MIAMIVALVES2023

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TALLAHASSEE MEMORIAL HEALTHCARE

No disclosures relevant to this talk.

TALLAHASSEE MEMORIAL HEALTHCARE

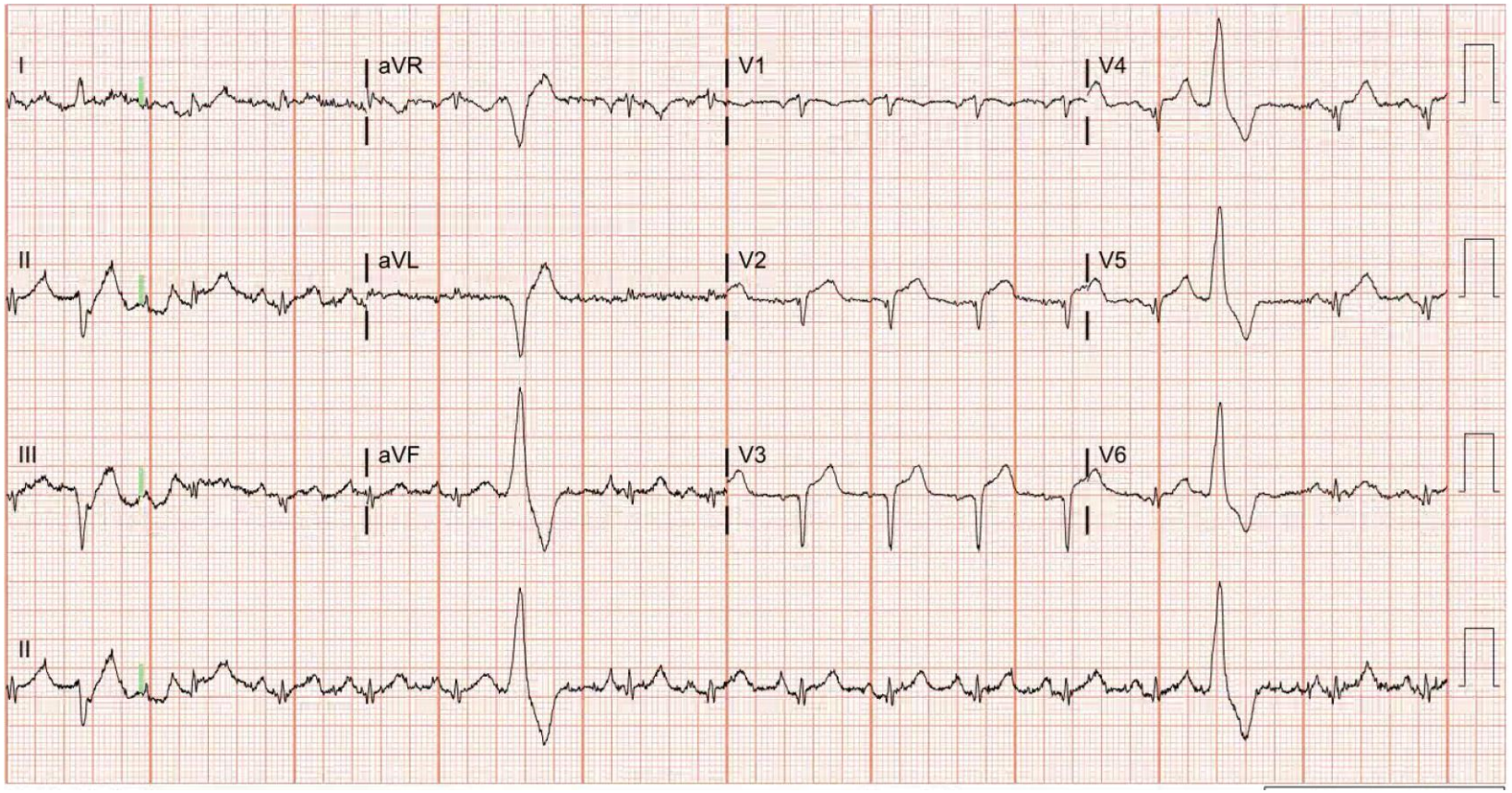
Case

- 80-year-old Farmer with the following medical problems:
- Essential hypertension
- Osteoarthritis of both shoulders
- Former smoker
- He doesn't have a primary care physician
- Poor historian

Case

- The patient presented to a satellite hospital with complaints of chest pain and ECG consistent with acute anterior STEMI.
- He was managed with thrombolysis and was sent to our center for further management.
- He was asymptomatic at arrival to the hospital. The plan was to do an Echocardiogram and Cardiac catheterization the next day
- Labs: Trop 45, WBC 12, Hb 12.5, Cr 1.0,

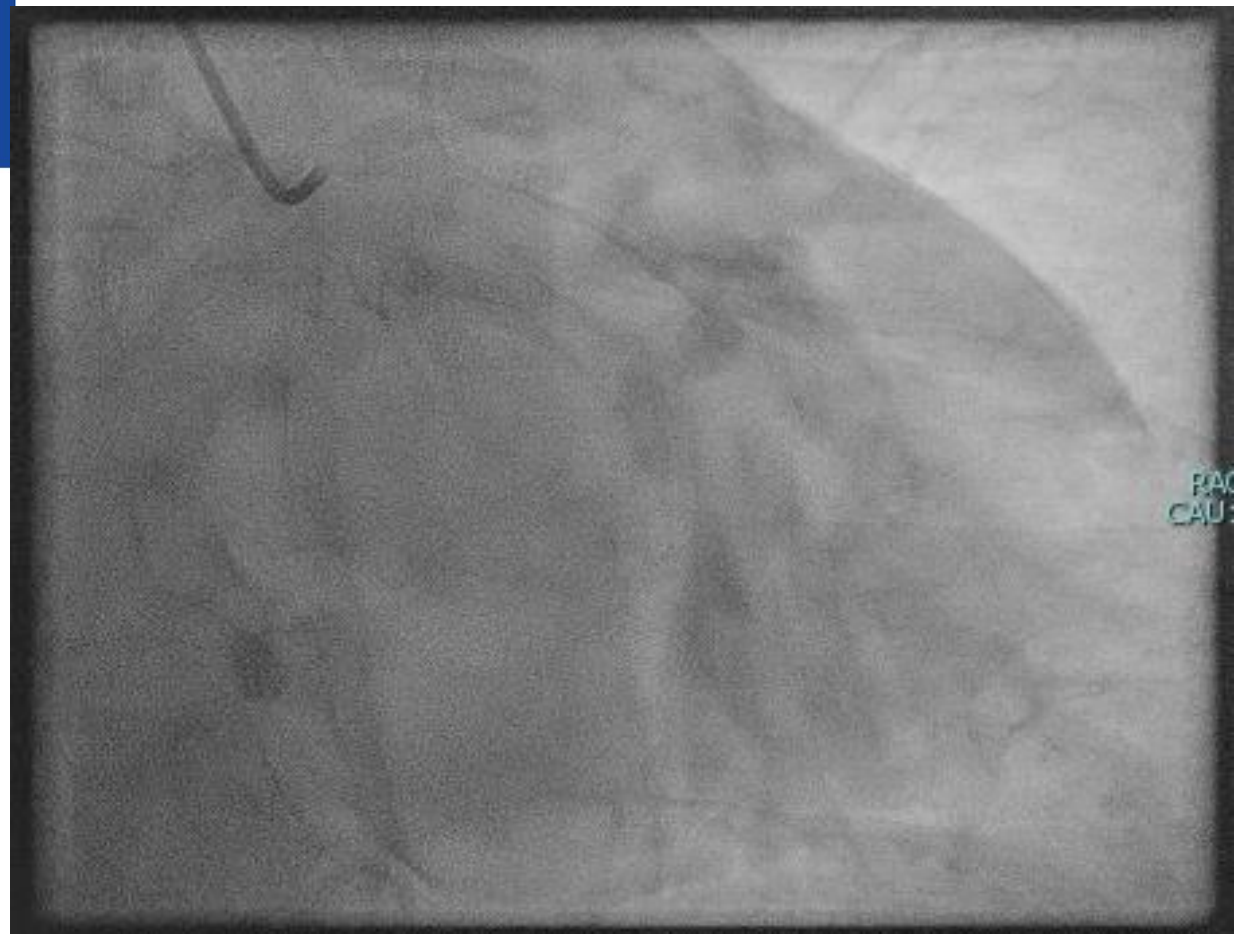
Case

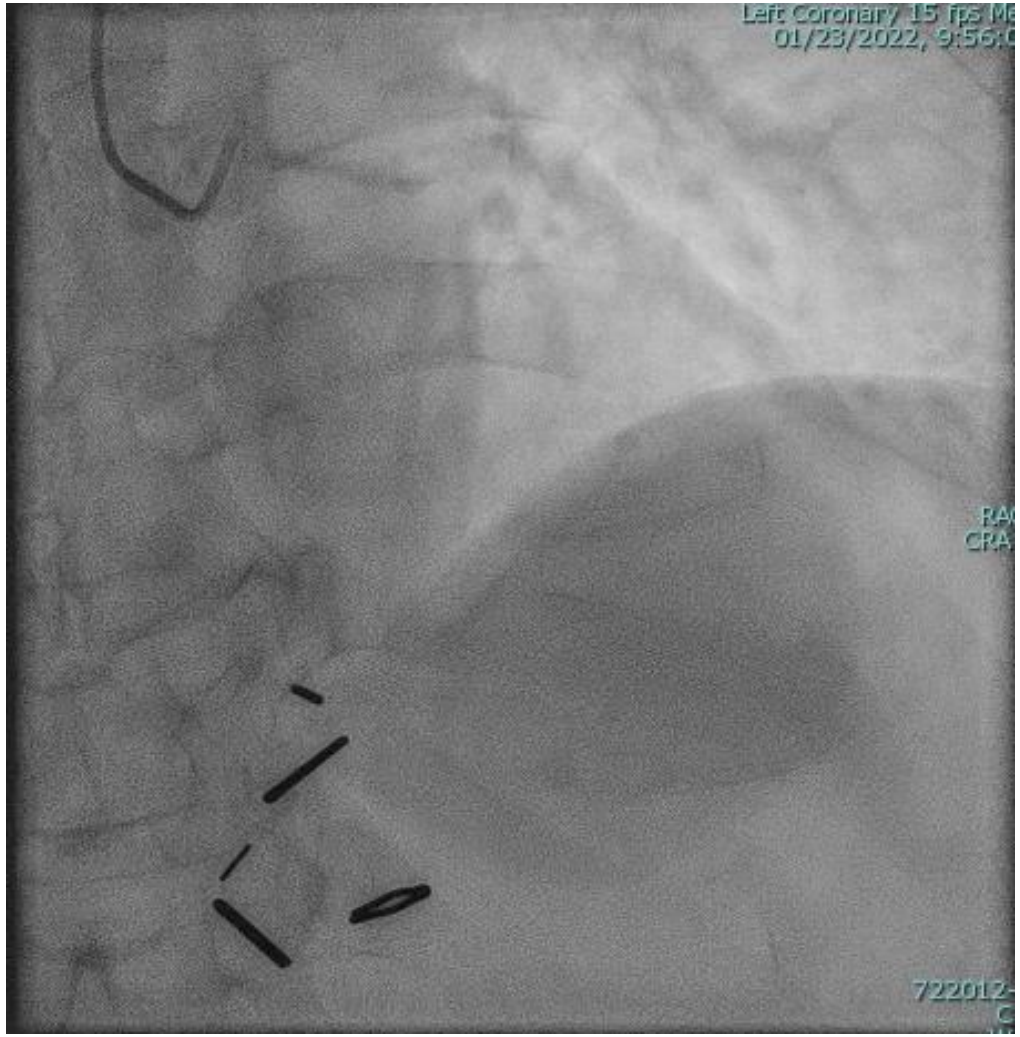


Case

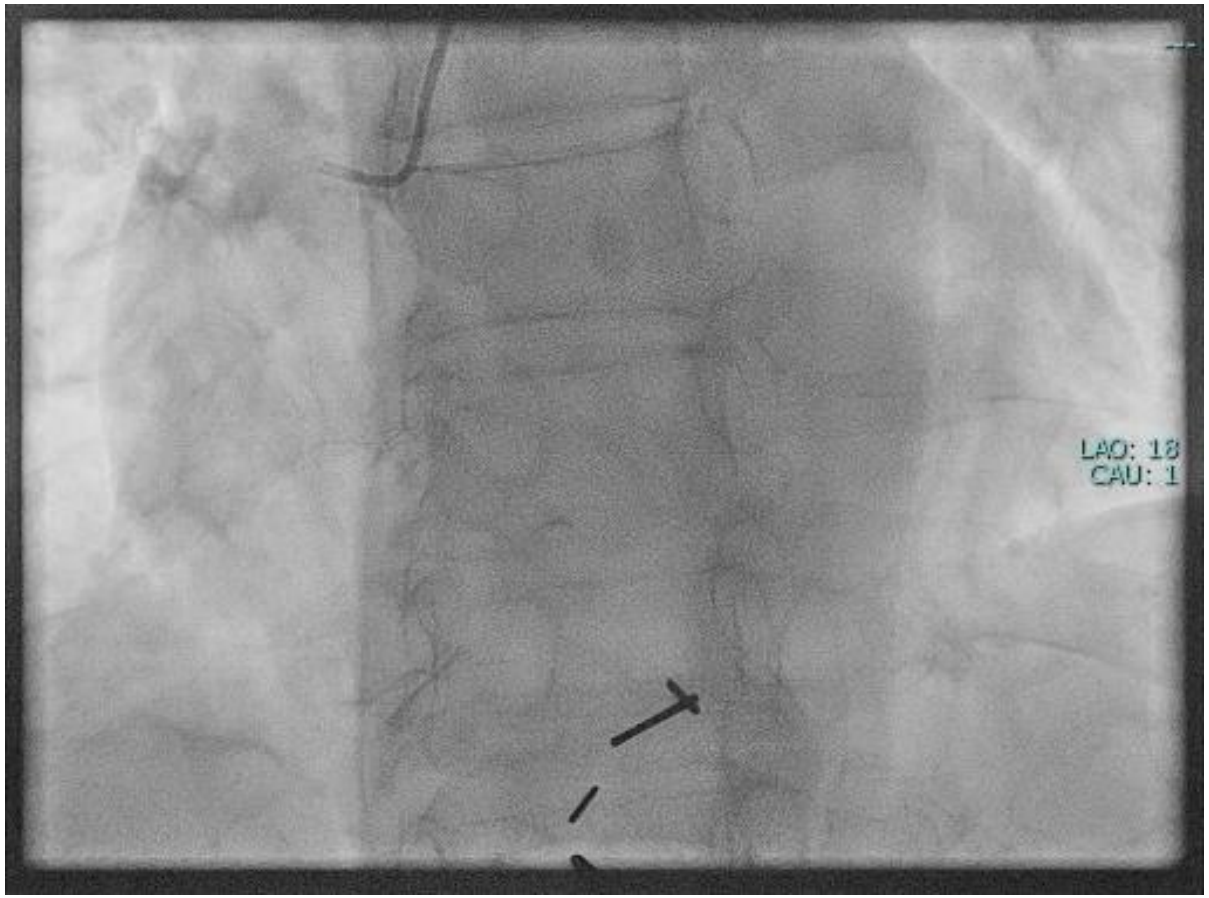
- Unfortunately, he develops chest pain while in the emergency department with no major changes in his ECG and he is taken to the cath lab.

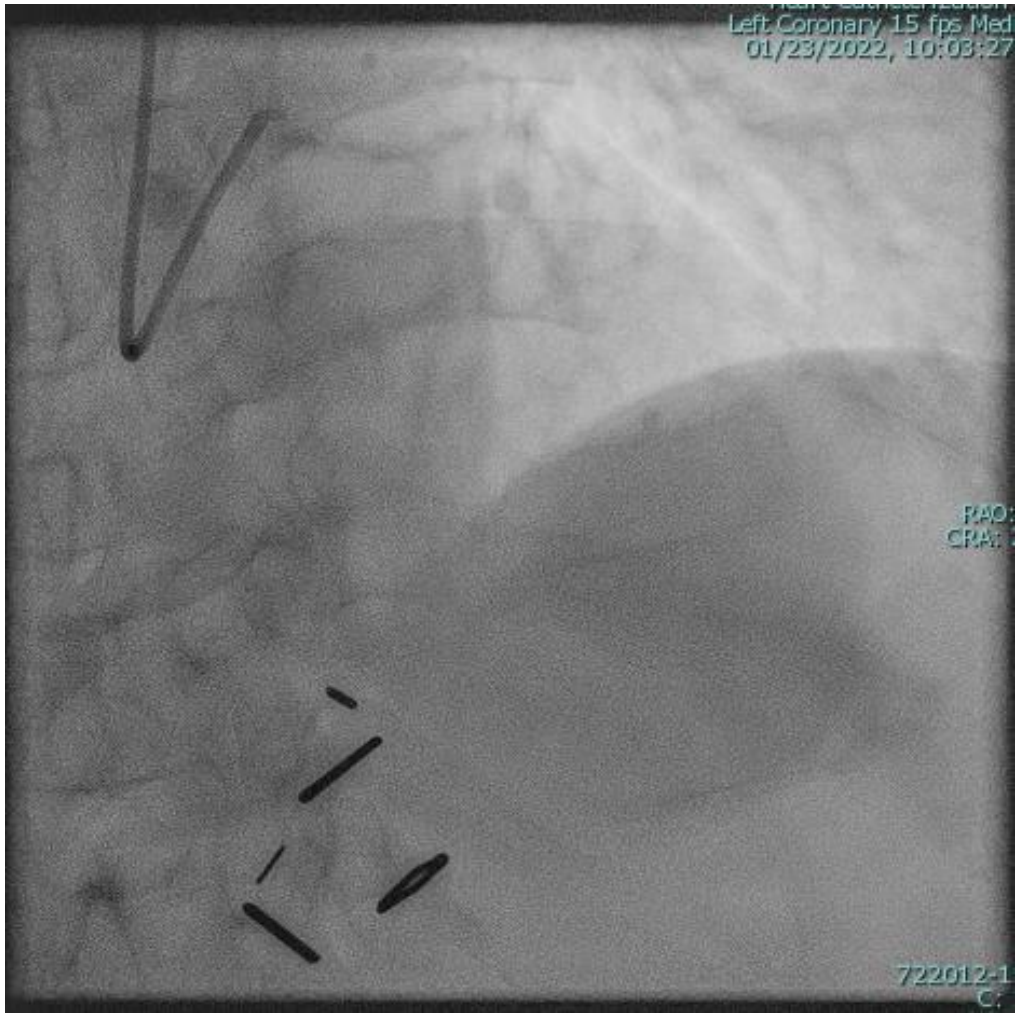
Angiogram



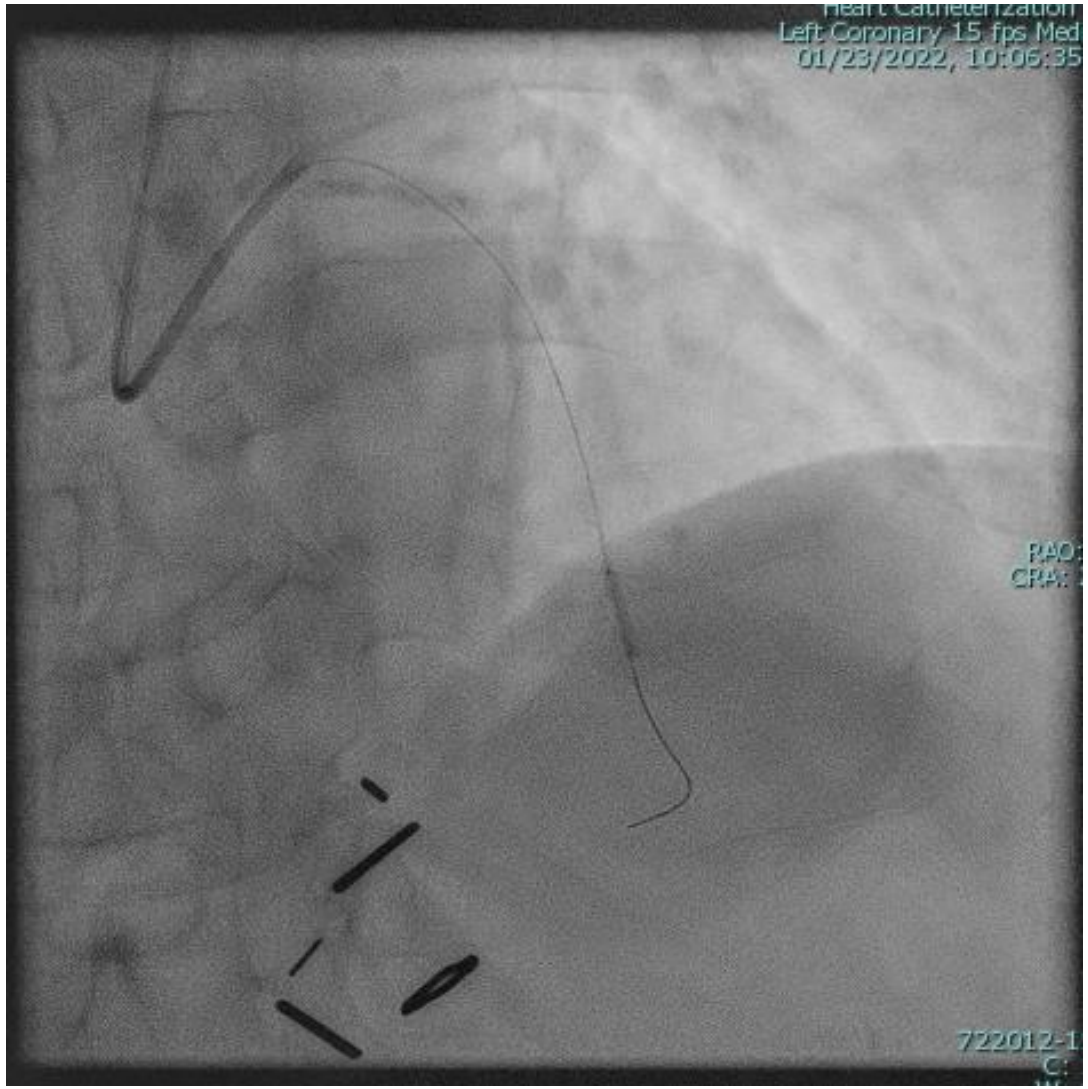


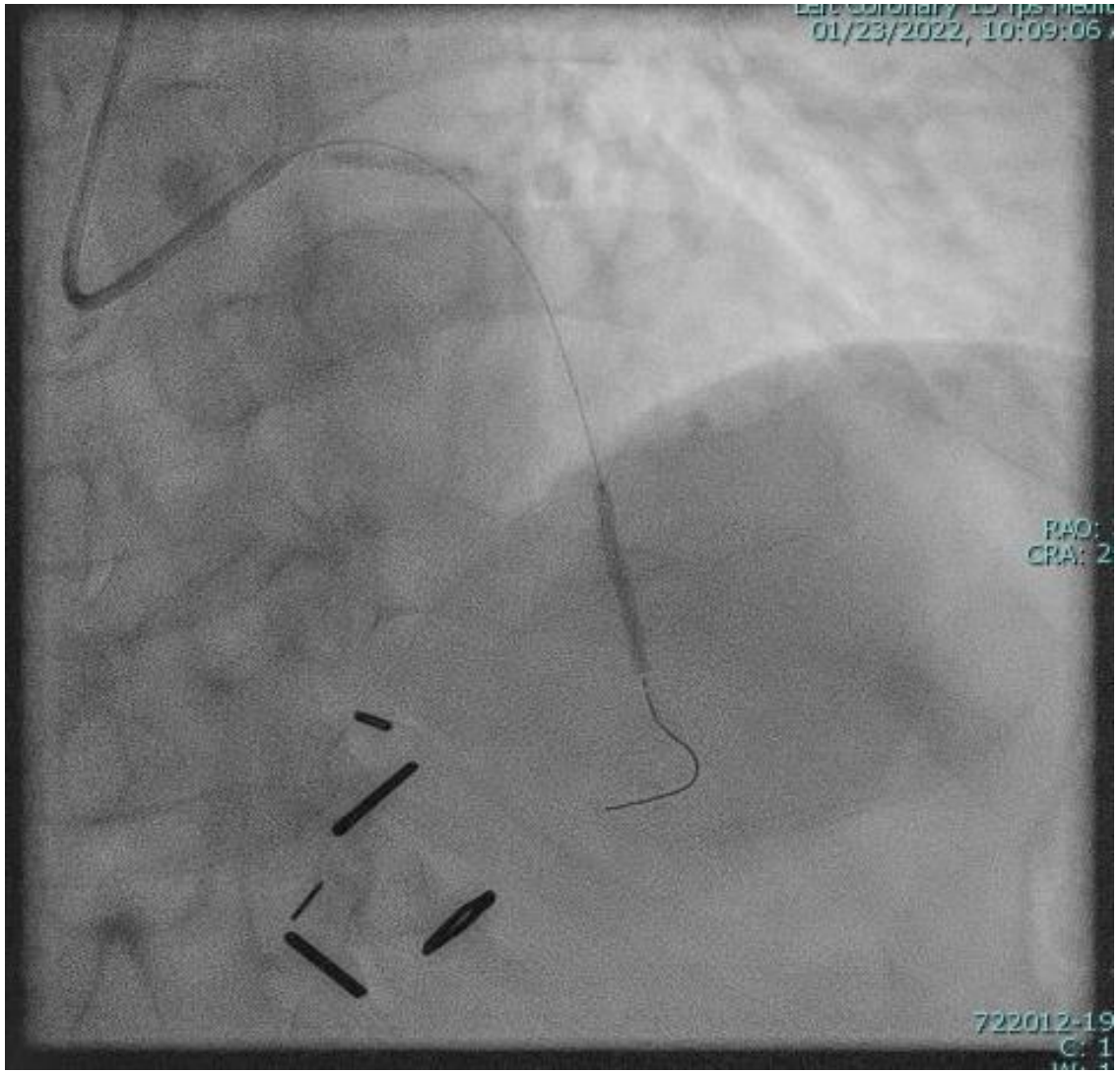
Angiogram





Intervention





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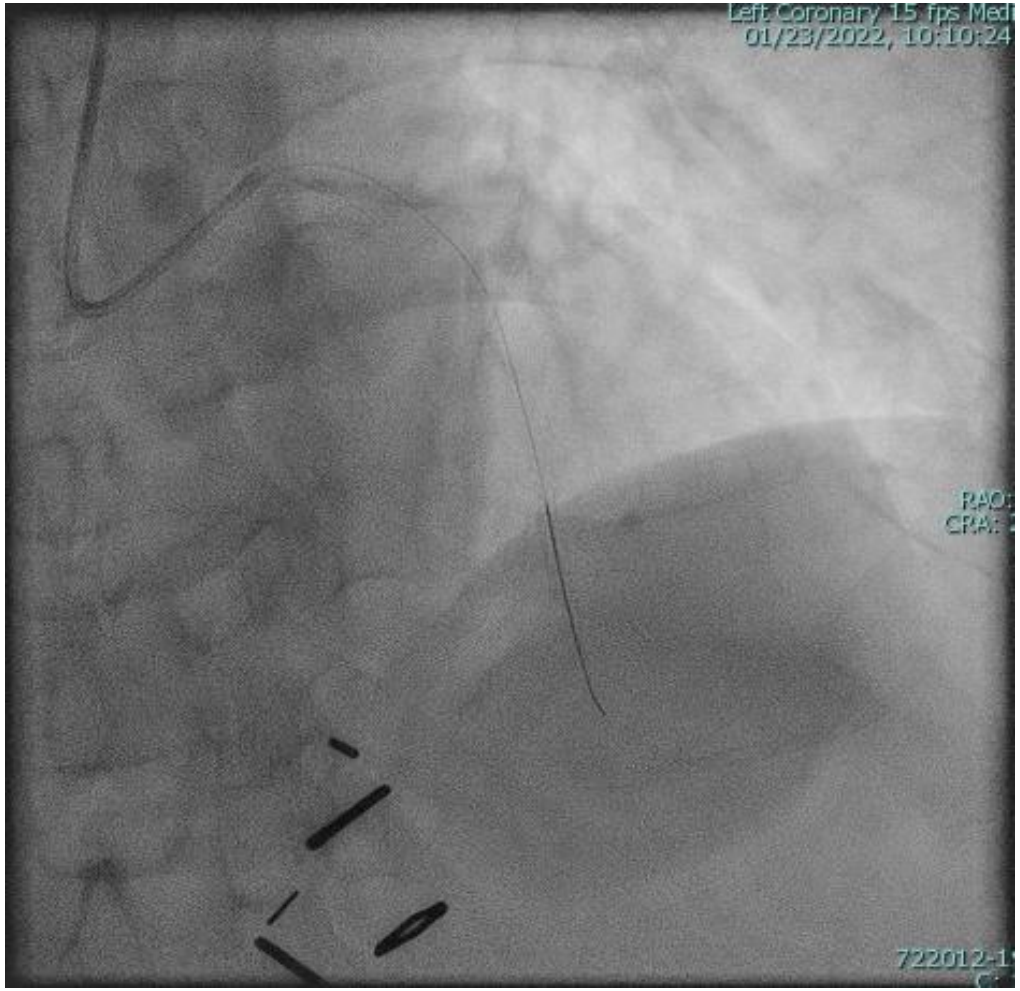
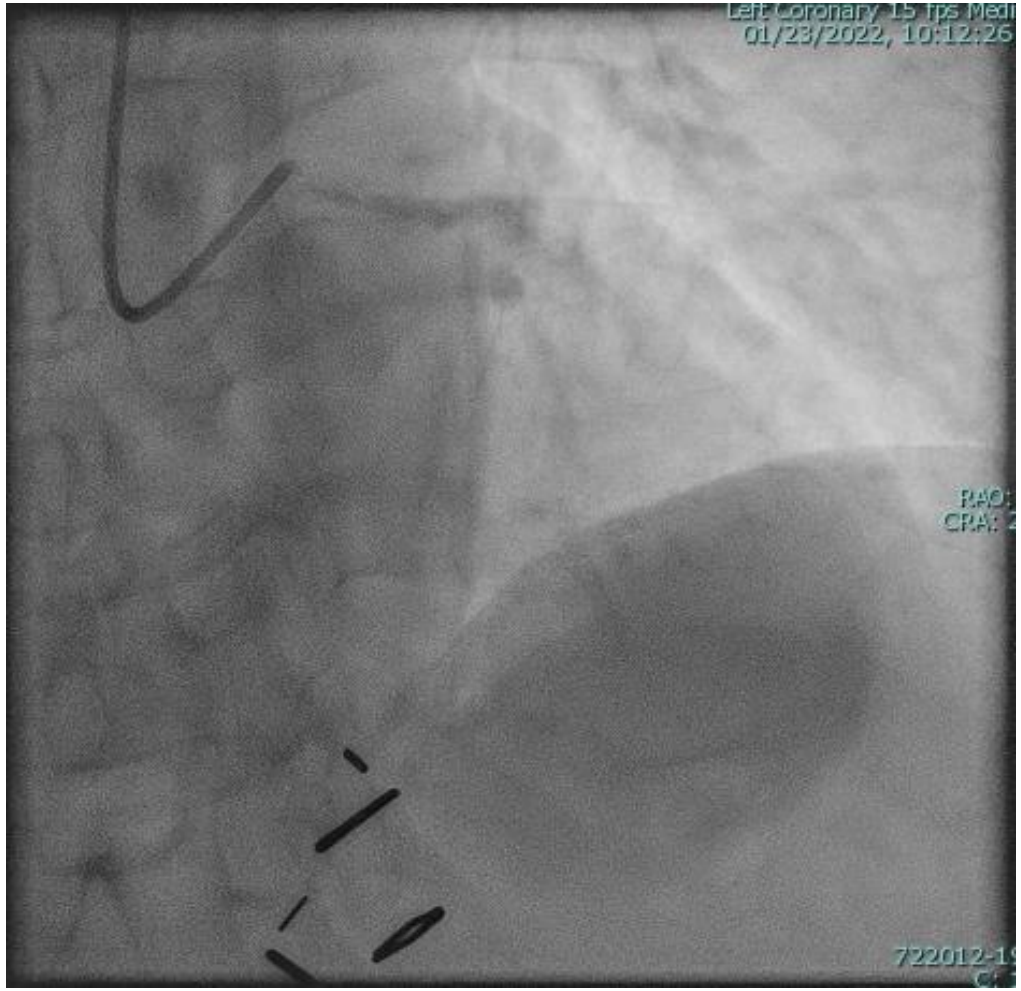
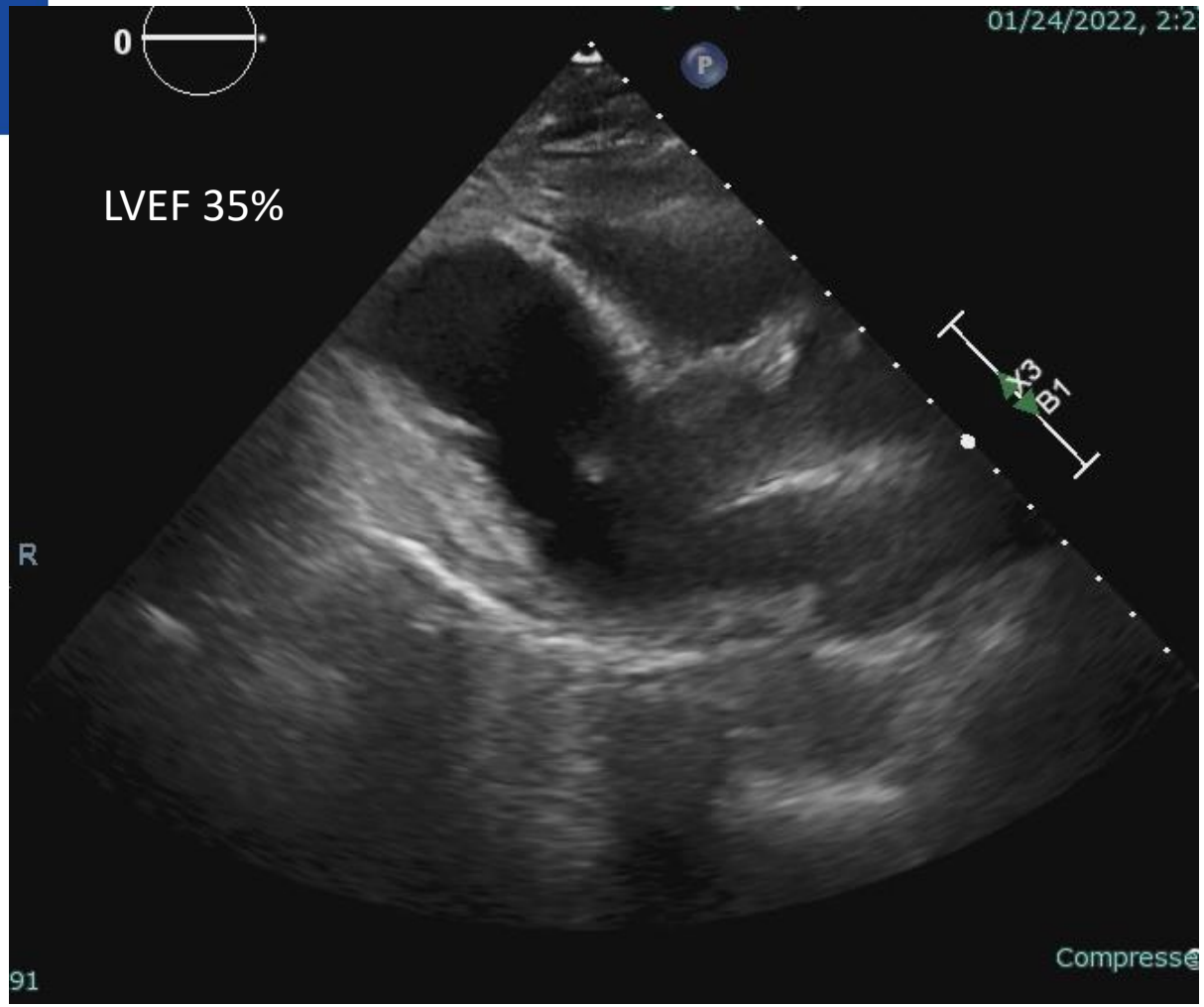
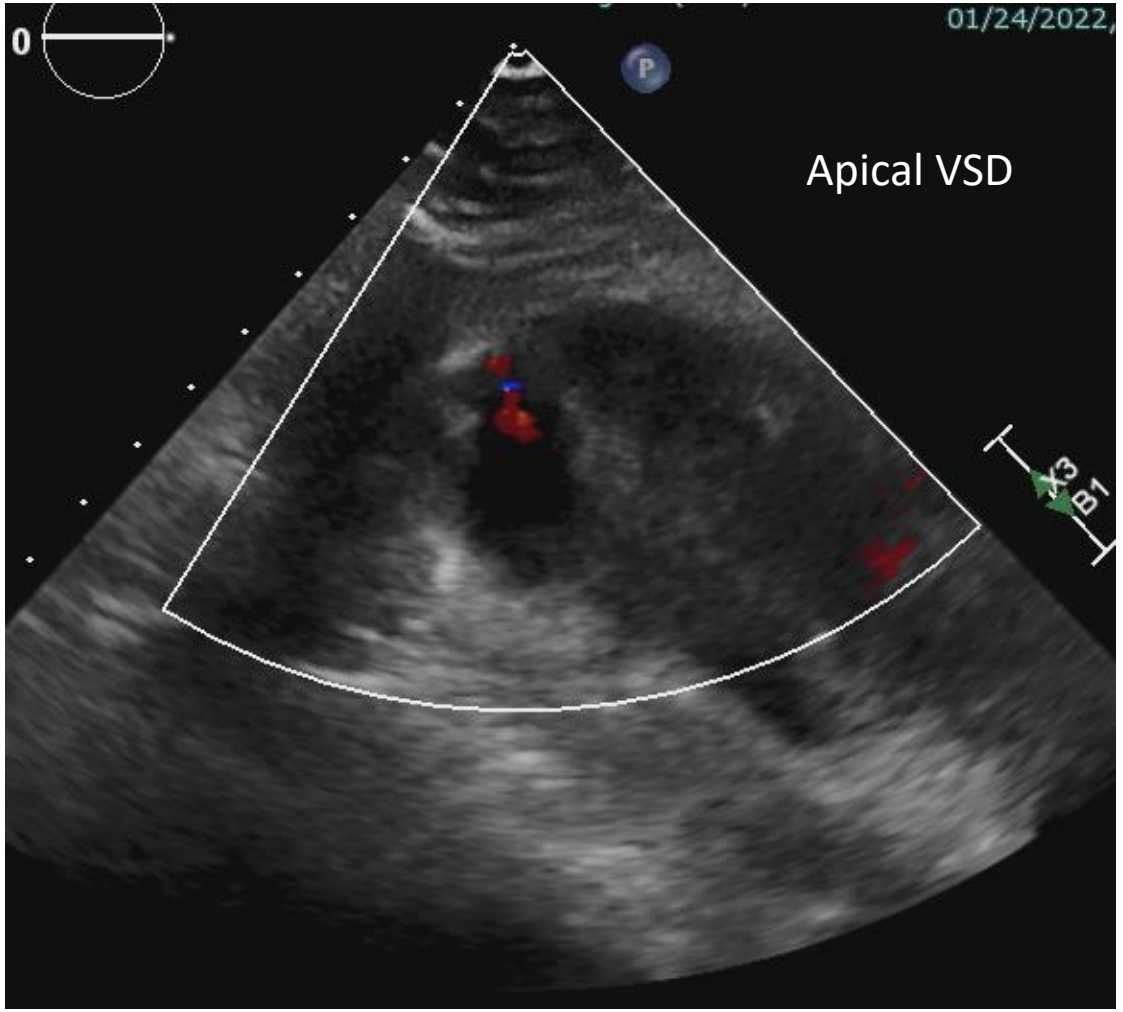




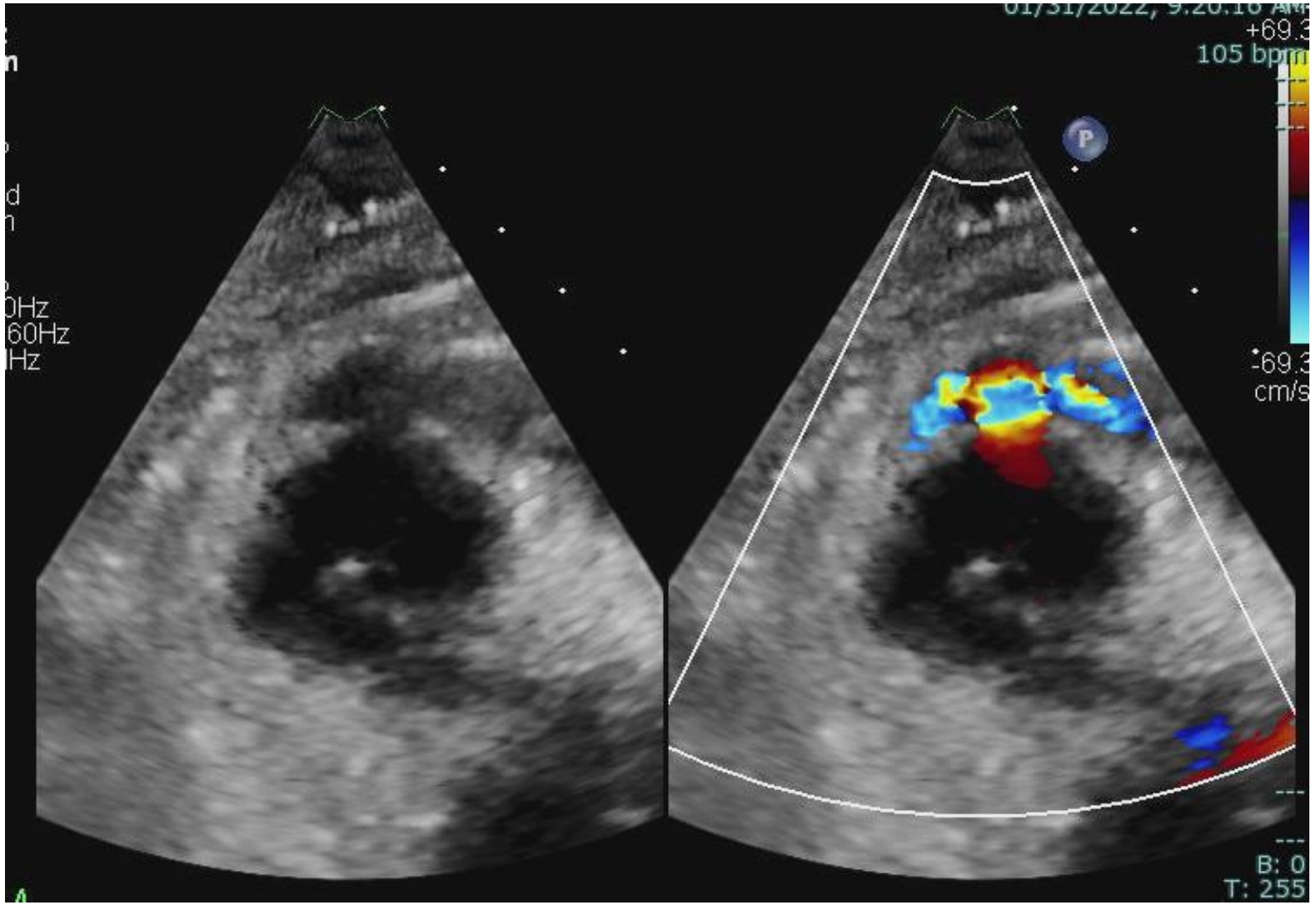
- The patient underwent primary PCI of mid-to-distal LAD.
- The patient was HD stable upon transfer to the CCU.

On postprocedural day 1 the patient developed shortness of breath and a new murmur.





Echocardiogram 1 week-post-procedure (1/31/22)



Post-MI Ventricular Septal Defects

Risk factors: Female gender, older age, hypertension, anterior MI.

The use of thrombolysis seems to be a risk factor for the development of **early** post-MI VSD.

Timing and approach of VSD repair continues to be a challenge due to risk of decompensation while waiting for scar formation and healing.

Post-MI Ventricular Septal Defects

Prior to thrombolysis incidence approx. 2%, after thrombolysis and PCI incidence approx. .3%.

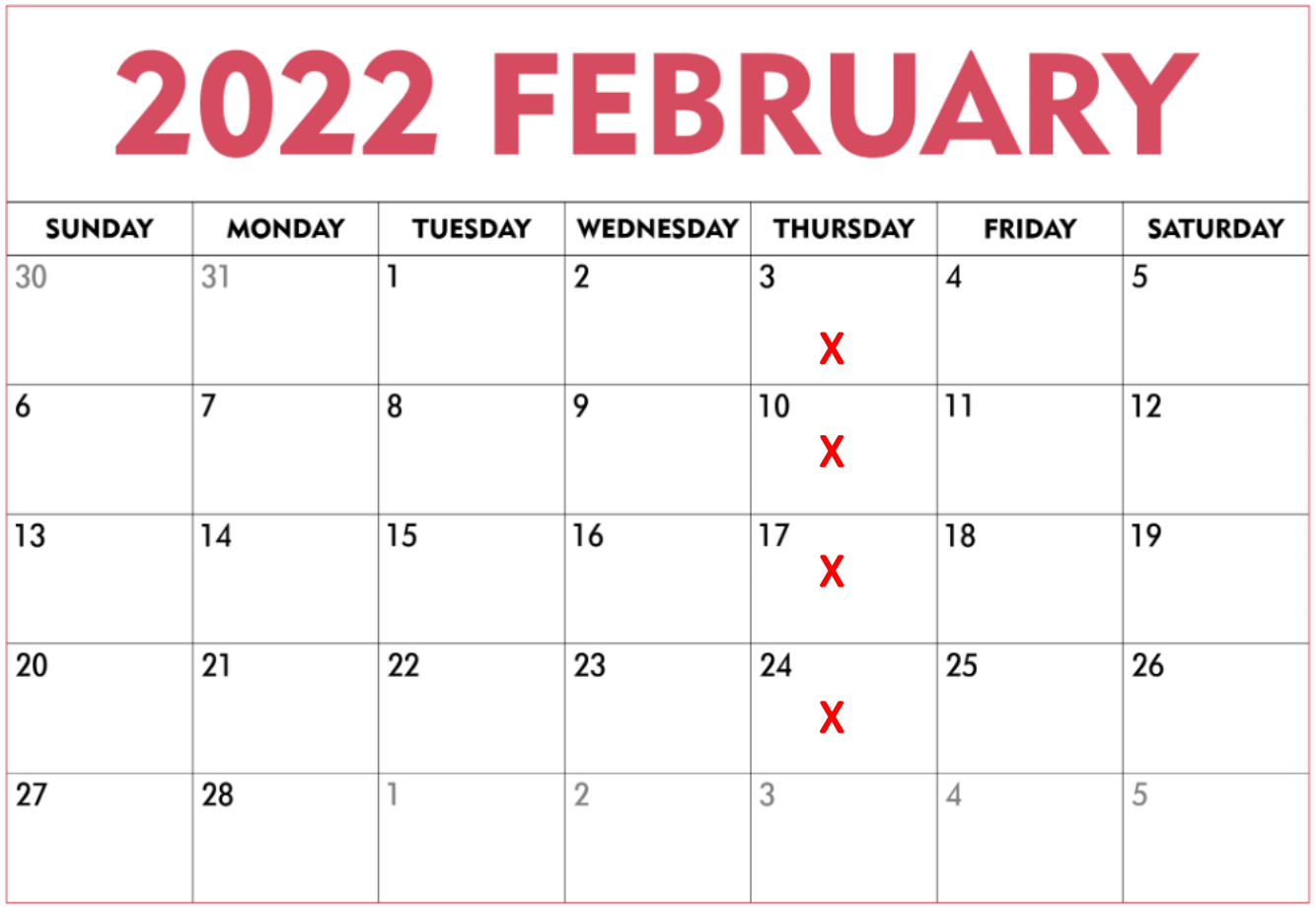
GRACE study .7% incidence with PCI and 1.1% with thrombolysis.

2/3 of post-MI VSD located in the anterior septal wall and 1/3 inferior (post) septum.

Post-MI VSD due to LAD infarct tend to be located more apical in the ant septum

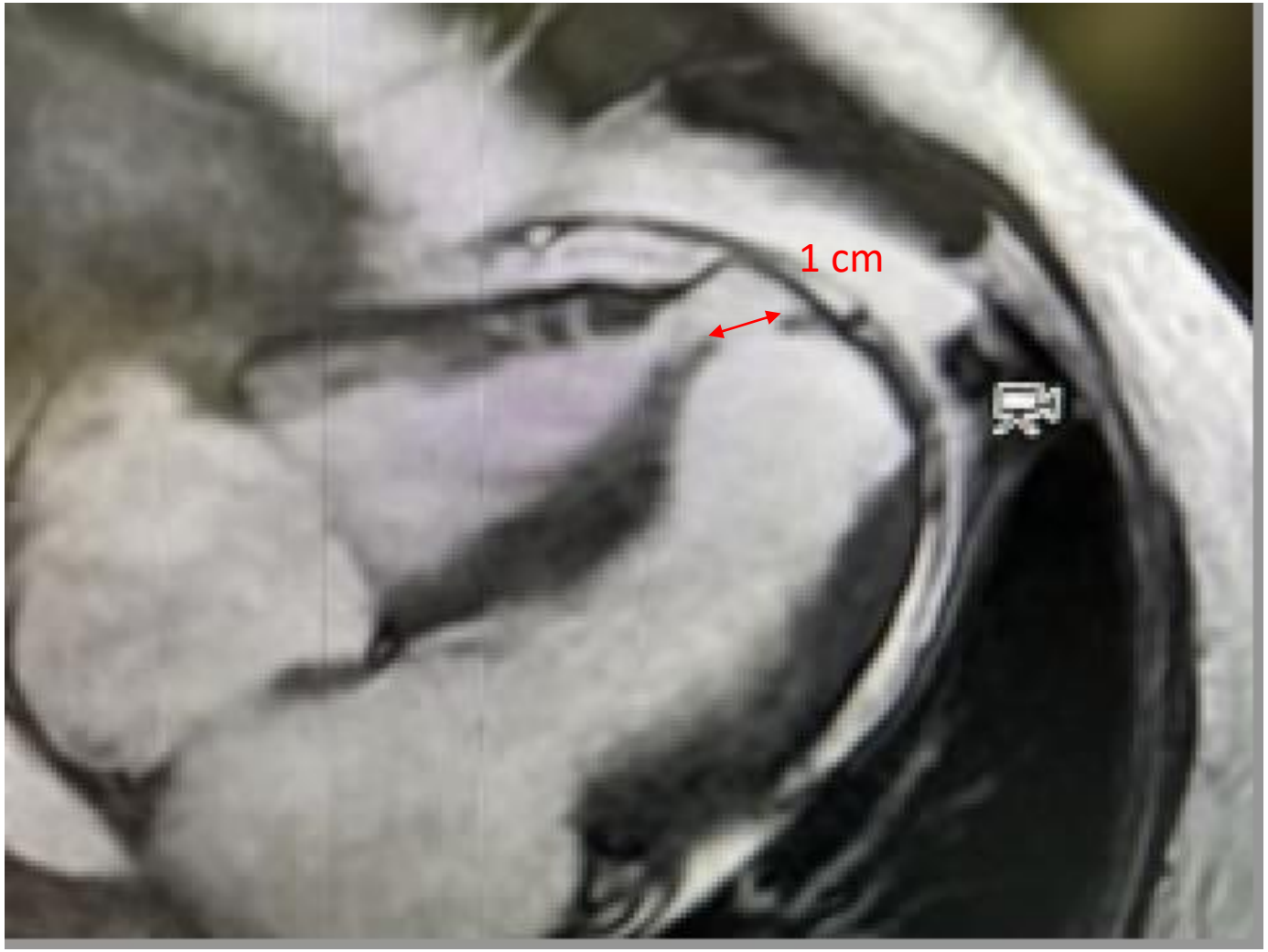
Post-MI VSD due to RCA infarct are located basal in the inferior septum and can be associated to ischemic MR.

Case



- He was followed in the office weekly for 6 weeks while we allowed the ventricle to heal on its own
- On his last visit, he was planned for closure of the ventricular septal defect 2 weeks later (week 8).

Cardiac MRI



Relevant History & Clinical Presentation

OW: An 80-year-old male farmer from a rural area 100 miles from our center with a history of HTN/smoker:

Presenting Symptoms

- Intermittent chest pain
- **Acute MI** diagnosed at satellite hospital
- Received TNK and transferred for Cath to our center.

PCI

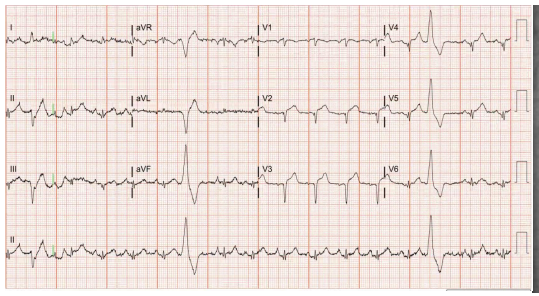
- **Primary PCI** was initially deferred as the patient was without CP and there were Q-waves on ECG. Later, the pt. developed CP and stenting of LAD was performed
- End diastolic pressure 25 mm
- Stable post procedure

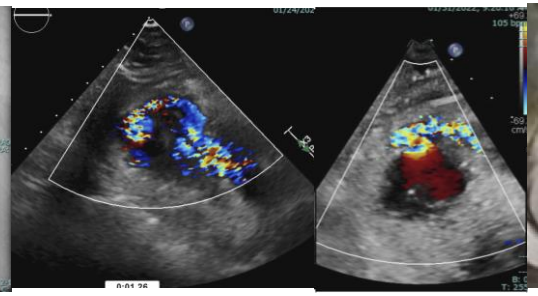
Day 1 Post-Procedure

- Developed a murmur and SOB the next morning
- Echocardiogram:
  - **Apical ventricular septal defect**
  - EF: 35-40%
  - Akinesia of apex
- Treatment with GDMT

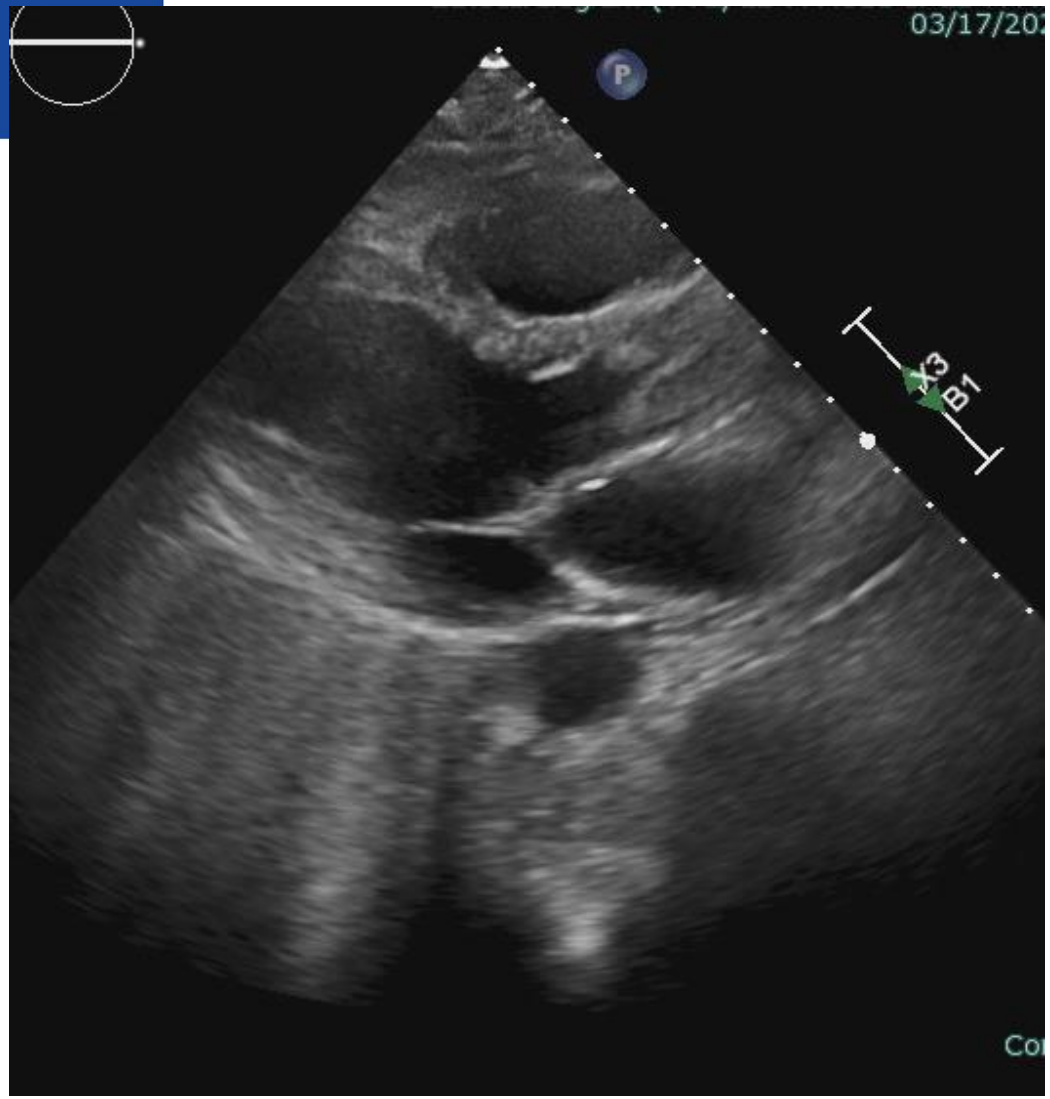
Weekly Follow-up

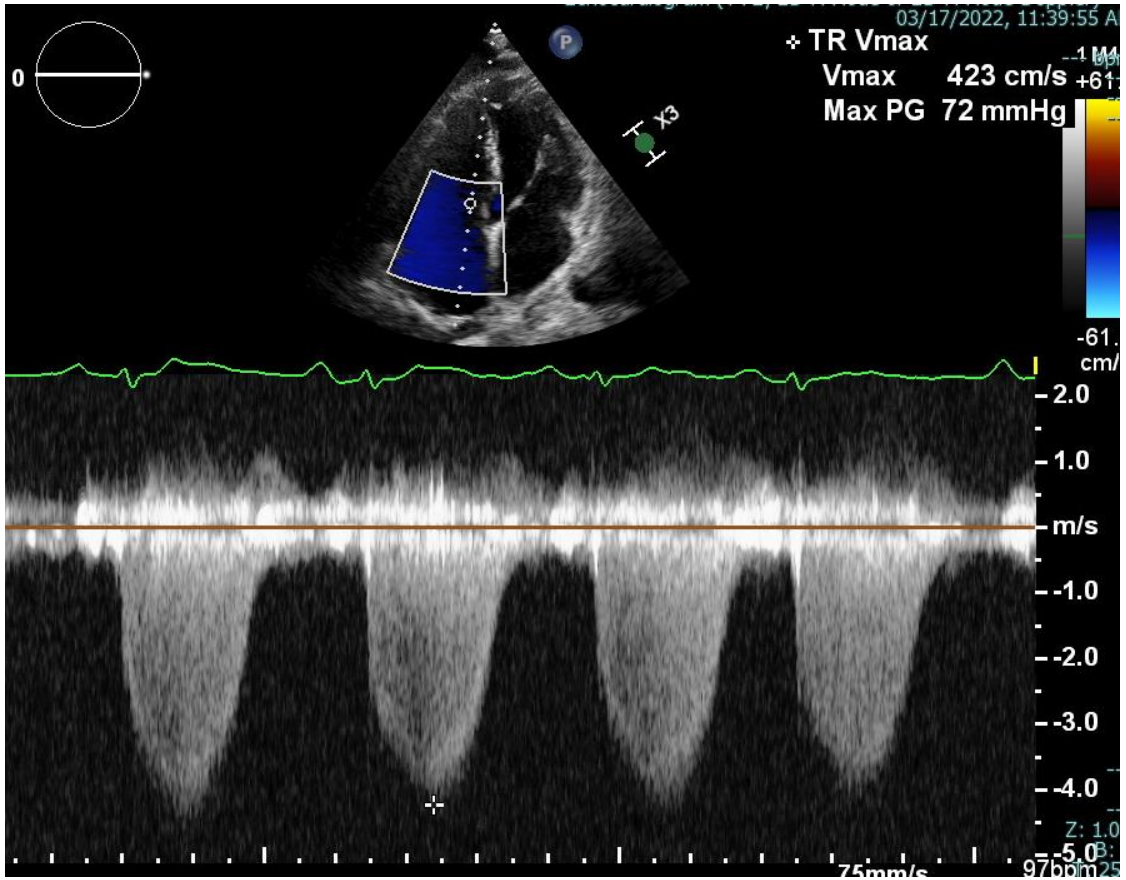
- Weekly follow-up at office for 6 weeks
- VSD closure planned for week 8 post-PCI




Echocardiogram 7 weeks after STEMI (3/17/2022)

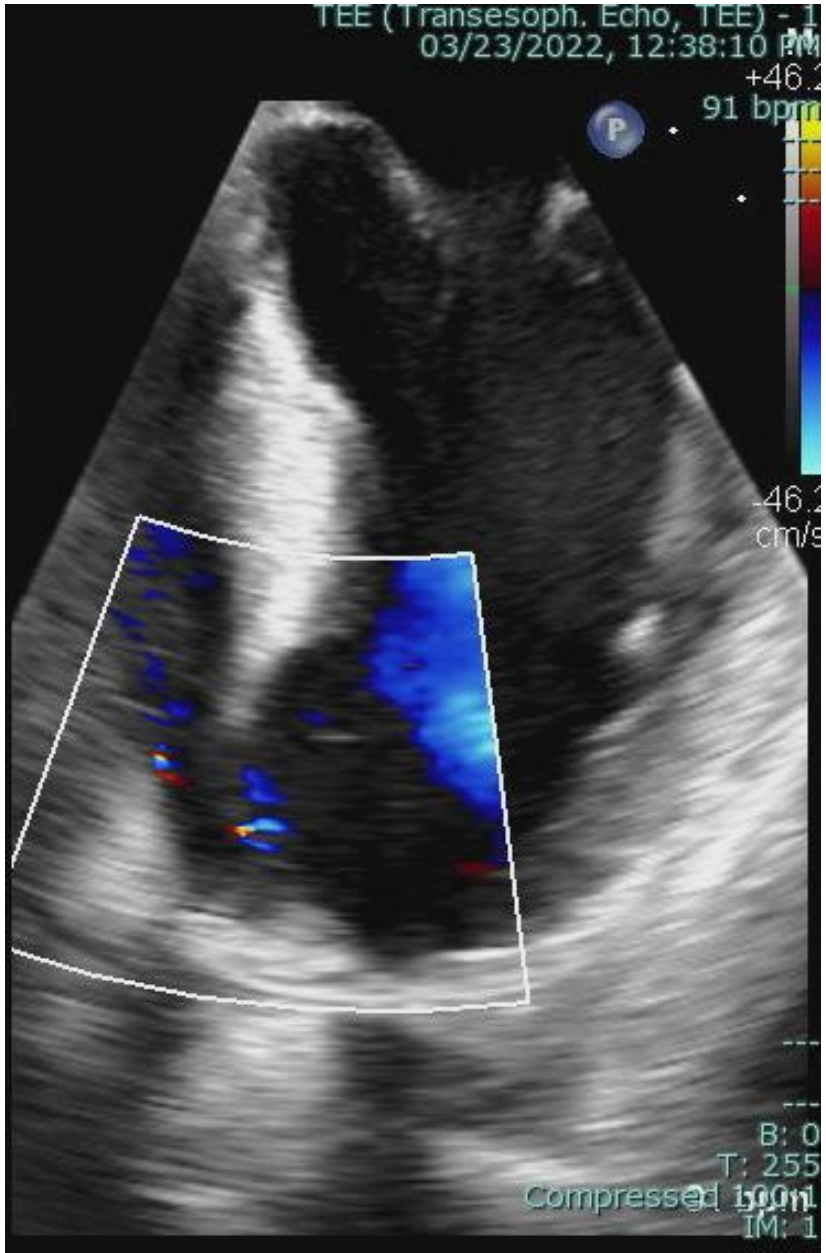




Case

- The patient presented to the emergency department before his procedure date in cardiogenic shock
- Required a balloon pump qp/qs 1.5 at the time.
- After stabilization and diuresis, he underwent emergent ventricular septal defect closure

VSD closure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T: 255
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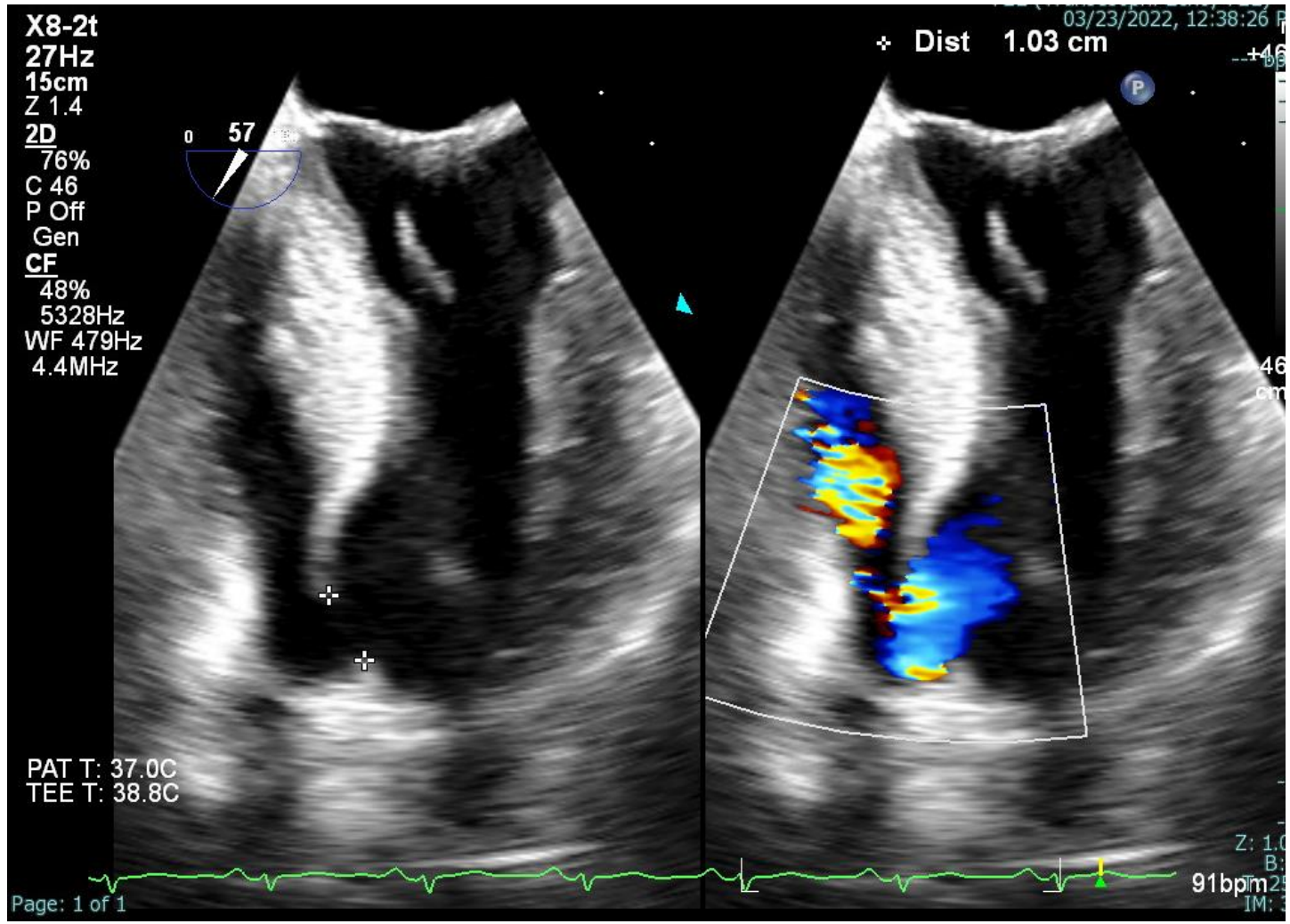
IM: 1


X8-2t
27Hz
15cm
Z 1.4
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76%
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P Off
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57
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03/23/2022, 12:38:26 PM
PAT T: 37.0C
TEE T: 38.8C
Page: 1 of 1
91bpm

VSD closure


3D Beats 1
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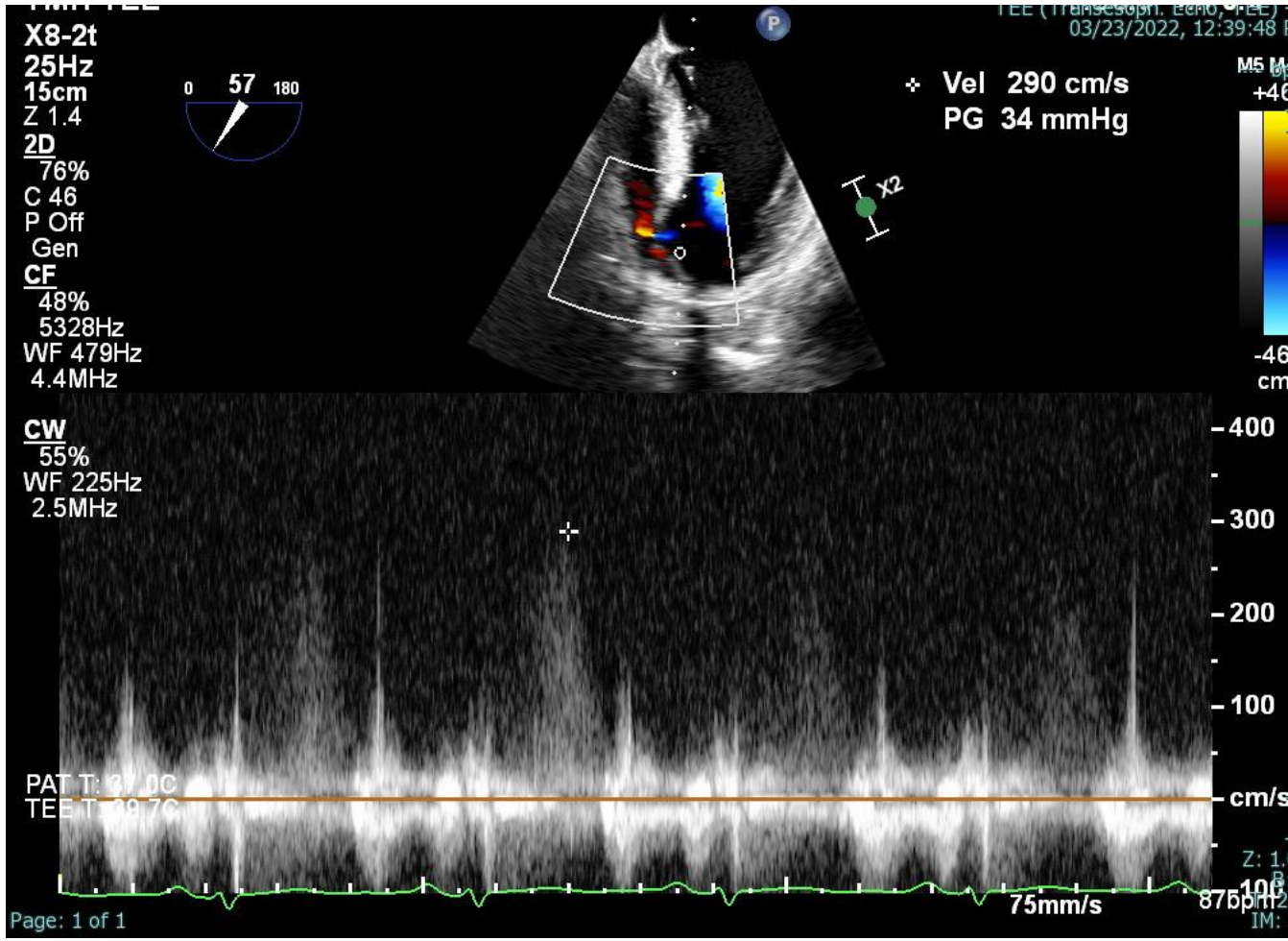
TIS0.2
TEE (Transesoph. Echo, TE
03/23/2022, 12:53:
87
37.0C
39.4C
Compressed


X8-2t
25Hz
15cm
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2D
76%
C 46
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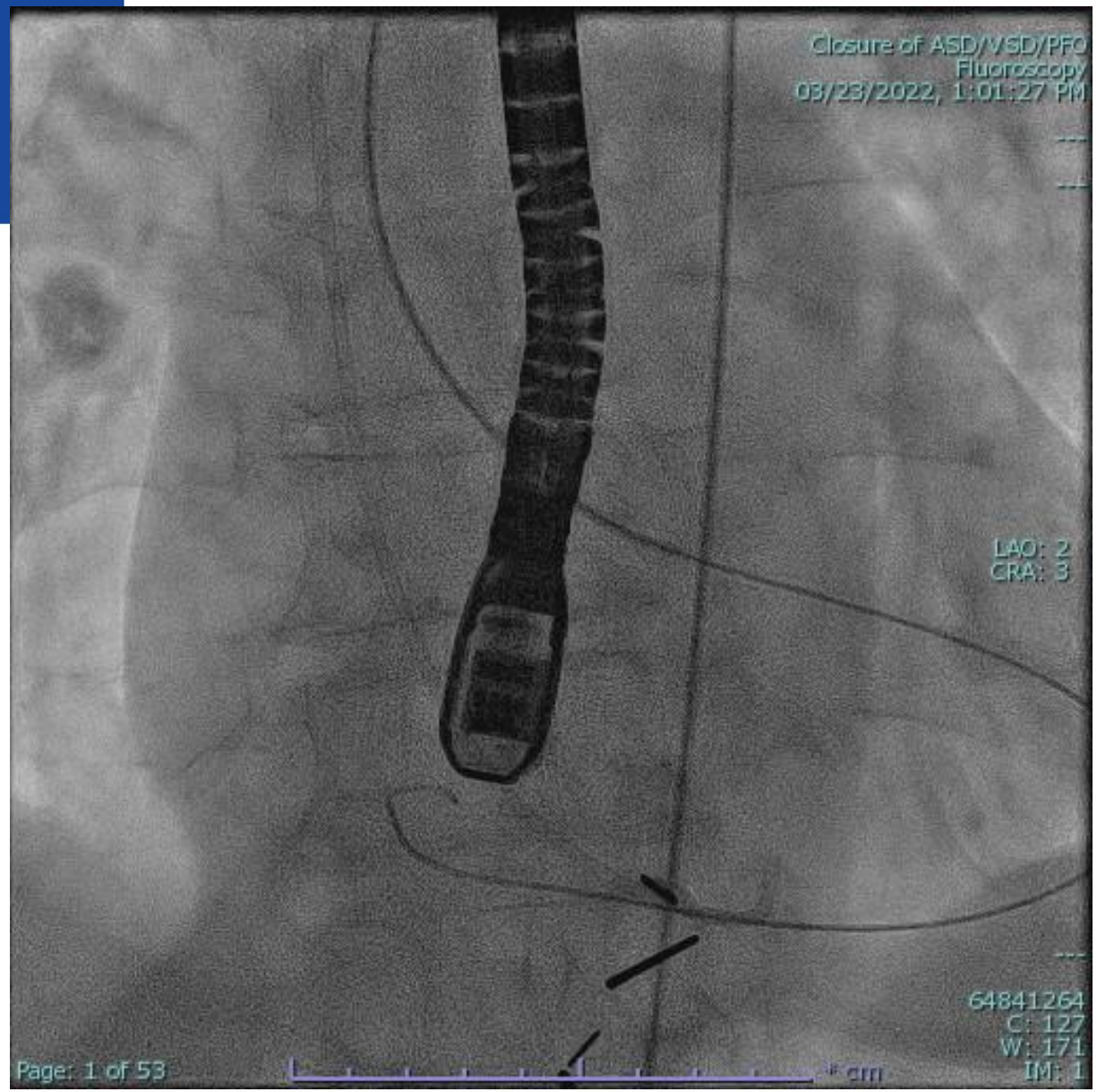
Page: 1 of 1

VSD closure


Closure of ASD/VSD/PFO
Fluoroscopy
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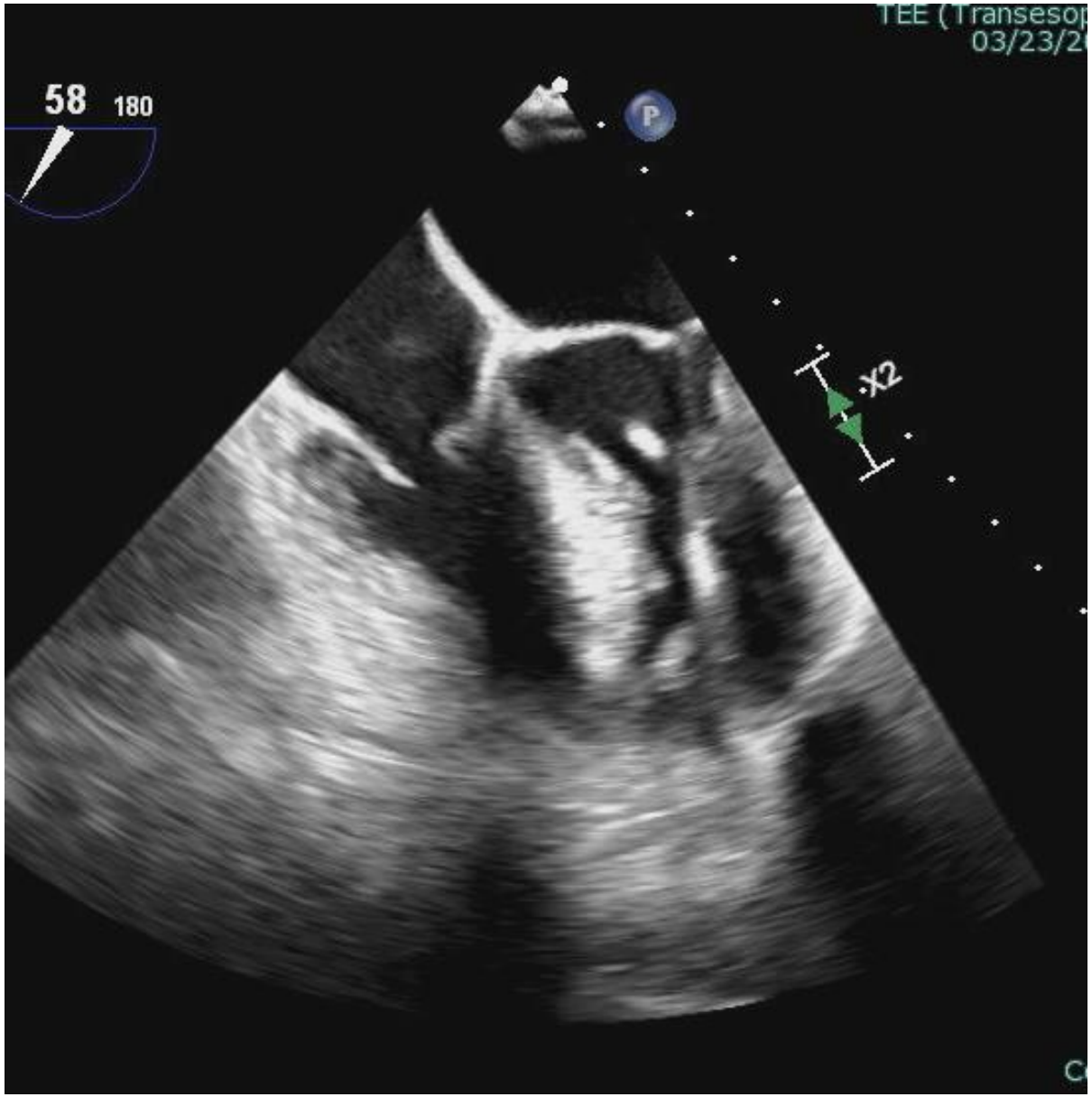
LAO: 2
CRA: 3
64841264
C: 127
W: 171
IM: 1
Page: 1 of 53


58
180
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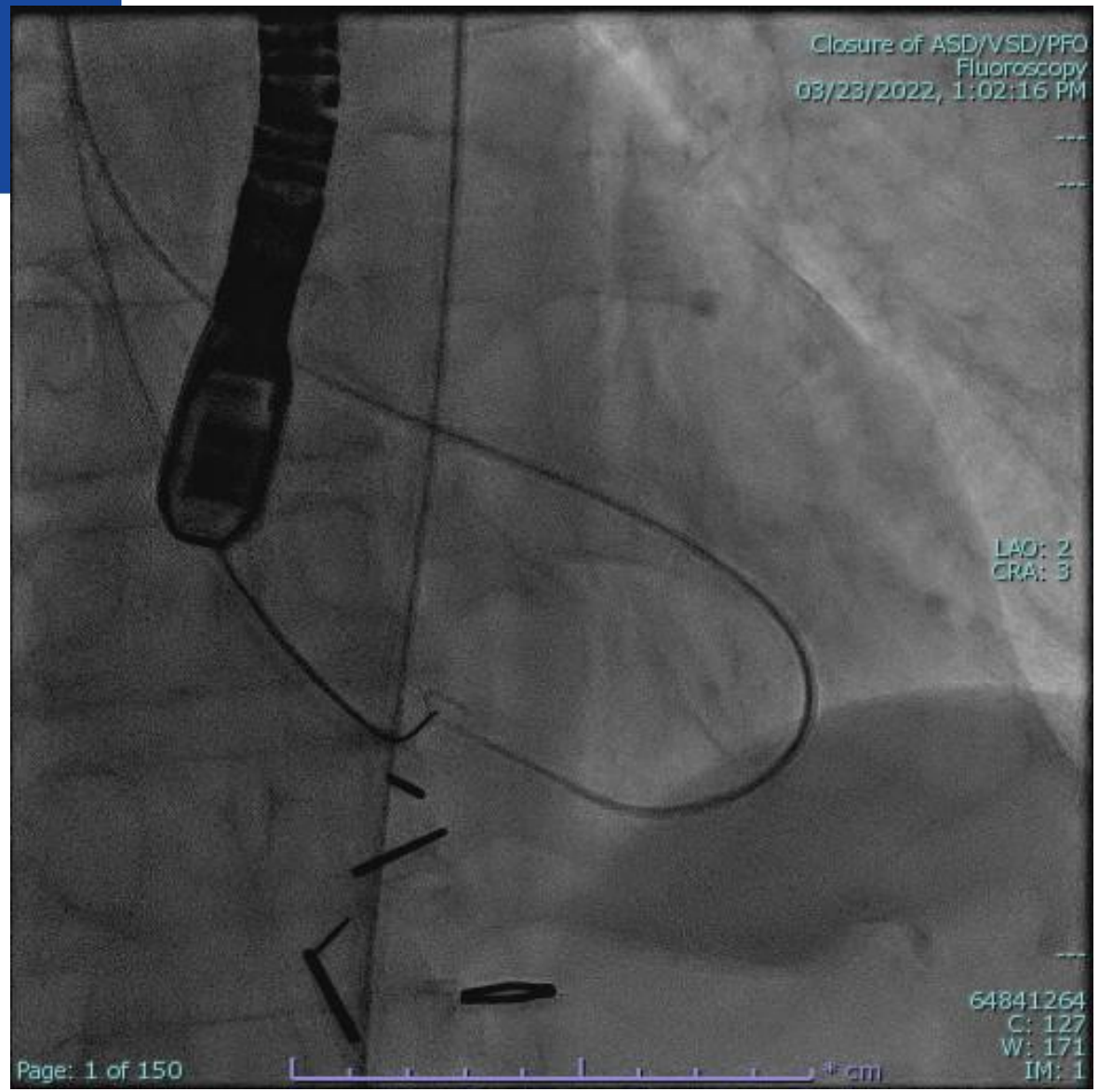
VSD closure


Closure of ASD/VSD/PFO
Fluoroscopy
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CRA: 3
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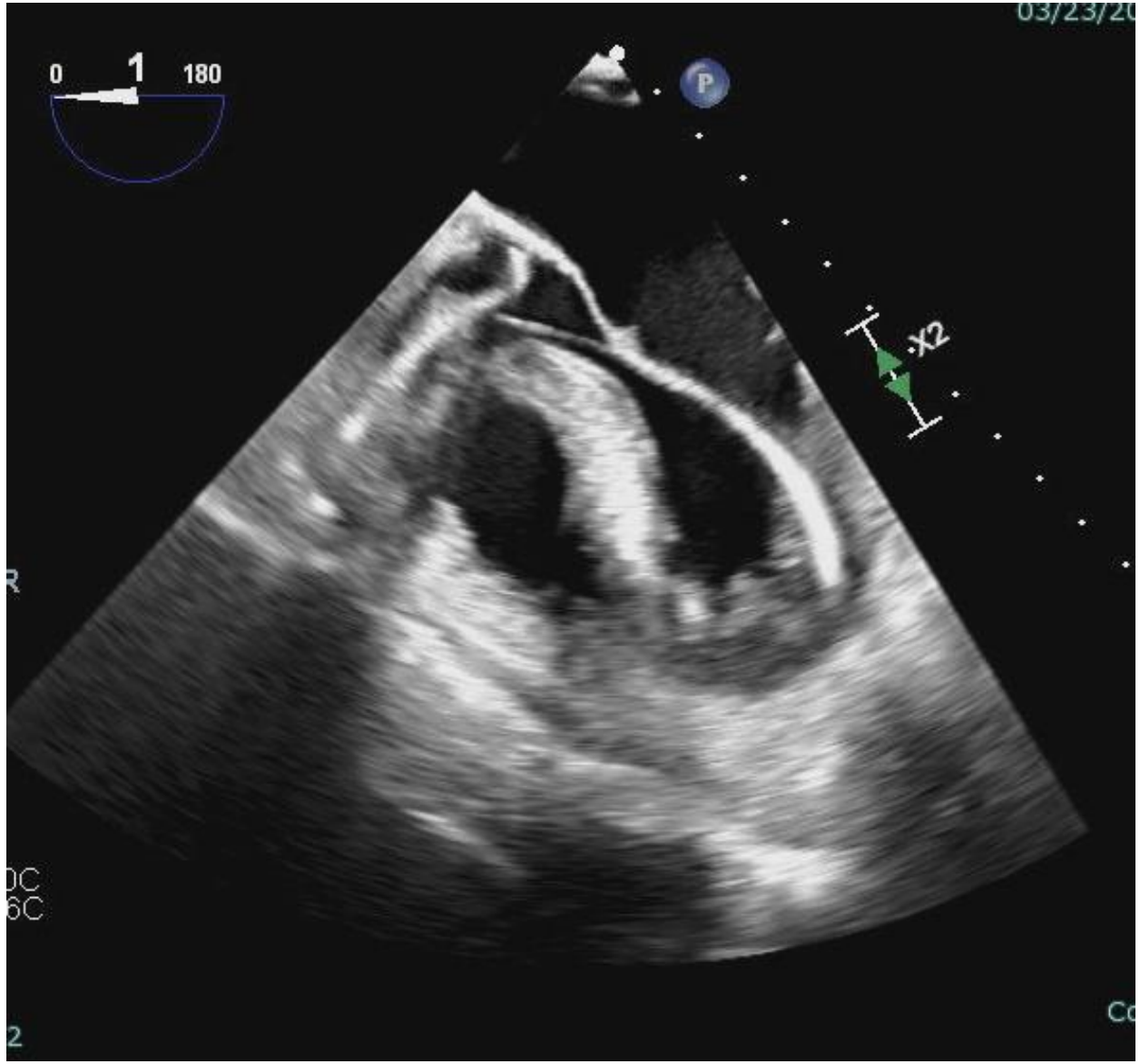
IM: 1
Page: 1 of 150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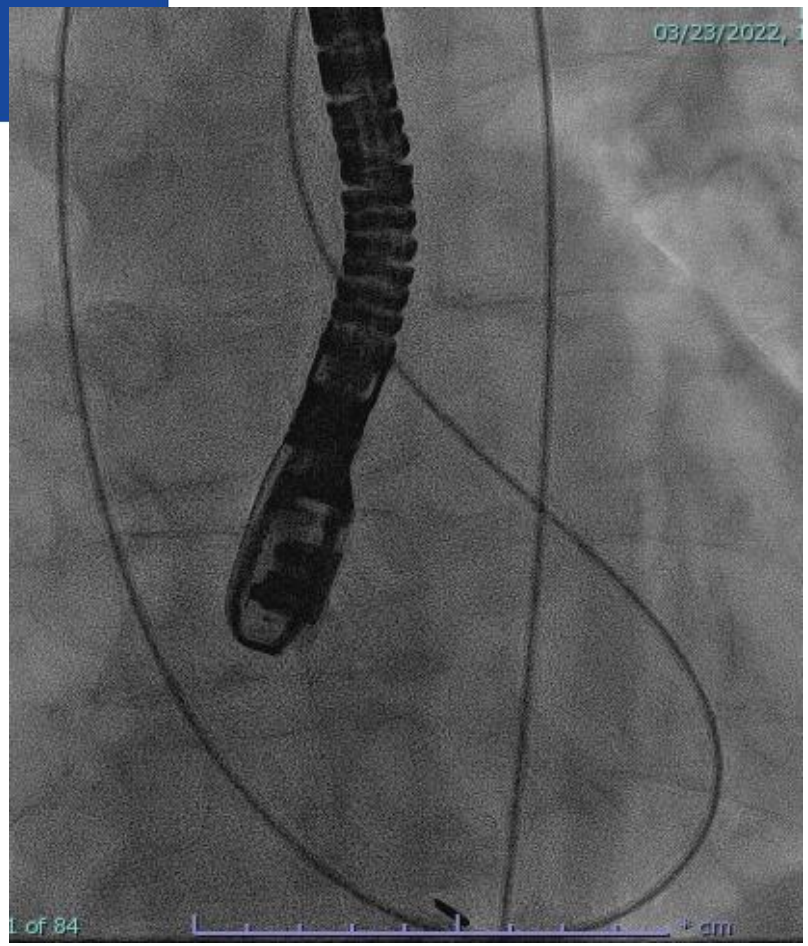
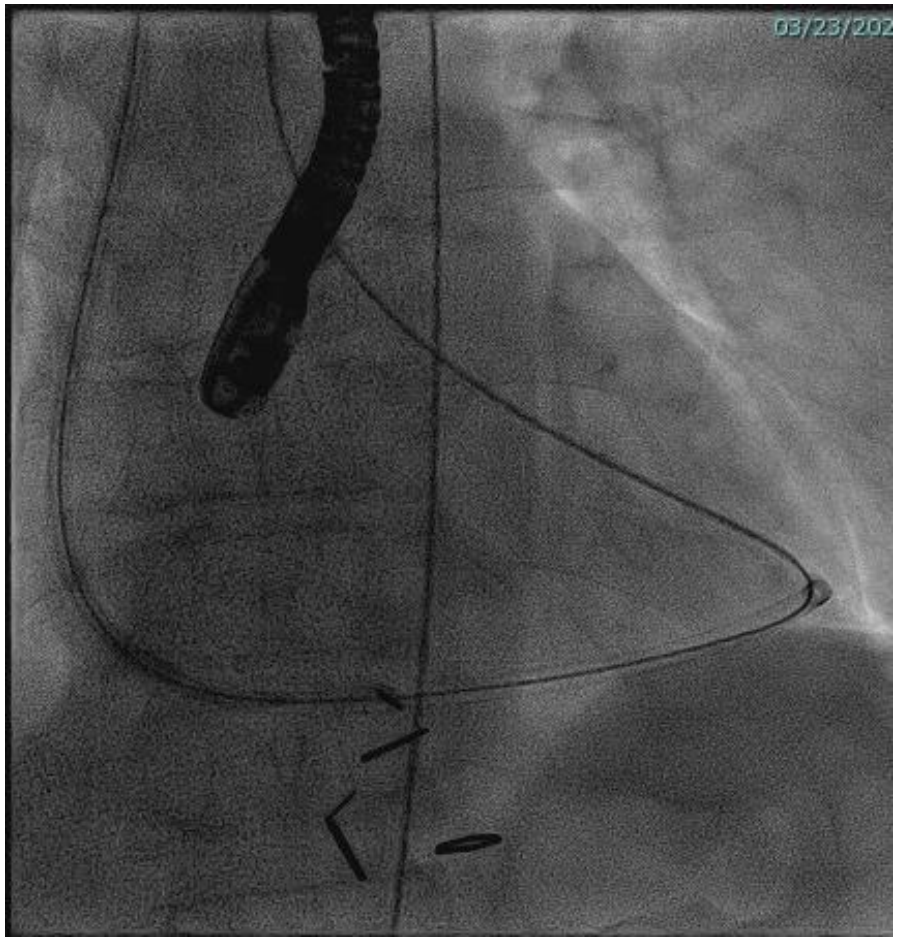
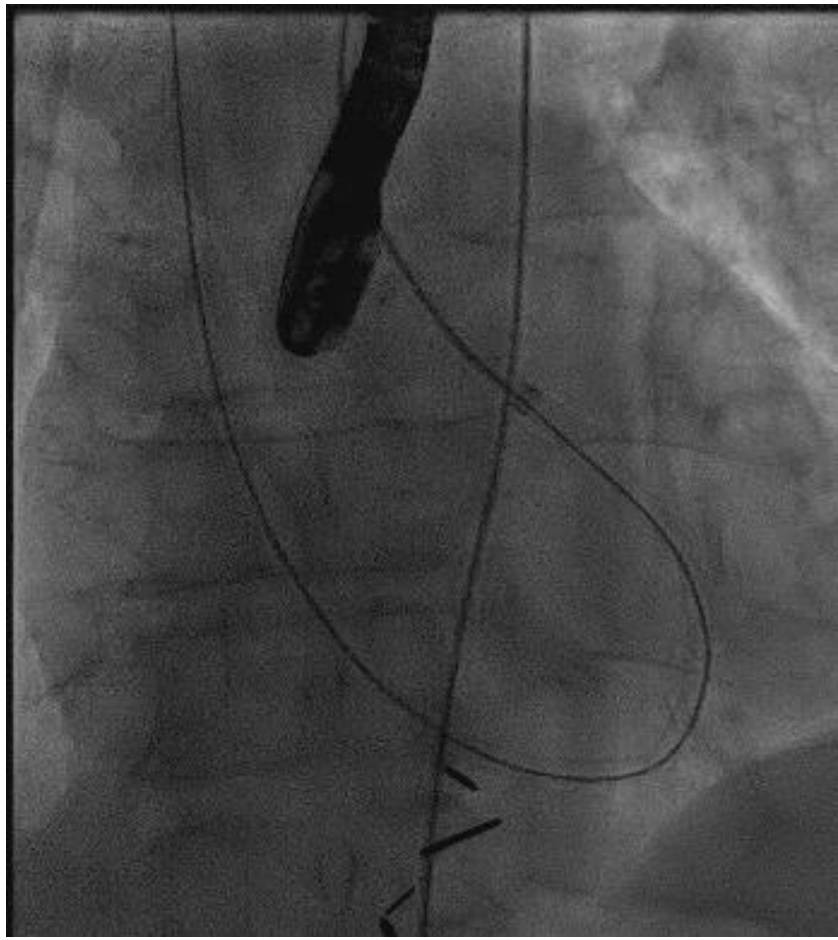
X2

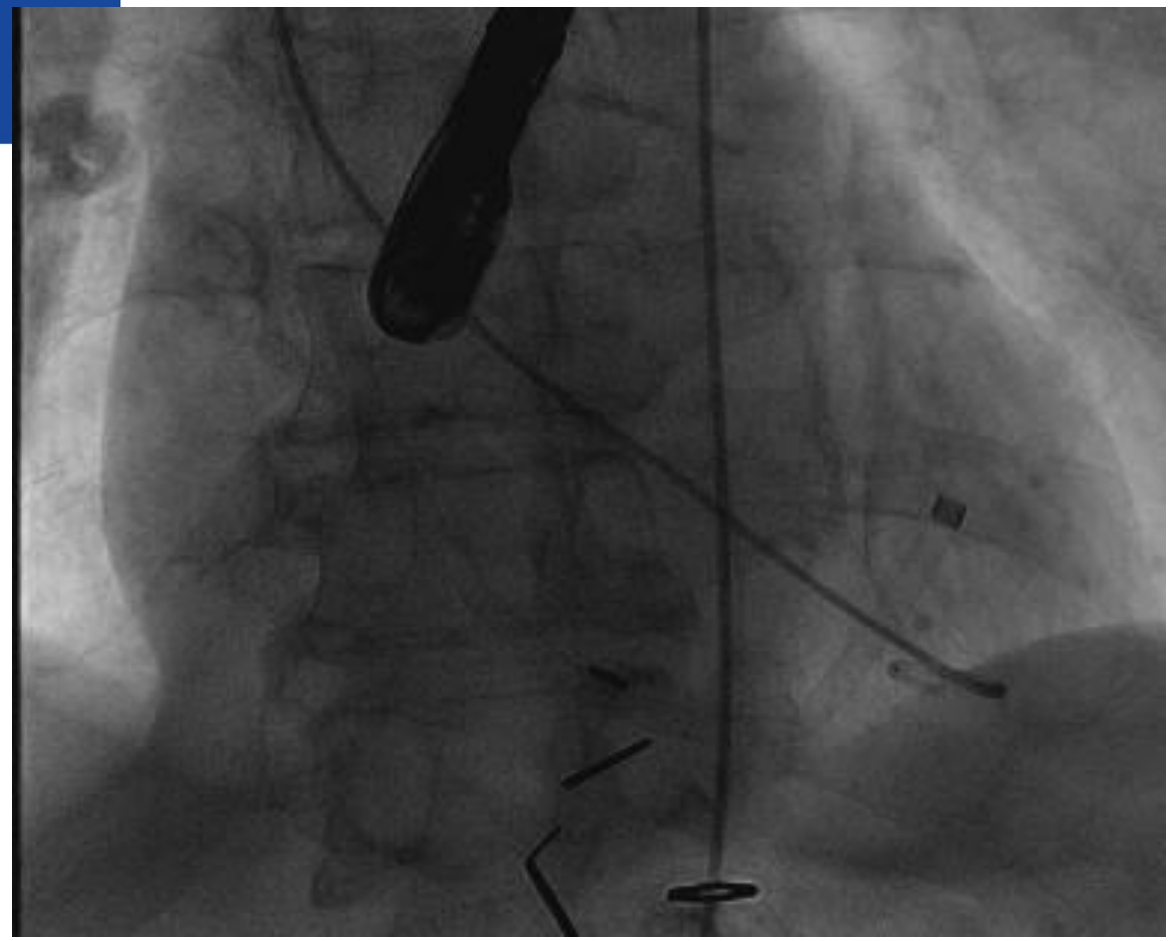
VSD closure

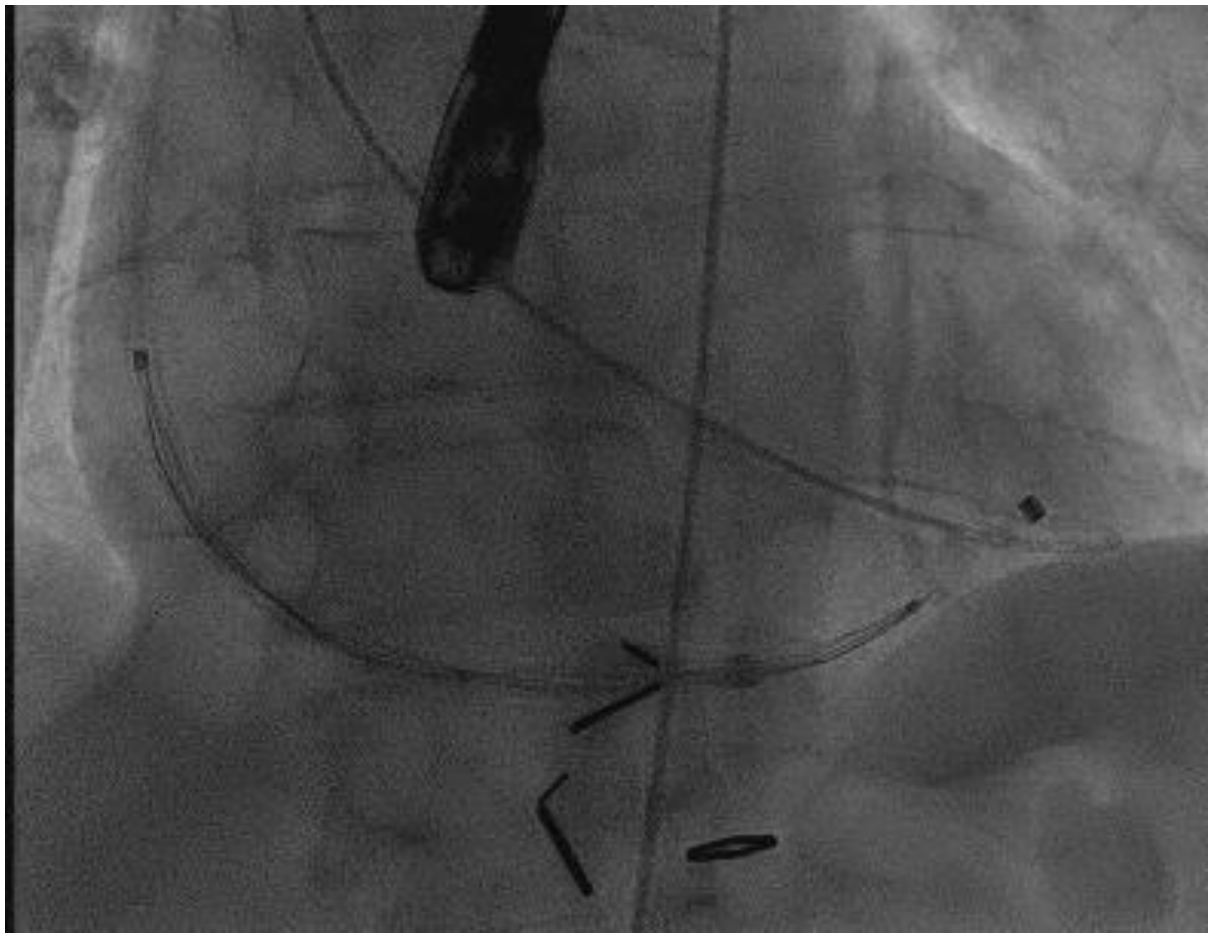




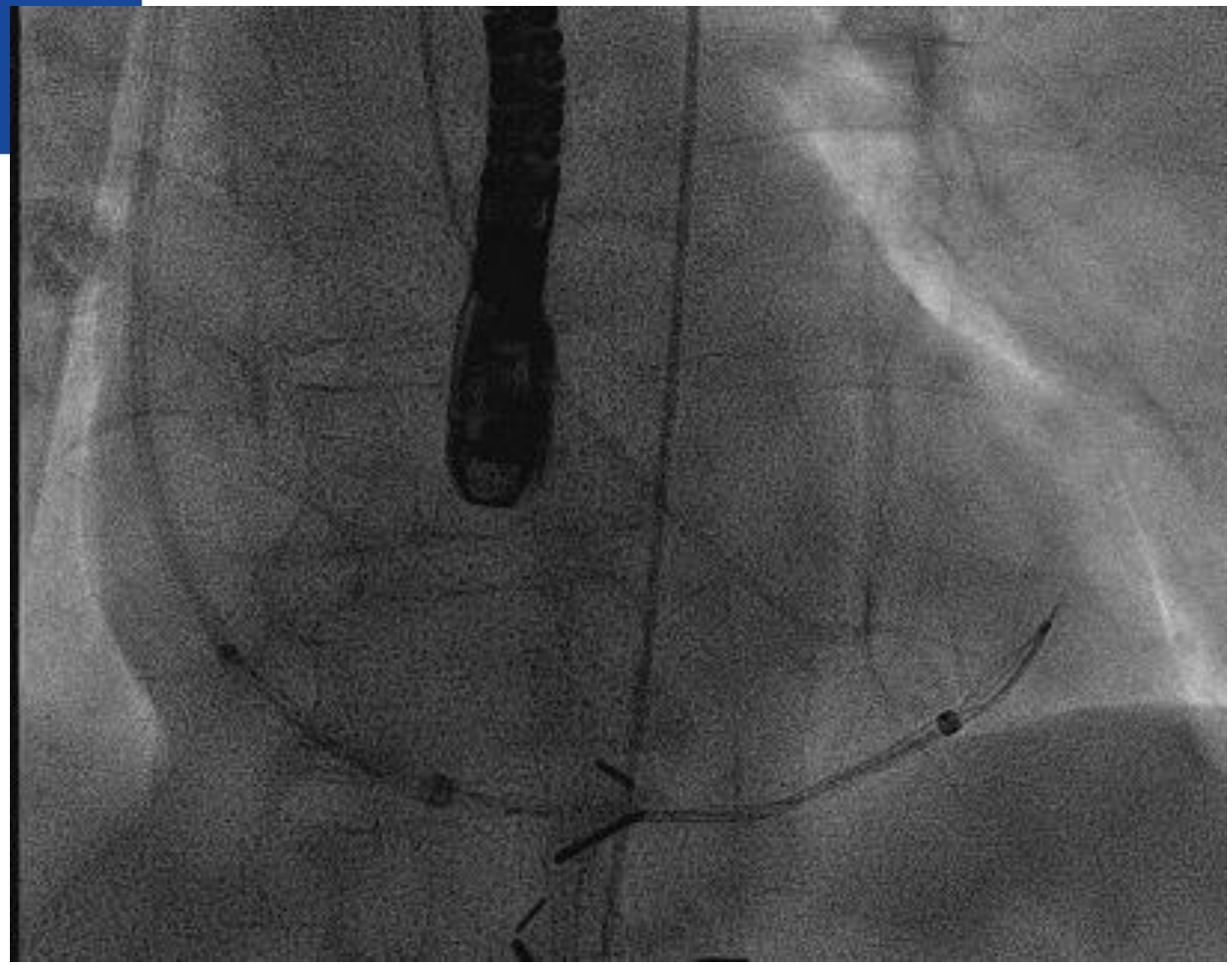


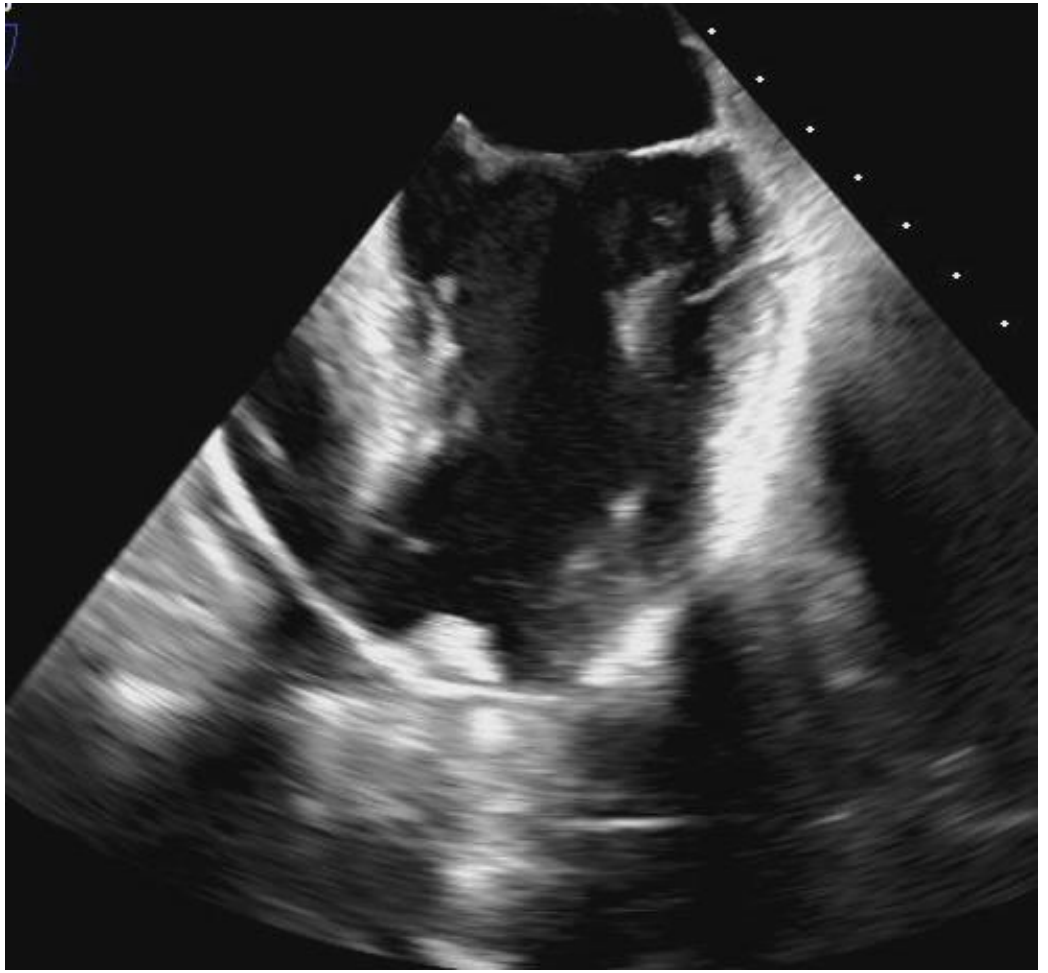
VSD closure



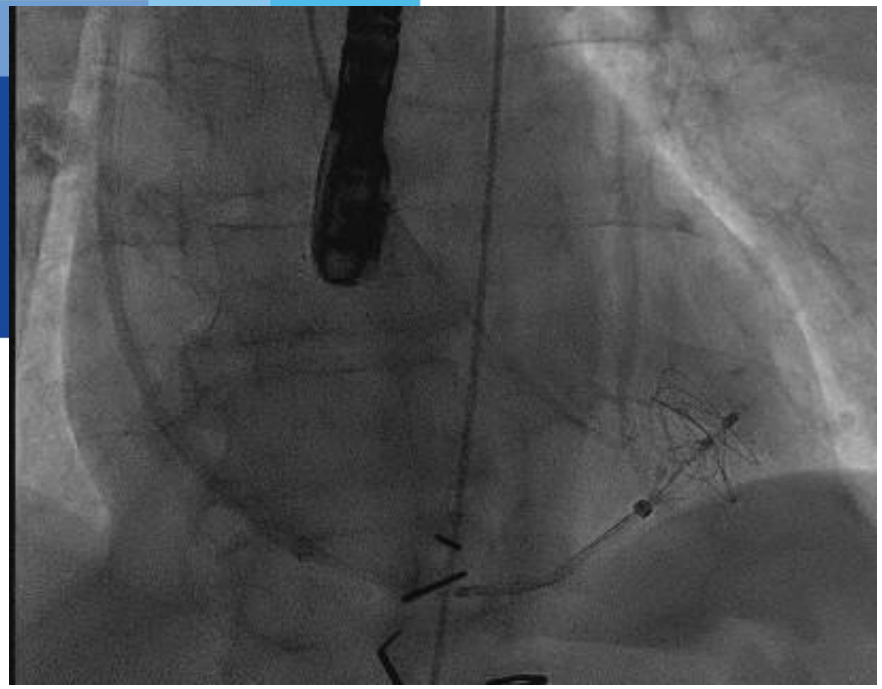


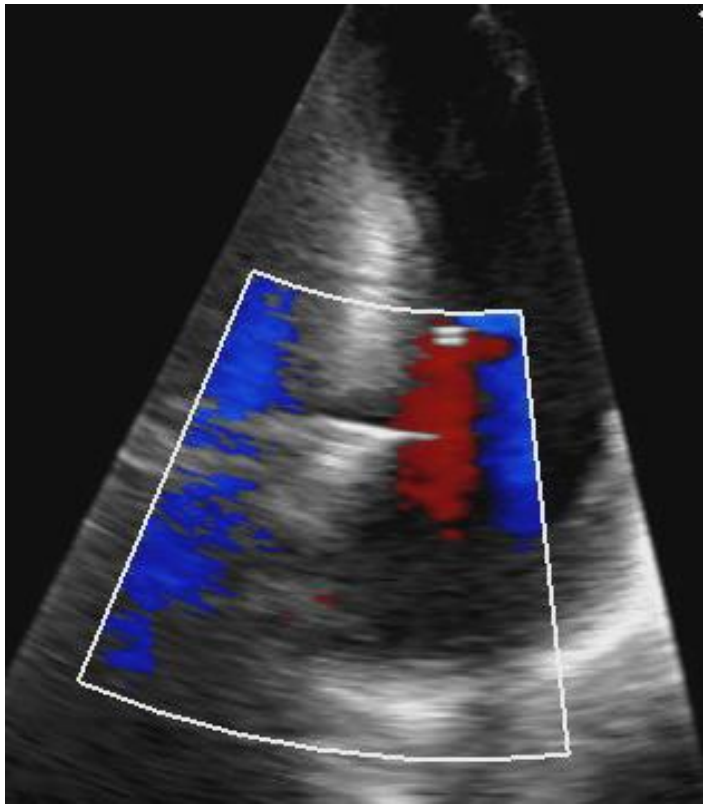
VSD closure

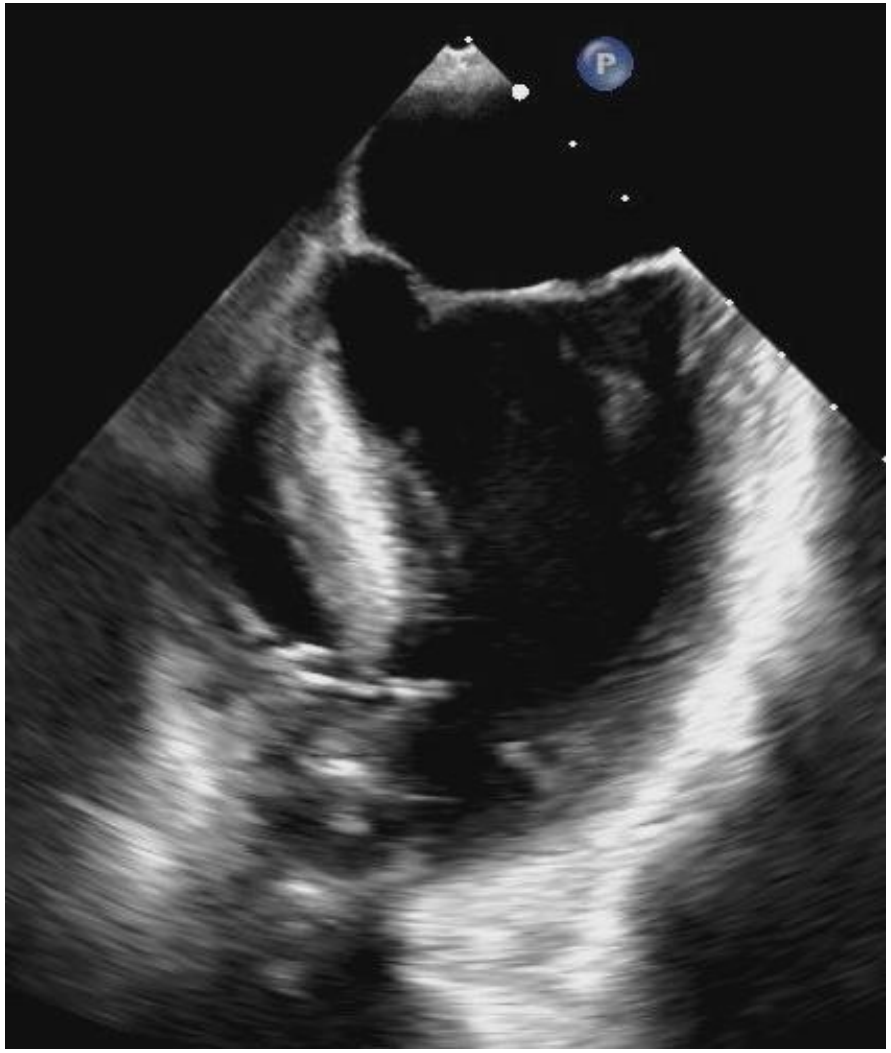




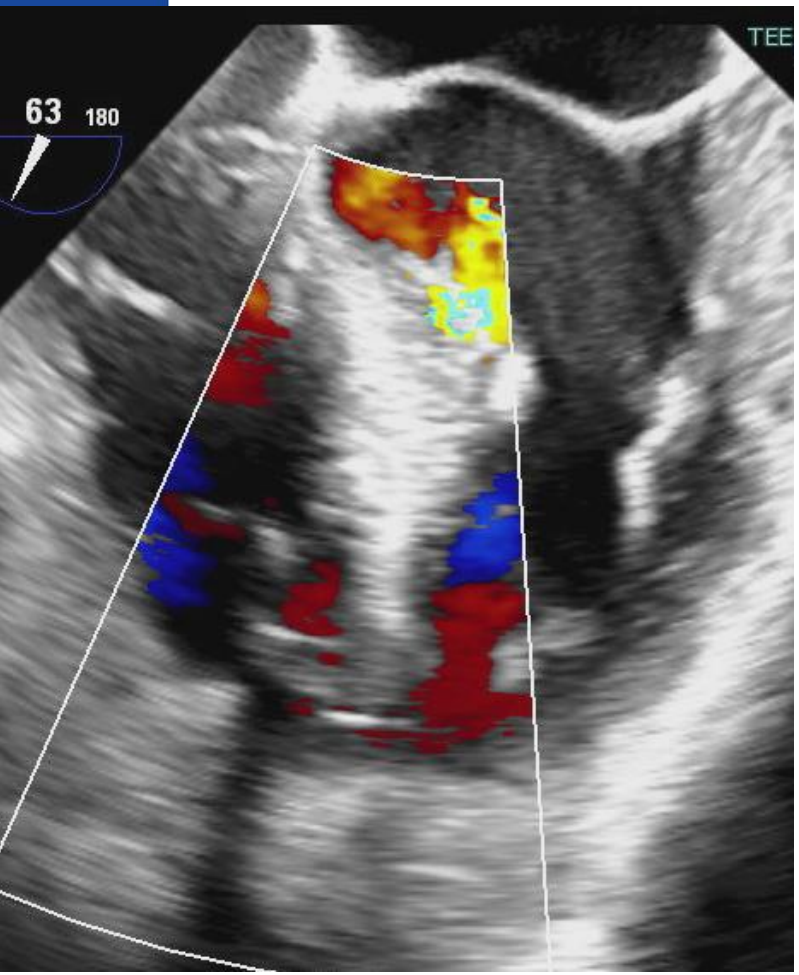
Case

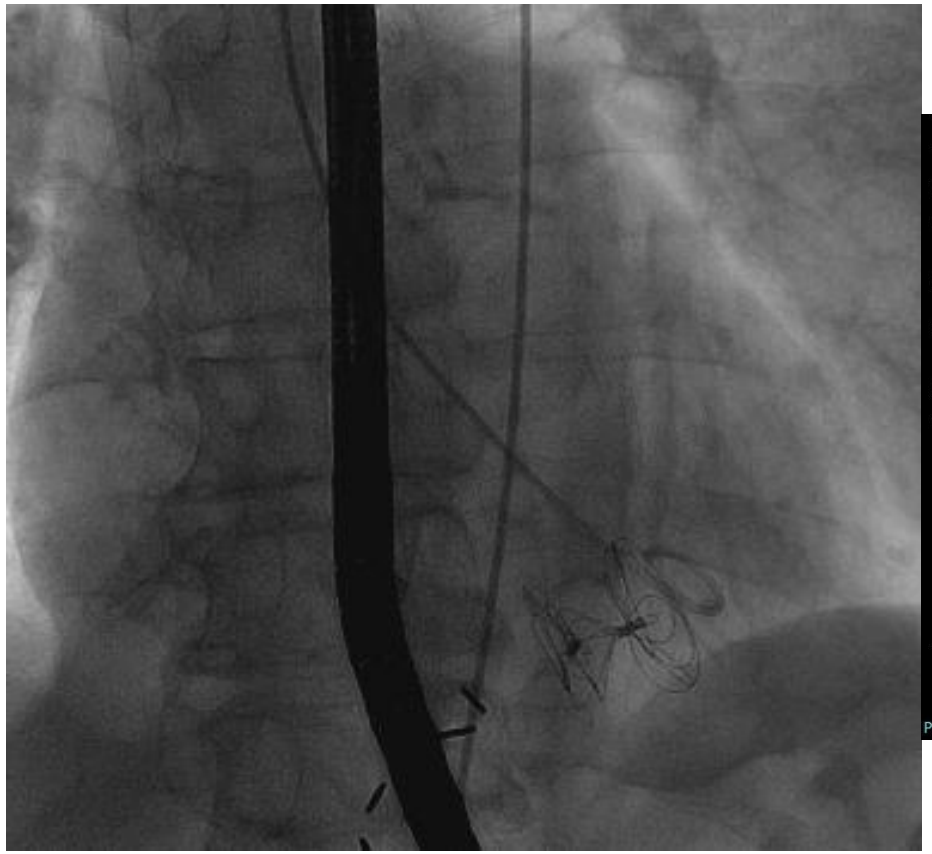


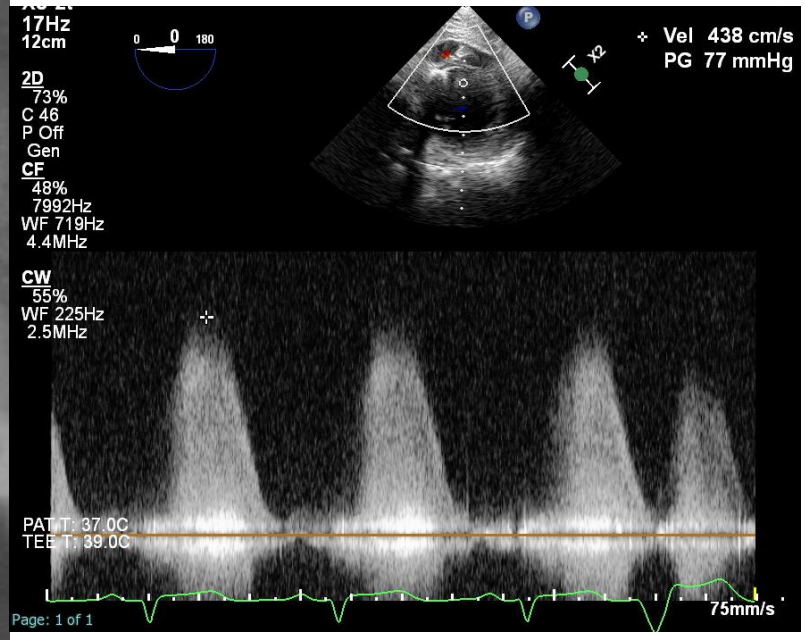




Case


TEE
63
180




17Hz
12cm
2D
73%
C 46
P Off
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CF
48%
7992Hz
WF 719Hz
4.4MHz
CW
55%
WF 225Hz
2.5MHz
Vel 438 cm/s
PG 77 mmHg
PAT T: 37.0C
TEE T: 39.0C
Page: 1 of 1
75mm/s

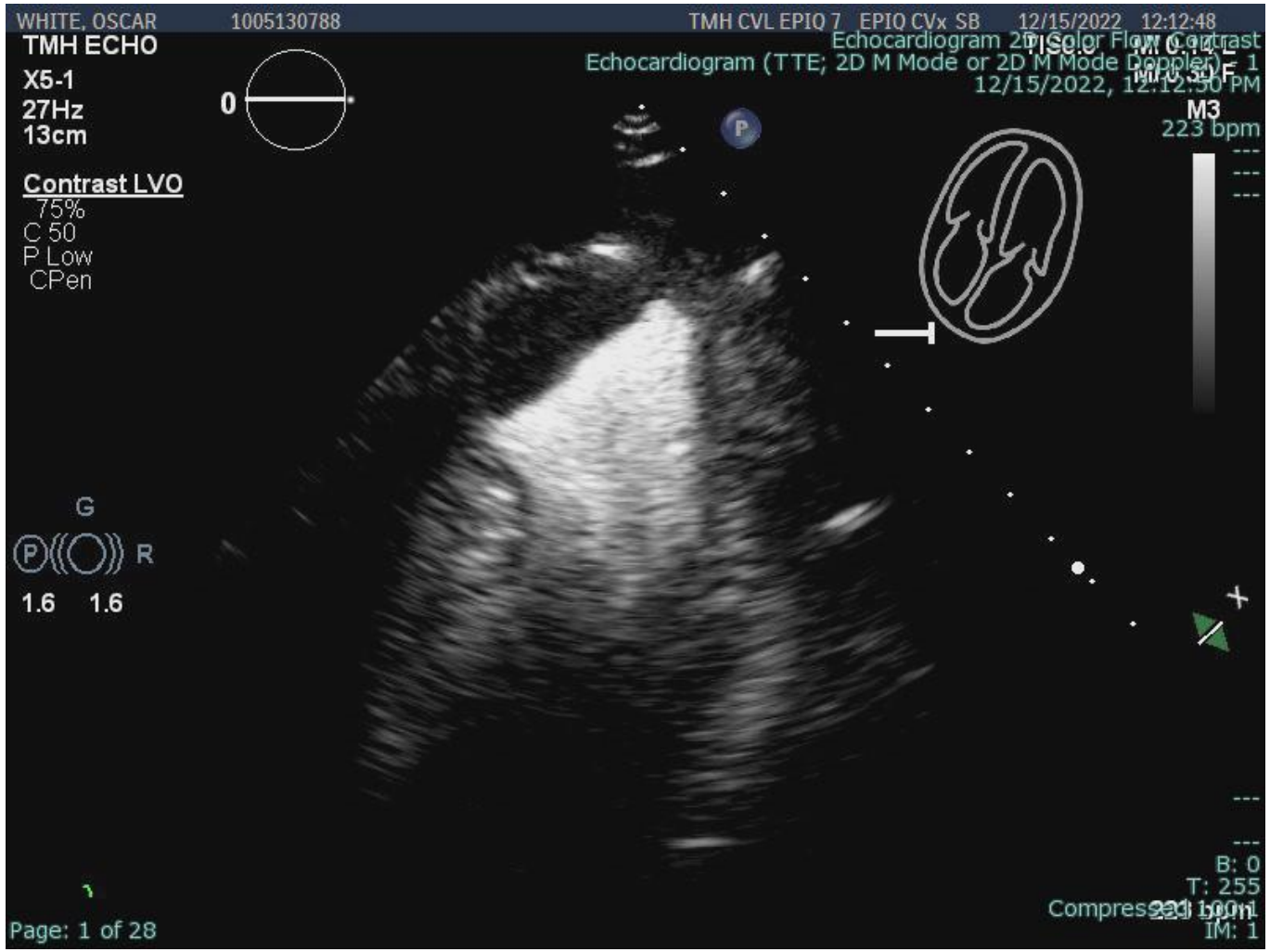
Case

- The patient was doing well after the procedure and was discharge on Rivaroxaban and Clopidogrel.
- One month later had a GI bleeding which prompted D/C of Rivaroxaban and continuation of Clopidogrel with treatment of a gastric ulcer.

Case

- 6 months after the procedure the patient came to the office and complaint of mild confusion, and unsteady gate.
- He was evaluated by neurology and eventually MRI revealed multiple small embolic CVA

Case



LV apical thrombus was visualized
The patient was placed on anticoagulation with no further issues and recovery from his neurological symptoms.

Key Takeaways

Female patients, older age, hypertension, anterior MI are risk factors for the development of post-MI VSD.

The use of thrombolysis seems to be a risk factor for the development of early post-MI VSD.

Timing of VSD closure continues to be a challenge due to risk of decompensation while waiting for scar formation and healing.

The Cardioform device seems to be an interesting alternative option for VSD closure in very apical locations due to less nitinol frame and softer nature.

Anticoagulation may be of extreme importance to avoid clot formation in this location.