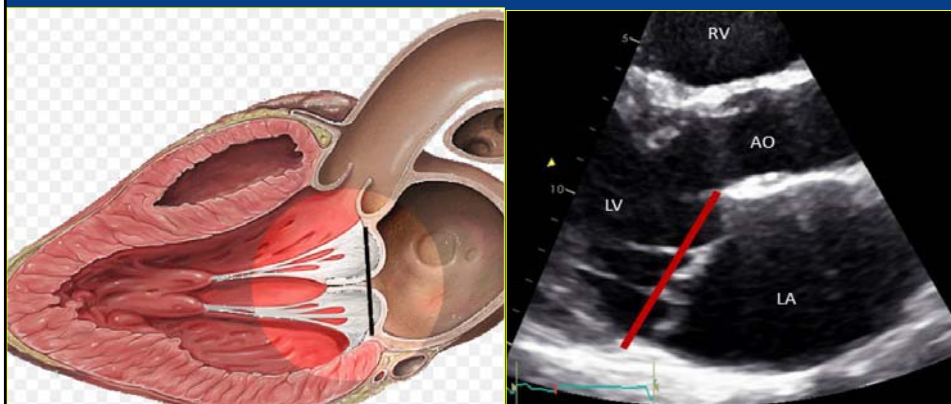
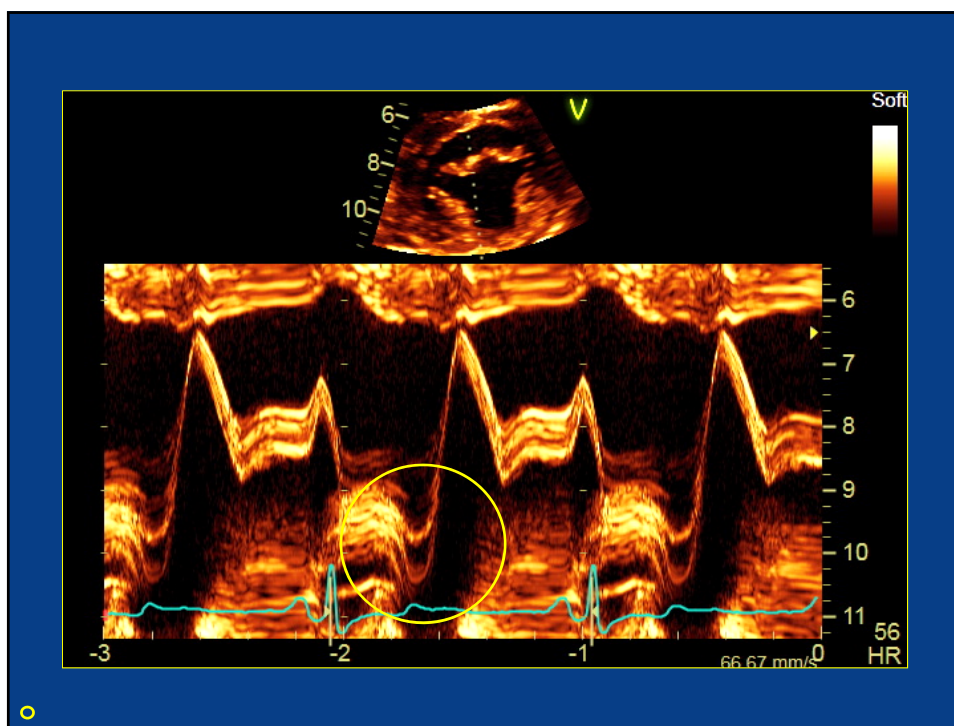


Mitral Valve Prolapse and the Pickelhaube

Denise Ignatowski, BS, RDCS

Mitral Valve Prolapse





Prevalence

11-13% : General population



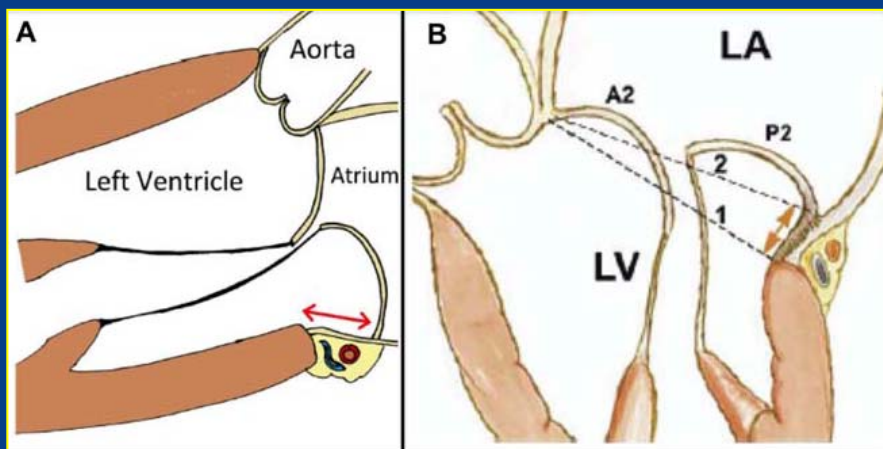
Malignant Cases

High Risk features

- Mitral annulus disjunction
- Systolic curling
- Pickelhaube Spike

Mitral annulus disjunction

Hypermobility of the MV apparatus



Mitral annulus disjunction

Hypermobility of the MV apparatus

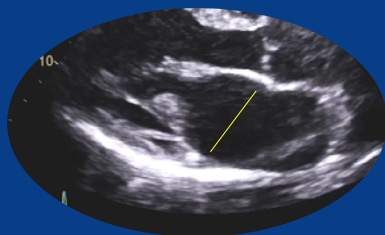


Mitral annulus disjunction
Paradoxical systolic increase of the
mitral annulus diameter

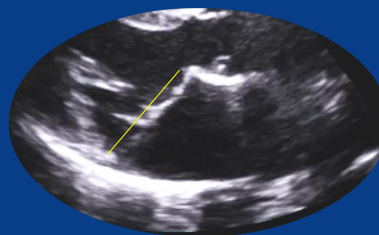


Mitral annulus disjunction

Paradoxical systolic increase of the mitral annulus diameter



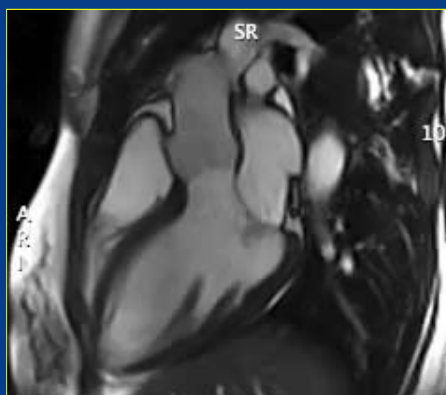
Diastole



Systole

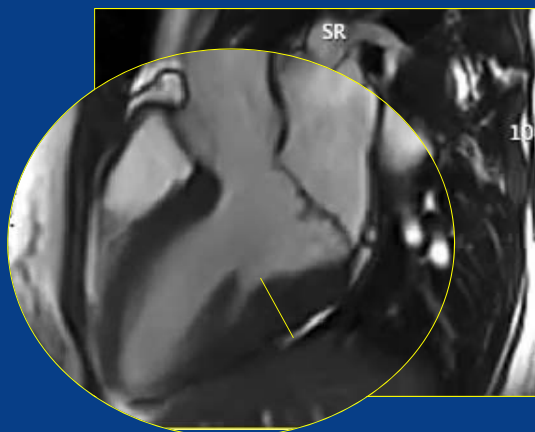
Systolic Curling

Increased myocardial function adjacent to the prolapsed leaflet



Systolic Curling

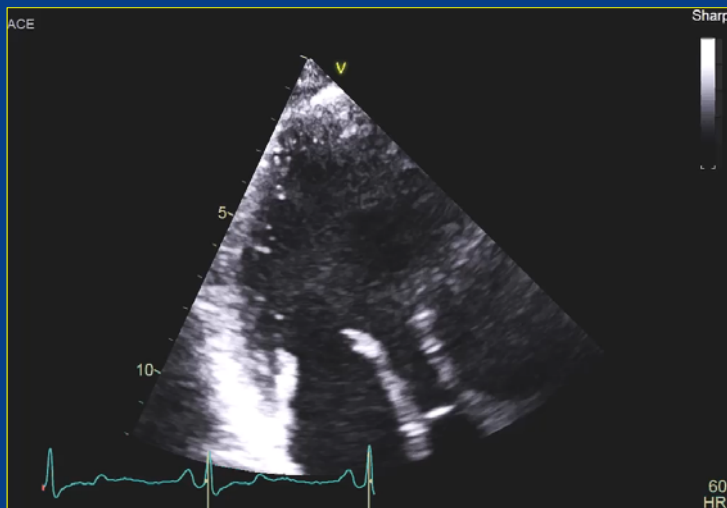
Focal hypertrophy of the LV base
Basal to mid LV wall thickness ratio >1.5



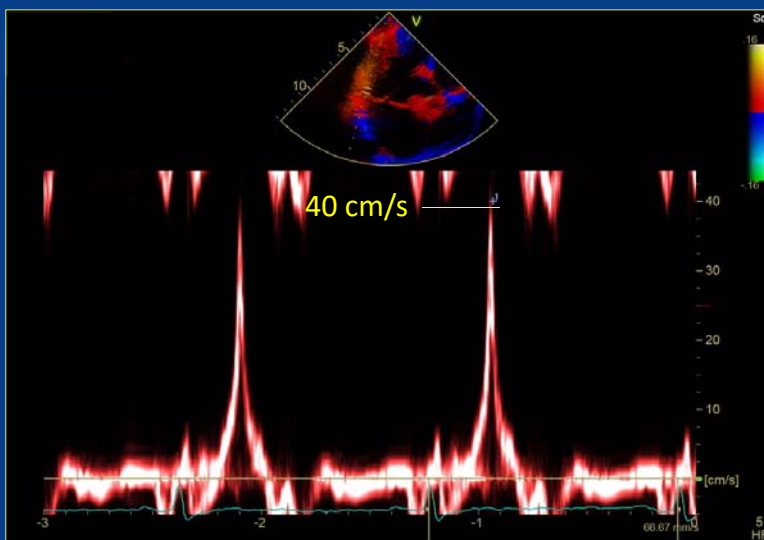
Ballerina foot Deformity



APLAX



o



o

Pickelhaube

German
Helmet



Pickelhaube

High-velocity systolic signal with
tissue Doppler imaging
resembling the Pickelhaube



Malignant phenotype

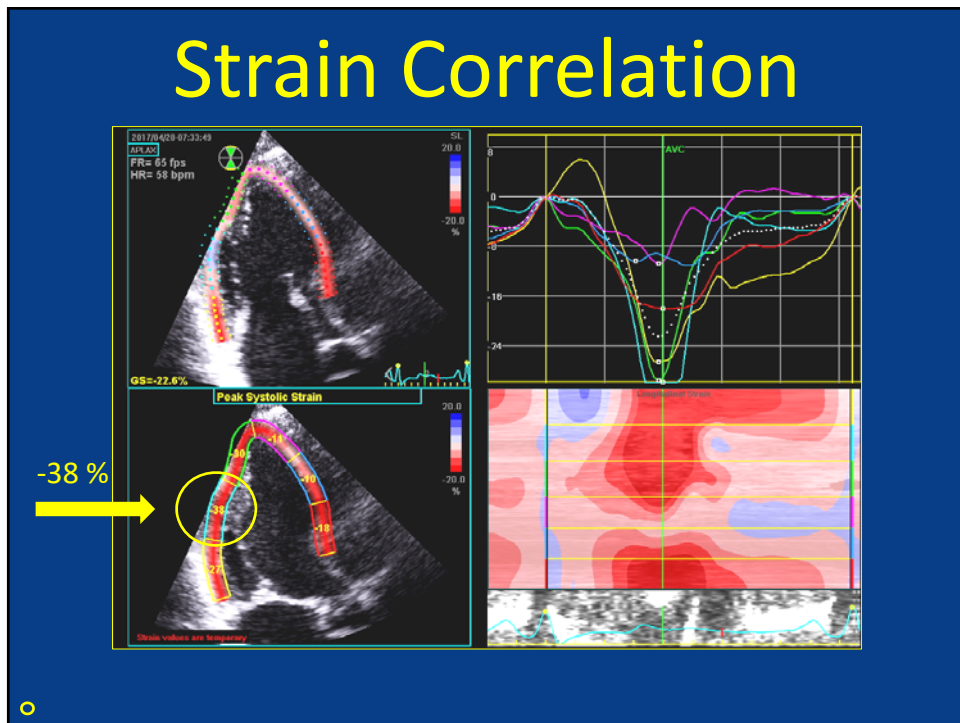
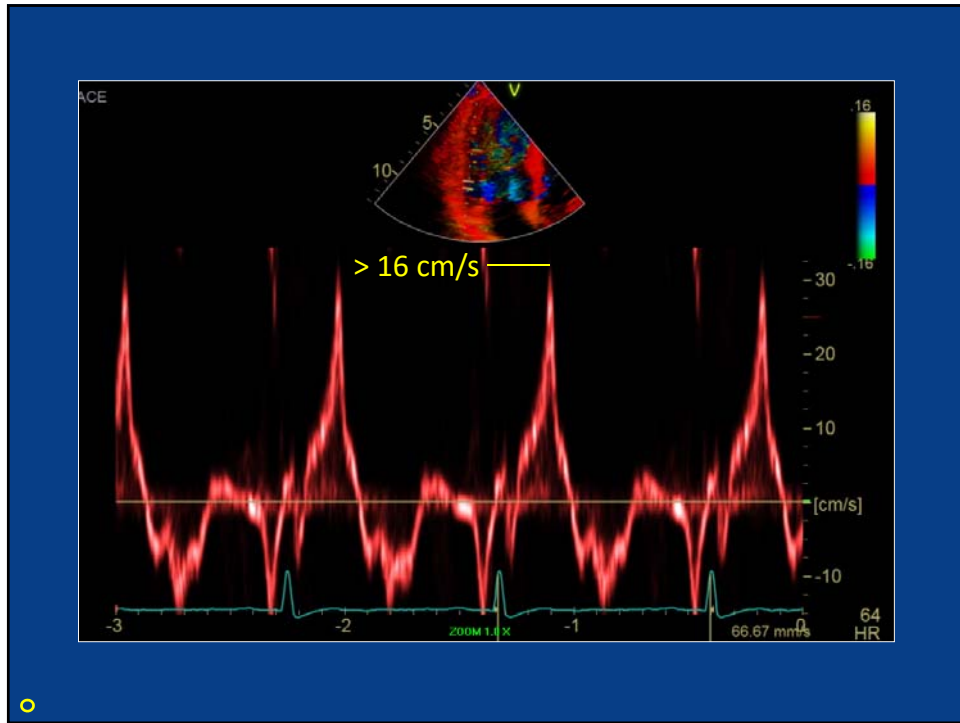
***The Pickelhaube Sign:
Novel Echocardiographic
Risk Marker for Malignant
Mitral Valve Prolapse
Syndrome***

Lakshmi Muthukumar MD, Faraaz Rahman MD, M. Fuad Jan MBBS MD, Armaan Shaikh DO, Lindsey Kalvin RDCS, Anwer Dhala MD, Arshad Jahangir MD, A. Jamil Tajik MD

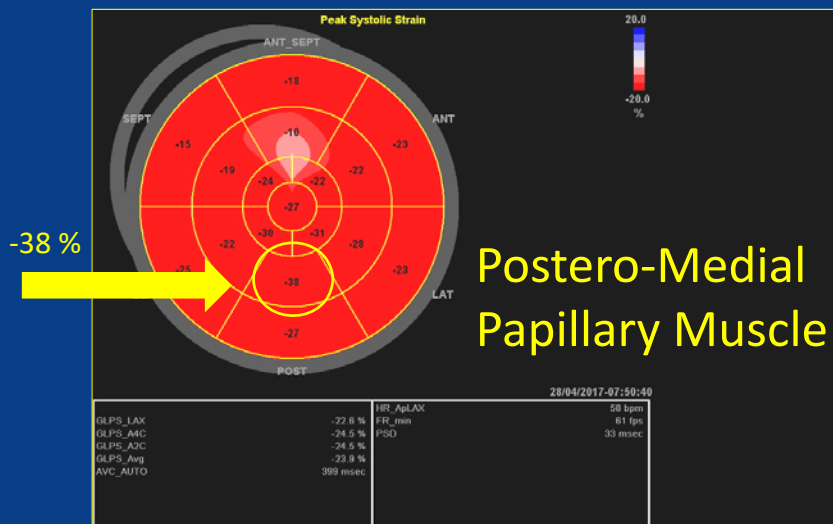


“The tugging of the posteromedial papillary muscle in mid-systole by the myxomatous prolapsing leaflets causes the adjacent posterobasal LV wall to be pulled sharply toward the apex”





Strain Bullseye

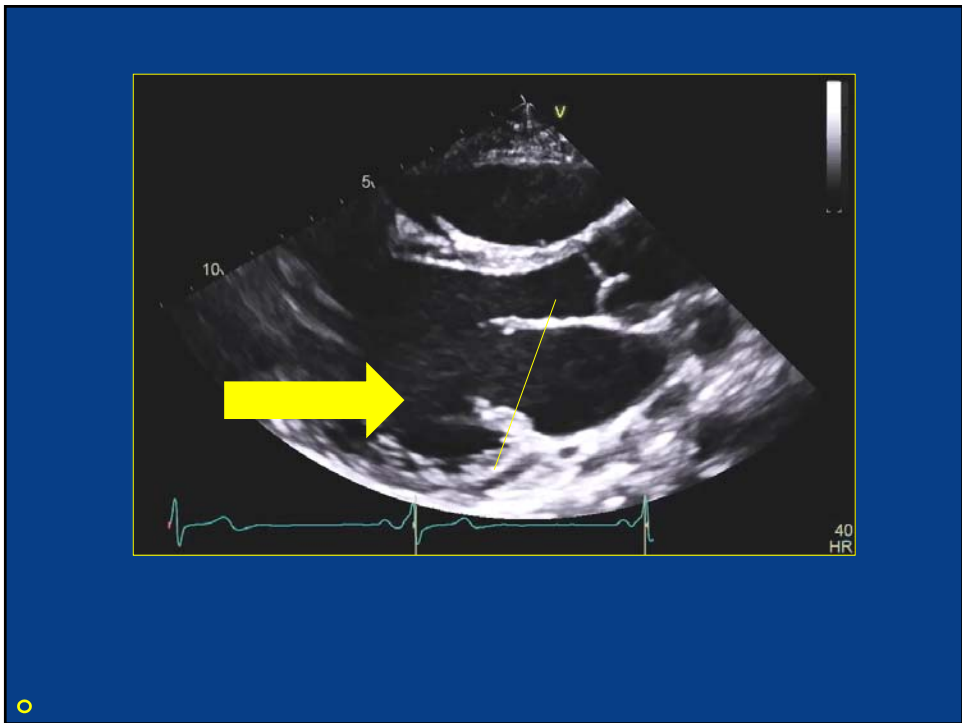


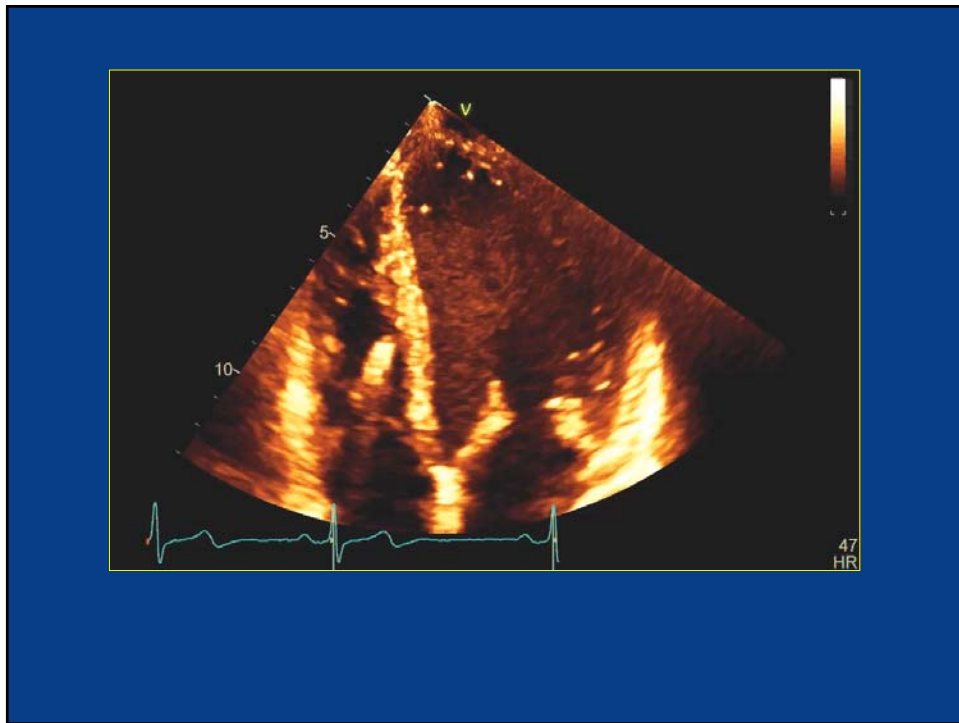
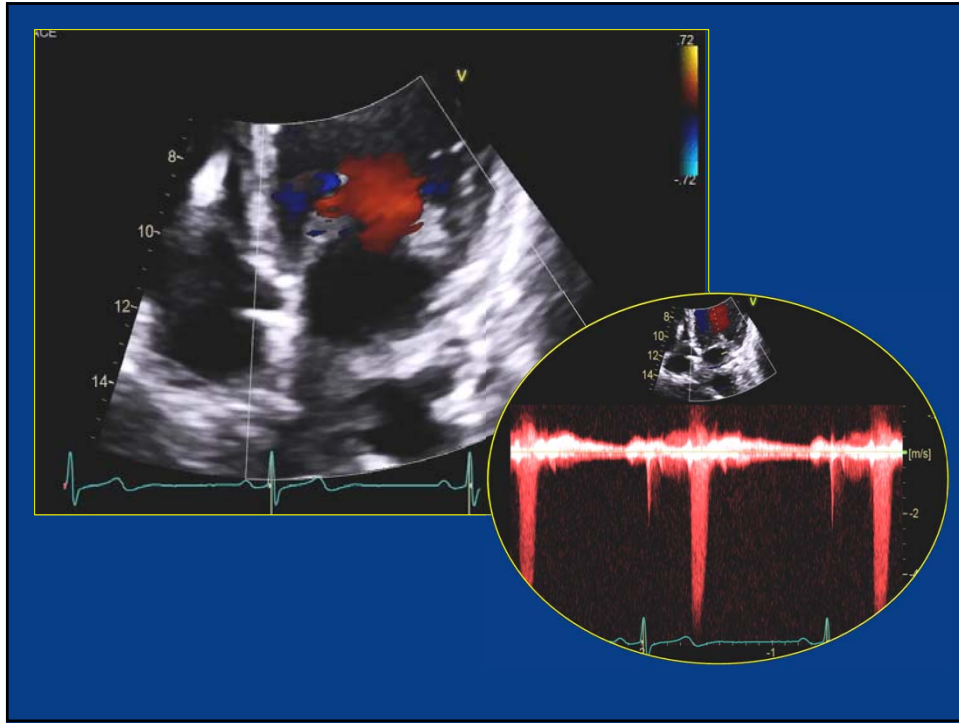
Case #1

42 y.o. woman

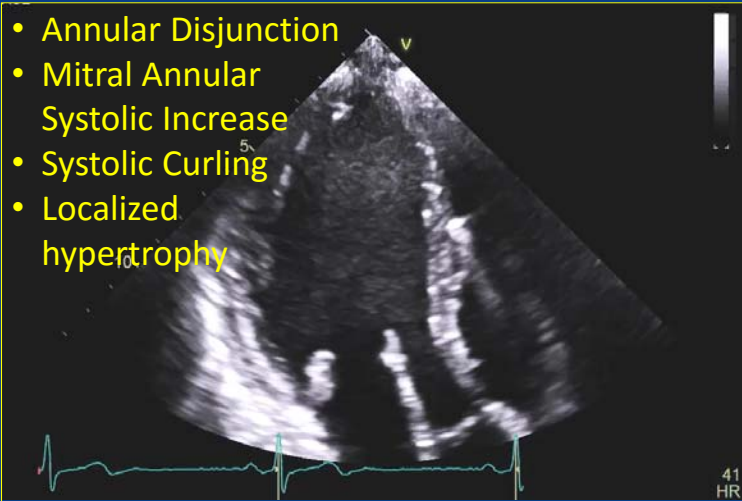
h/o Postpartum
Cardiomyopathy, 2009

s/p Single chamber ICD

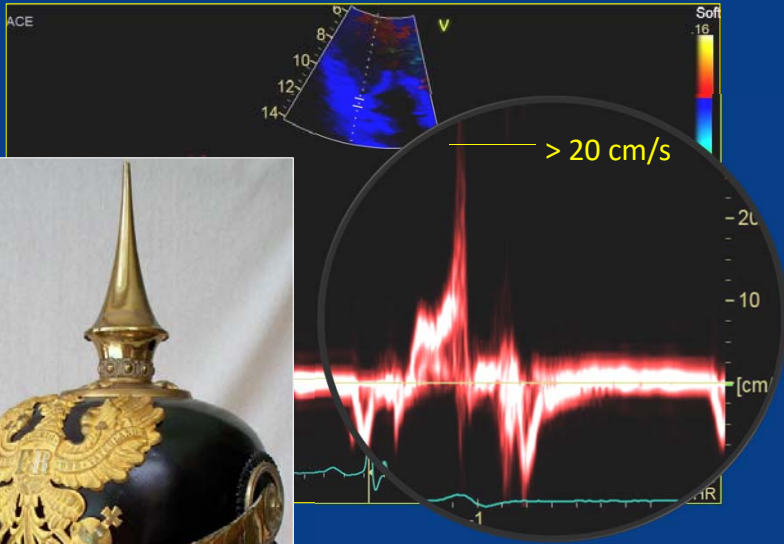





- Annular Disjunction
- Mitral Annular Systolic Increase
- Systolic Curling
- Localized hypertrophy



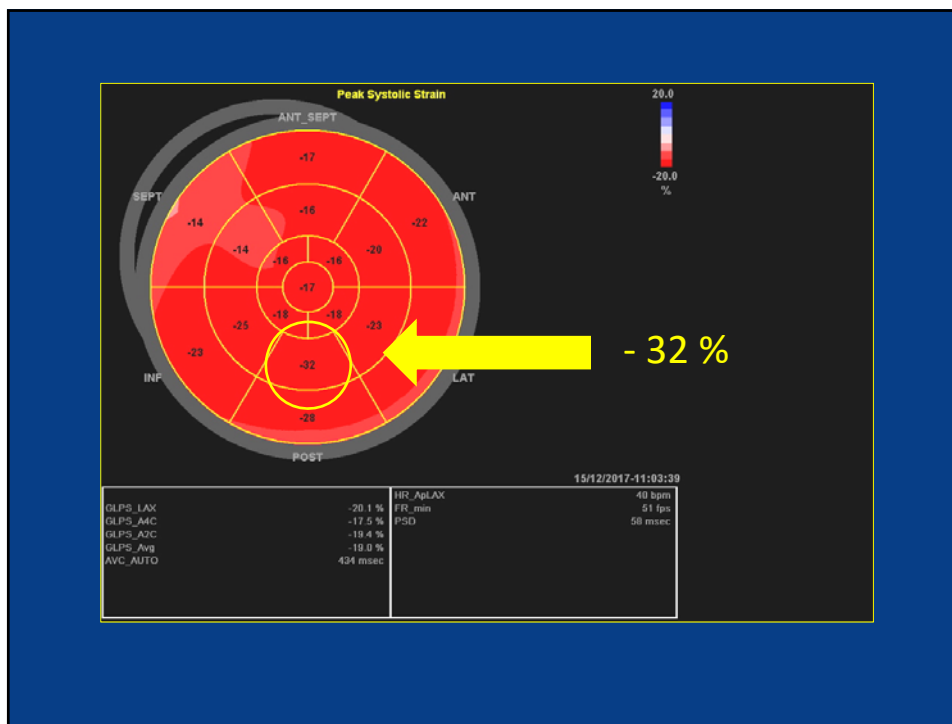
The image is a parasternal short-axis echocardiogram of the heart. The mitral annulus is visible as a bright, curved line. There is a noticeable gap between the mitral annulus and the left ventricular wall, which is characteristic of annular disjunction. The mitral annulus appears thickened and curved during systole. A heart rate of 41 HR is displayed in the bottom right corner.



The image shows a parasternal short-axis echocardiogram with a circular inset. The inset displays a color Doppler flow measurement of the mitral regurgitation jet, with a peak velocity indicated as $> 20 \text{ cm/s}$. The main image shows the mitral annulus and the left ventricular wall. A scale on the right indicates a soft tissue thickness of 16. The heart rate is 41 HR.



The image shows a black and gold military helmet, likely a ceremonial or historical helmet, with a prominent gold spike on top and intricate gold detailing on the front.



Malignant MVP

- Annular Disjunction
- Systolic Curling
- Pickelhaube
 - Systolic peak > 16 cm/s
 - Exaggerated Strain Value

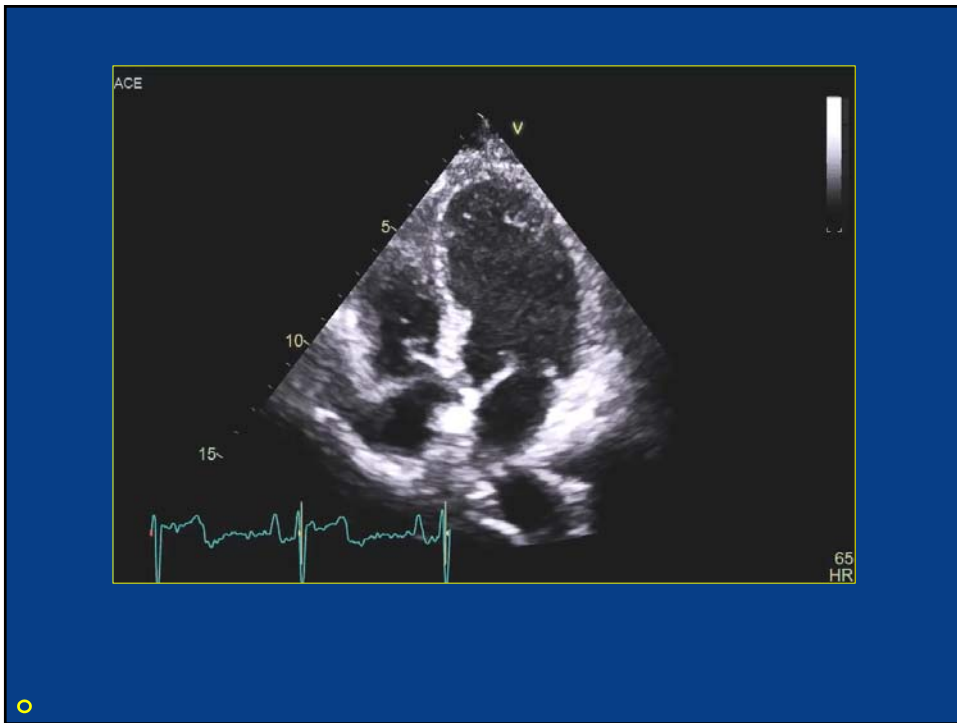
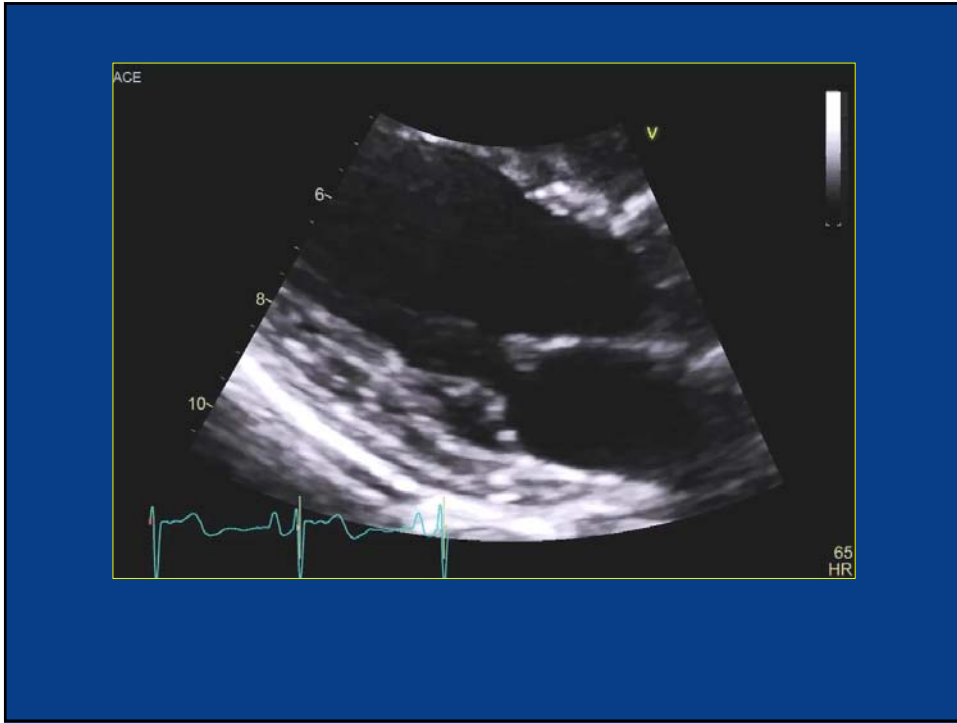
Case #2

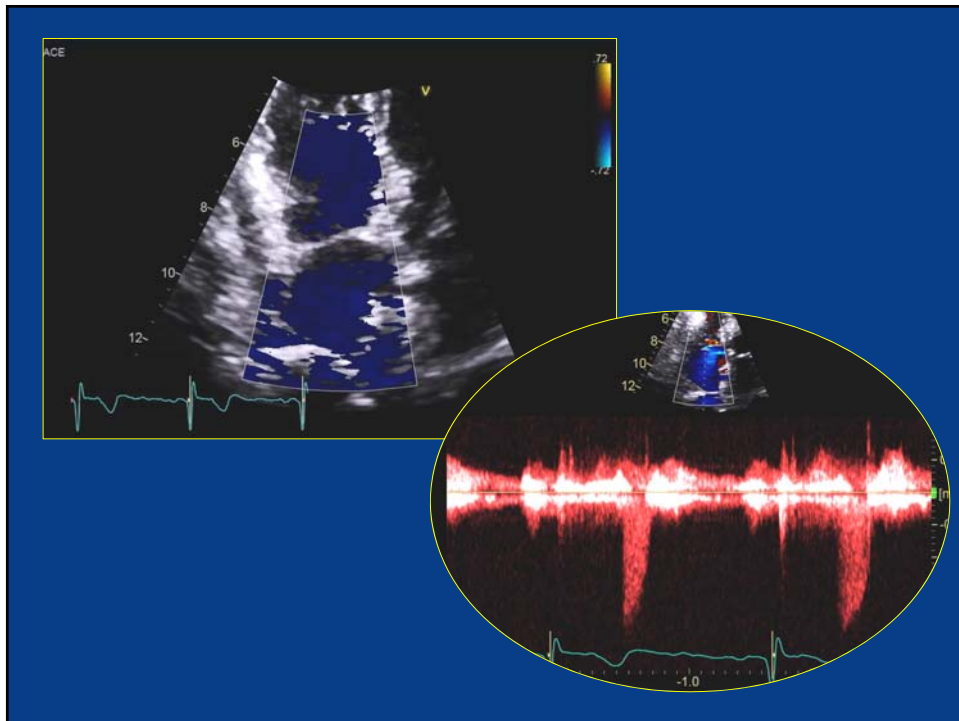
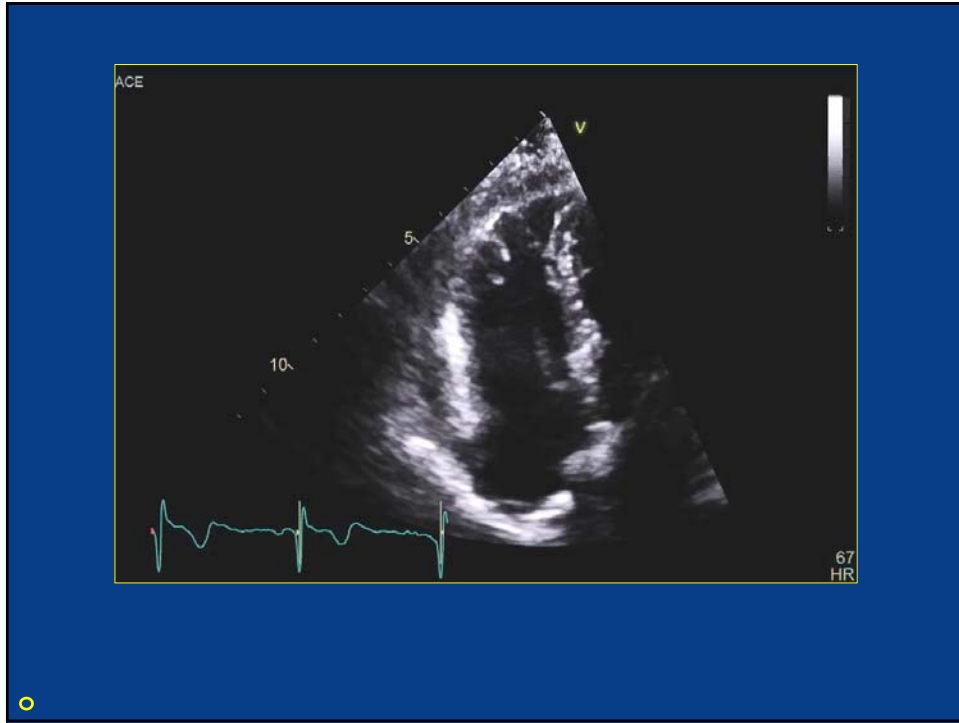
66 y.o. woman

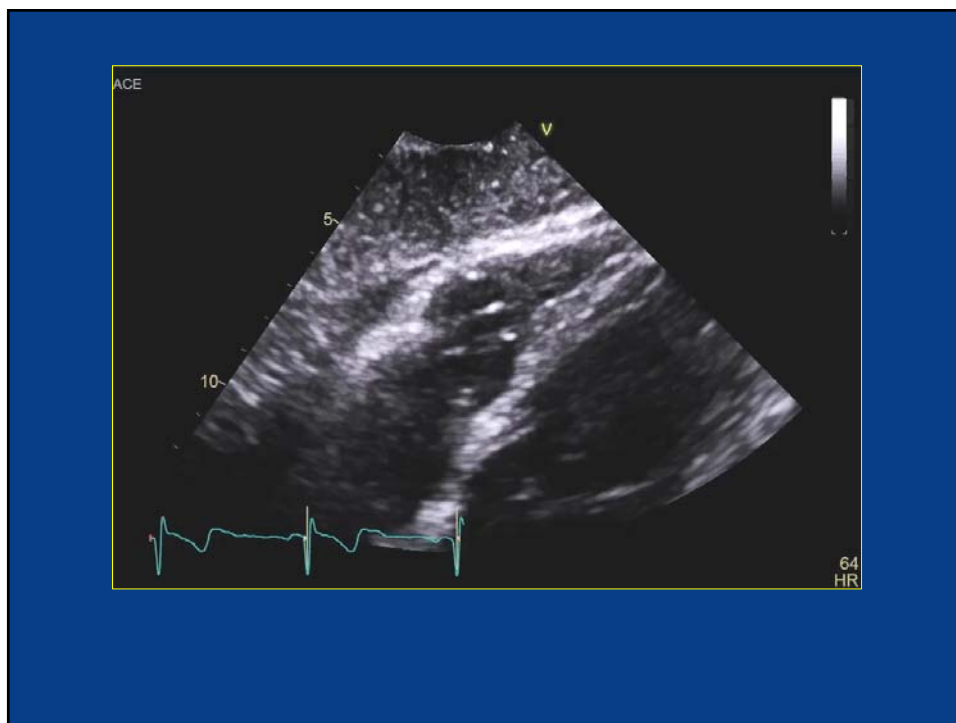
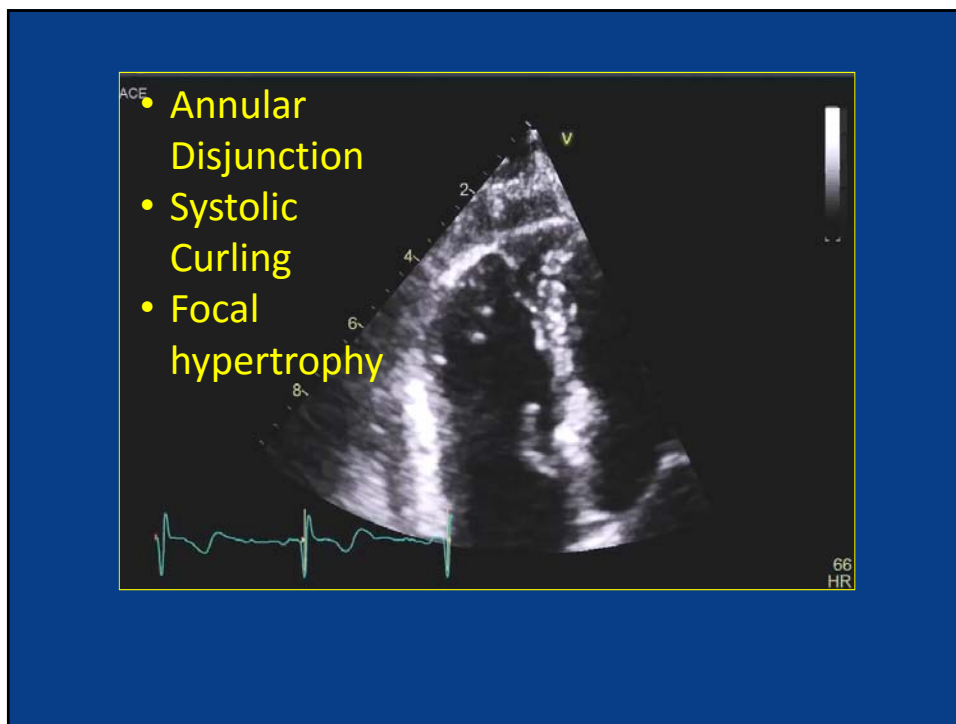
Visited family practice
doctor for neck pain

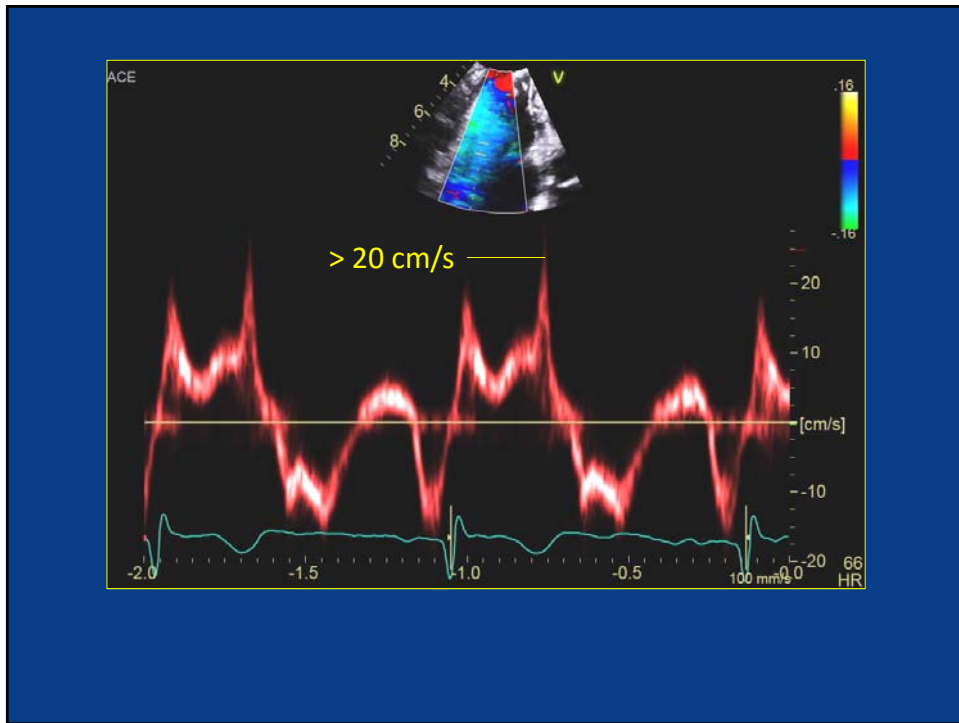
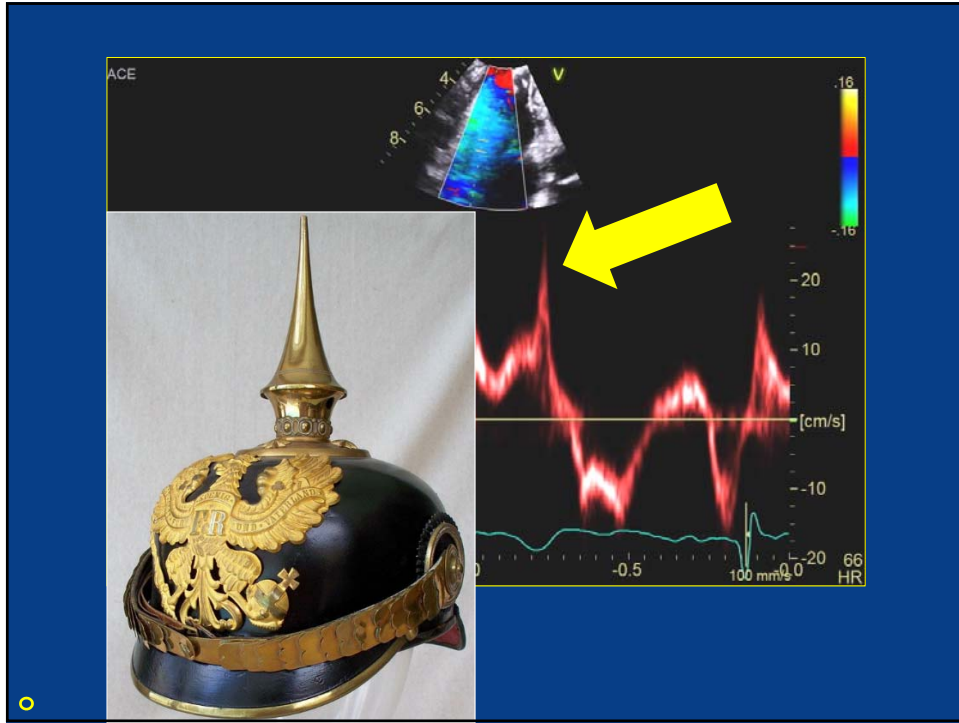
2/6 systolic murmur

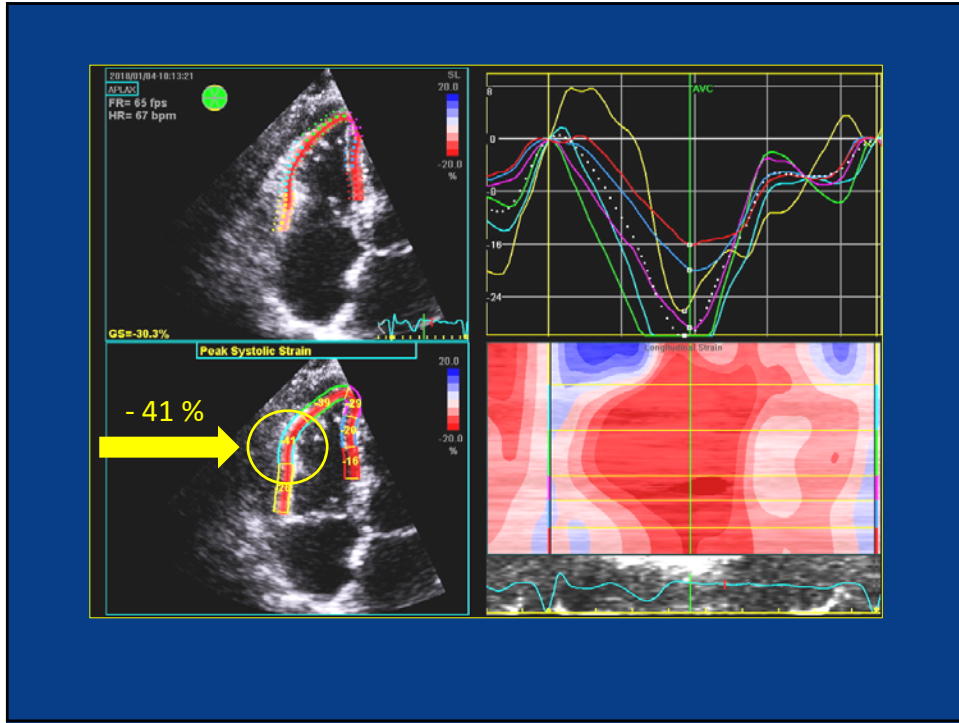












THANK YOU!