CHF after MI

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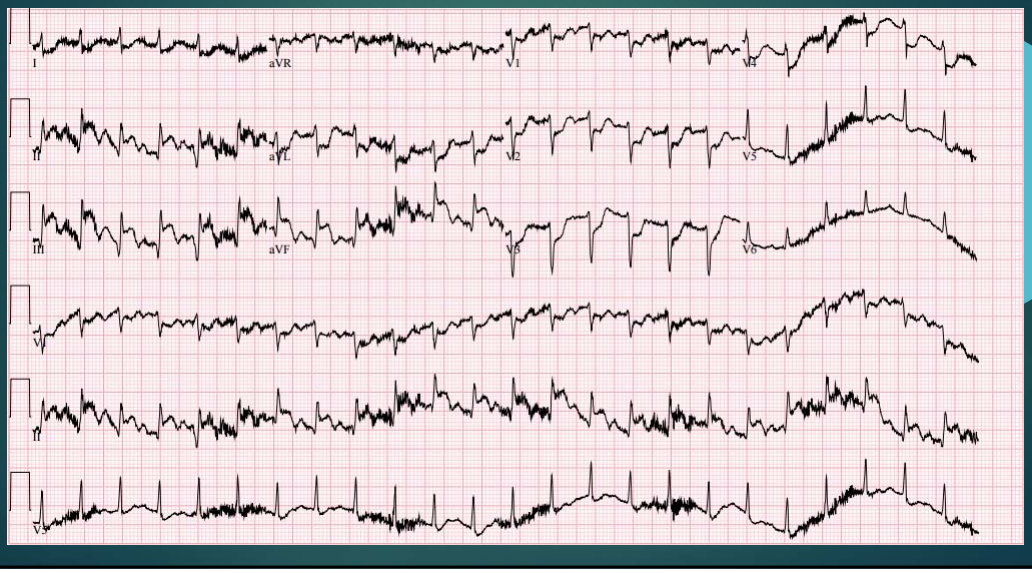
Disclosures

No relevant disclosures

History

- 47 y/o m
- No prior medical problems
- History notable for tobacco, EtOH, cocaine use
- Called EMS a few hours after being awoken from sleep with severe CP, SOB, and arm numbness
- Took Xanax at home without relief
- On arrival to ED, had persistent symptoms and abnormal EKG
- ?Chest pain a few days prior as well

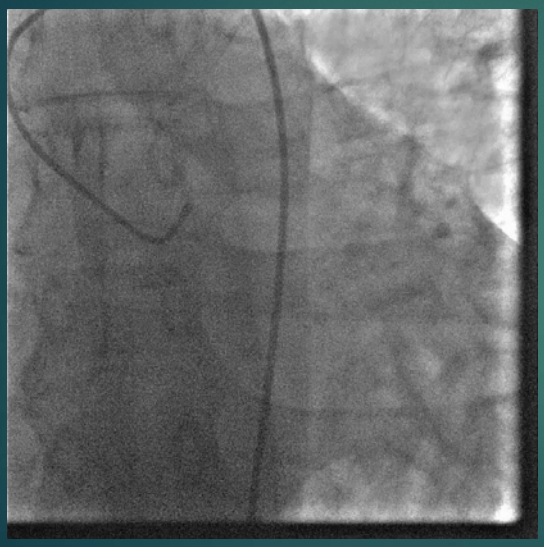
Admission EKG

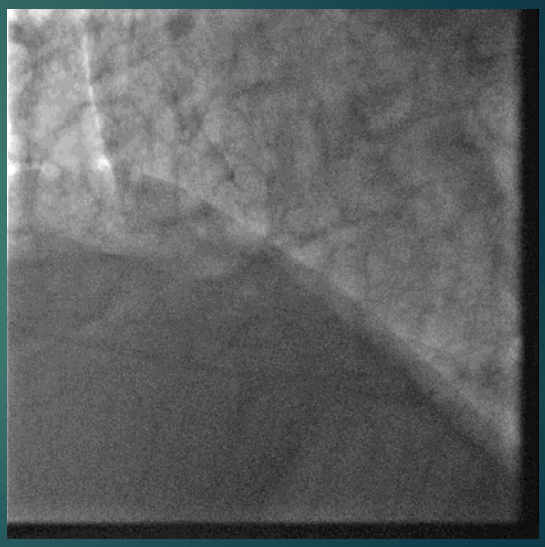


RHC

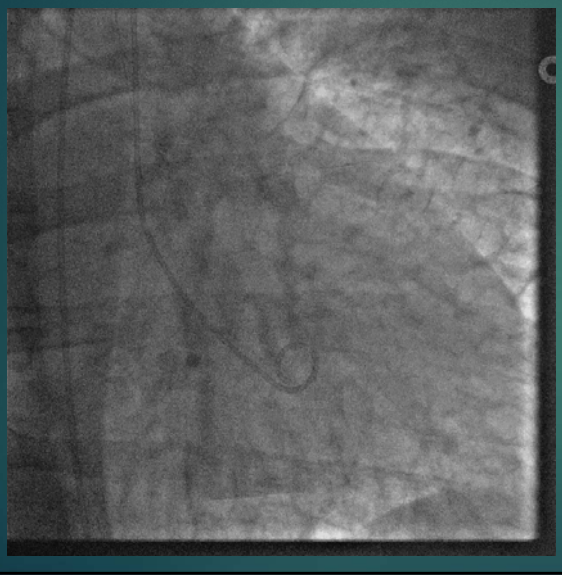
- RHC
  - RA =14,
  - RV = 57/18,
  - PA = 69/42/55
  - PA Sat = 52%
  - PCWP = 43
  - Fick CO/CI = 2.9/1.4

Coronaries – 100% mRCA





LV gram

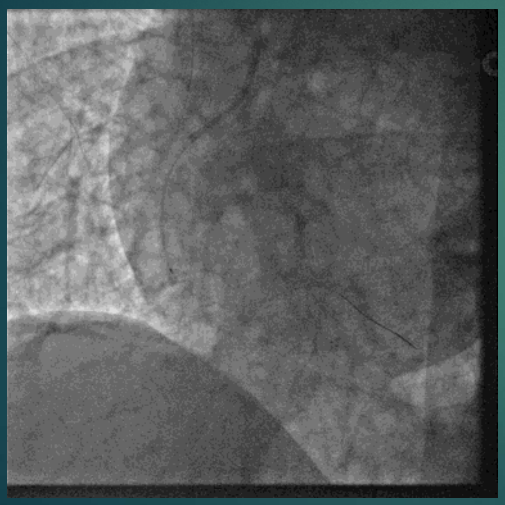


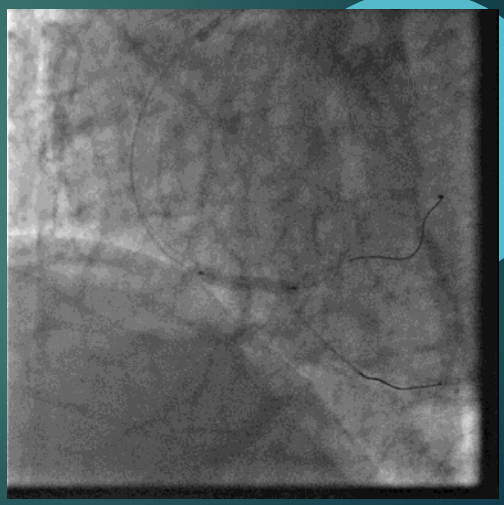
LVEF ~ 40%

Inferior hypokinesis

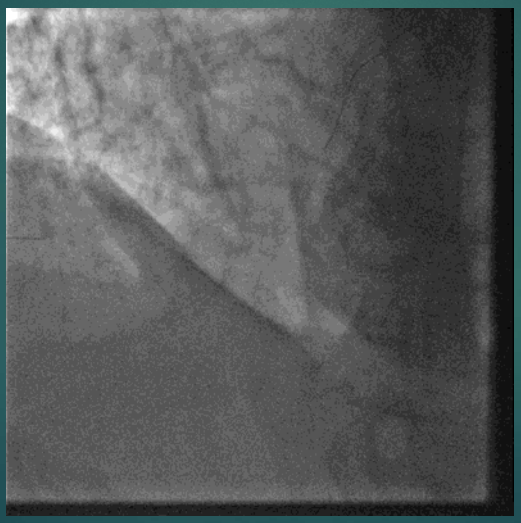
4+ MR

Thrombectomy + PCI





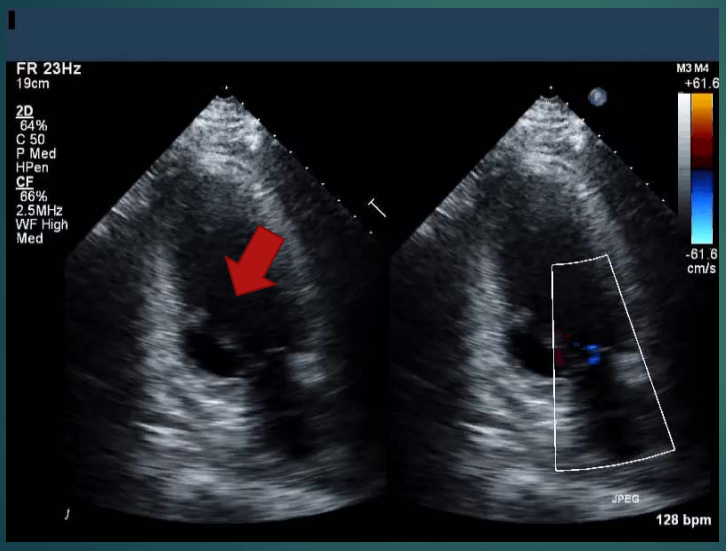
Final Result



After Cath

- IABP placed for BP support
- Stat TTE ordered for flash CHF

TTE



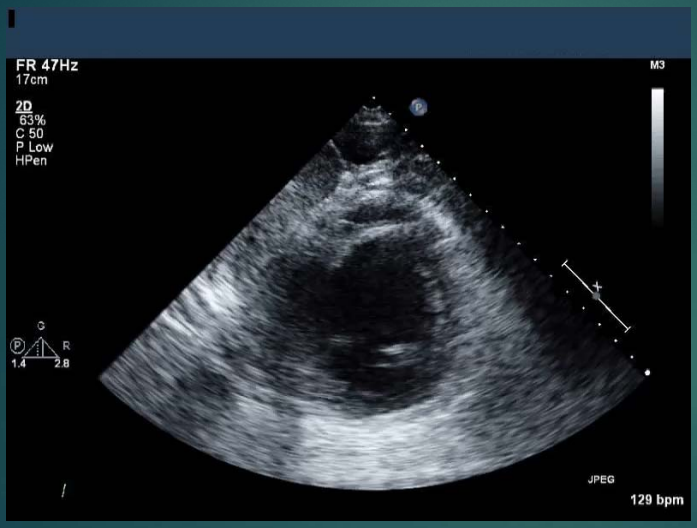
LVEF ~ 30%

Inferior akinesis

Severe MR

Mobile echodensity attached to mitral chordae

TTE

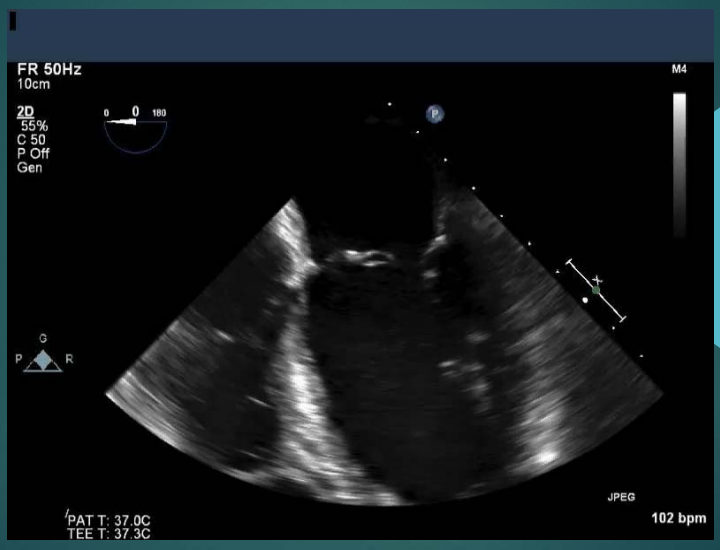


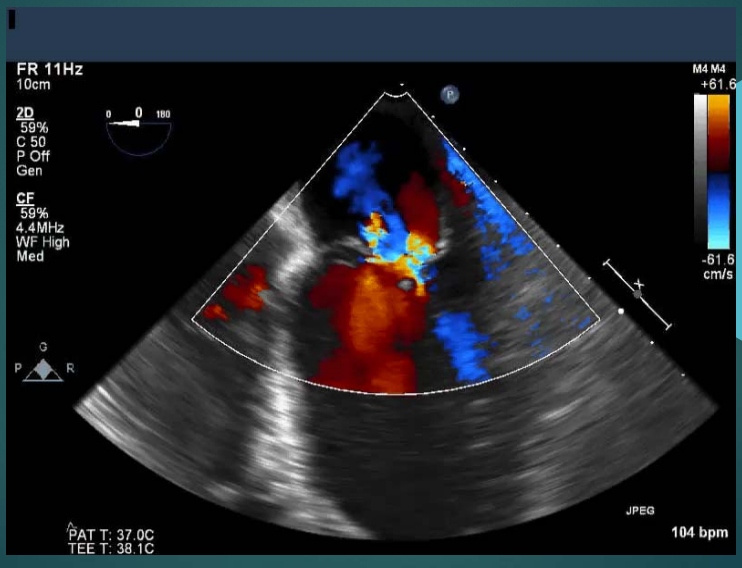
LVEF ~ 30%

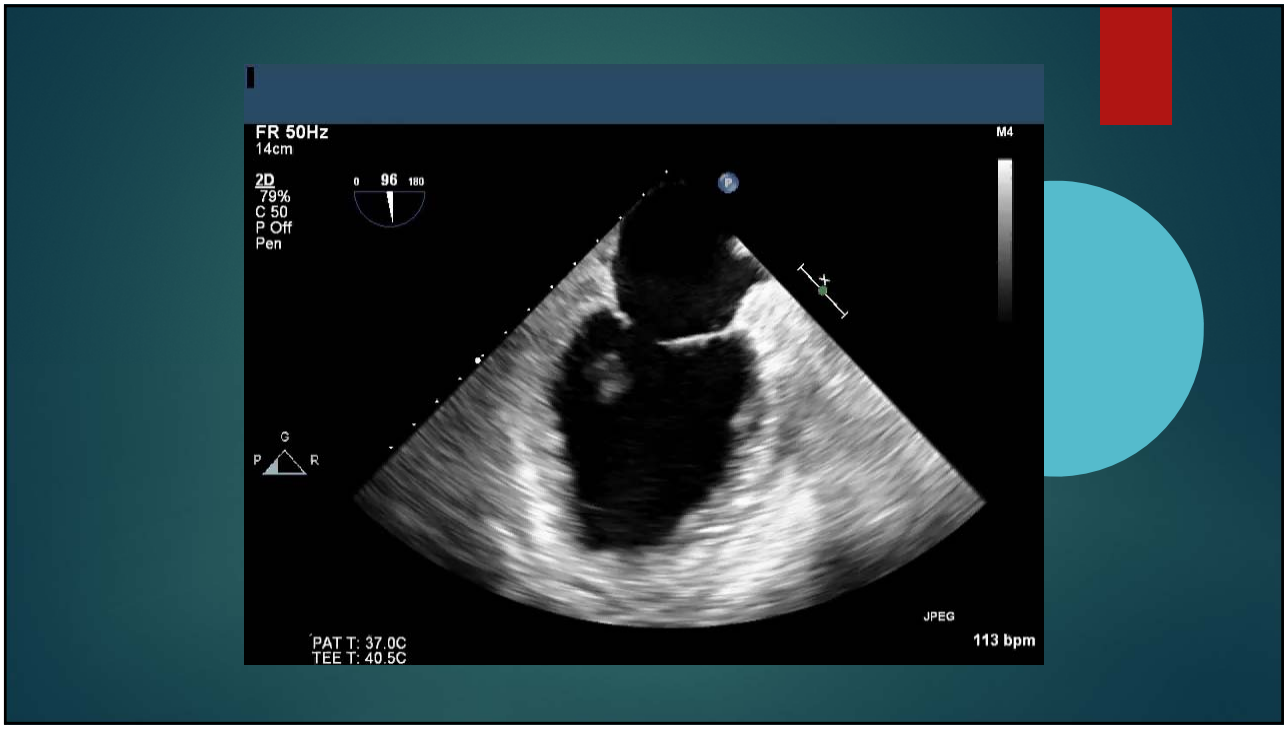
Inferior/inferoseptal akinesis

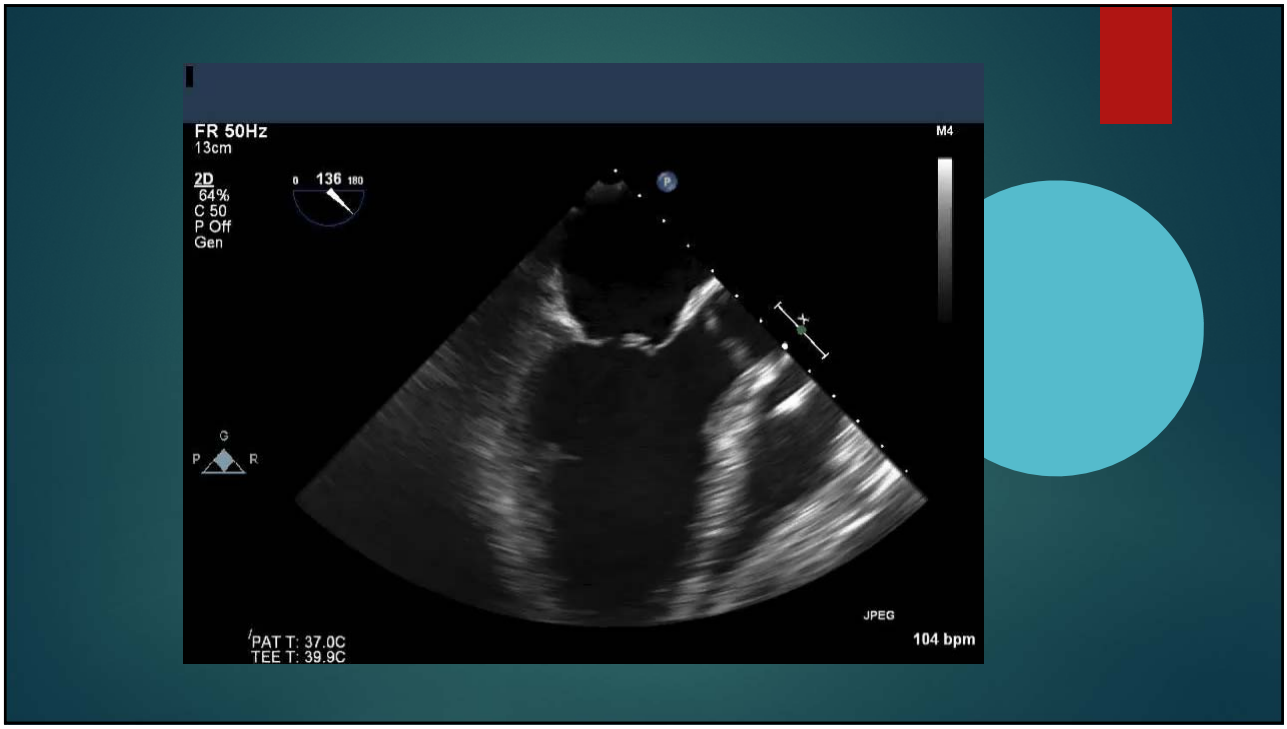
Severe MR

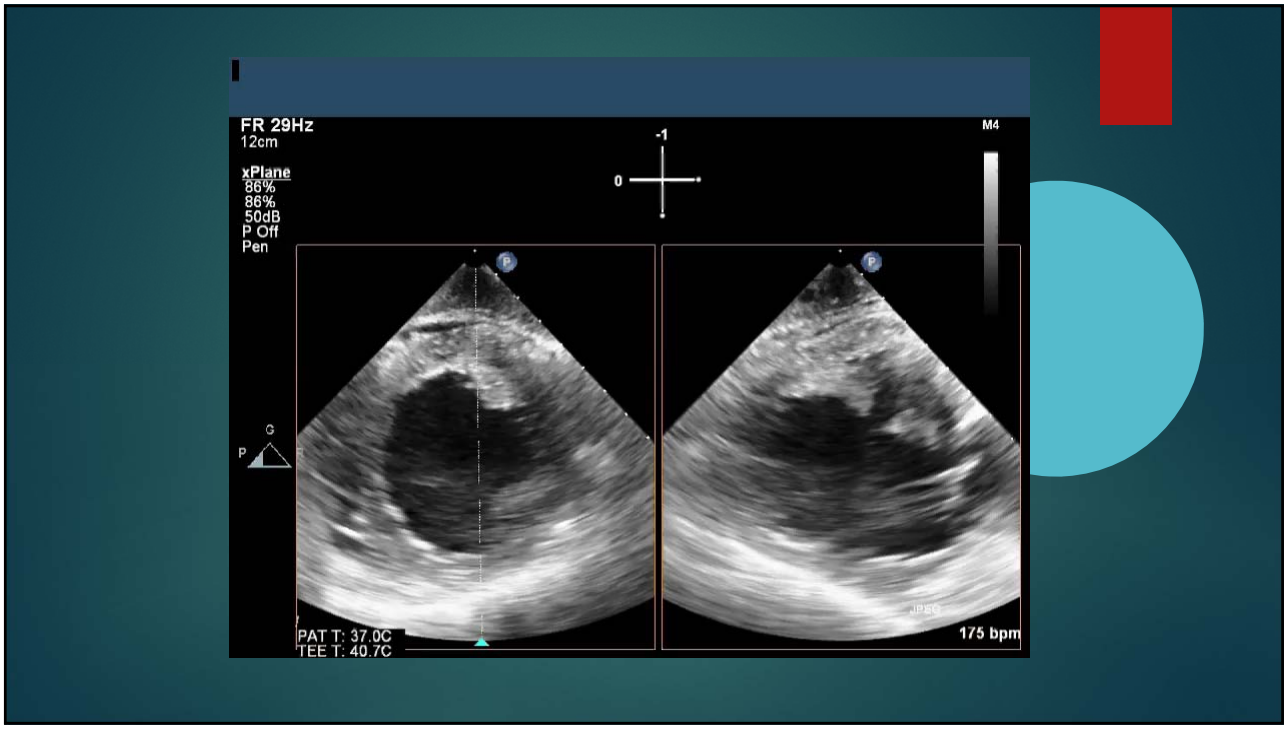
TEE

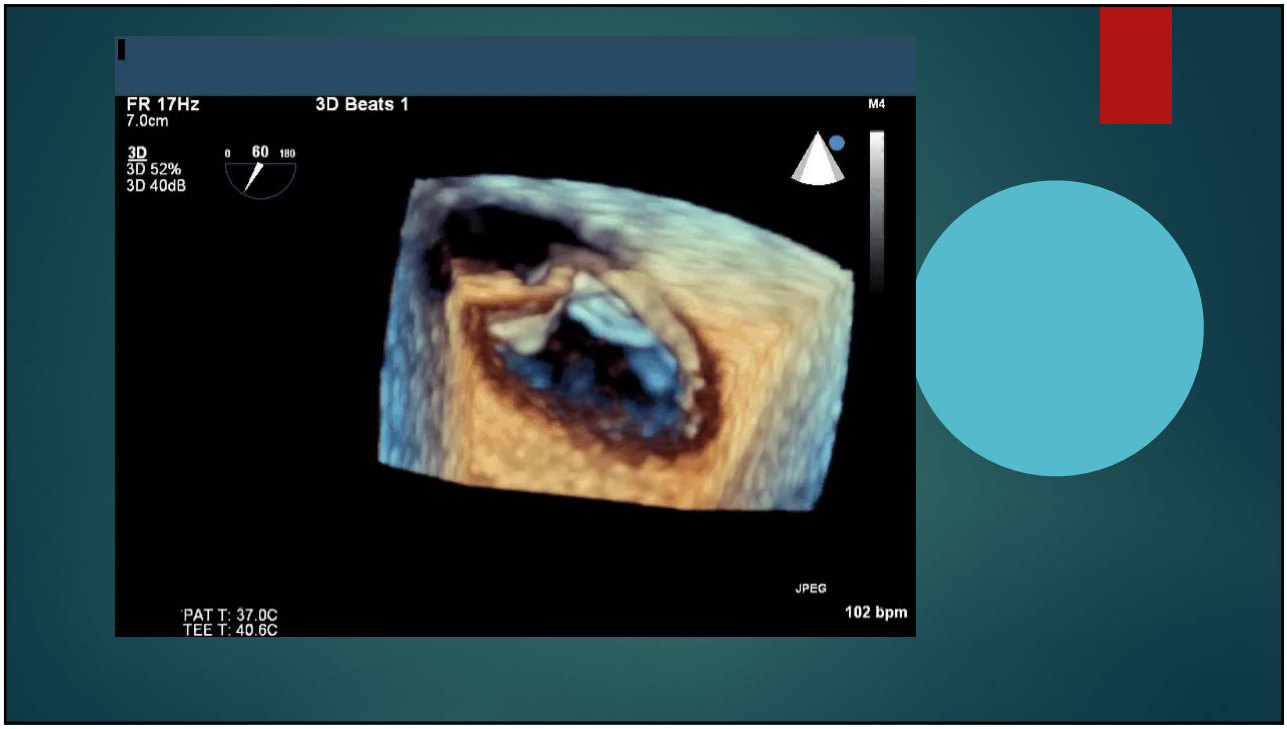

FR 50Hz
10cm
2D
55%
C 50
P Off
Gen
M4
PAT T: 37.0C
TEE T: 37.3C
JPEG
102 bpm

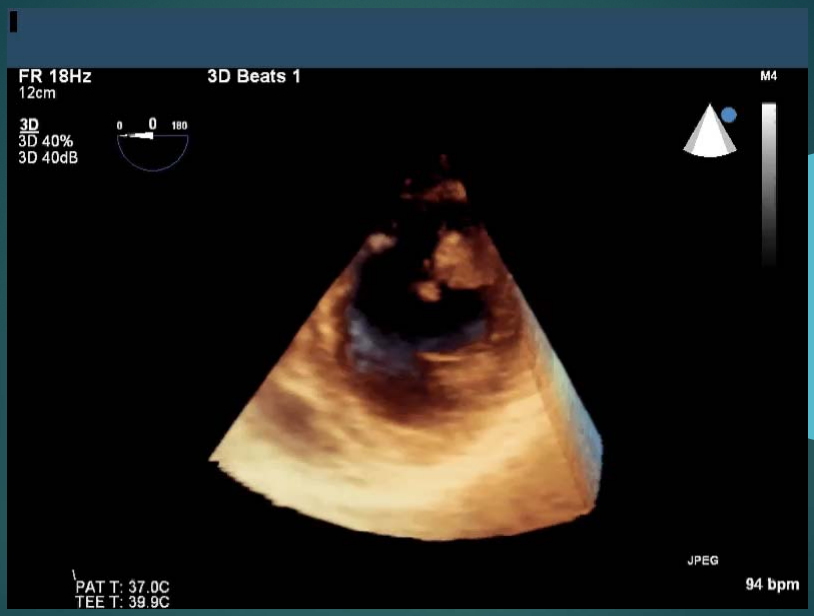

FR 11Hz
10cm
2D
59%
C 50
P Off
Gen
CF
59%
4.4MHz
WF High
Med
M4 M4
+61.6
-61.6
cm/s
PAT T: 37.0C
TEE T: 38.1C
JPEG
104 bpm


FR 50Hz
14cm
2D
79%
C 50
P Off
Pen
0 96 180
M4
JPEG
113 bpm
PAT T: 37.0C
TEE T: 40.5C


FR 50Hz
13cm
2D
64%
C 50
P Off
Gen
0 136 180
M4
JPEG
104 bpm
PAT T: 37.0C
TEE T: 39.9C


FR 29Hz
12cm
xPlane
86%
86%
50dB
P Off
Pen
-1
0
M4
PAT T: 37.0C
TEE T: 40.7C
175 bpm


FR 17Hz
7.0cm
3D Beats 1
3D
3D 52%
3D 40dB
0
60
180
M4
JPEG
PAT T: 37.0C
TEE T: 40.6C
102 bpm



Clinical Course

- Remained hypotensive despite IABP therapy and norepinephrine
- Became hypoxic requiring intubation
- CXR showed severe pulmonary edema
- Taken emergently to operating room

Treatment and follow-up

- MVR Performed
- Unable to wean cardiac bypass → BIVAD
- Eventually weaned off mechanical support and discharged from hospital
- Progressive decline, on home inotrope therapy
- Will receive LVAD as bridge-to-transplant

Papillary muscle rupture – incidence and prognosis

- Occurs in 1-3% of acute MI
- Typically occurs 2-7 days post MI
  - ? Stuttering infarct in this patient
- Poor prognosis
  - without surgical intervention: 24 die within 24 hours
  - with surgery: 19-45% early death rate

Papillary muscle rupture - anatomy

- Posteromedial rupture more common than anterolateral
  - PM: supplied by RCA
  - AL: supplied by LAD and LCX
- Posteromedial is partial rupture more often than anterolateral rupture
  - PM: often made of several smaller parts
  - AL: usually a continuous muscle bundle
- Single culprit lesion in most cases (RCA)

Treatment

- Mitral valve replacement preferred over mitral repair in most cases
- Concomitant CABG has been shown to improve short and long-term mortality