

# Presenter Disclosures

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*Dr. Yin Ge*

**Show and tell:  
clinical vignettes (primary PCI, PCI vs CABG, TAVI)**

## Relationships with financial sponsors:

- Grants/Research Support: N/A
- Speakers Bureau/Honoraria: N/A
- Consulting Fees: N/A
- Patents: N/A
- Other: N/A



## Case 1



## HPI

62 M with no cardiac risk factors

5 day history of intermittent chest pain

Pressure-like; lasts a few minutes

Occurs at rest, not precipitated by exercise

Sometimes accompanied by headaches and dizziness

## Past Medical History

Back surgery - 2014

## Home Medications

None

## Physical Exam

**VS:** BP 147/83 mmHg, HR 88 and regular.

**CV:** S1, S2 with physiologic split, no murmurs.

**Chest:** No crackles.

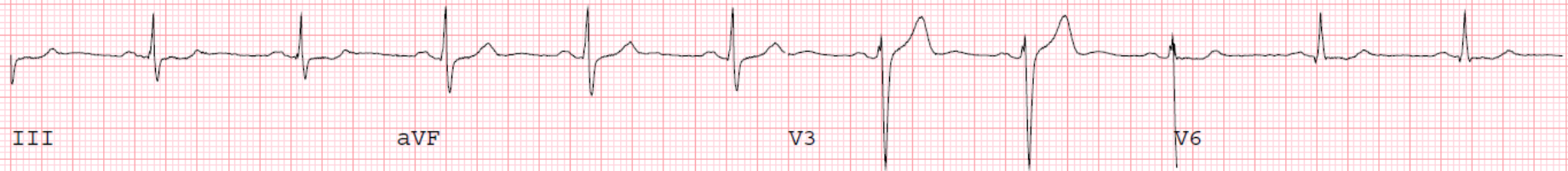
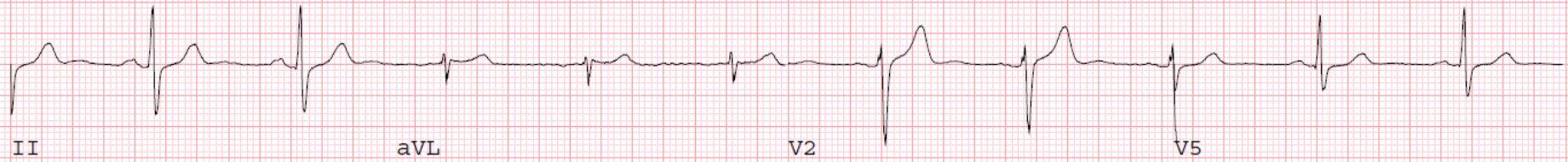
**Extremities:** No edema. Good equal bilateral pulses

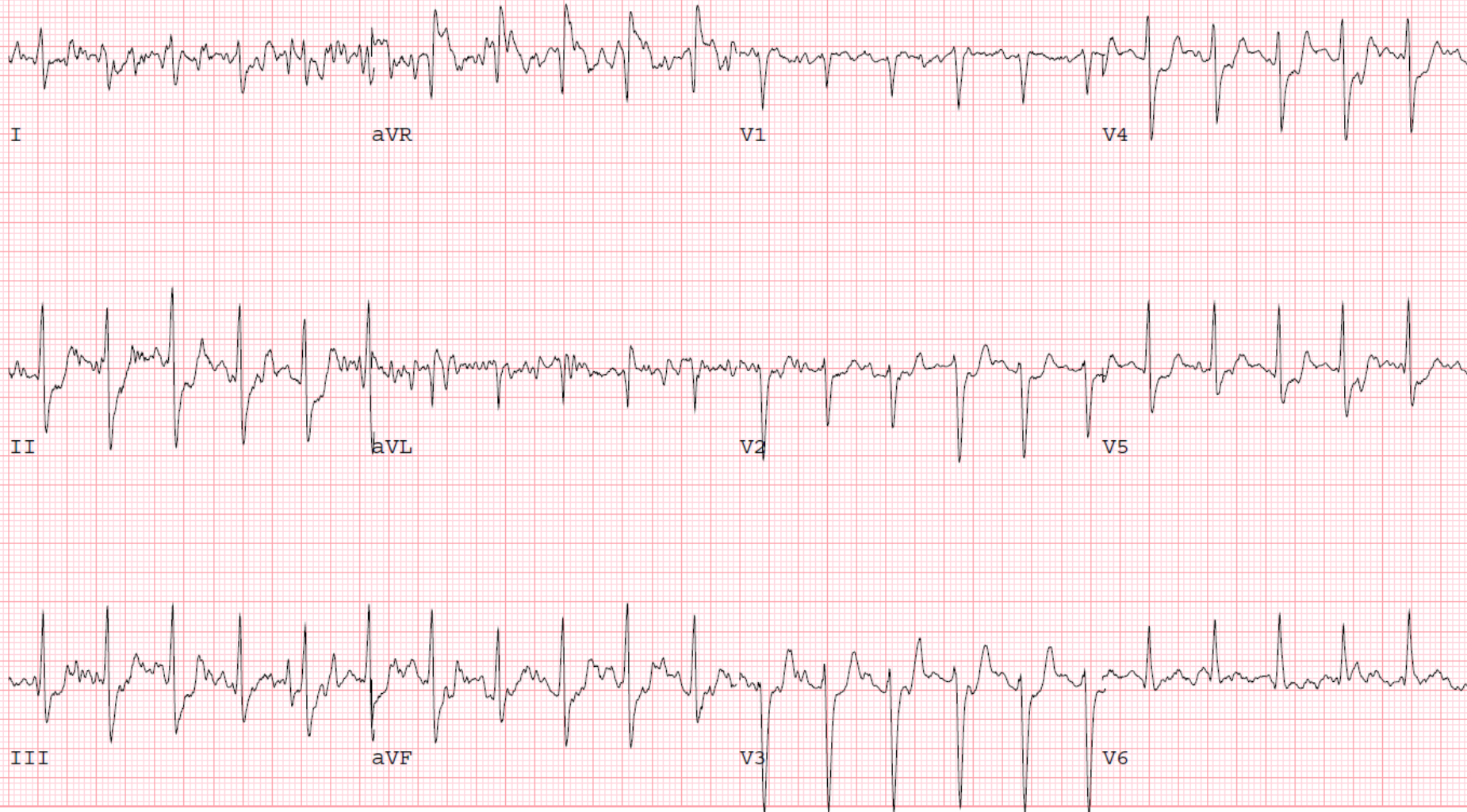
## Labs

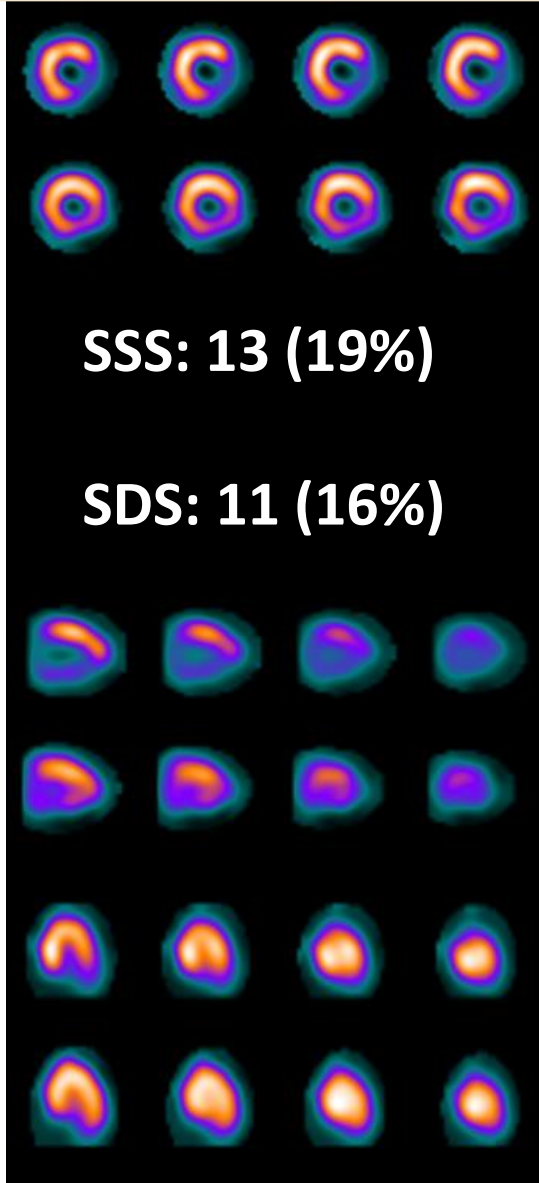
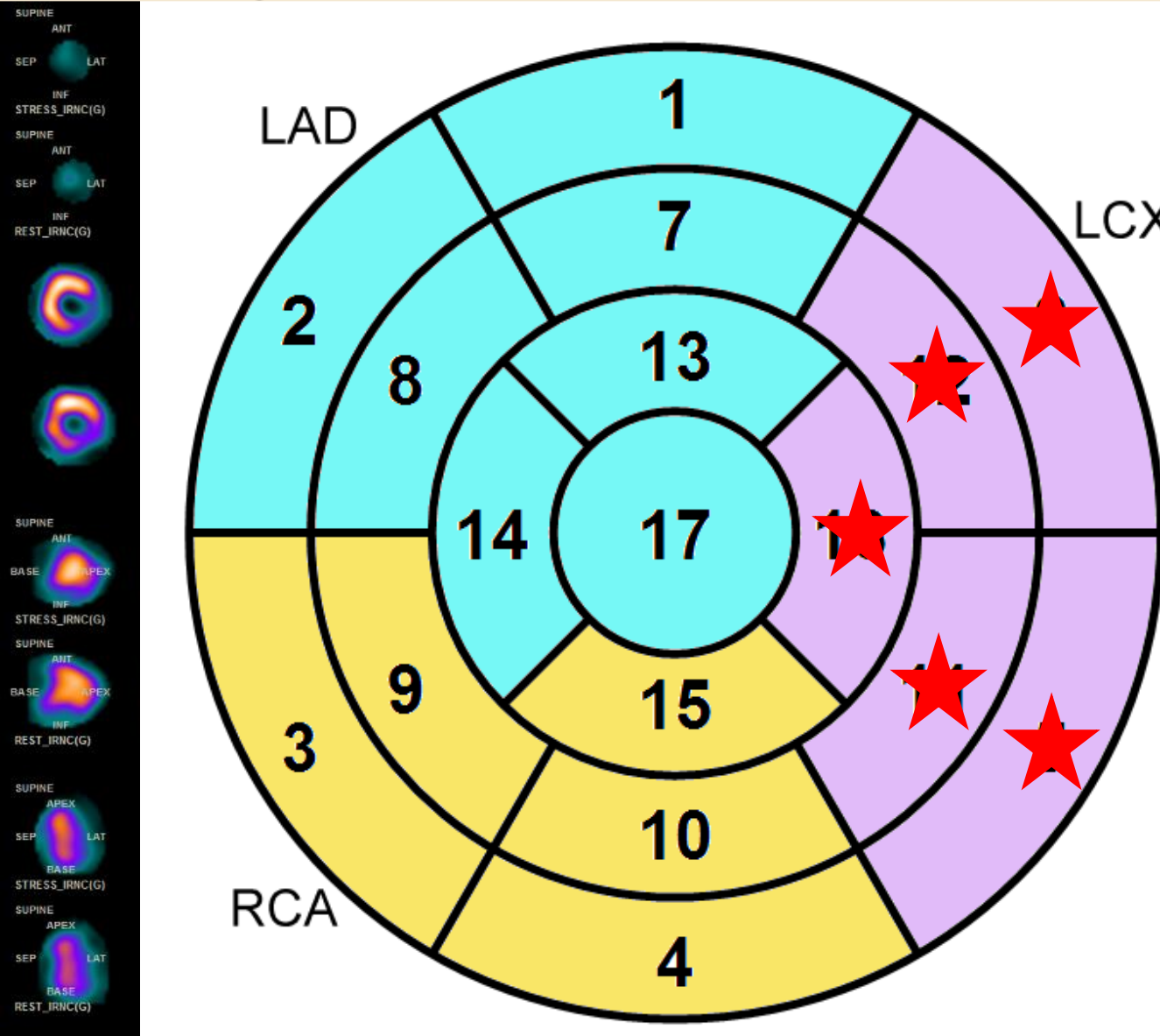
**Electrolytes:** WNL

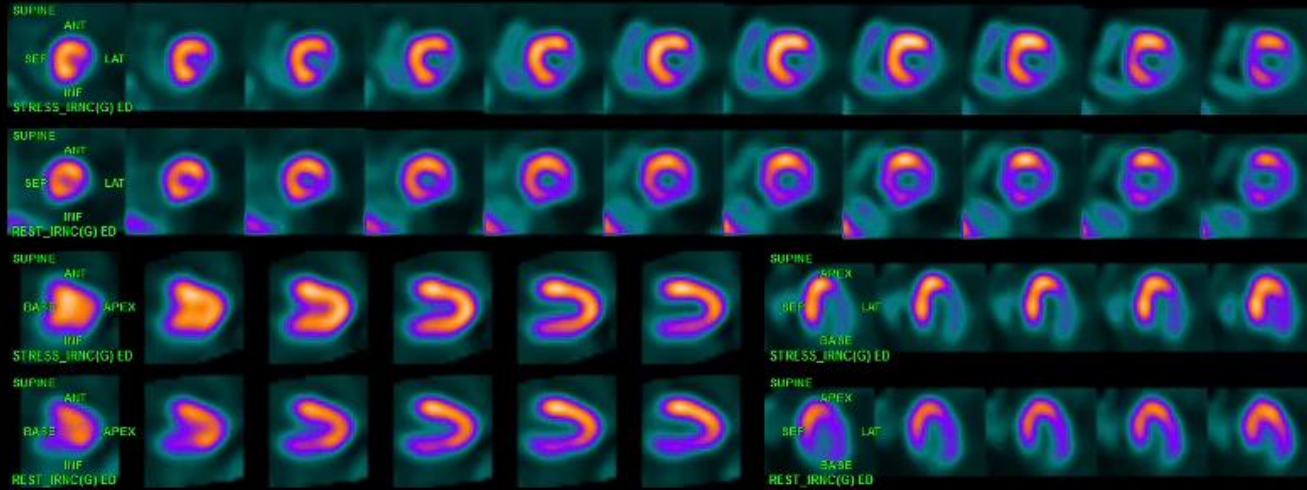
**CBC:** WNL

**Hs-Tnl:** 17>27>21

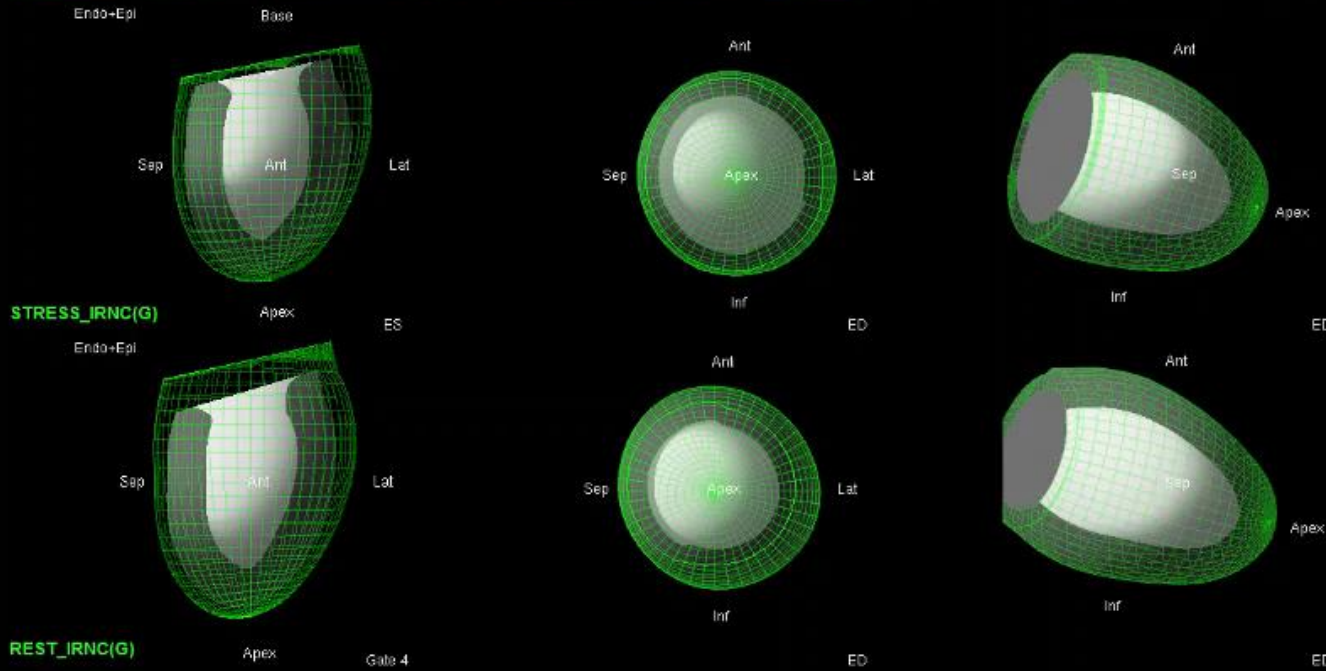
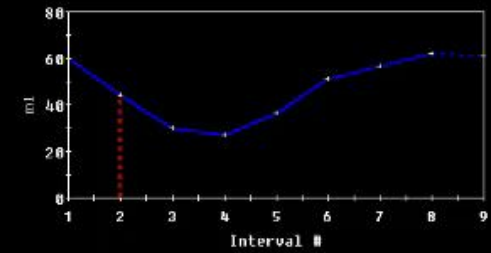




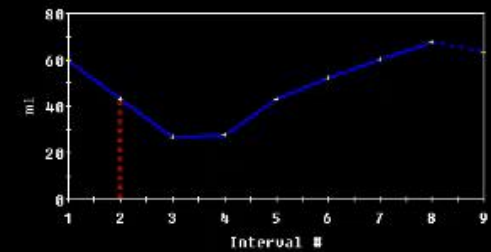


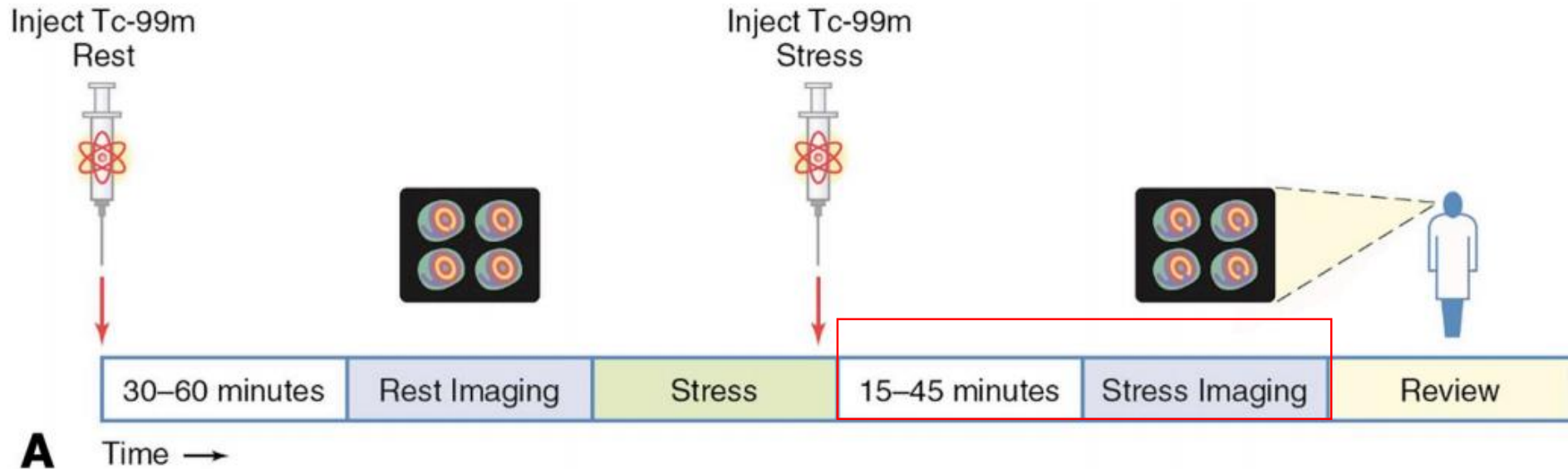


**STRESS\_IRNC(G)**  
 EF: 57%  
 EDV: 62ml  
 ESV: 27ml  
 SV: 35ml

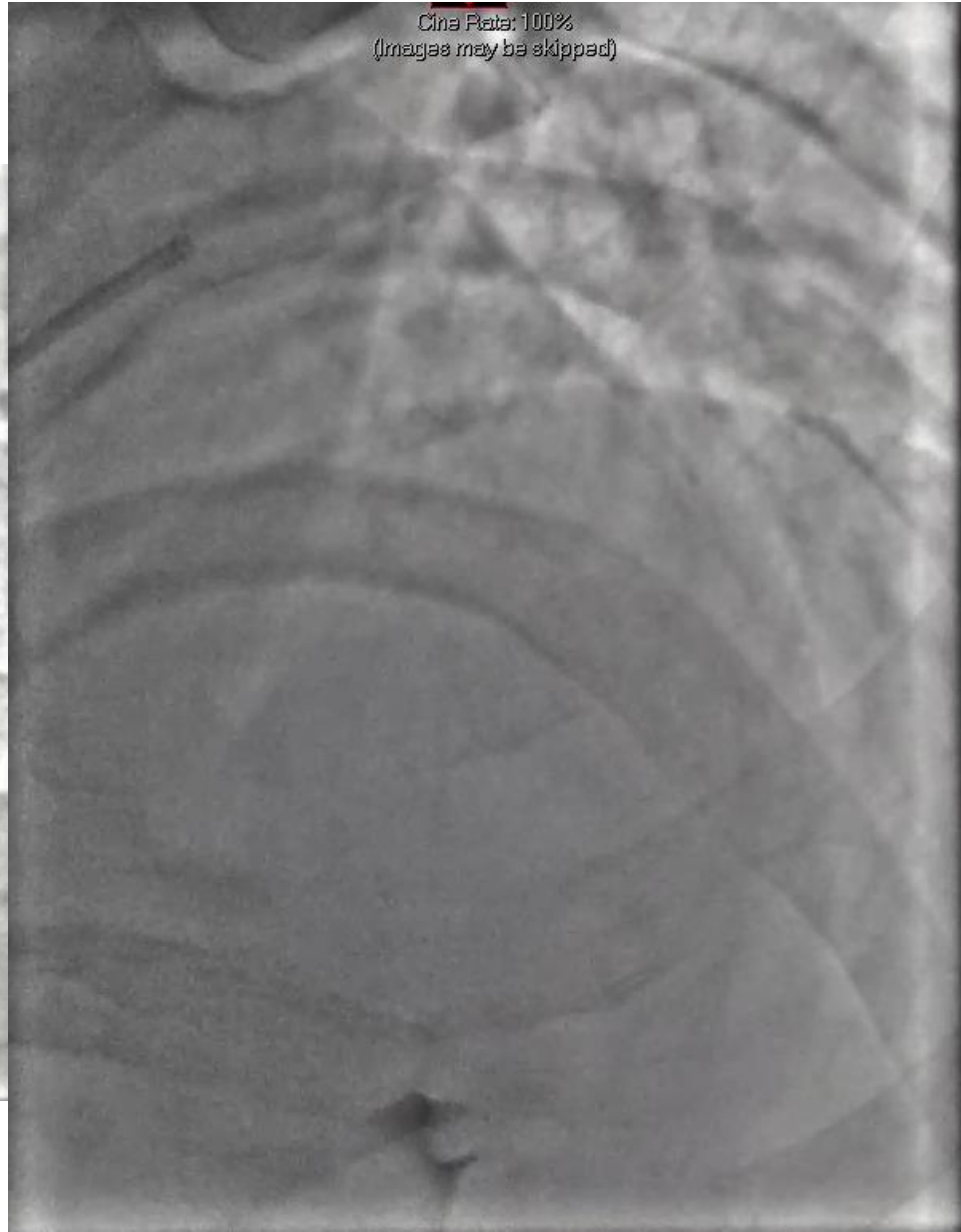


**REST\_IRNC(G)**  
 EF: 60%  
 EDV: 67ml  
 ESV: 27ml  
 SV: 41ml





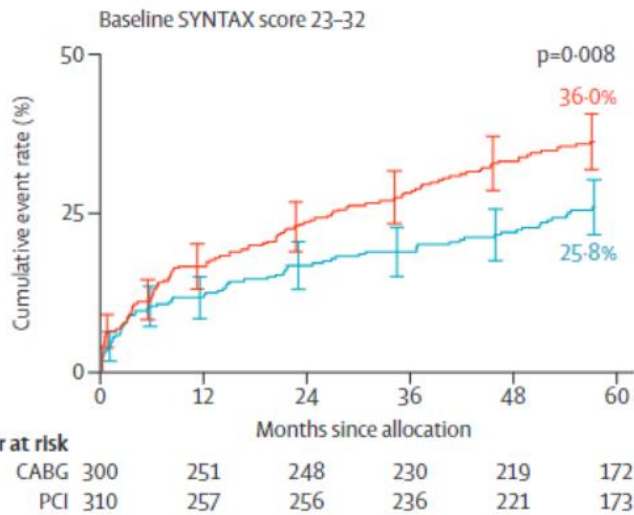




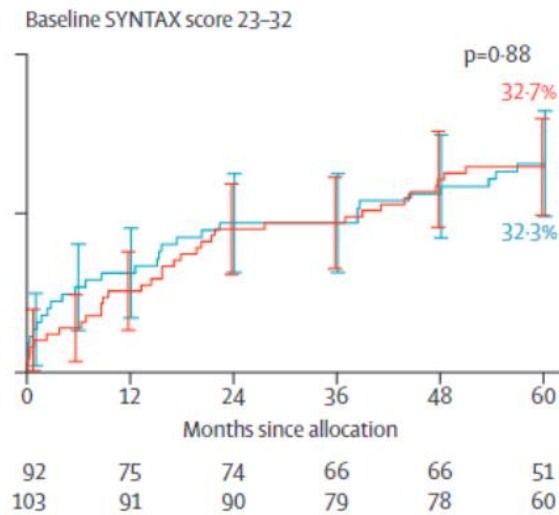


## 5 year results SYNTAX

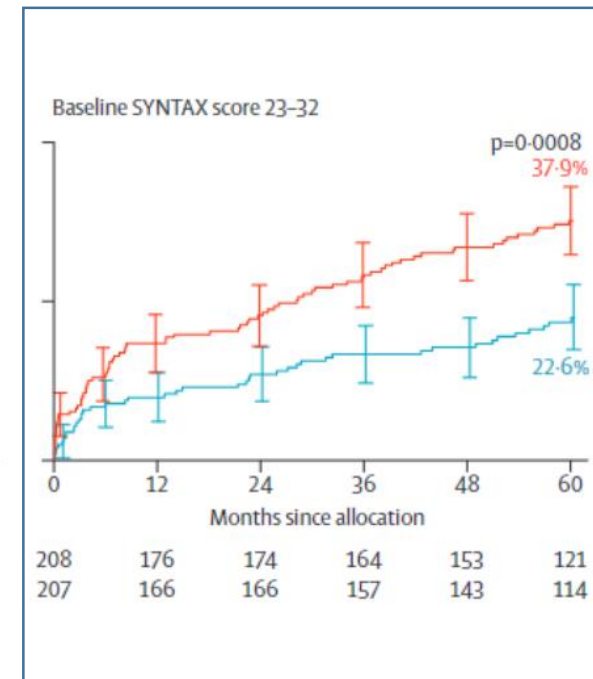
### Overall



### LM



### 3VD





## Case resolution:

- STS score: 0.31%
- 4V CABG
  - LIMA-LAD, SVG-D1, SVG-OM, SVG-RCA
  - No complications; discharged home



## Case 2



## HPI

47 M former smoker

Habitual cocaine user

Prolonged episode SSCP 3 months ago

Exertional chest pain and shortness of breath (CCS 2)

## Past Medical History

Focal segmental glomerulosclerosis

Gout

Obesity

Obstructive sleep apnea

## Home Medications

Aspirin 81 mg daily

Lipitor 20 mg daily

Allopurinol 300 mg daily

Telmisartan 160 mg daily

Mycophenolate Mofetil 750 mg BID

## Physical Exam

**VS:** BP 105/81 mmHg, HR 103 and regular.

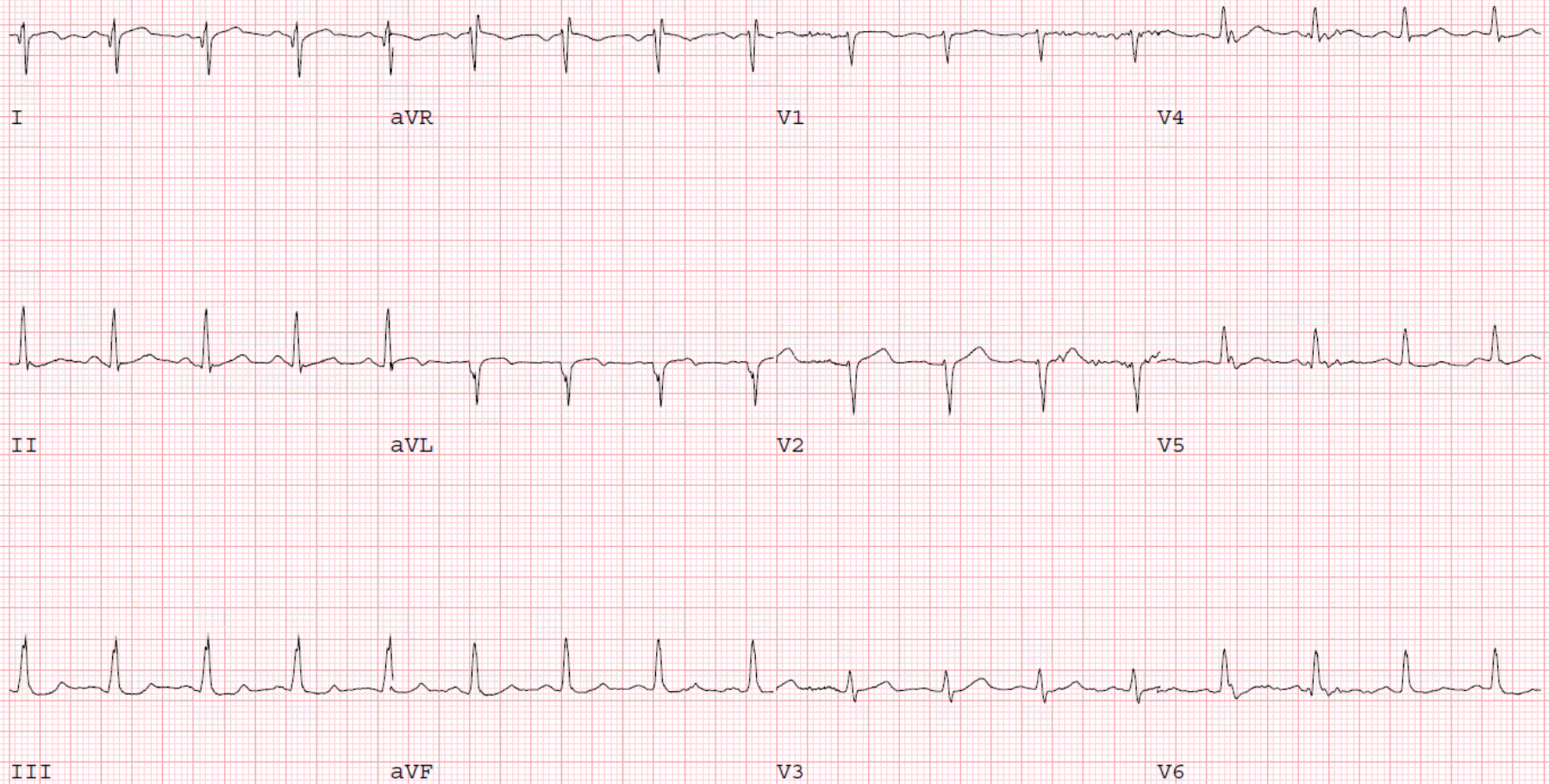
**CV:** S1, S2 with physiologic split, no murmurs. JVP 1 cm ASA.

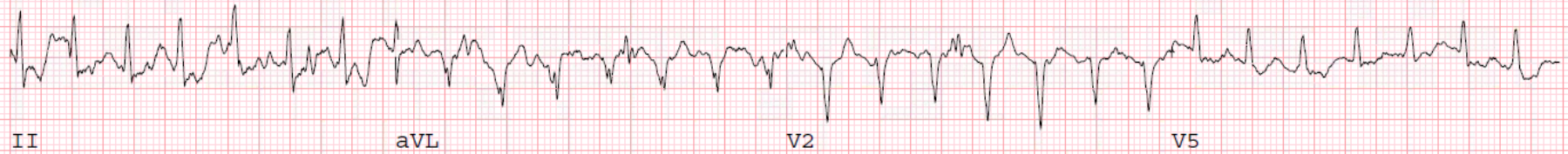
**Chest:** No crackles.

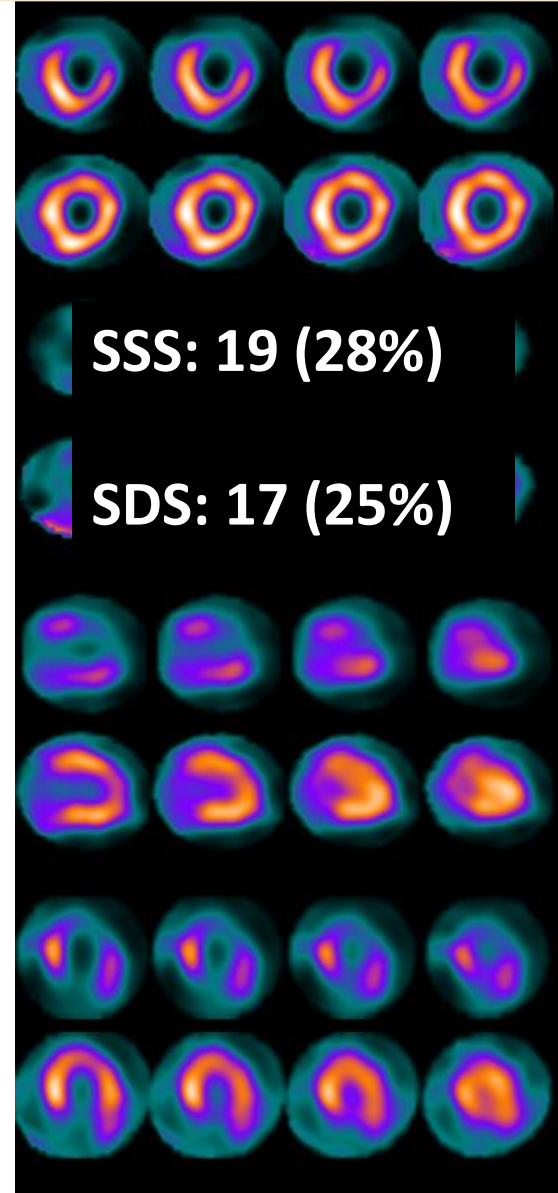
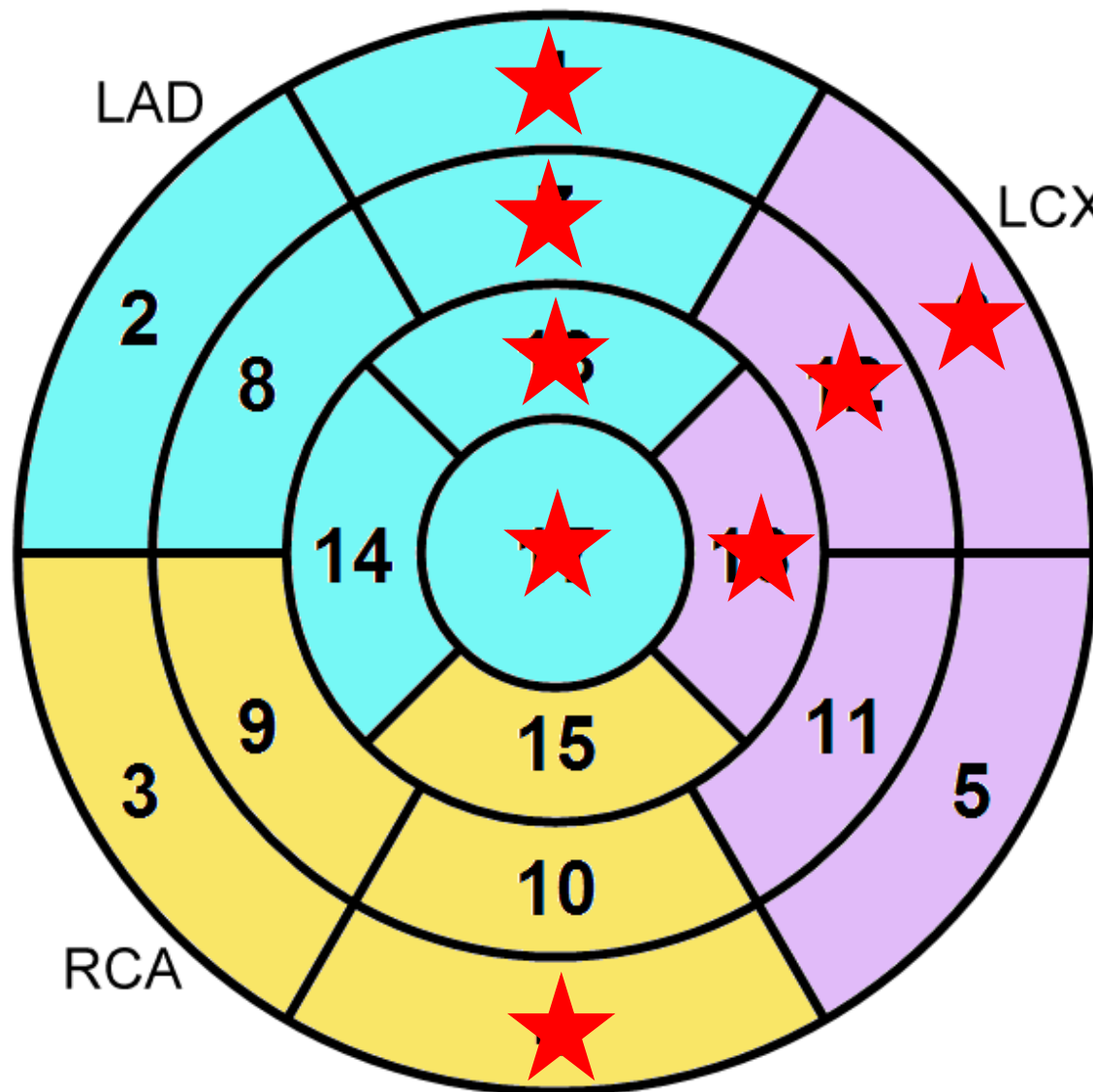
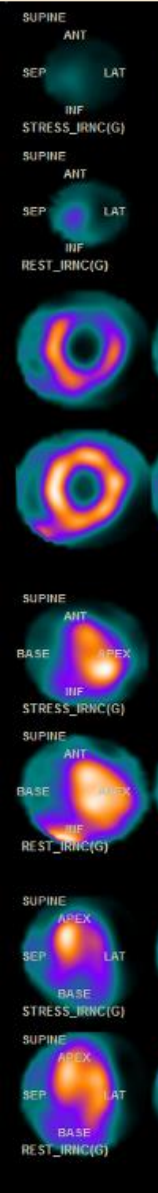
**Extremities:** 1+ edema. Good equal bilateral pulses

## Labs

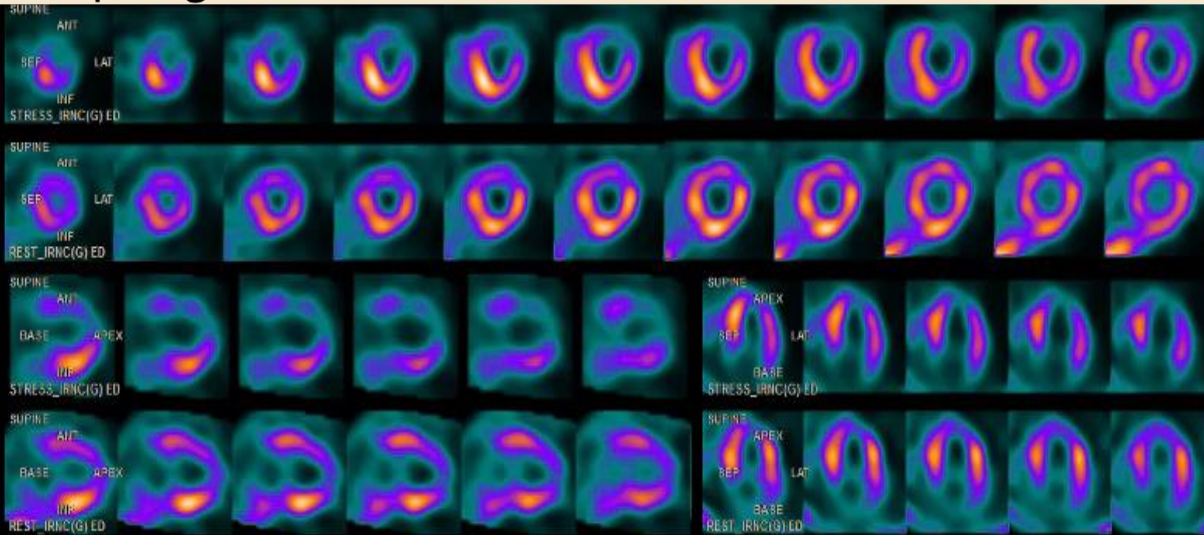
**HbA1c:** 7.5%











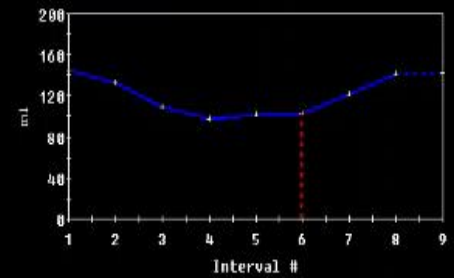
**STRESS\_IRNC(G)**

EF: 32%

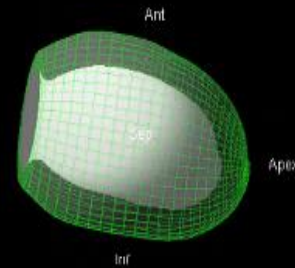
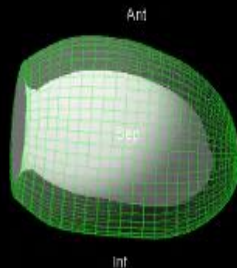
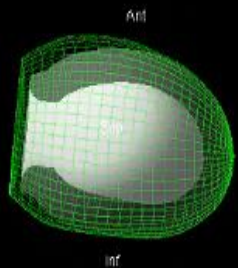
EDV: 144ml

ESV: 98ml

SV: 47ml



Endo+Epi



**REST\_IRNC(G)**

EF: 27%

EDV: 138ml

ESV: 100ml

SV: 38ml

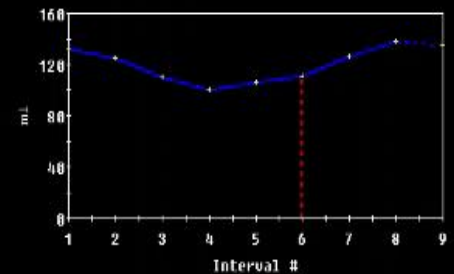
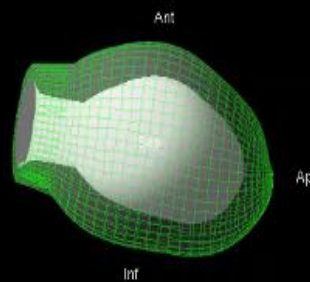
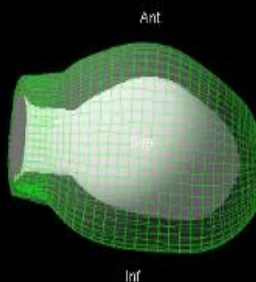
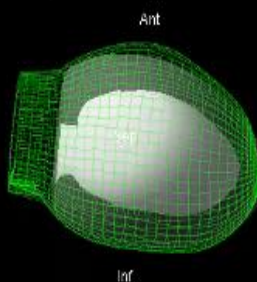
**STRESS\_IRNC(G)**

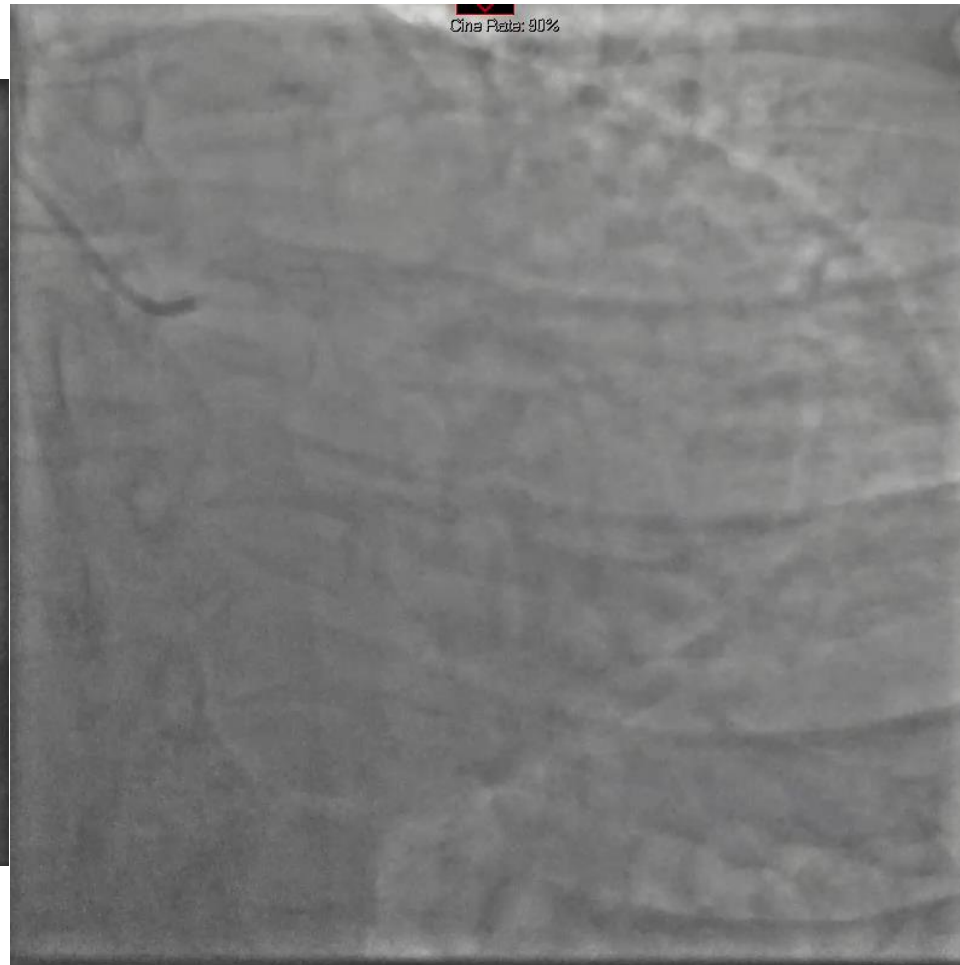
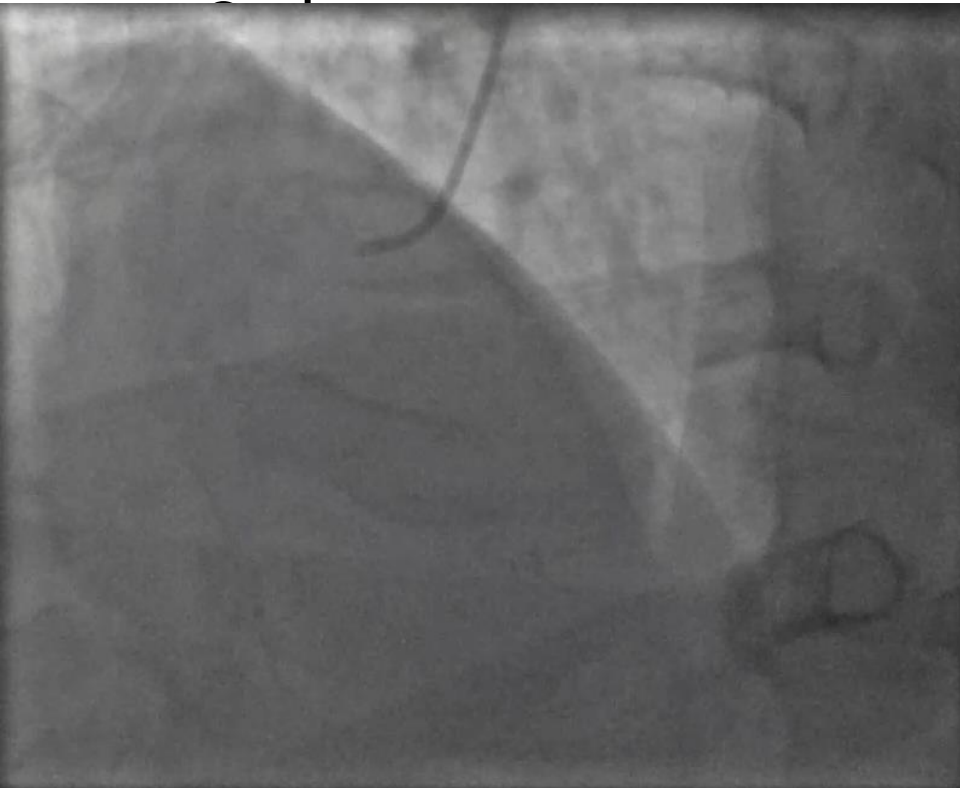
ES

ED

ED

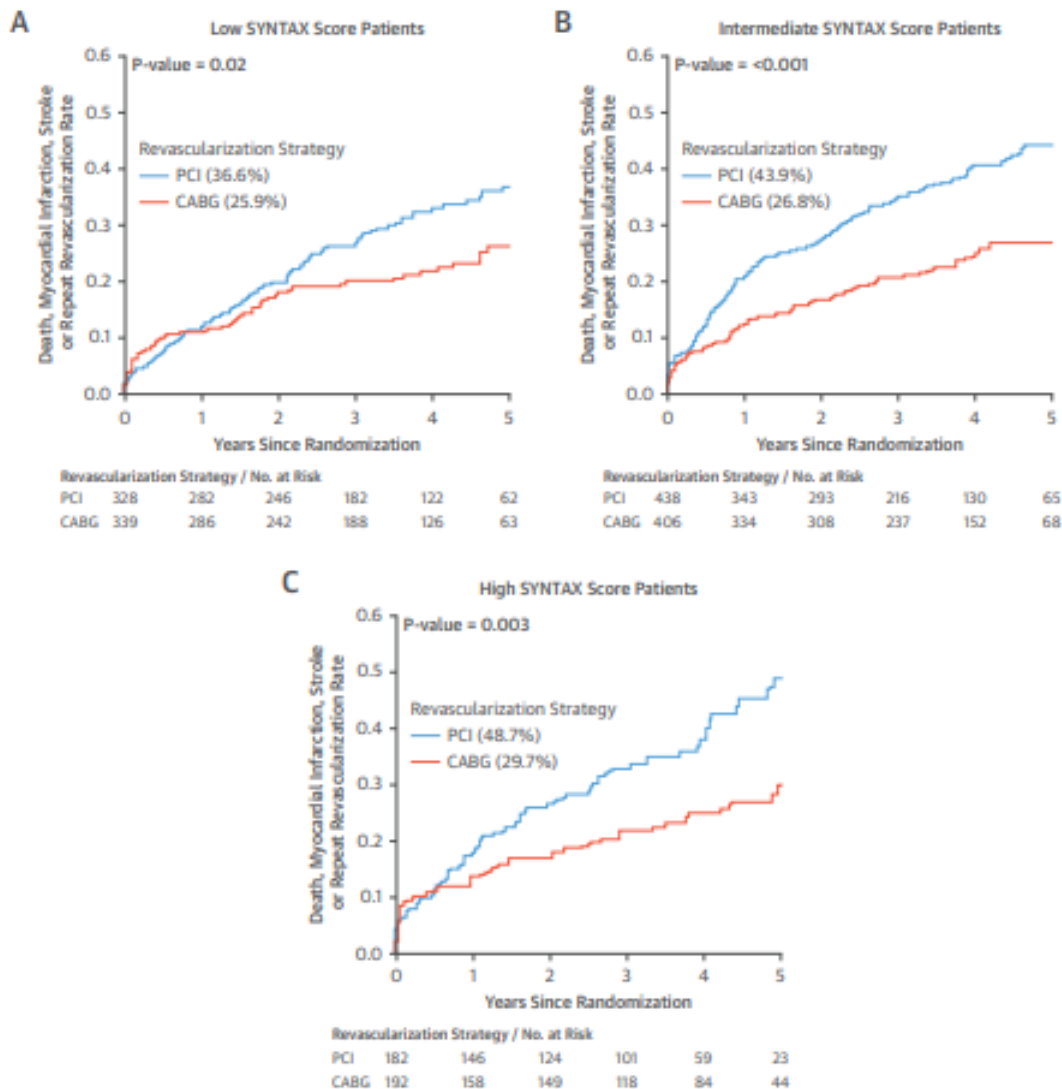
Endo+Epi







## FREEDOM





## Case resolution:

- STS score: 0.94%
- Renal failure: 3.6%
- 4V CABG
  - LIMA to LAD, left radial to PDA and SVG to OM.
  - Vasoplegia and renal failure; didn't require dialysis



## Case 3



## HPI

78 F with CAD, CABG (LIMA - LAD), PCI to RCA, and severe mitral stenosis

NYHA class IV, failure to respond to oral furosemide at home

## Past Medical History

Mild AS

Mitral stenosis

Mean gradient 11mmHg (HR 69 bpm)

CAD

CABG (LIMA - LAD) 1989

PCI to RCA (2001, 2007), LCX (2008)

Normal LVEF (60%)

DM2, hyperlipidemia, hypertension

Peripheral vascular disease

Paroxysmal atrial fibrillation

COPD

## Home Medications

Atenolol 50 mg PO BID

Verapamil 40 mg TID

Coumadin 5 mg QD

Clopidogrel 75mg QD

Lasix 120 mg PO BID

Simvastatin 20 mg PO QHS

Pioglitazone 15 mg PO QD

Glipizide 5 mg PO BID

## Physical Exam

**VS:** BP 160/58mmHg, HR 68 and regular.

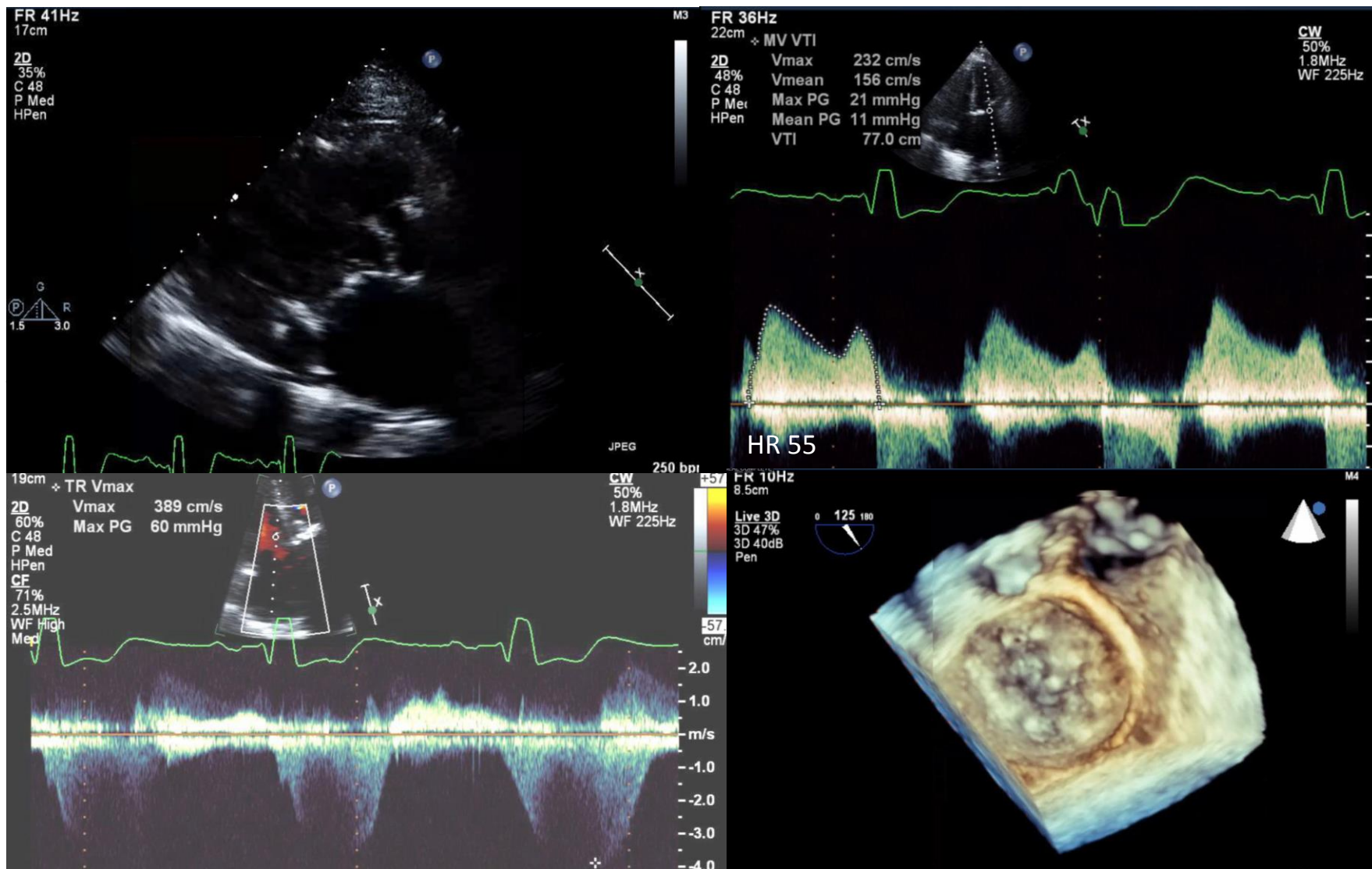
**CV:** JVP 9 cm. S1, S2 with physiologic split, grade 2/6 early systolic murmur at right upper sternal border, with radiation to the left sternal border.

**Chest:** Crackles two thirds up on the right; one third up on the left.

**Extremities:** 1-2+ edema with left calf ulcerations.



## Echocardiogram

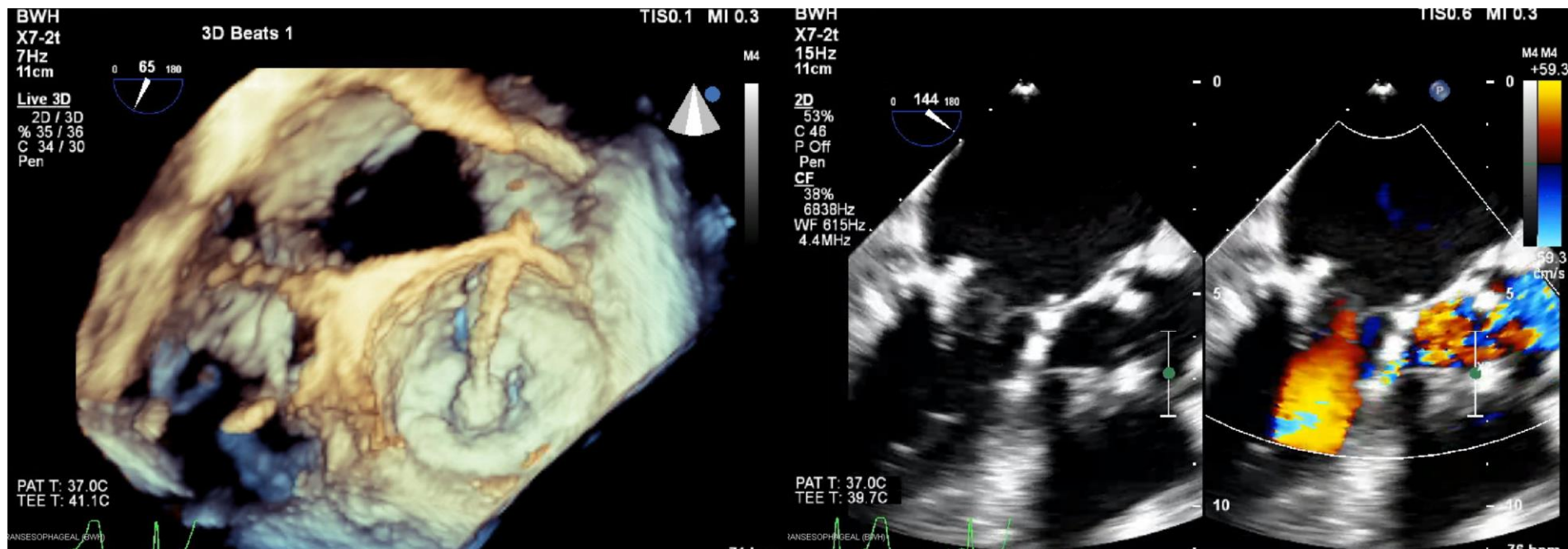


## Transcatheter mitral valve in MAC

26mm Sapien 3 valve

TEE and fluoroscopy guided

Uncomplicated procedure; MV gradient 4 mmHg at HR 72 bpm



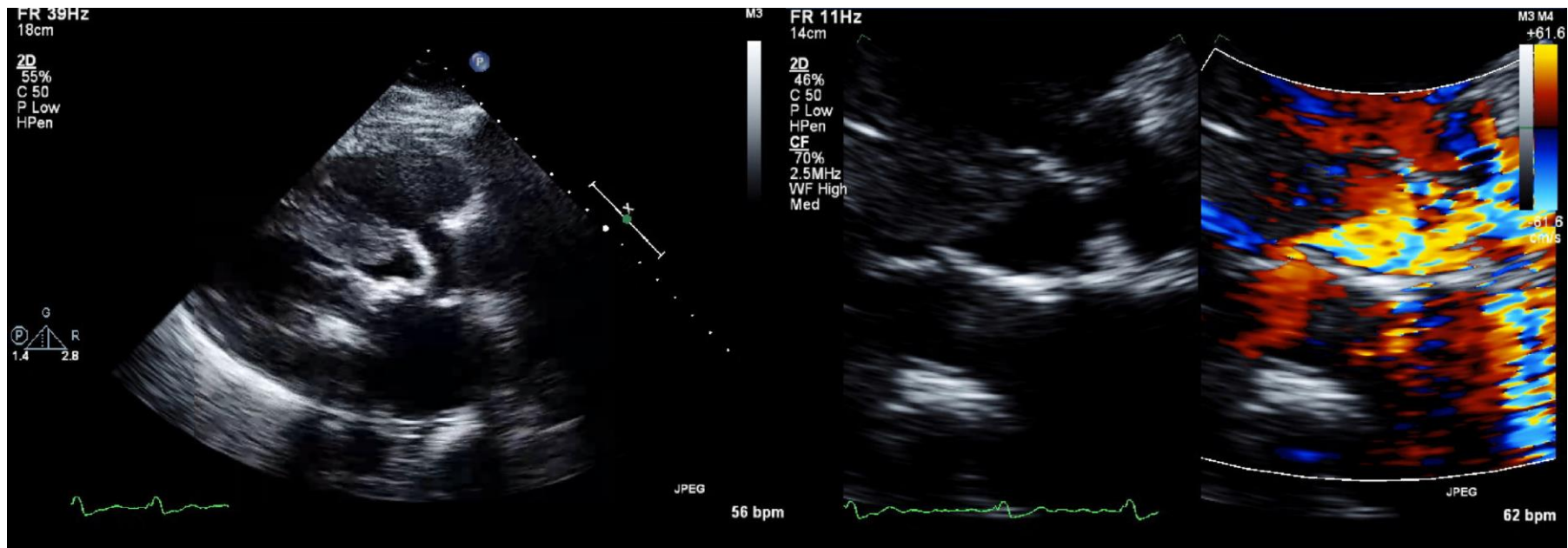


## Post procedure:

Symptomatically improved. Diuresing.

Increased intensity of murmur in upper sternal border.

TTE: Peak gradient across LVOT 58 mmHg at rest (unable to perform Valsalva).

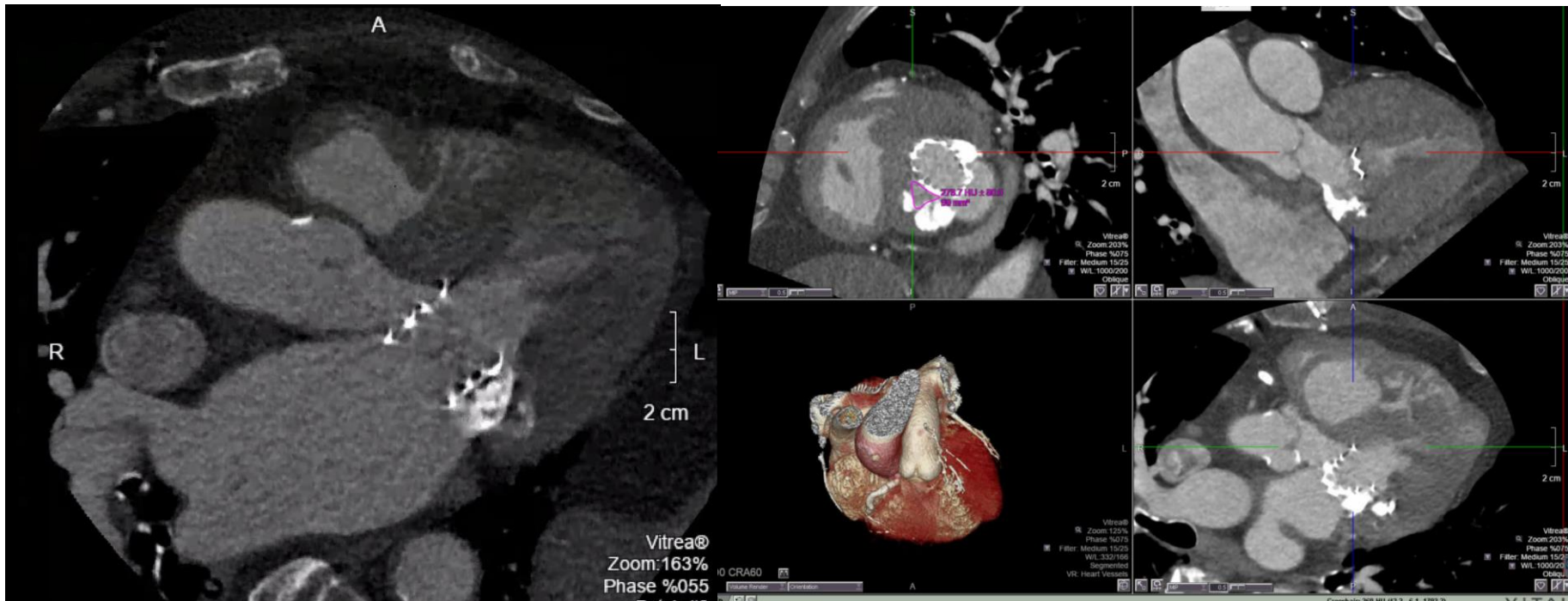


## 4-D Cardiac CT

Gated multi-phase cardiac CT

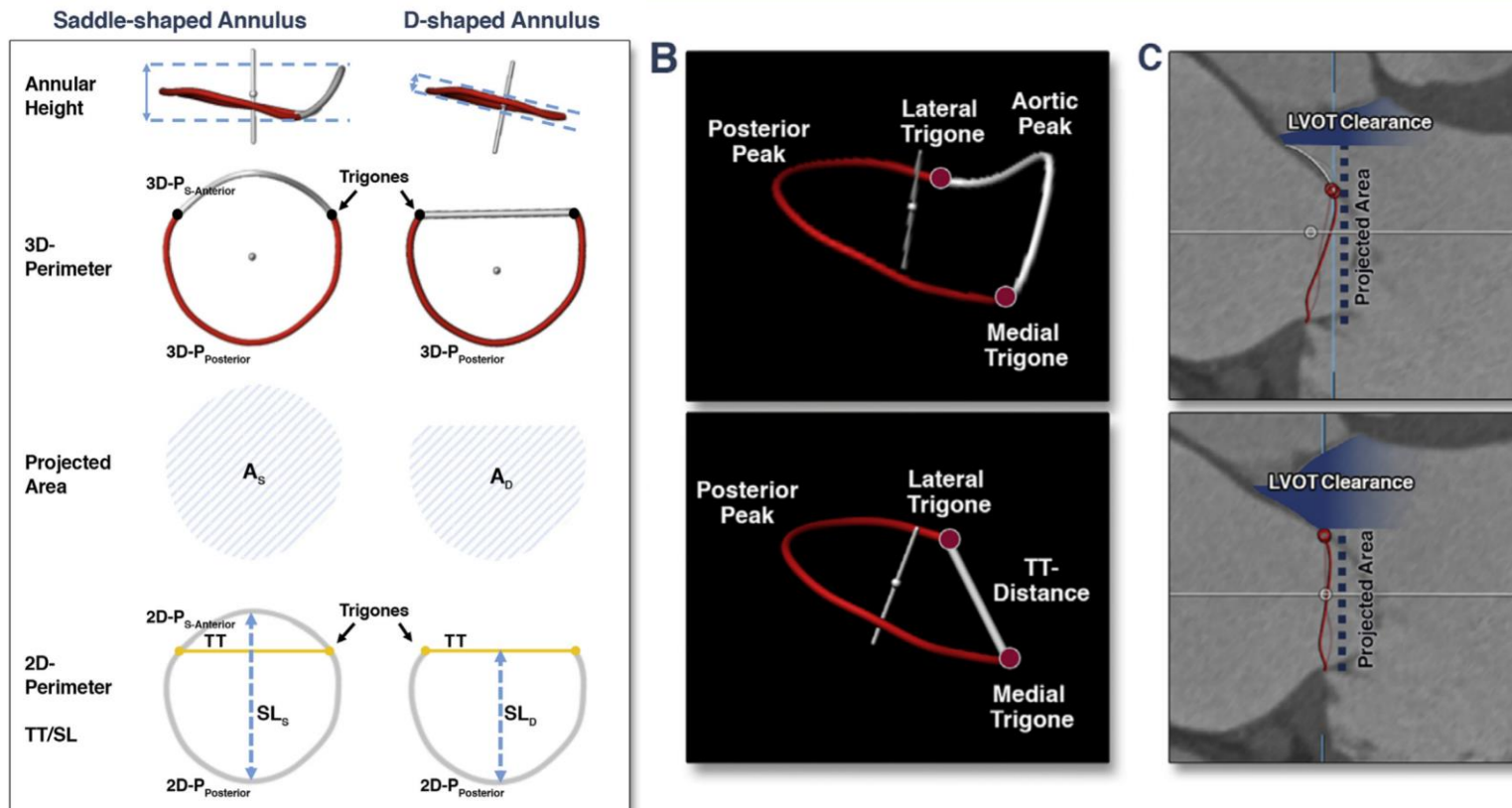
Images from different phases of the cardiac cycle are reconstructed, typically at 5-10%

Post-processing software allows visualization of structure in any 2D plane, at different time intervals of the R-R cycle



## Multimodality evaluation of the mitral valve

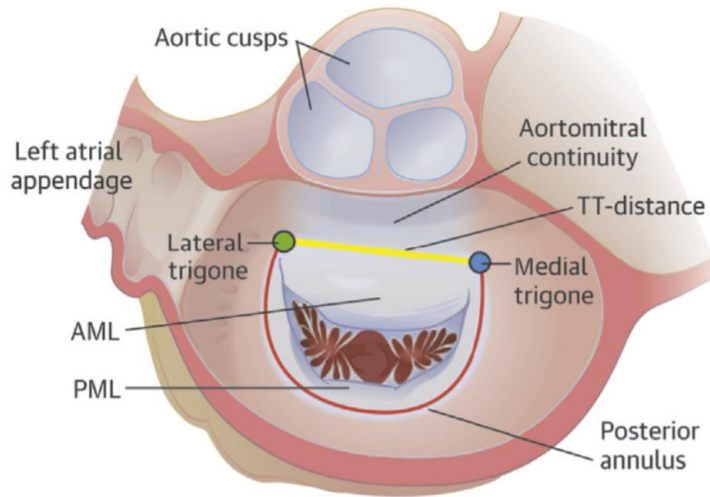
**FIGURE 1** Saddle-Shaped and D-Shaped Mitral Annulus: Definition and 3-Dimensional Structure



## Multimodality evaluation of the mitral valve

### Anatomical Assessment for TMVI Eligibility and Device Sizing

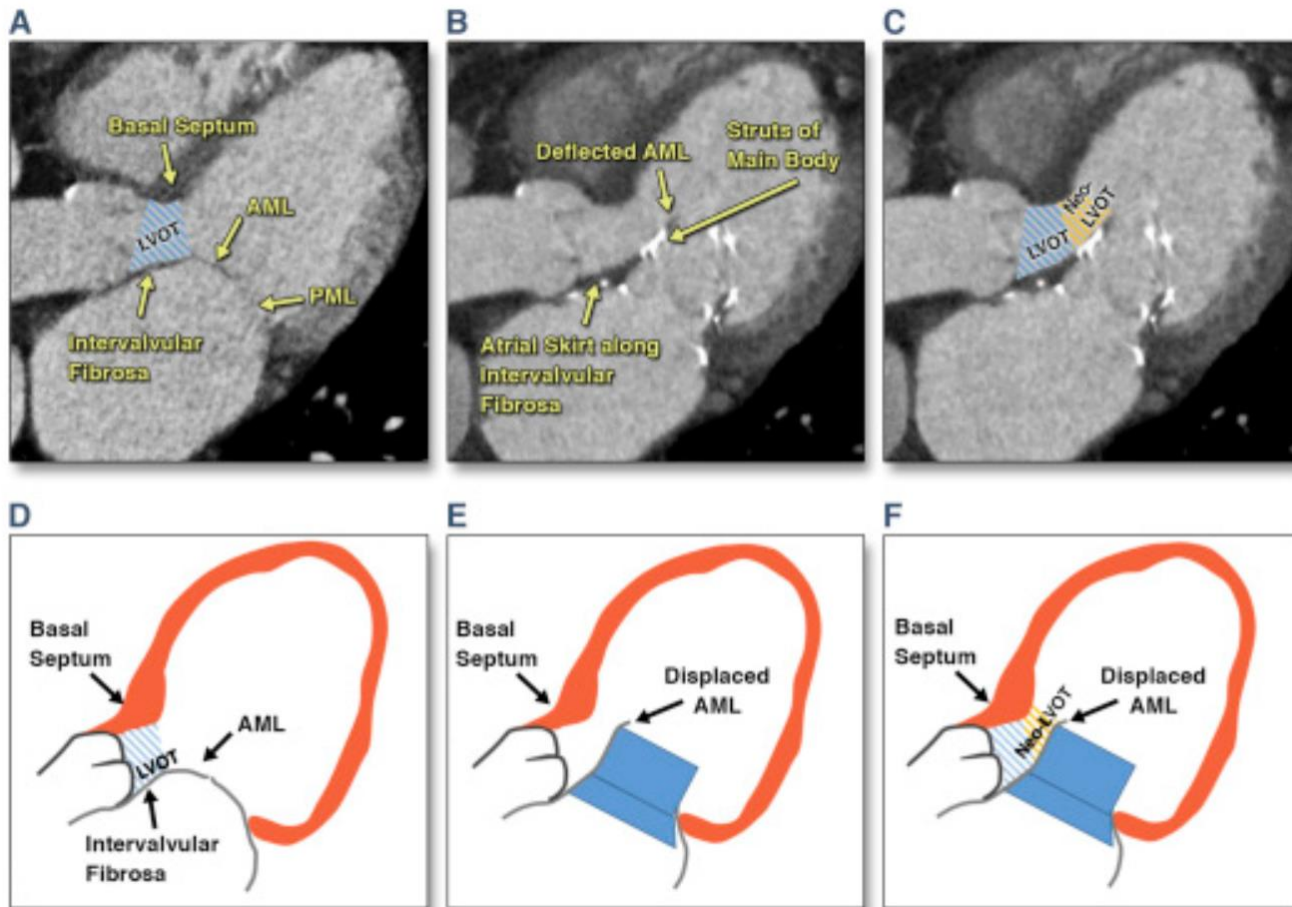
#### 3D ANNULAR SEGMENTATION (CT/3D TEE)



#### LANDING ZONE CHARACTERISTICS (CT/2D AND 3D TEE)

- Annular calcium
  - MVP/mitral annular disjunction
  - Myocardial shelf
  - Leaflet length
  - Directly inserting papillary muscles
- Adequate Landing Zone:  
yes/no

## LVOT obstruction post TMVR



## Risk factors for LVOT obstruction post TMVR

