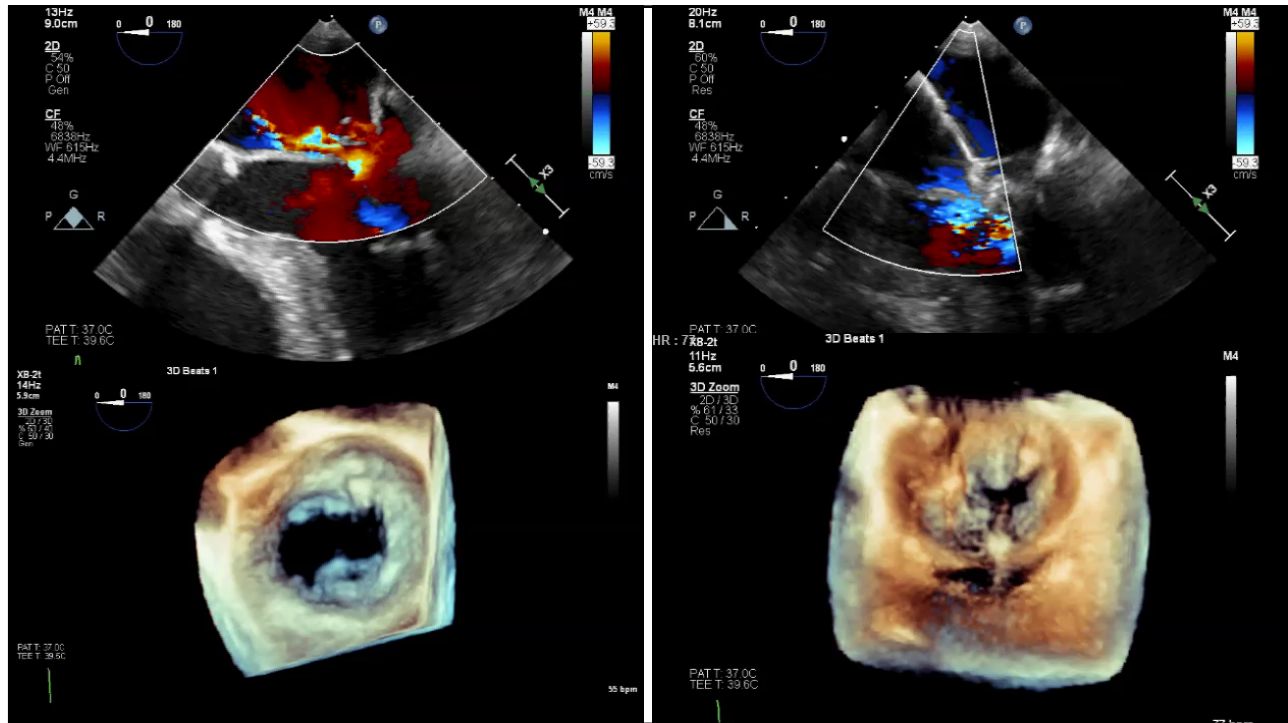


# What's the Plan, Stan?

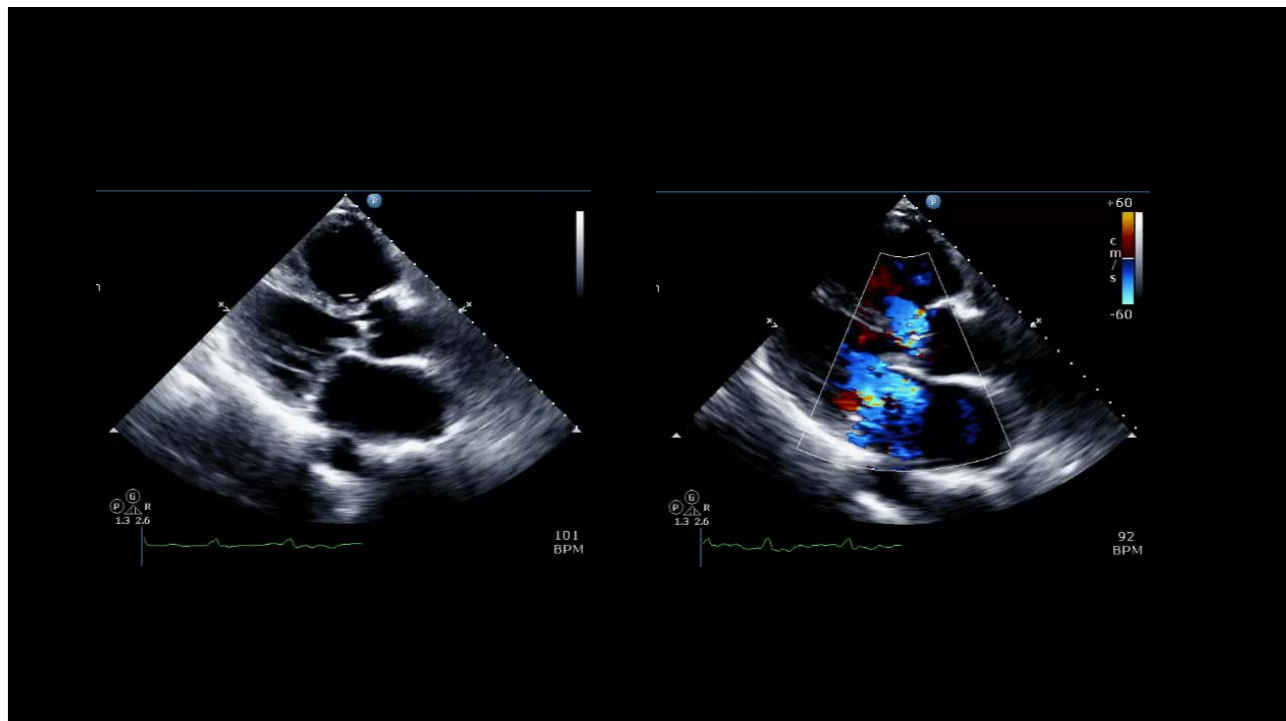
Matthew W Parker, MD  
University of Massachusetts Medical center

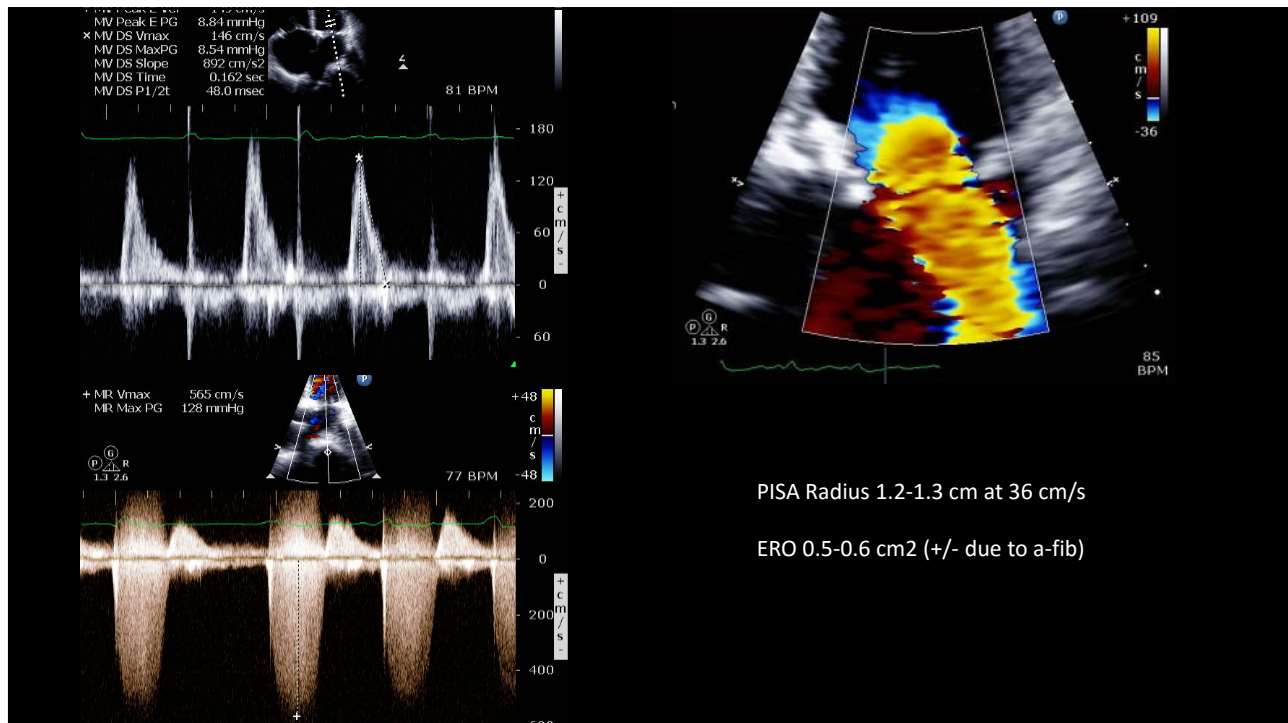
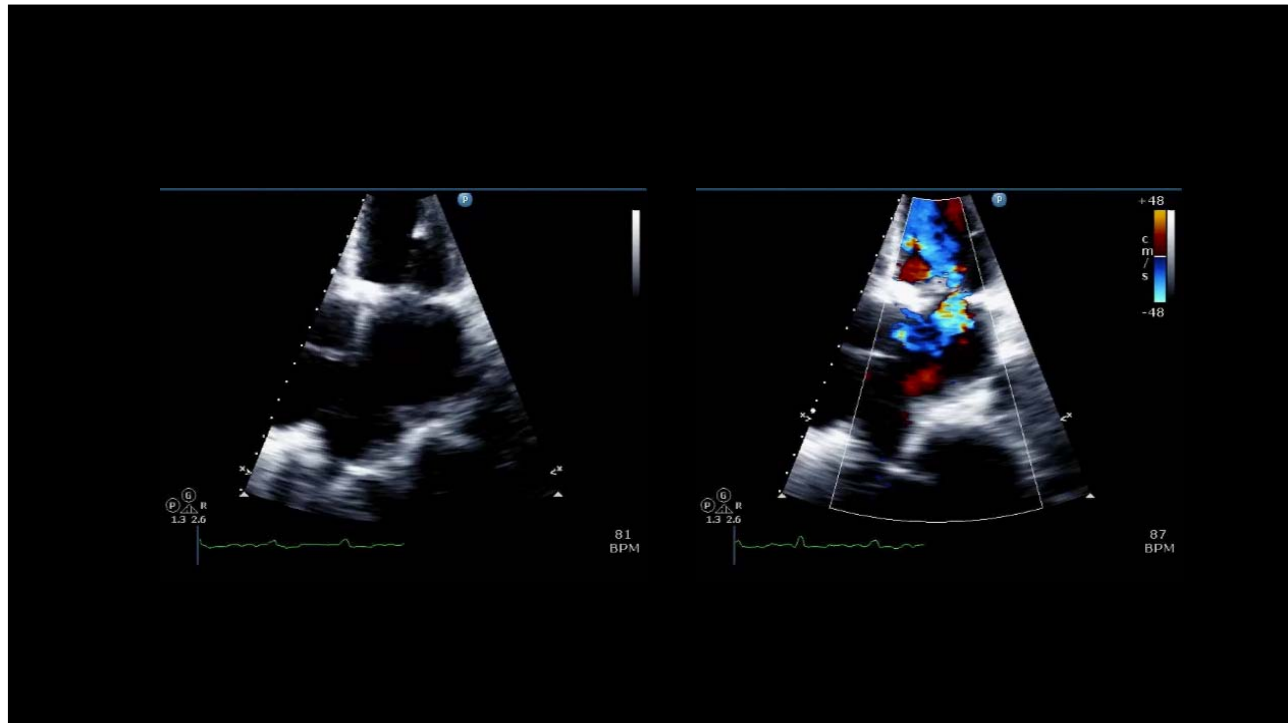


## The Patient

81M, told he had severe mitral regurgitation several years ago when he has his first episode of atrial fibrillation, but had been reluctant to undergo surgery for fear of stroke. Now with decreasing exercise capacity and two hospitalizations for heart failure requiring IV diuresis in the past year.

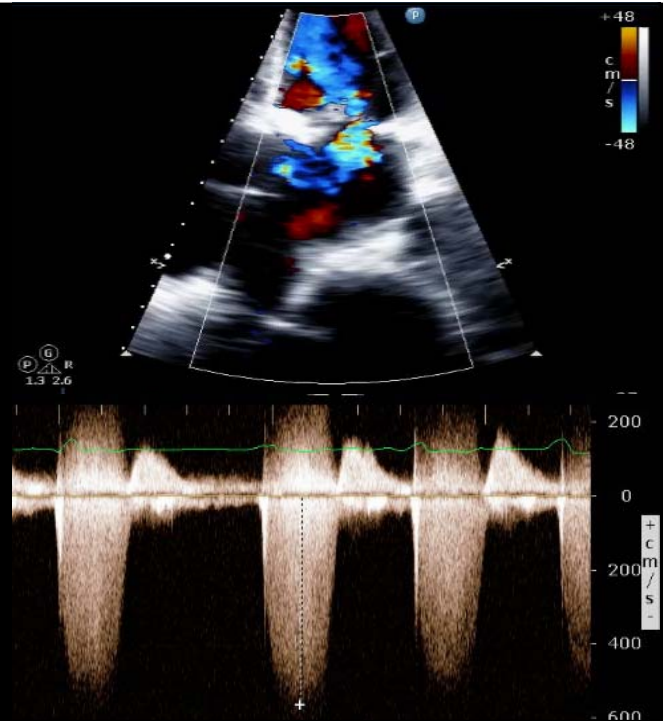
PMHx significant for MR, mild-mod pulmonary hypertension, worsening TR and deteriorating RV function; stroke 10 years ago without persistent defects; COPD not on oxygen; sustained an aortic transection repaired in the 1980s





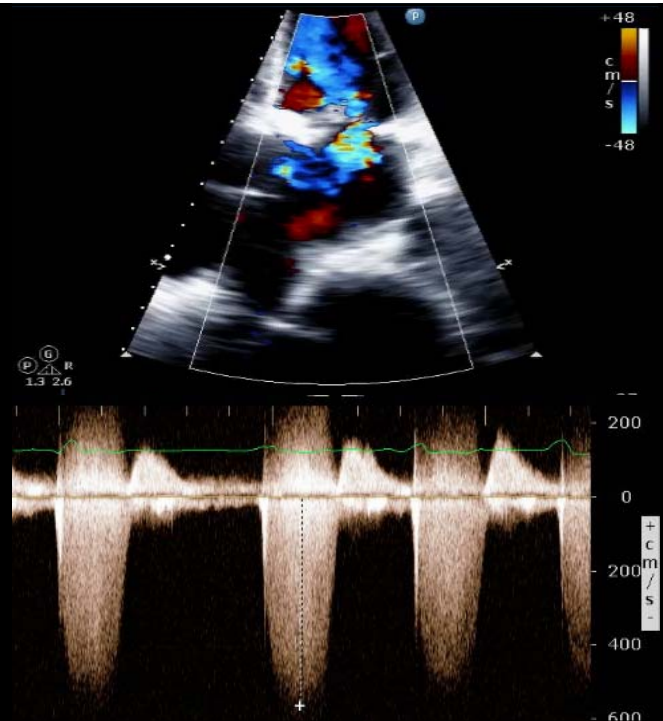
What is the degree of mitral regurgitation?

1. Mild
2. Moderate
3. Severe
4. Cannot determine



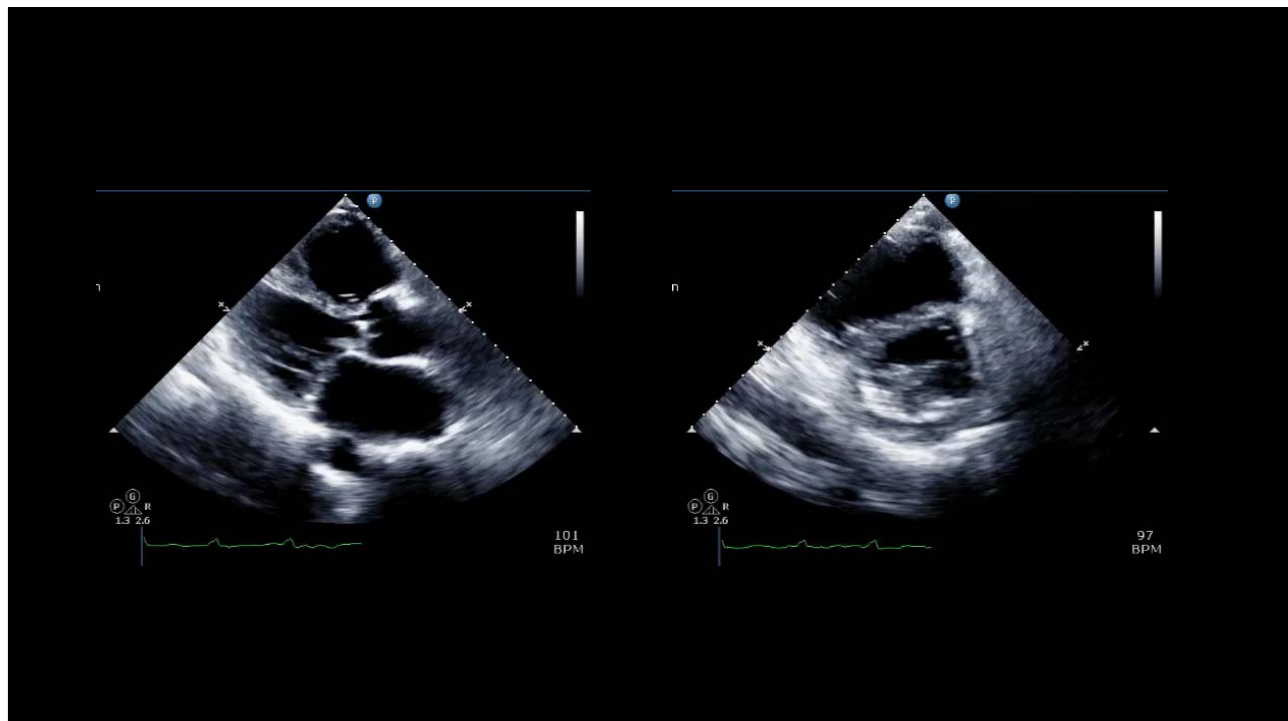
What is the degree of mitral regurgitation?

1. Mild
2. Moderate
3. Severe
4. Cannot determine



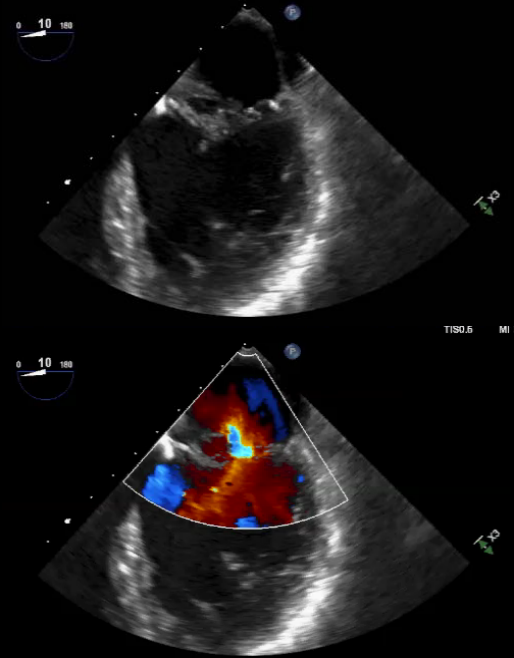
## *What's the Plan?*

- 81M severe symptomatic mitral regurgitation
- STS Risk for mitral valve replacement 4.6%
- Scheduled for MitraClip®



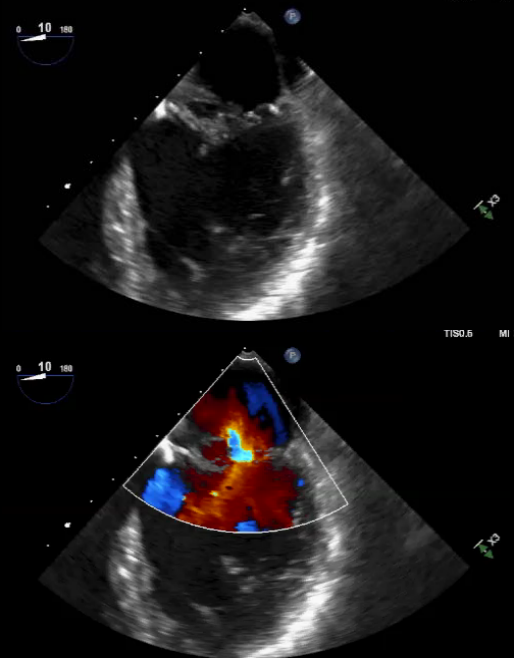
What is the cause of this patient's mitral regurgitation?

1. Carpentier Type I (normal motion)
2. Carpentier Type II (excess motion)
3. Carpentier Type IIIa (systolic and diastolic restriction)
4. Carpentier Type IIIb (systolic restriction)
5. Carpentier Type IV (systolic anterior motion)



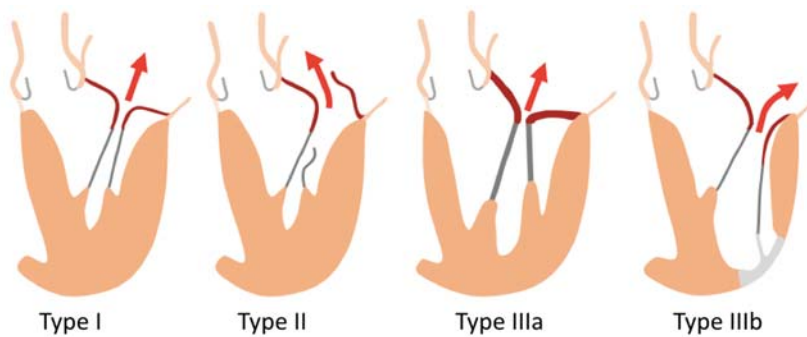
What is the cause of this patient's mitral regurgitation?

1. Carpentier Type I (normal motion)
2. Carpentier Type II (excess motion)
3. Carpentier Type IIIa (systolic and diastolic restriction)
4. Carpentier Type IIIb (systolic restriction)
5. Carpentier Type IV (systolic anterior motion)
6. I'm not sure yet

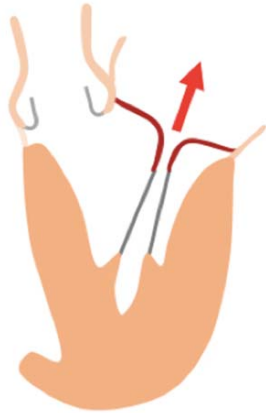


## Cause of the Mitral Regurgitation

### Carpentier Classification of Mitral Regurgitation



## Type I. Normal leaflet motion



Type I

Endocarditis with Perforation

Pure Annular Dilatation

- Infarct basal to the papillary muscle
- Left atrial enlargement

Cleft Mitral Valve

## Type II. Excess leaflet motion



Type II

Ruptured Chord(s)

- Fibroelastic deficiency
- Endocarditis

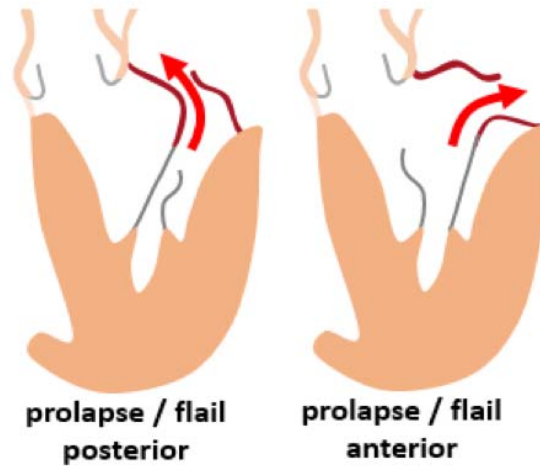
Myxomatous Disease

- Prolapse
- Flail

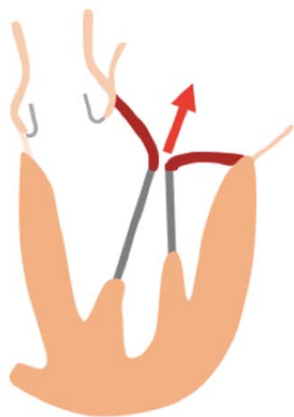
Ruptured Papillary Muscle



## Type II. Excess leaflet motion



## Type IIIa. Restricted leaflet motion (systole and diastole)



Type IIIa

Rheumatic Disease

Mitral annular calcification

Fen-phen valvulopathy

## Type IIIb. Restricted leaflet motion (systole only)



Type IIIb

Tethering from infarcts  
affecting the lateral papillary  
muscle

## “Type IV.” Systolic anterior motion



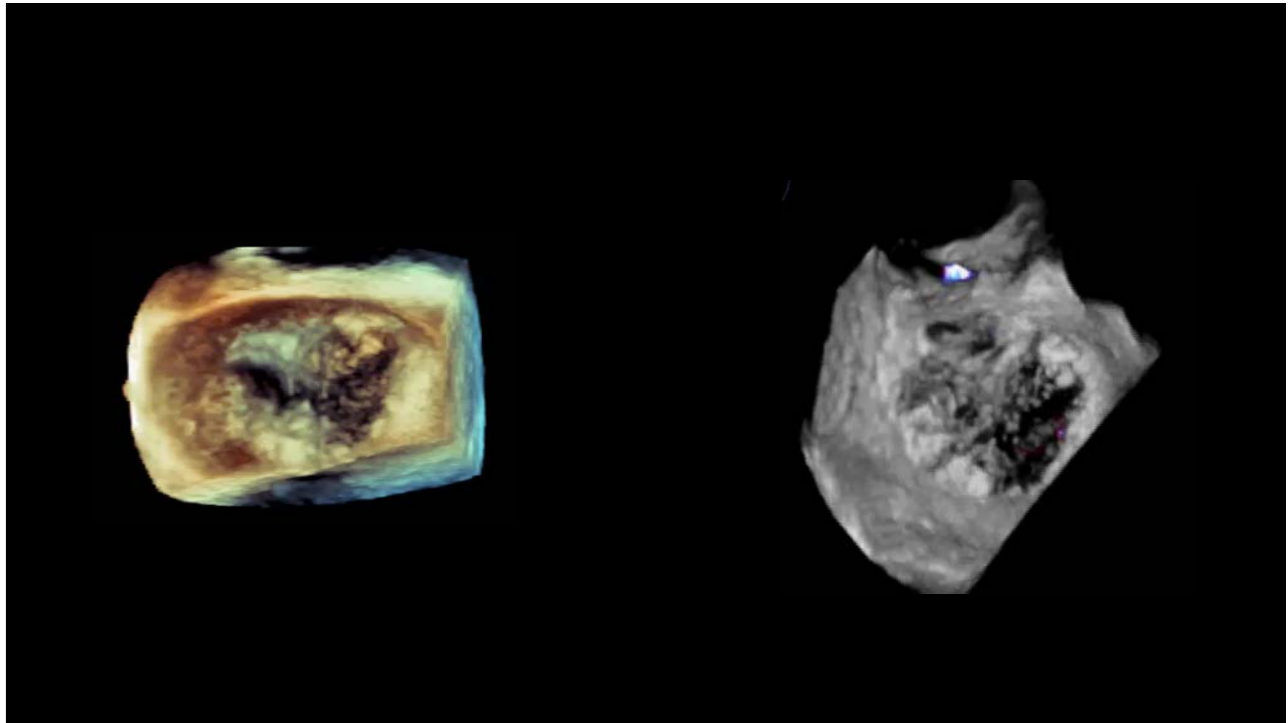
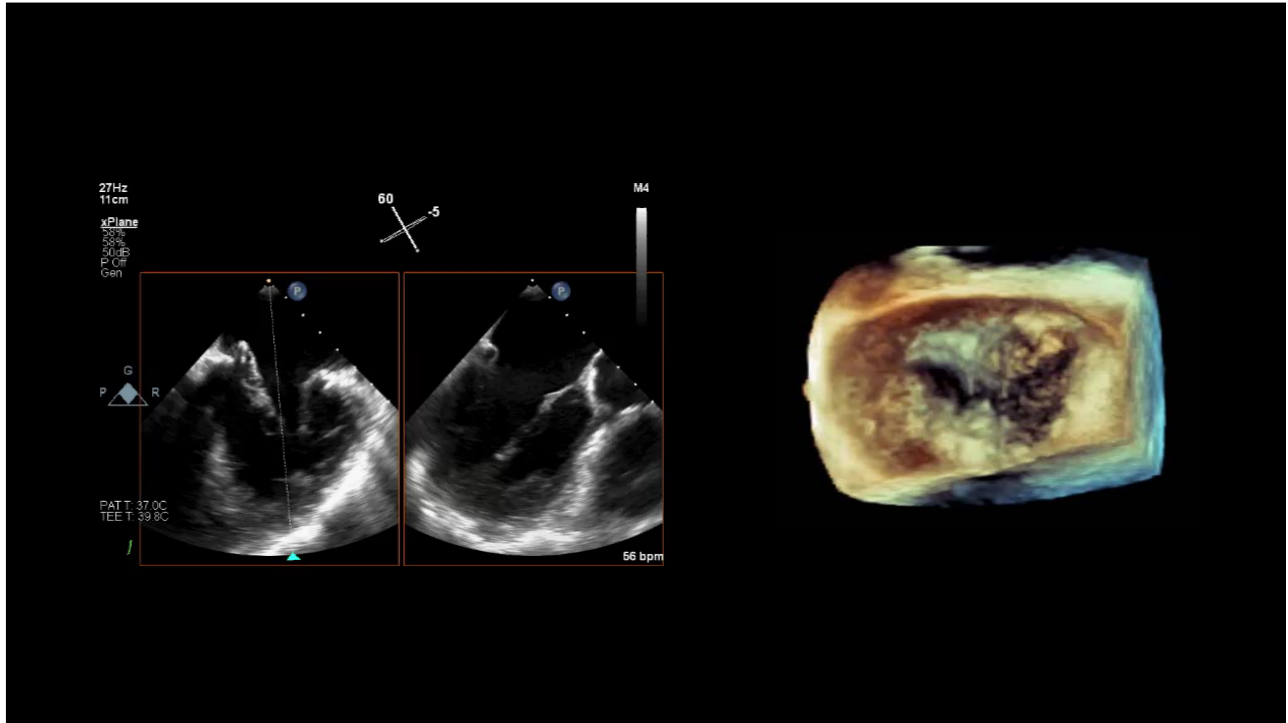
SAM

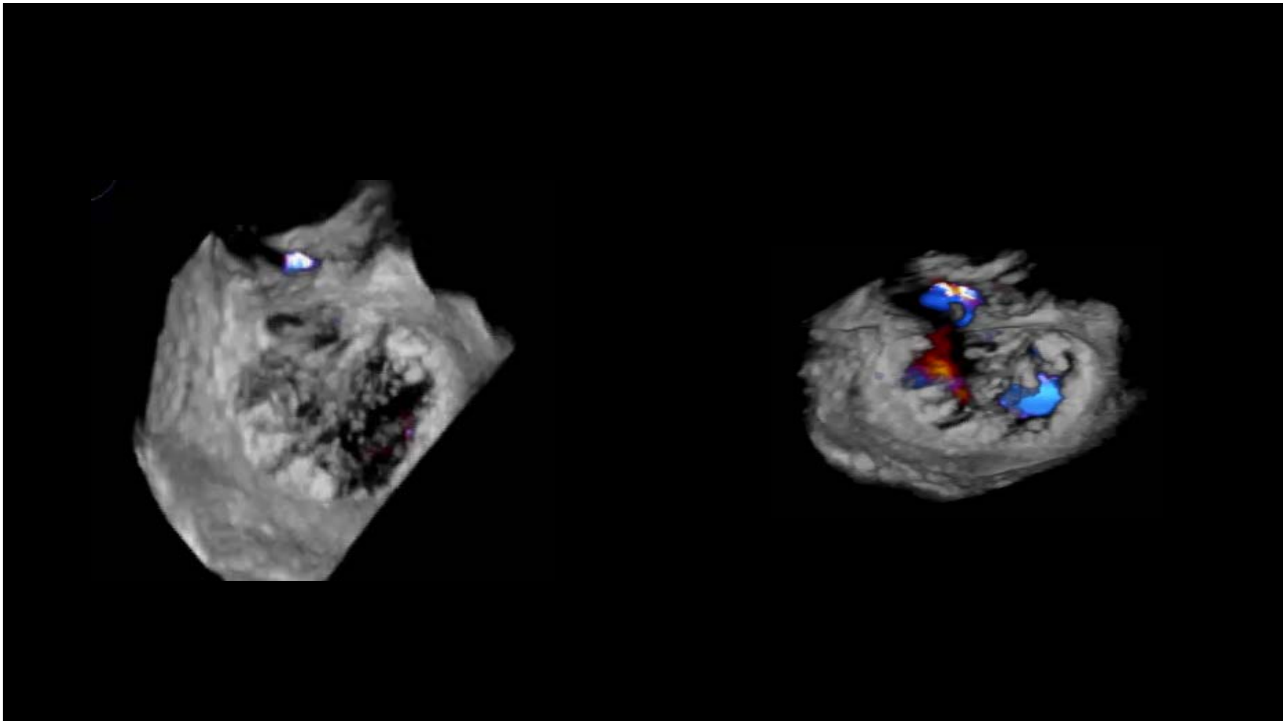
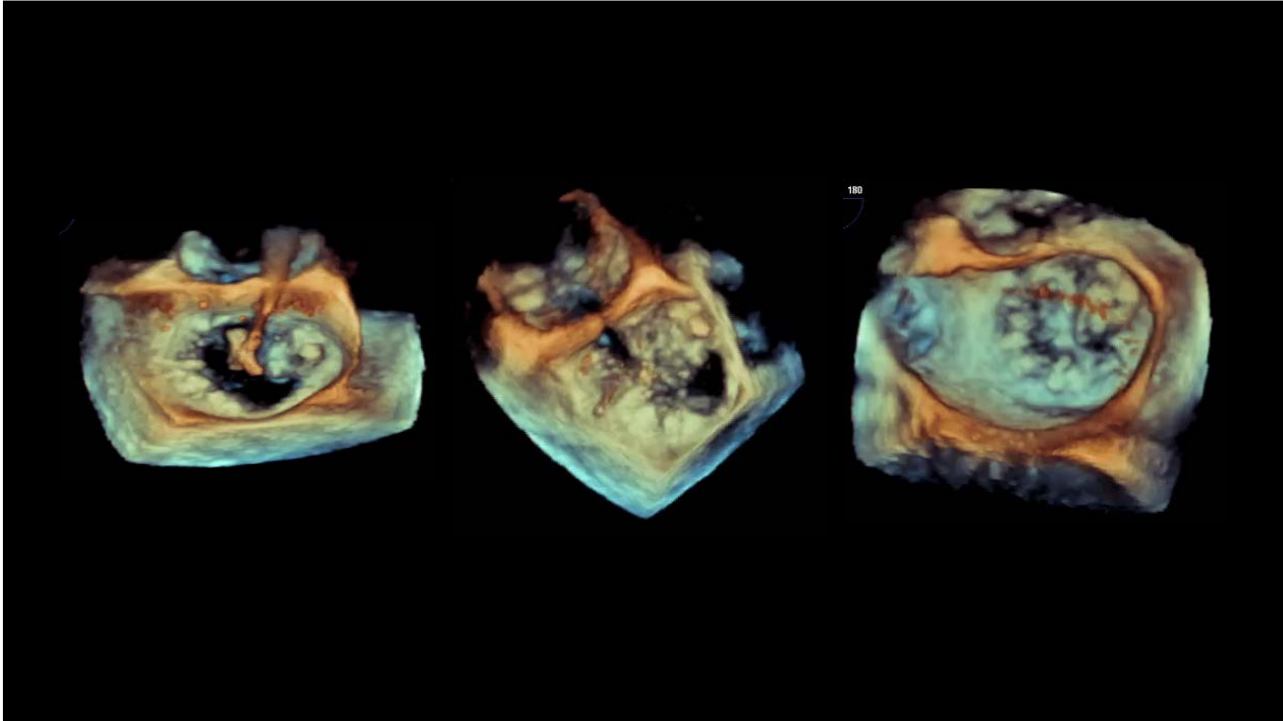
Hypertrophic Cardiomyopathy  
with obstruction

Hyperdynamic circulatory  
states

Extensive Anterior MI

Takotsubo Syndrome





## Take-Away

- Mechanism of MR is just as important as severity
- Carpentier Classification provides a framework to describe a diseased mitral valve
- Percutaneous intervention is only successful when echo can show interventional colleagues the plan

Slip out the back, Jack,  
Make a new plan, Stan,  
Don't need to be coy, Roy,  
    Just listen to me  
Hop on the bus, Gus,  
Don't need to discuss much  
Just drop off the key, Lee,  
    And get yourself free

