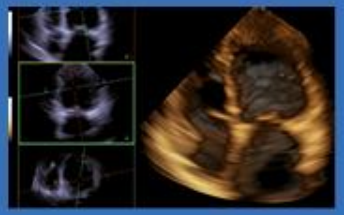
EuroValve
January 26-27, 2017

Interactive session : what is your diagnosis ?
A pitfall

Anne Bernard, MD, PhD

Tours, France

www.eurovalvecongress.com



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Faculty disclosure

Anne Bernard

I have **no financial relationships** to disclose.

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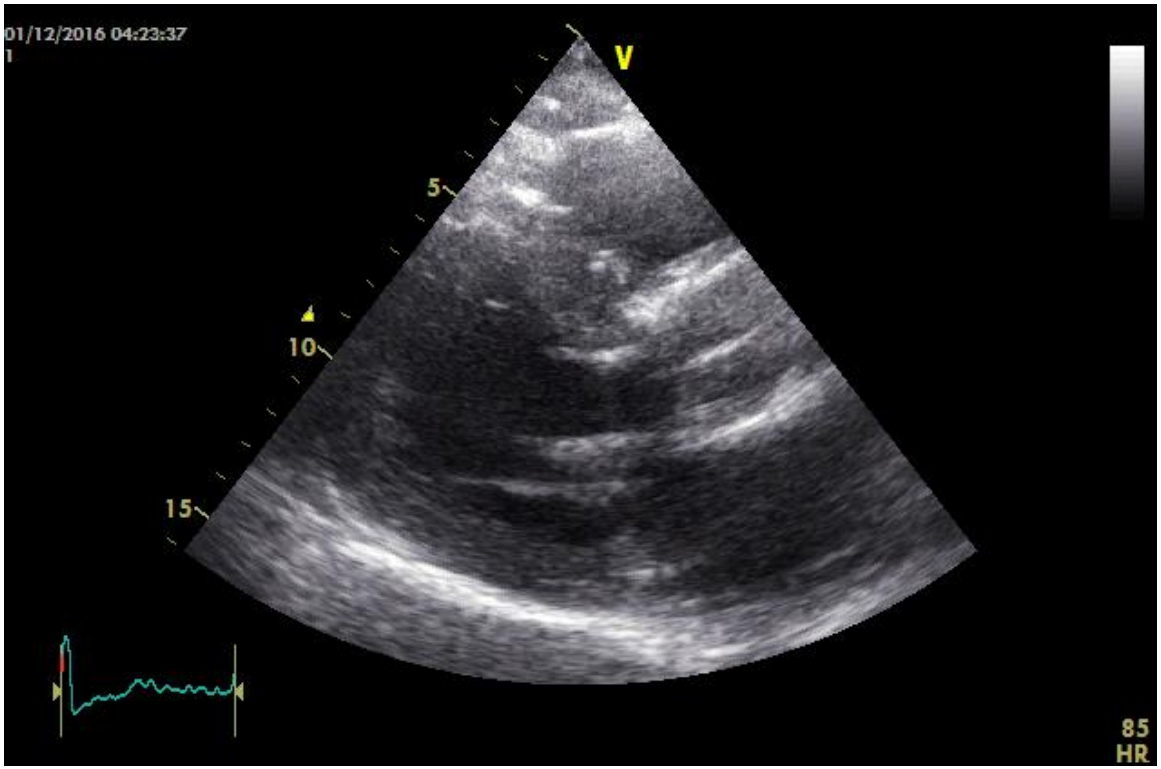
A 60 year old man

- Admitted to ICU for acute pulmonary oedema
- History:
  - **Hypertrophic obstructive cardiomyopathy** diagnosed 20 years ago
  - Last follow-up: resting obstruction (39 mmHg), mild MR due to SAM
  - Paroxysmal atrial fibrillation
  - **Therapy:** nadolol, apixaban, candesartan, amiodarone (discontinued one week ago)
- Gradually progressing exertional dyspnea > furosemide
- Then, acute pulmonary oedema

Parasternal long-axis view



- Maximal septal thickness = 22 mm
- Systolic anterior motion

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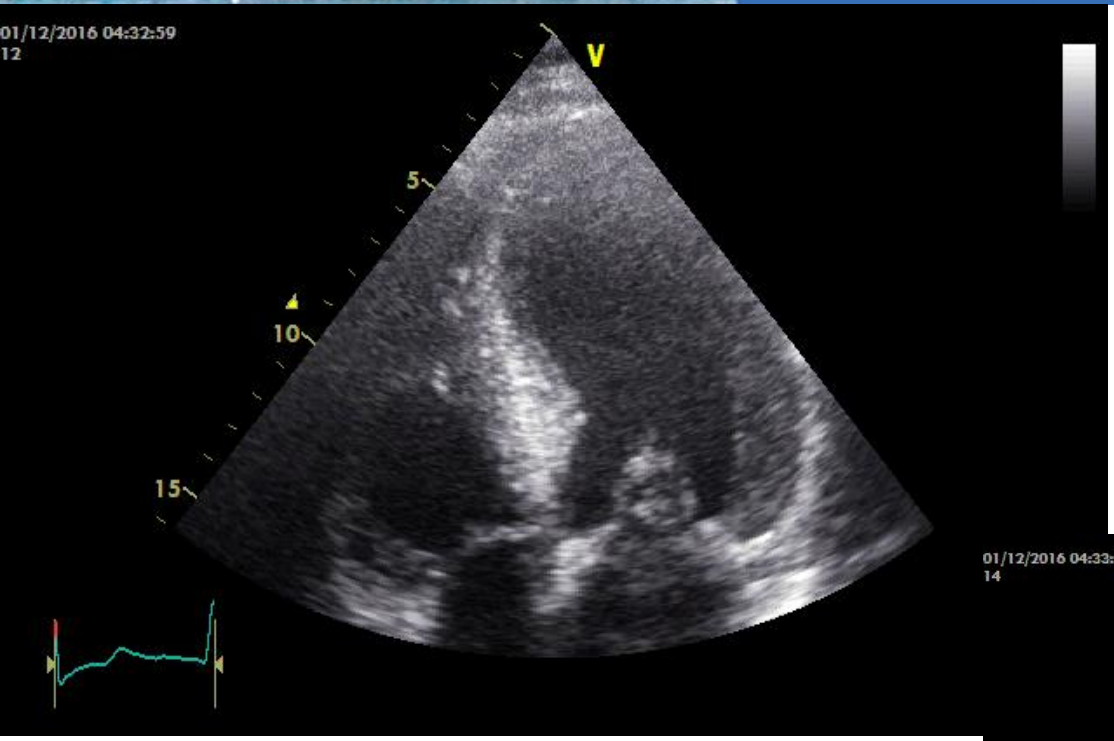
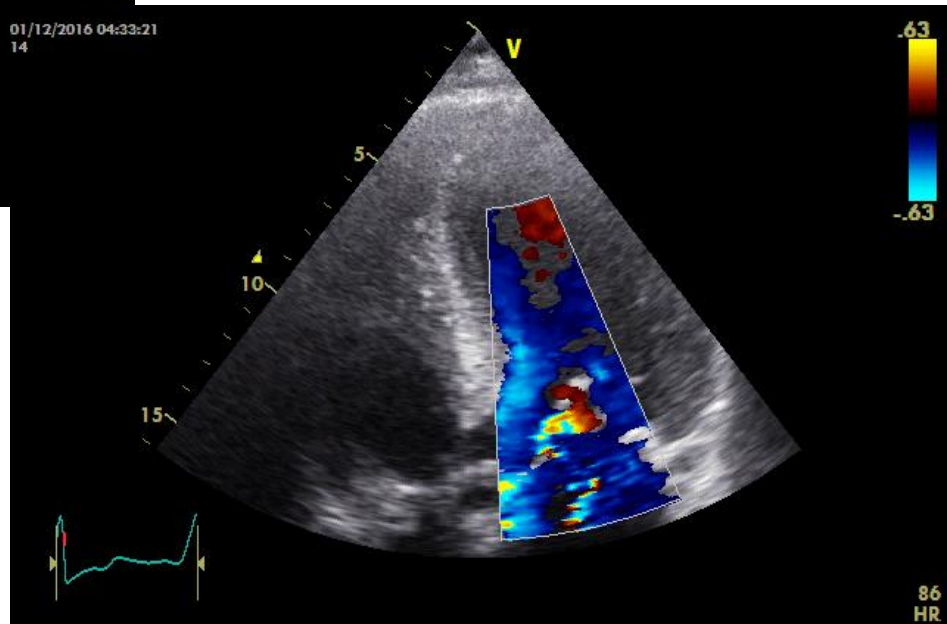
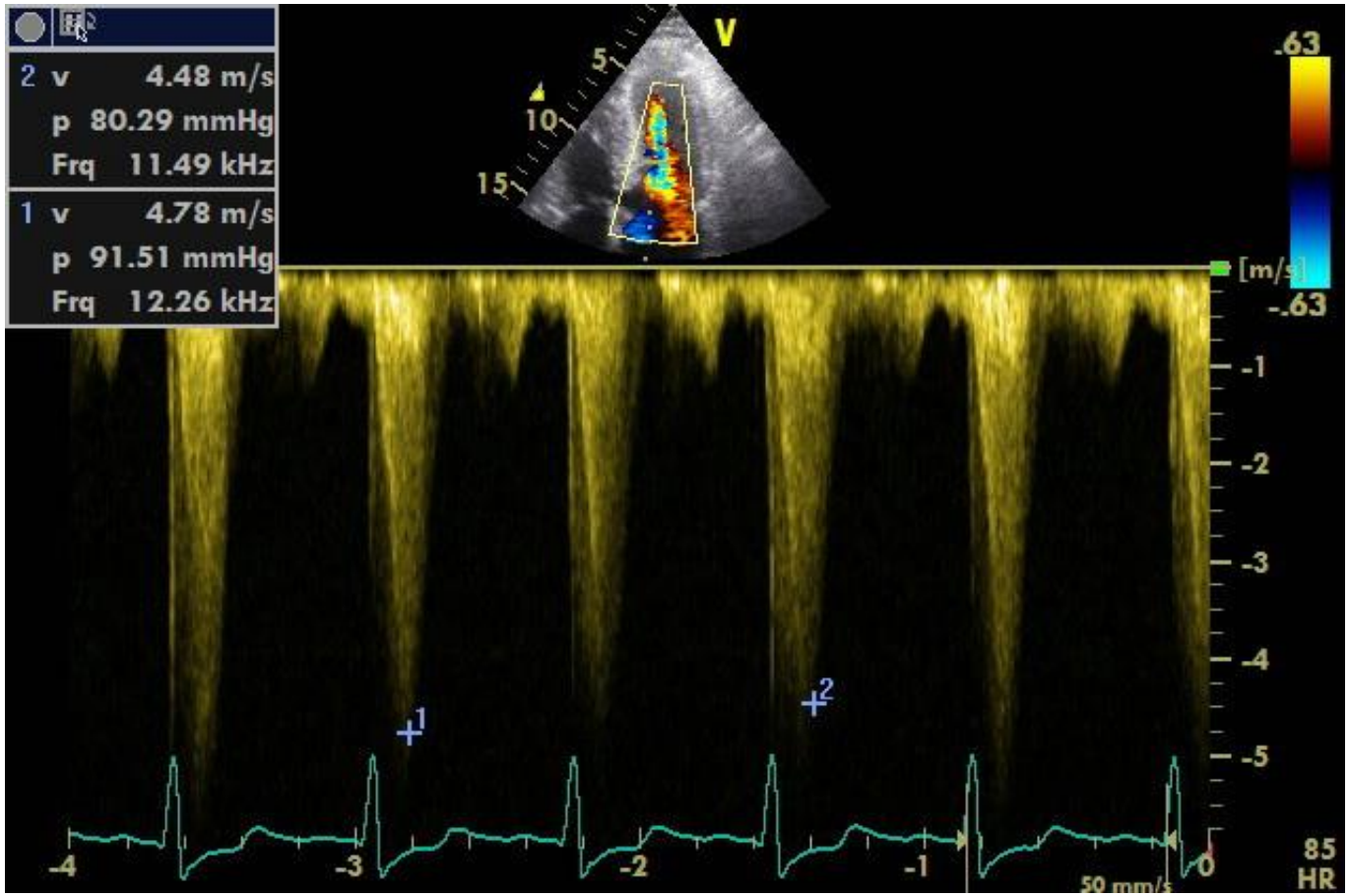
Apical 4 chamber view





- Hyperdynamic function
- Systolic anterior motion
- Moderate MR

Significant LVOT resting osbtruction of 91 mmHg
sPAP = 30 + 15 mmHg



Treatment

- intravascular volume replacement and majoration of B-blockers
- 2 days after, rapid atrial fibrillation that worsened his clinical status
- Diagnosis of severe hyperthyroidism

  > Neomercazole + prednisone
- Despite initiation of treatment, he remained breathless

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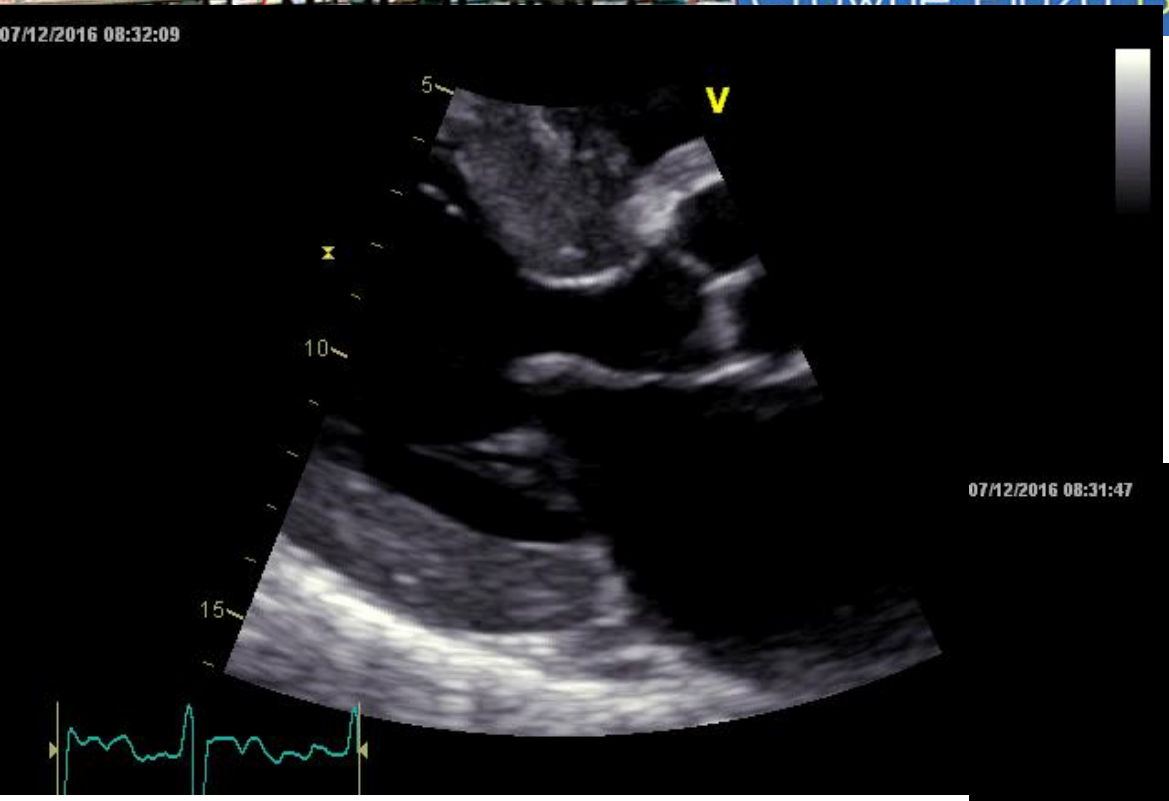

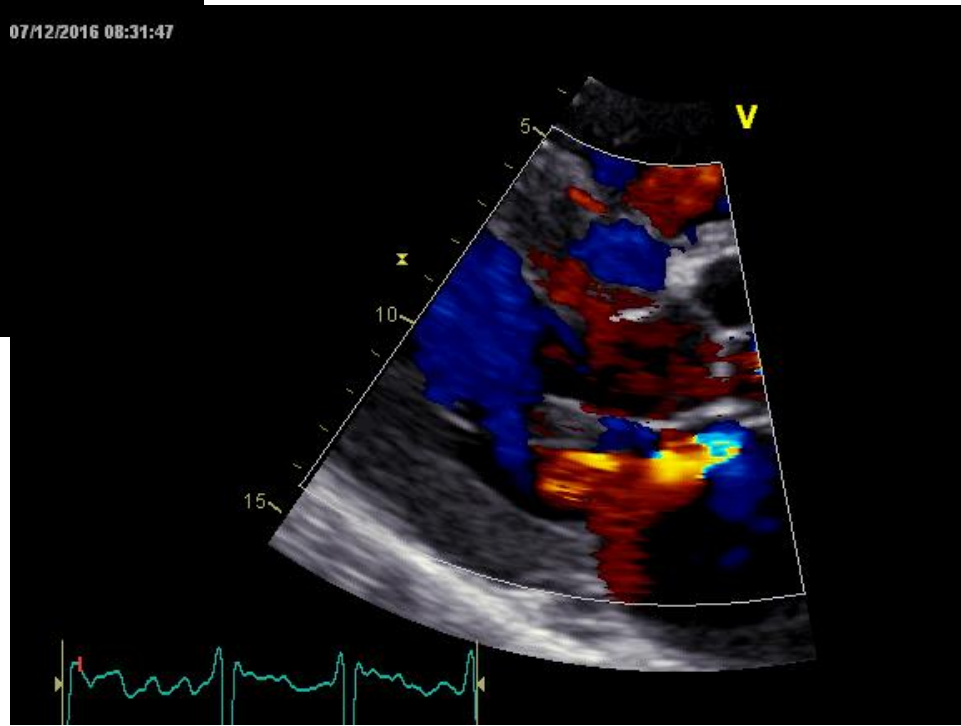

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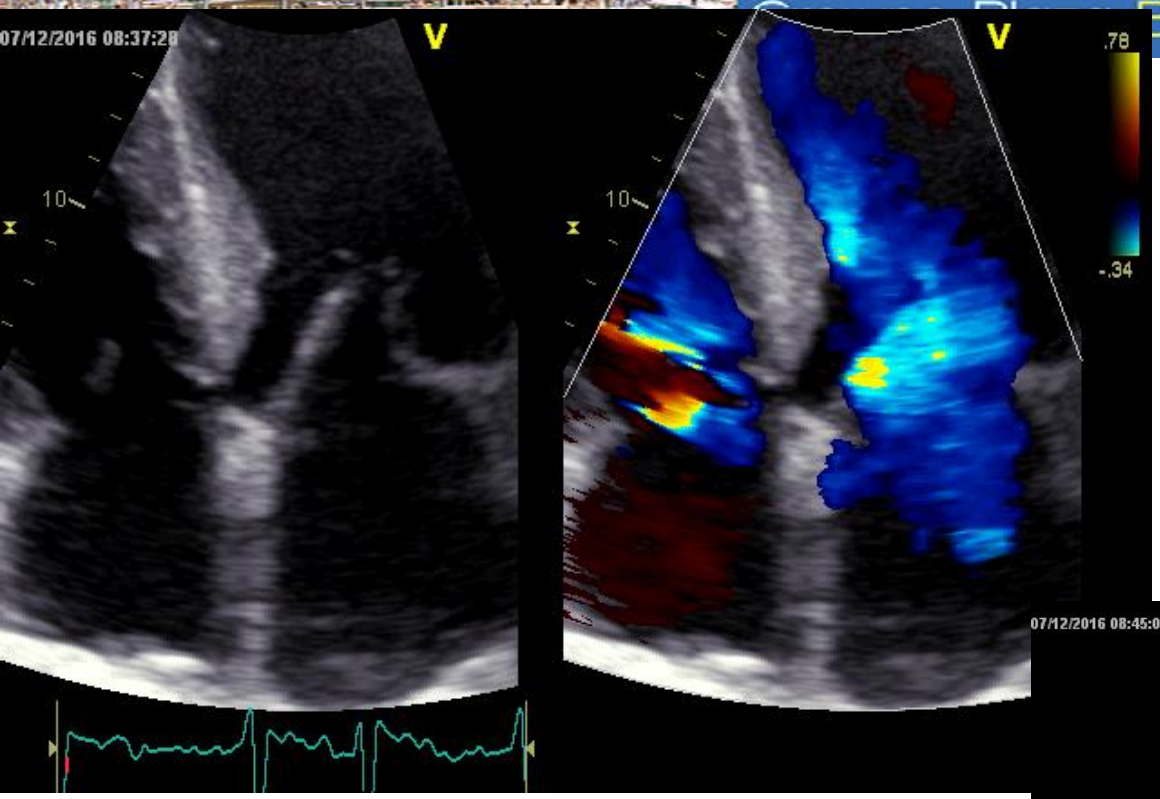
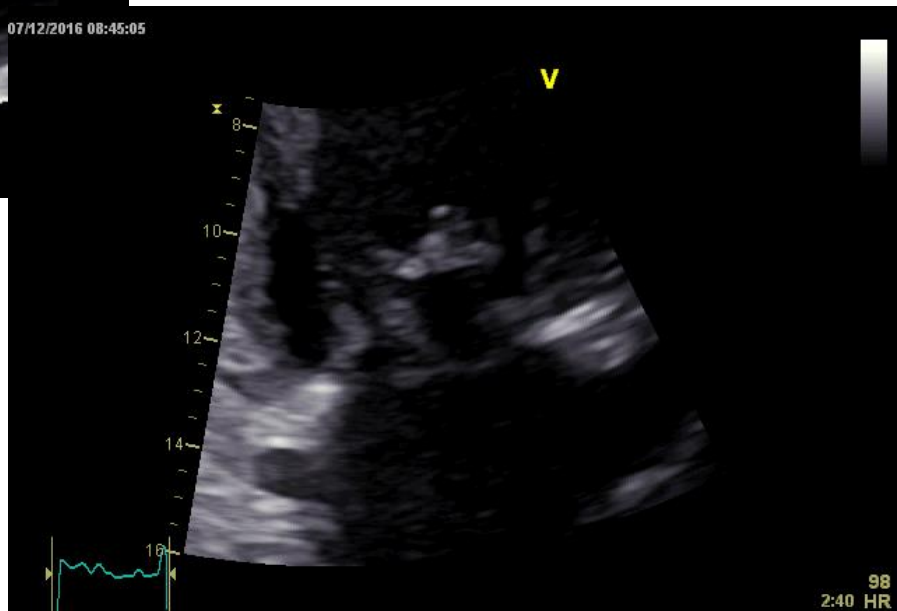


Apical 4 chamber view



Zoom Apical 2 chamber view

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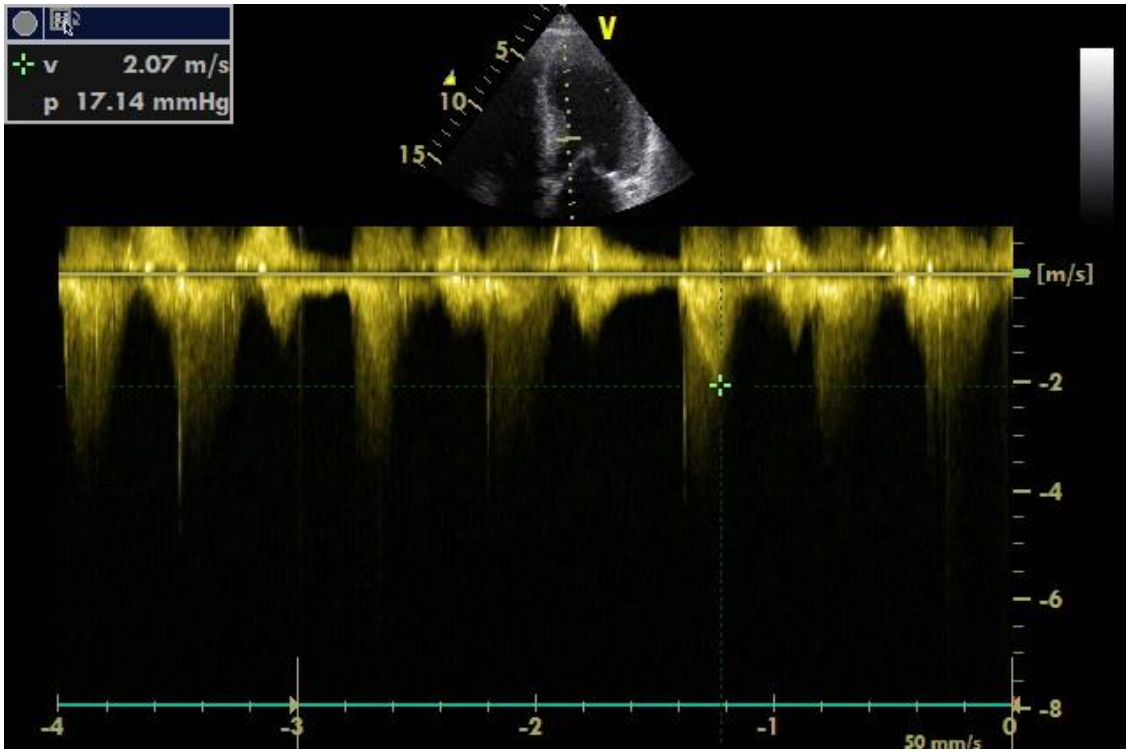

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What is your diagnosis ?

1. There is a persistant severe LV obstruction
2. Atrial fibrillation explains his clinical status
3. Mitral regurgitation is severe
4. SAM explains mitral regurgitation
5. There is another cause of MR

What is your diagnosis ?

1. There is a persistant severe LV obstruction
2. Atrial fibrillation explains his clinical status
3. **Mitral regurgitation is severe**
4. SAM explains mitral regurgitation
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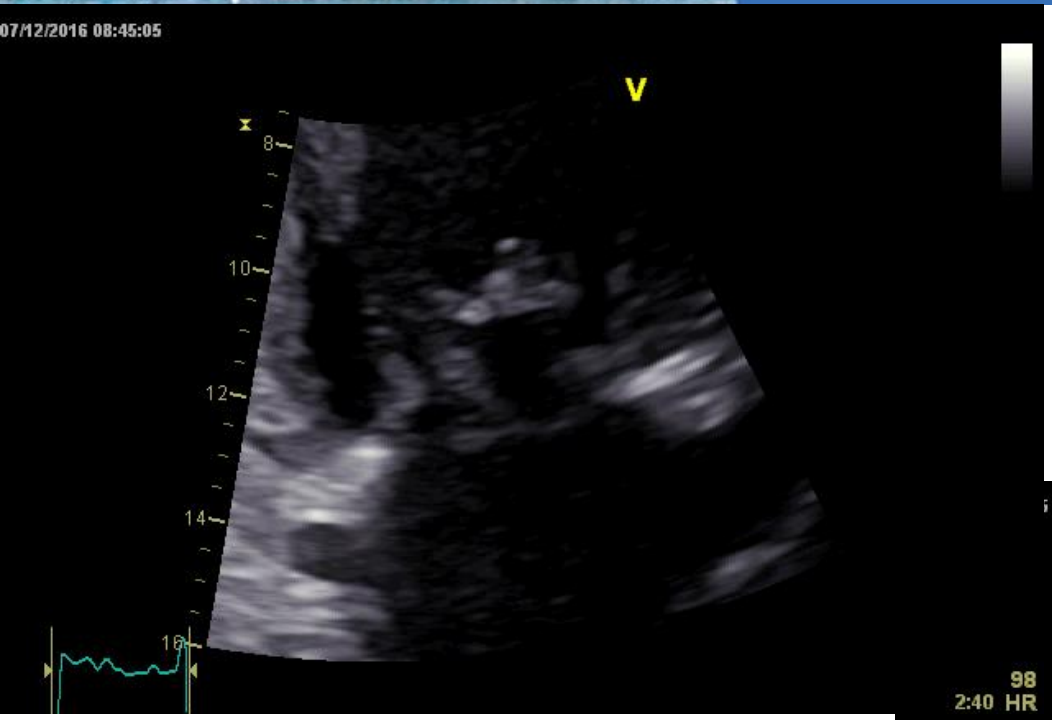

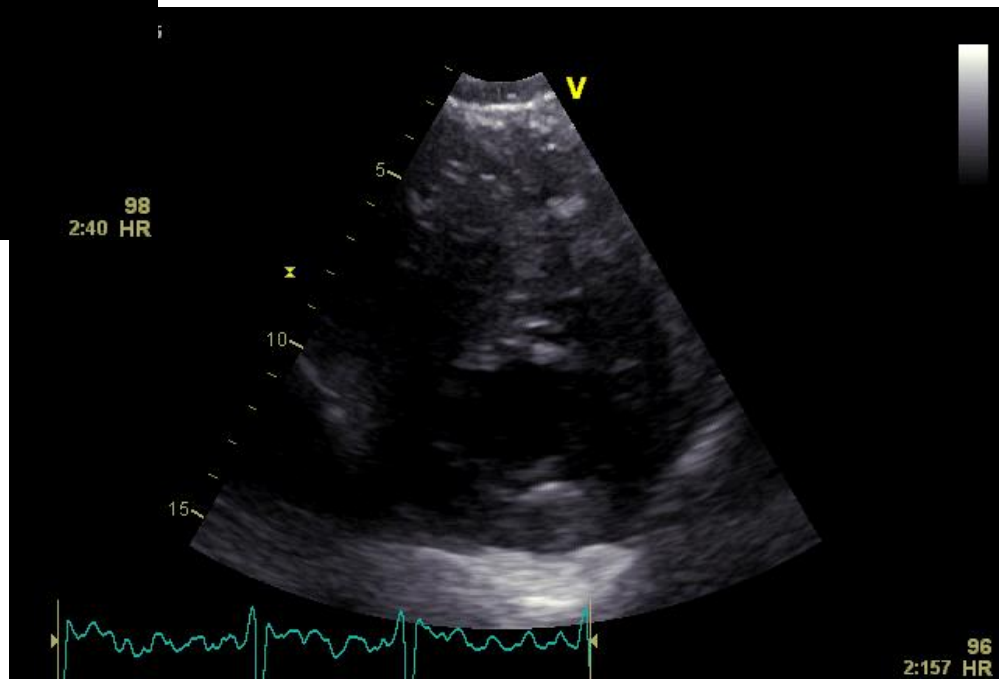

P2 prolapse with chordae rupture

- Would you perform another imaging test ?

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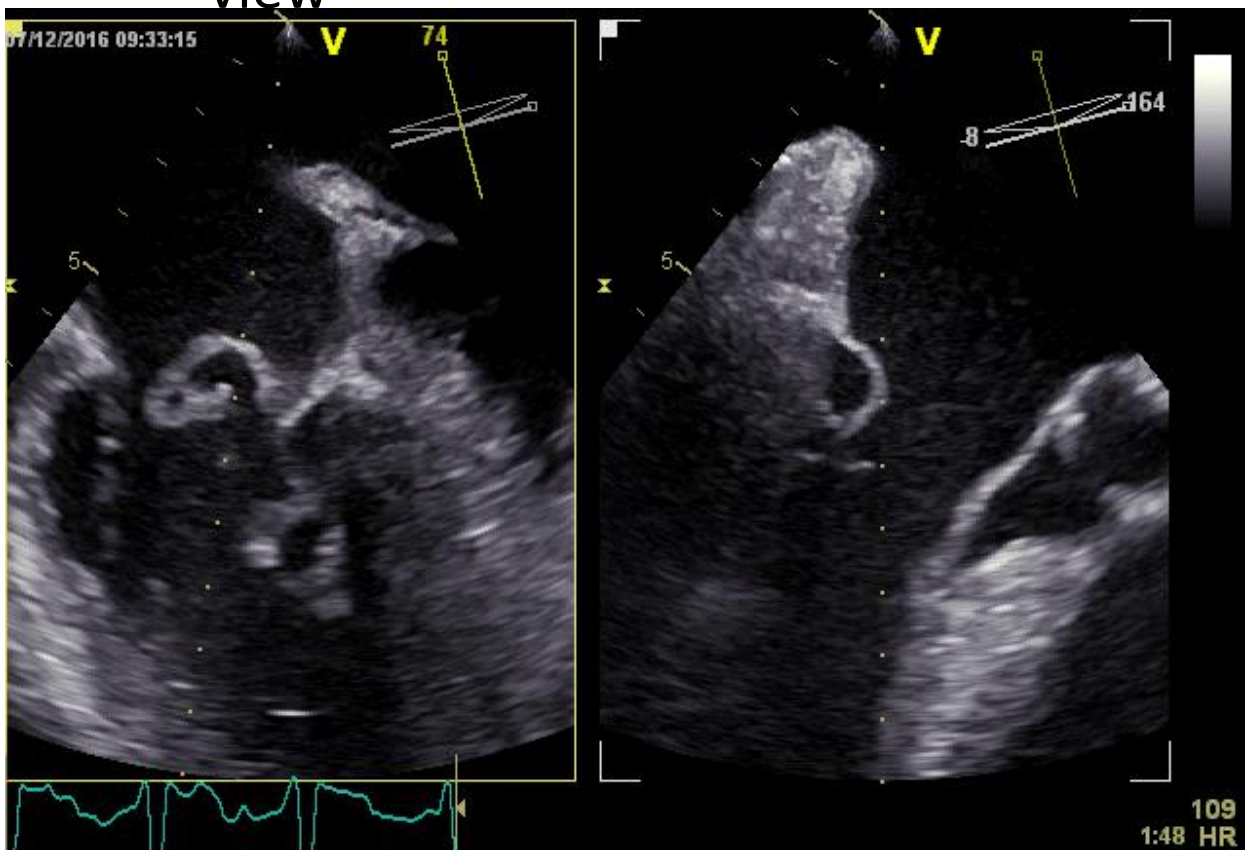
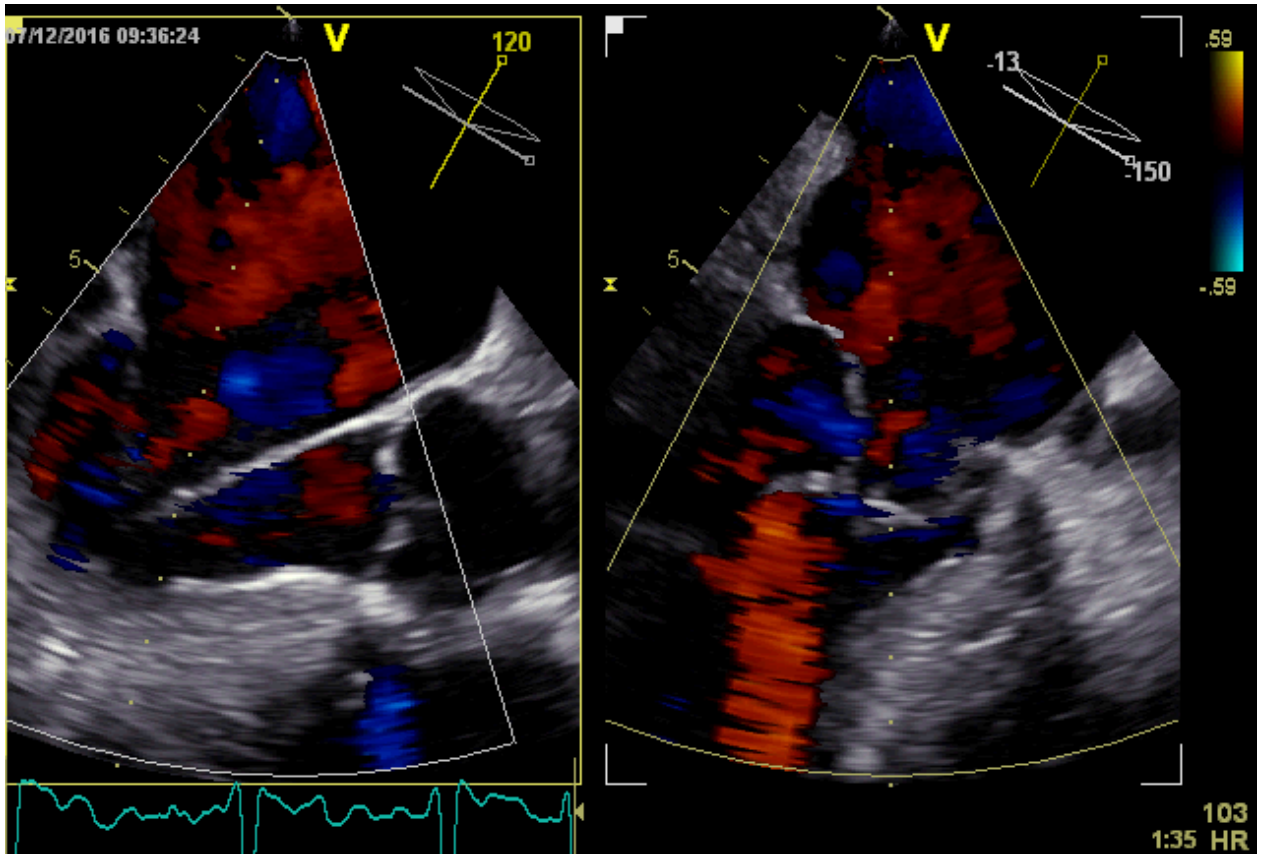
TOE

Bicommissural view

120° view



120° view



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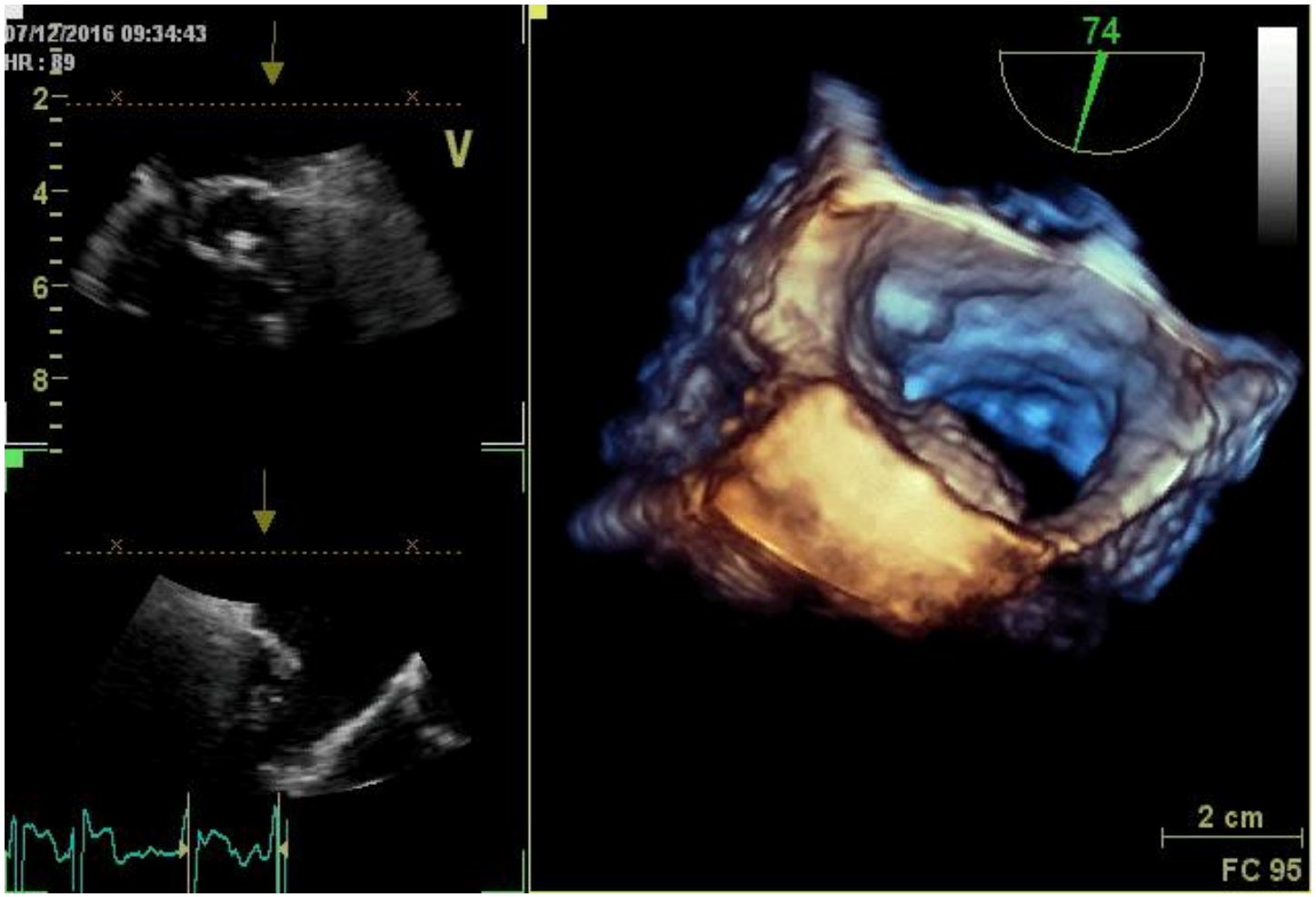

- The patient will shortly be referred for surgery after control of hyperthyroidism for :
  - mitral valve repair
  - septal myectomy-myotomy
  - atrial fibrillation surgery

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CASE REPORT

Mitral Regurgitation Due to Ruptured Chordae Tendineae in Patients With Hypertrophic Obstructive Cardiomyopathy

WEI-XI ZHU, MD, JAE K. OH, MD, STEPHEN L. KOPECKY, MD, FACC, HARTZELL V. SCHAFF, MD, FACC, A. JAMIL TAJIK, MD, FACC

Rochester, Minnesota

- 93 septal myectomy-myotomy
- 5 patients with mitral valve chordal rupture (5.4%)

Archives of Cardiovascular Disease (2015) 108, 244–249

ELSEVIER MASSON

Available online at ScienceDirect www.sciencedirect.com

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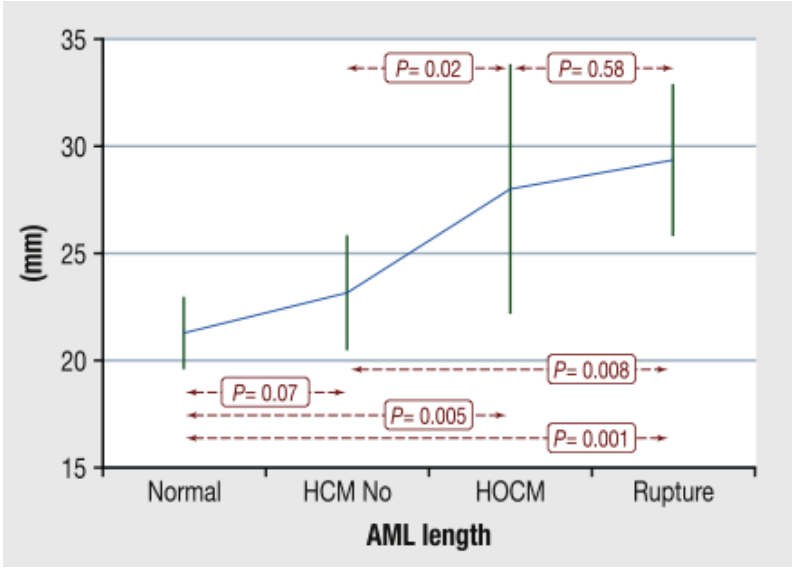
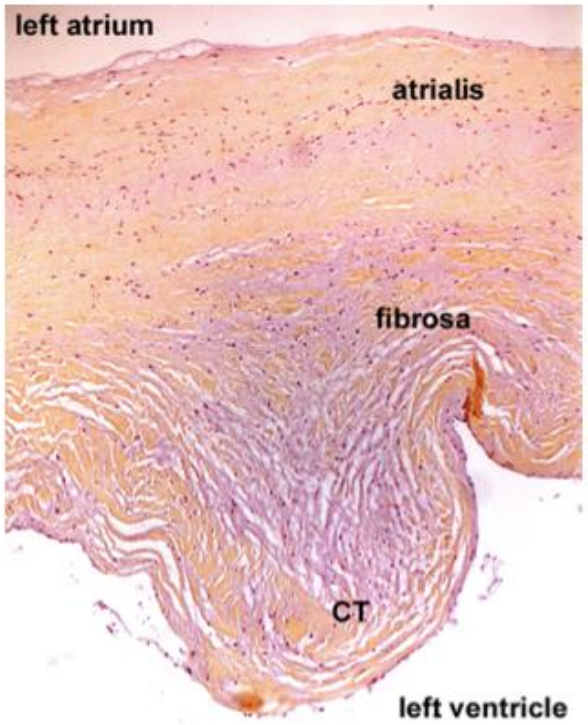
CLINICAL RESEARCH

Rupture of mitral valve chordae in hypertrophic cardiomyopathy

CrossMark

- 580 HCM
- 6 patients with mitral valve chordal rupture (1%)
- always involving posterior mitral leaflet

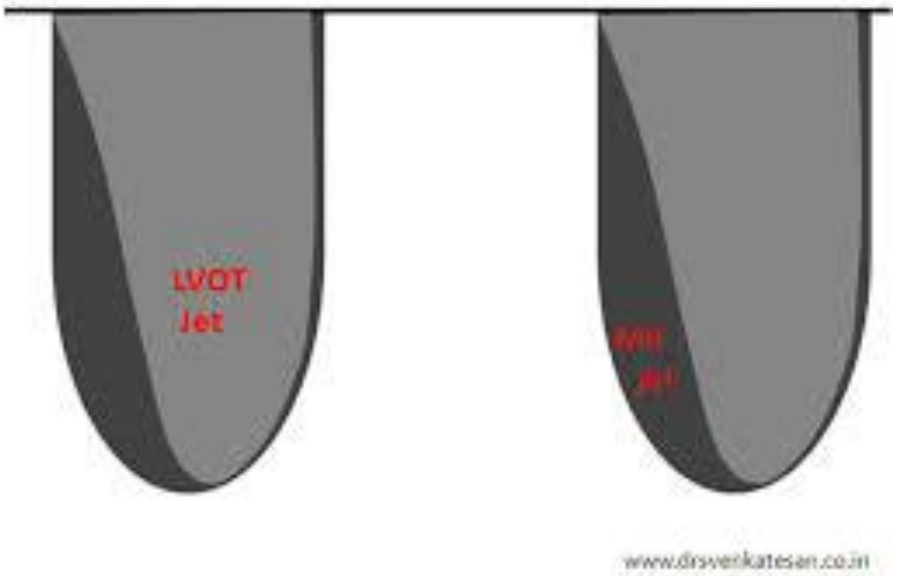


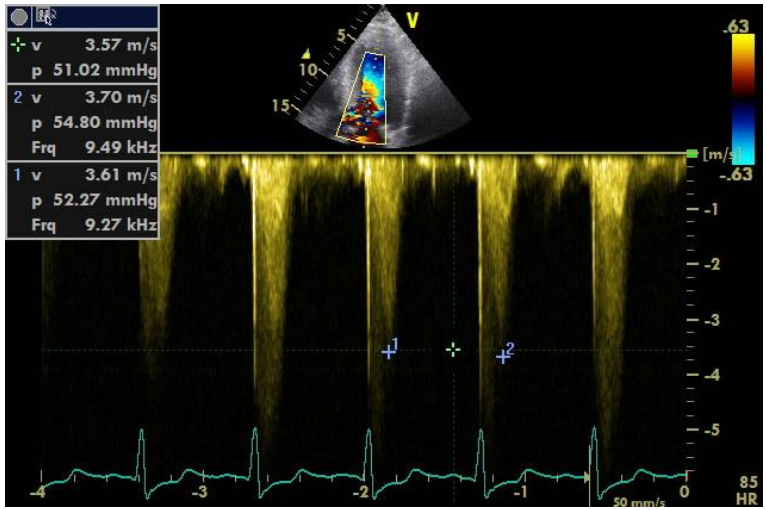


- Longer anterior mitral leaflet than normal subjects
- Insufficient elongation of the PML that promote rupture ?

- Leaflet degeneration ?
- Myxomatous change ?

Doppler spectrum in HOCM with MR

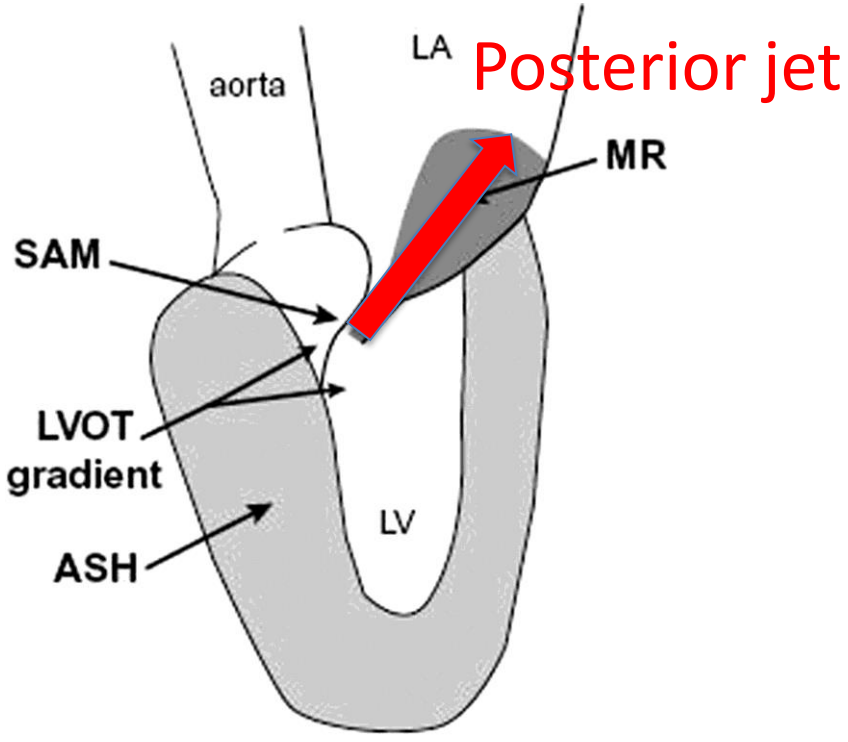




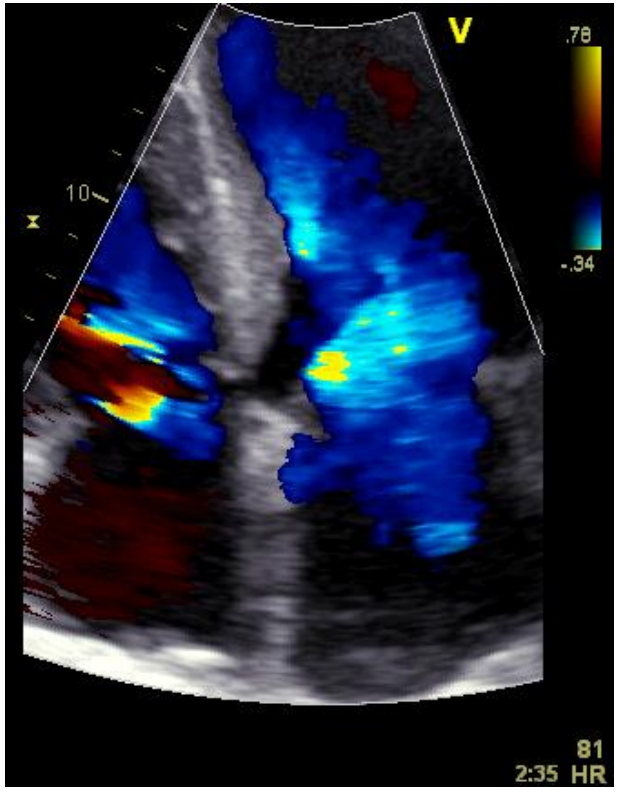
Dicrease or disappearance of SAM and LVOT obstruction after rupture

HOCM with MR

MR due to SAM



MR due to P2 prolapse



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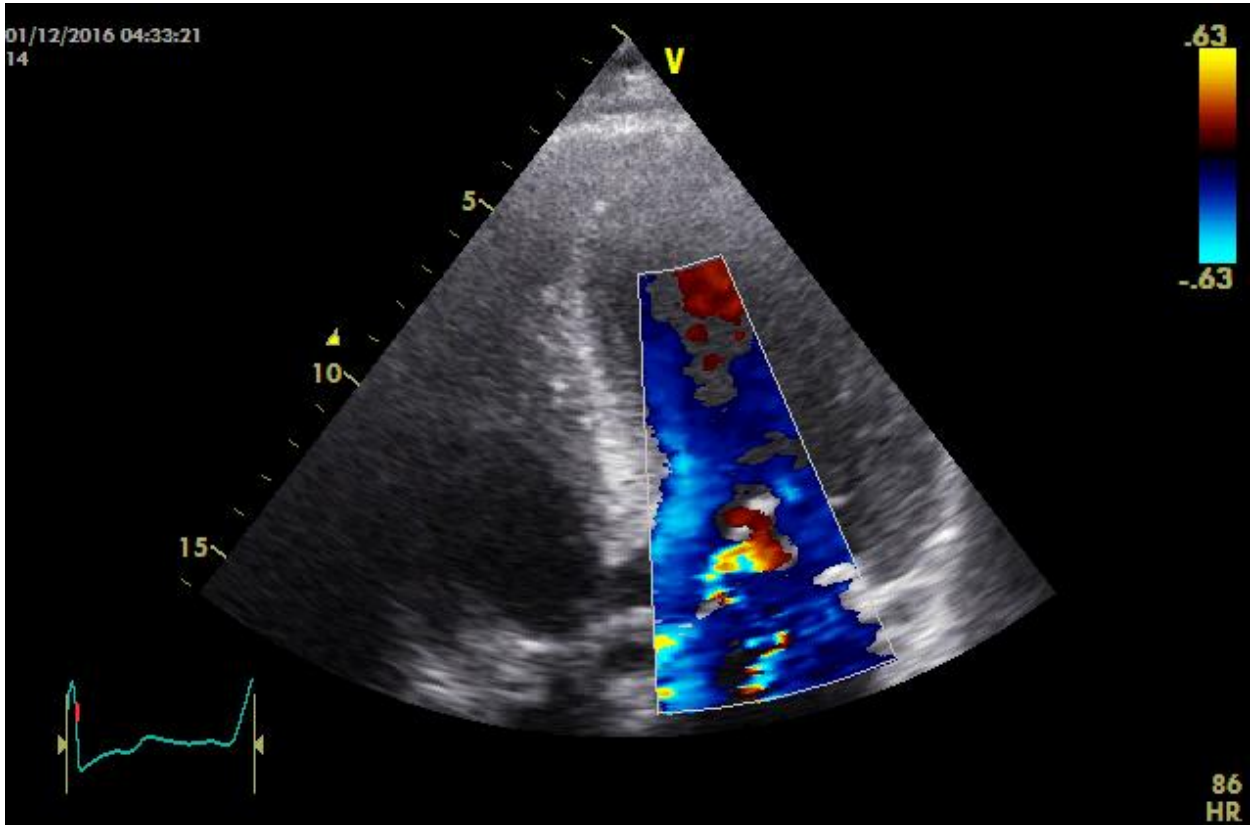

Take home message

- Mitral regurgitation in association with hypertrophic obstructive cardiomyopathy is usually caused by the systolic anterior motion of the anterior mitral leaflet.
- Chordal rupture should be considered in the differential diagnosis of MR especially in those with acute hemodynamic deterioration.
- A detailed assessment of mitral valve anatomy should be performed for HCM patients.
- TOE should be performed to confirm diagnosis as it dramatically impacts therapy.
- HCM is also a mitral valve disease.