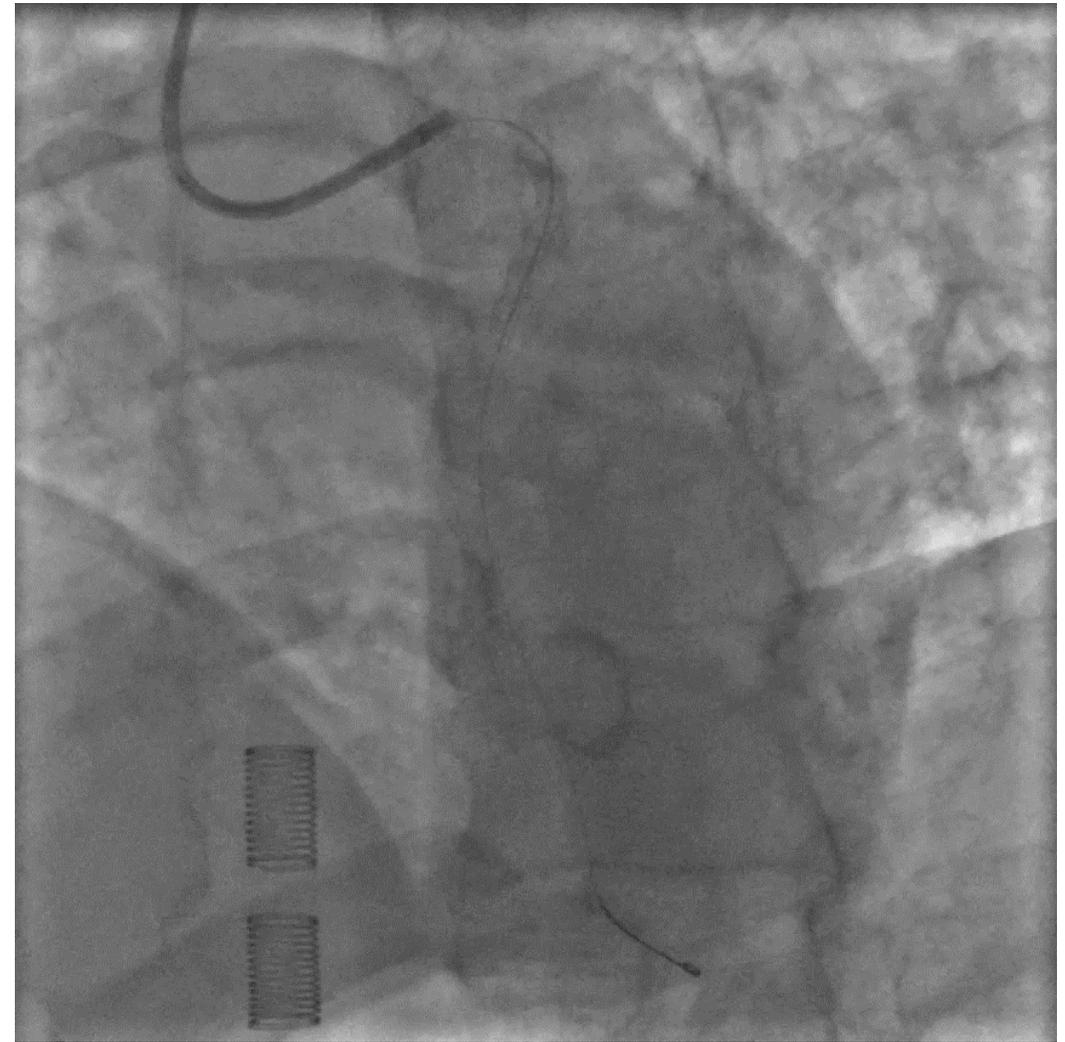
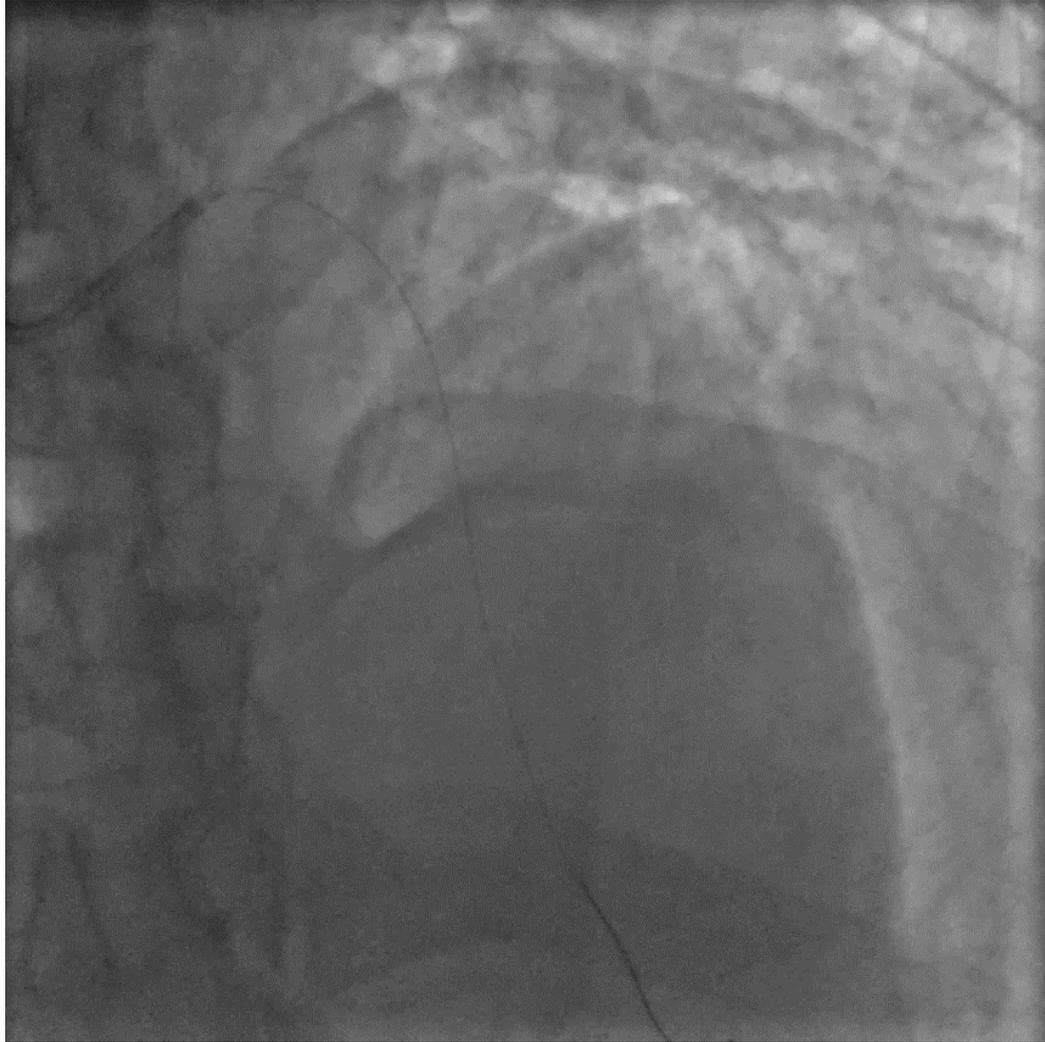


Questions

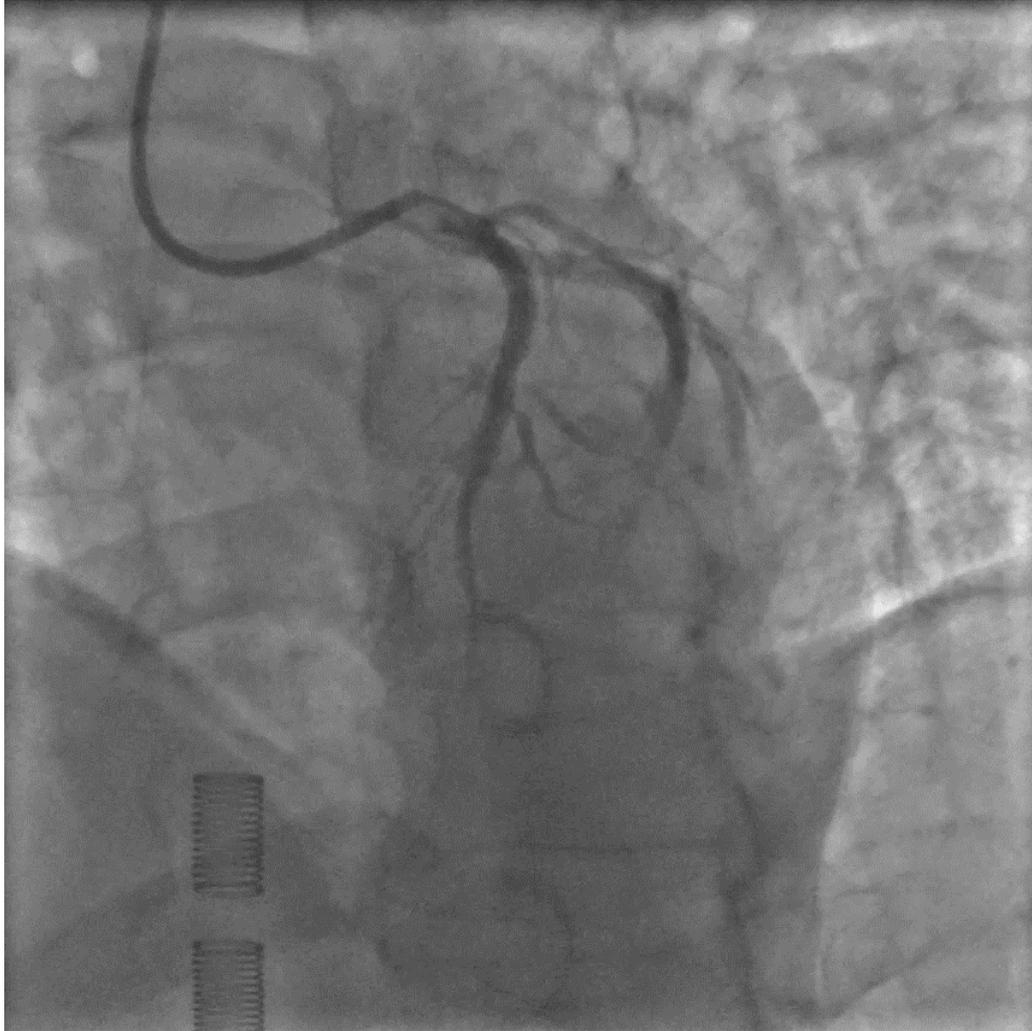
1. Aspiration: yes or no?
2. Non-culprit PCI in cardiogenic shock: yes or no?
3. ECMO: yes or no?
4. Impella with or without ECMO: yes or no?
5. Impella before or after PCI?
6. Therapeutic hypothermia: yes or no, what target, how long?



LAD aspiration thrombectomy, and PCI



LCX PCI



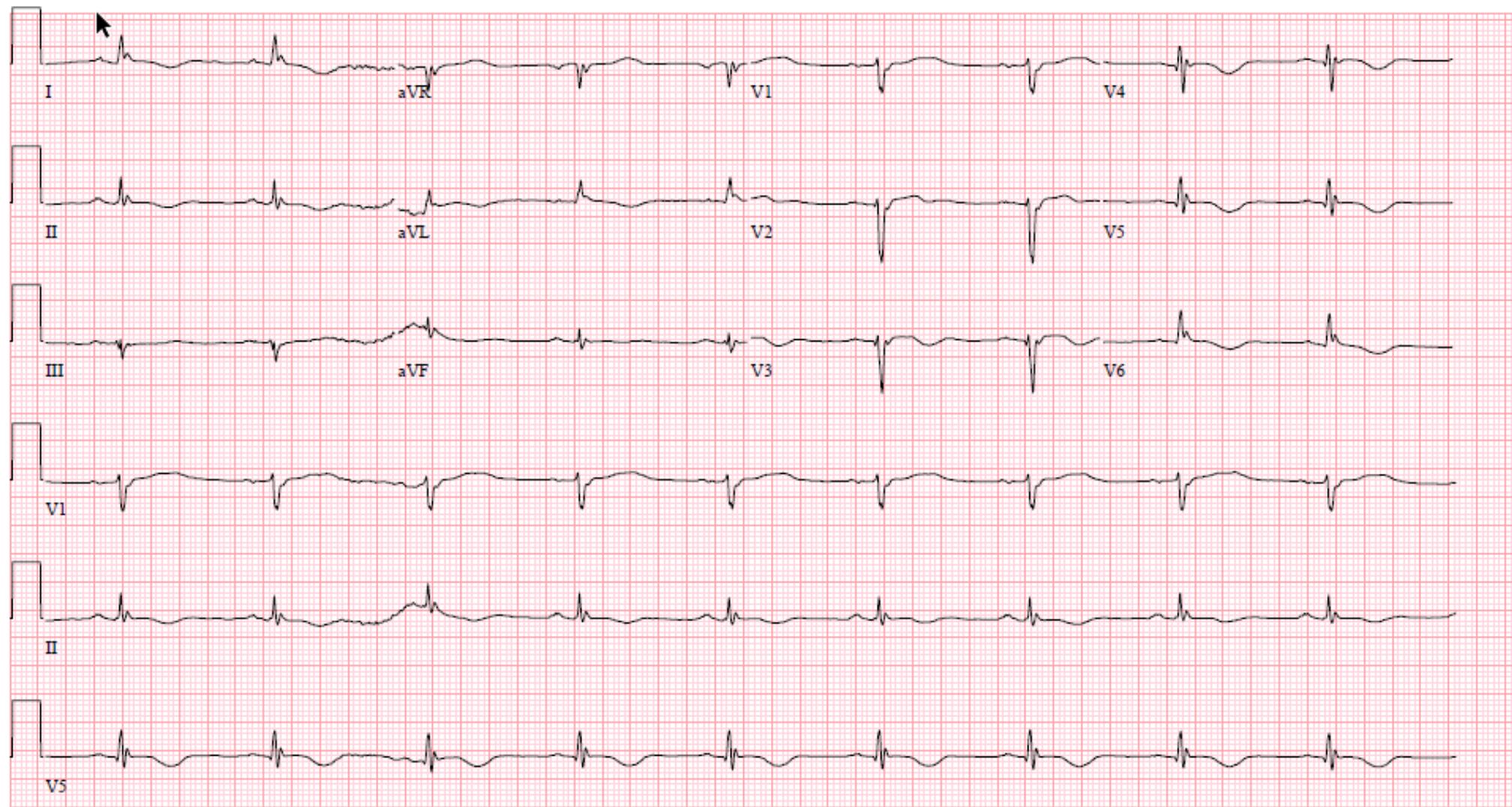
- Opening aortic pressure: 122/103 (113) mmHg.
- Right heart catheterization:
 - RA: A-wave 14, V-wave 11, mean 10.
 - PA: 15/7 (10) mmHg.
 - PCWP: A-wave 11, V-wave 11, mean 9 mmHg.
- Left heart catheterization:
 - LV systolic pressure: 80 mmHg
 - LVEDP: 6 mmHg.

- Procedural summary

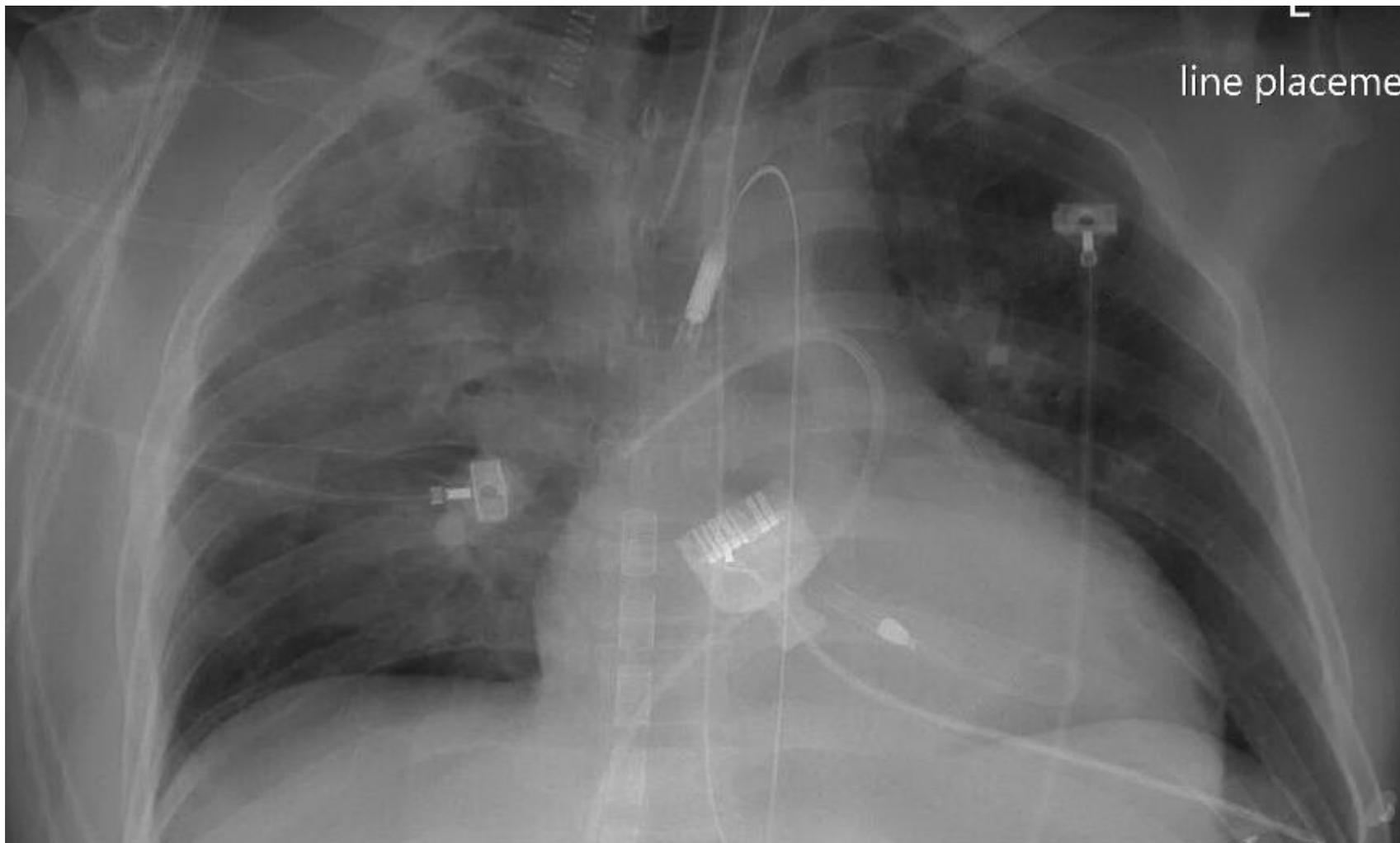
- Aspiration thrombectomy of the LAD
- PCI of the proximal to mid LAD using a 3.5 x 38 mm Xience Alpine DES
- PCI of the distal dominant LCX using a 3.0 x 15 mm Xience Alpine DES
- Placement of an Impella CP

- Peak troponin: 46

Post PCI ECG



Case



TTE: hospital day #1

- Low normal LVEF 50% with hypokinesis of the mid to apical septal wall, otherwise normal



Hospital course

- Therapeutic hypothermia
 - Initiated one hour after presentation via ECMO circuit, cooled to 33 degrees
 - Rewarmed after 24 hours
 - No focal neurologic deficits
- MCS
 - Impella removed hospital day #2
 - ECMO removed hospital day #4
- Discharged hospital day #14
- 3 month follow-up: doing well, returned to work, playing soccer, on DAPT, no anginal complaints



Key Points for Discussion

1. Choice and timing (relative to PCI) of advanced hemodynamic support systems
2. Non-culprit PCI in cardiogenic shock
3. Significance of ST segment changes in cardiac arrest
4. Evaluation of neurological status
5. Therapeutic hypothermia

