

Use what you have  
Do what you can

Dr.Fadi Khazaal ( Cardiology Fellow 3<sup>rd</sup> Y)

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# Patient Information

- 29 years old Bangladeshi gentleman

# Chief Complaint

- SOB

# History of Present Illness

- SOB over the last 3 days associated with dry cough , orthopnea and PND .
- fever .
- no chest pain , dizziness or palpitation.

# Review of Systems

- Unremarkable

# Past Medical History

- Mitral valve replacement in 2012 with mechanical valve.

# Medications

- Warfarin

# Allergy

- No known allergies .



# Social History

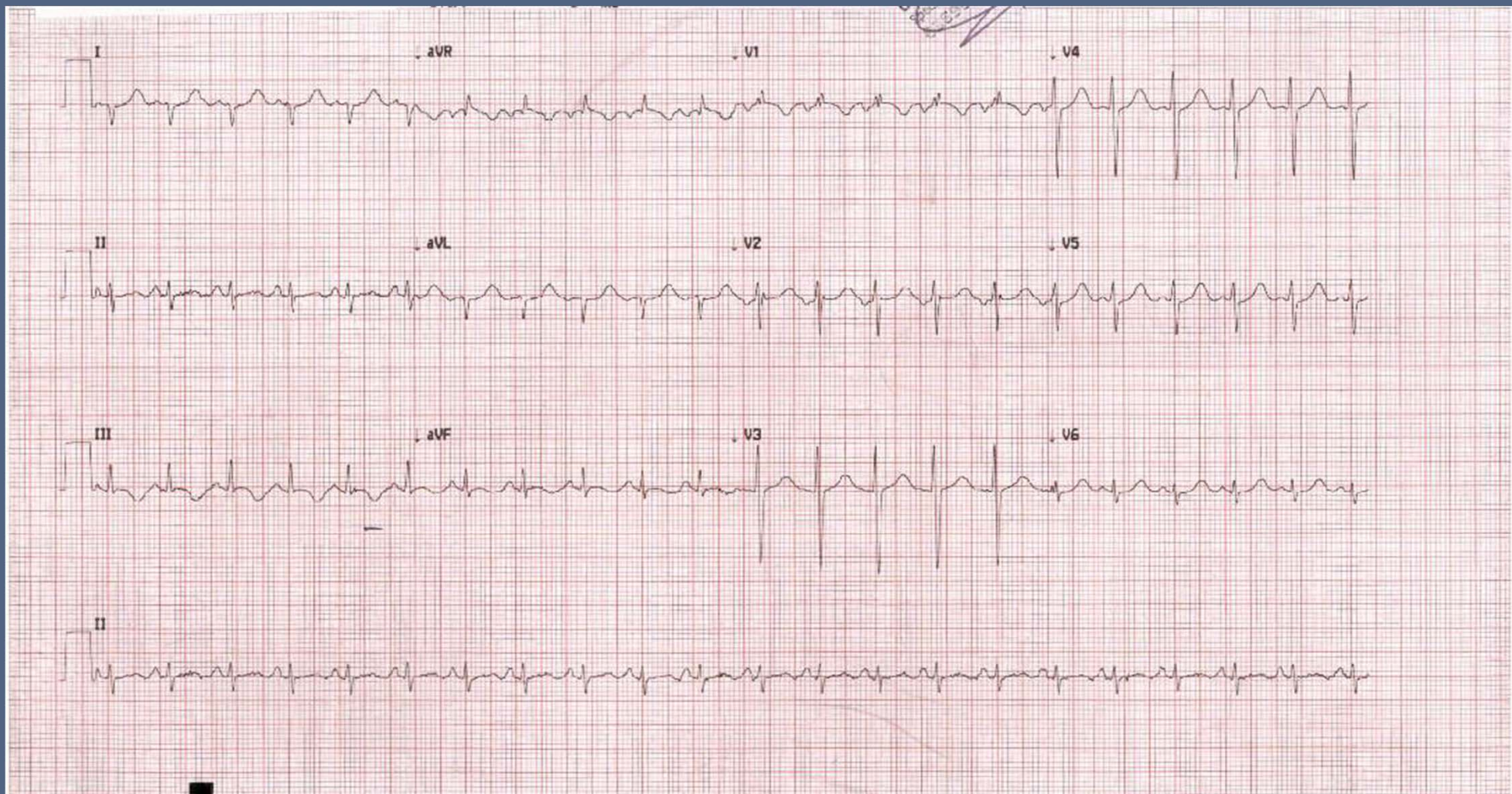
- Non smoker
- Non alcoholic
- Unemployed
- Lives with 6 roommates .

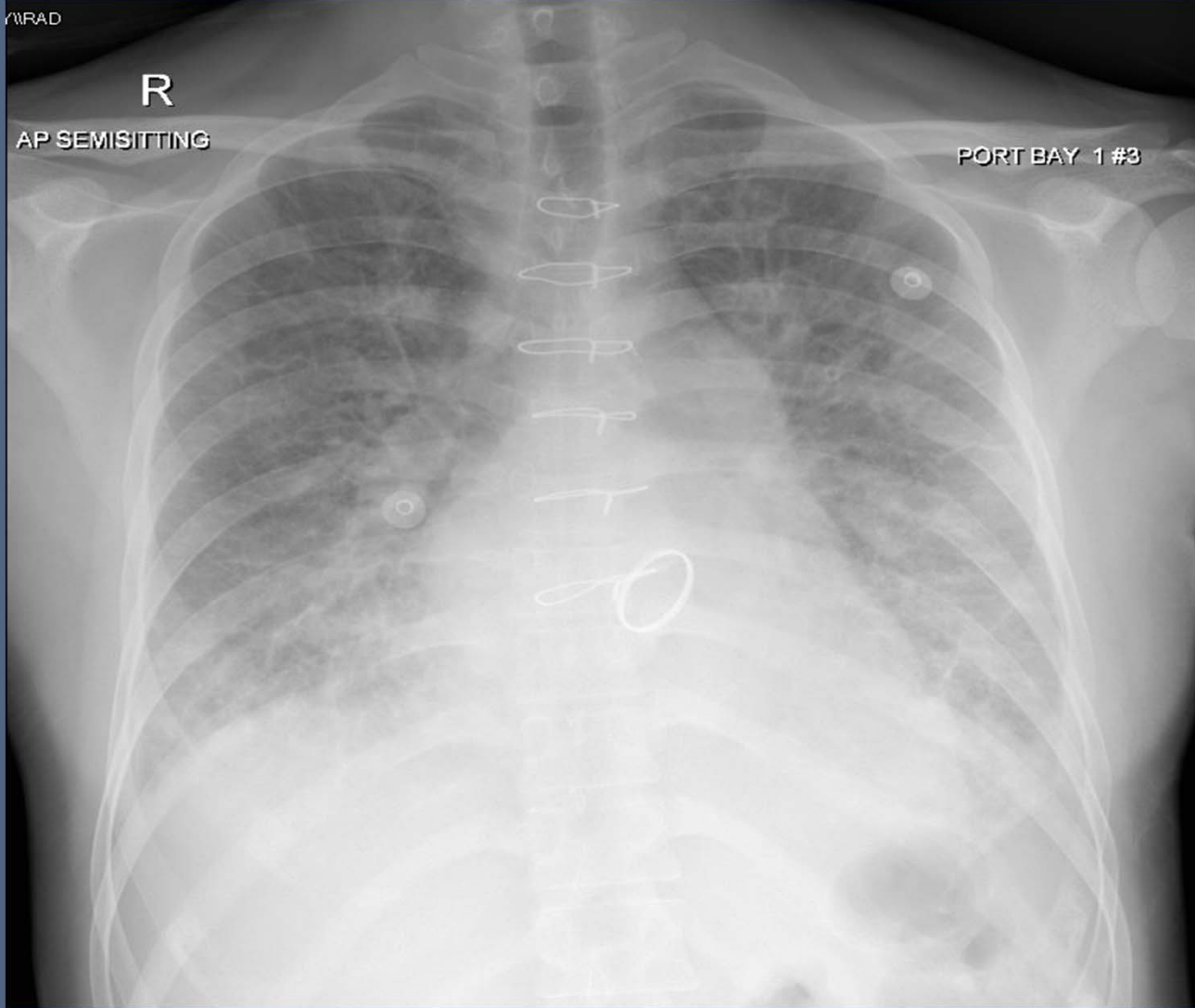
# Family History

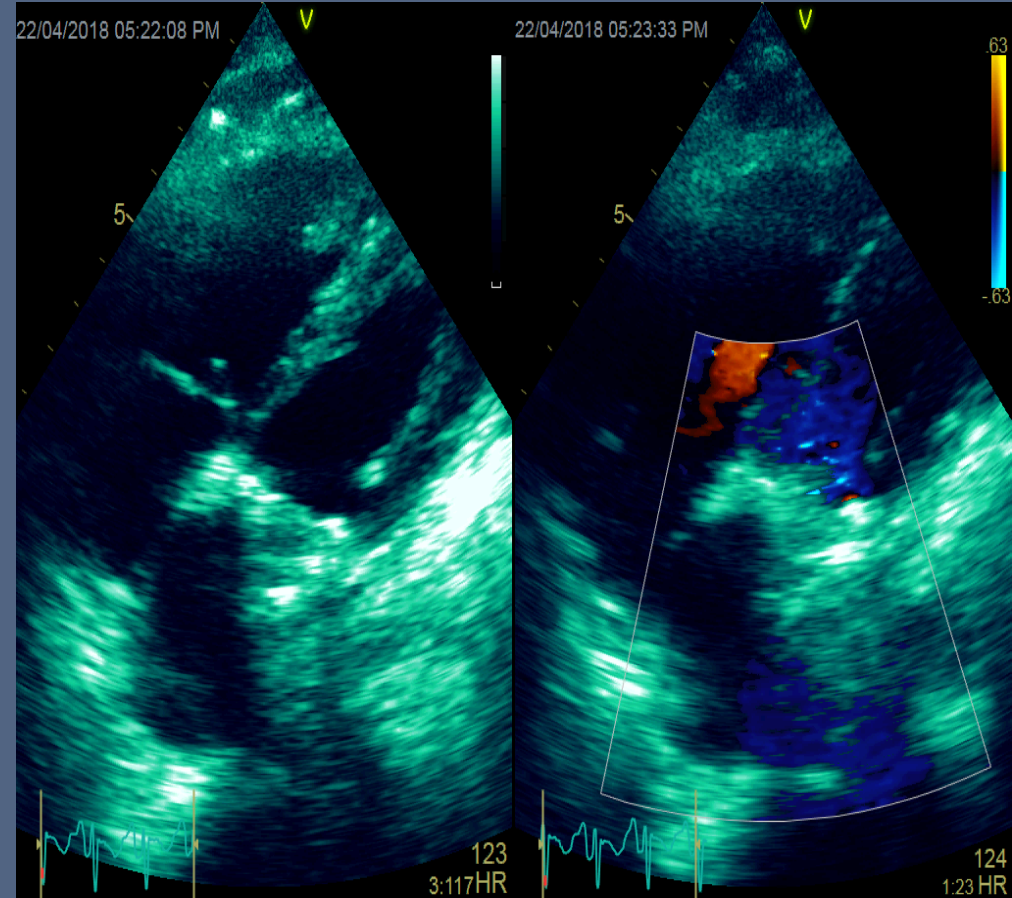
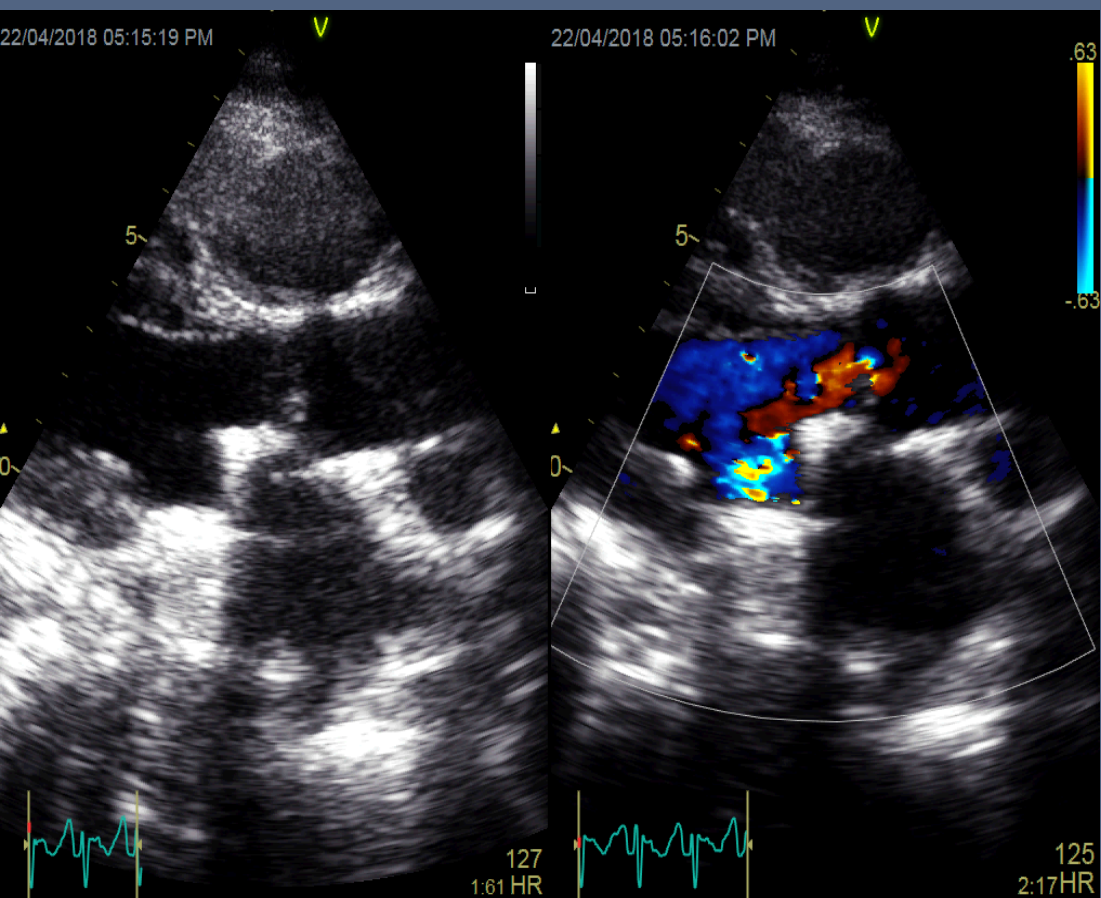
- Unremarkable

# Physical Exam

- **T: 37.3 °C (Oral) HR: 130 RR: 39 BP: 98/61 SpO2: 97%**
- General: alert, oriented, distressed .  
Chest: **bilateral crackles up to midzone.**  
CVS: tachycardia, audible heart mechanical valve.  
Abdomen: soft, lax and non-tender.  
No LL edema.









# Recommendations for the imaging assessment of prosthetic heart valves: a report from the European Association of Cardiovascular Imaging endorsed by the Chinese Society of Echocardiography, the Inter-American Society of Echocardiography, and the Brazilian Department of Cardiovascular Imaging<sup>†</sup>

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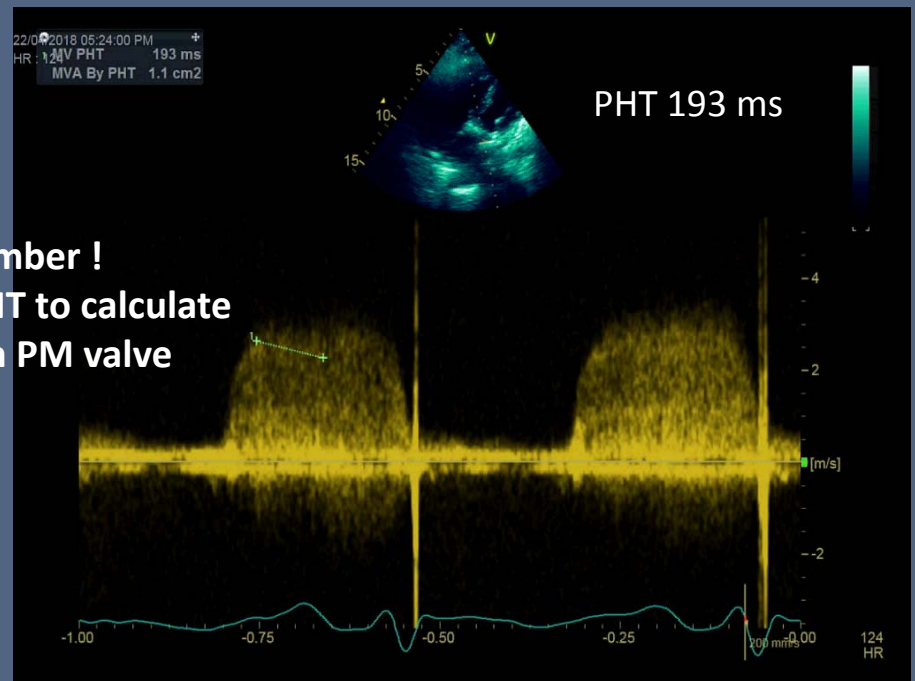
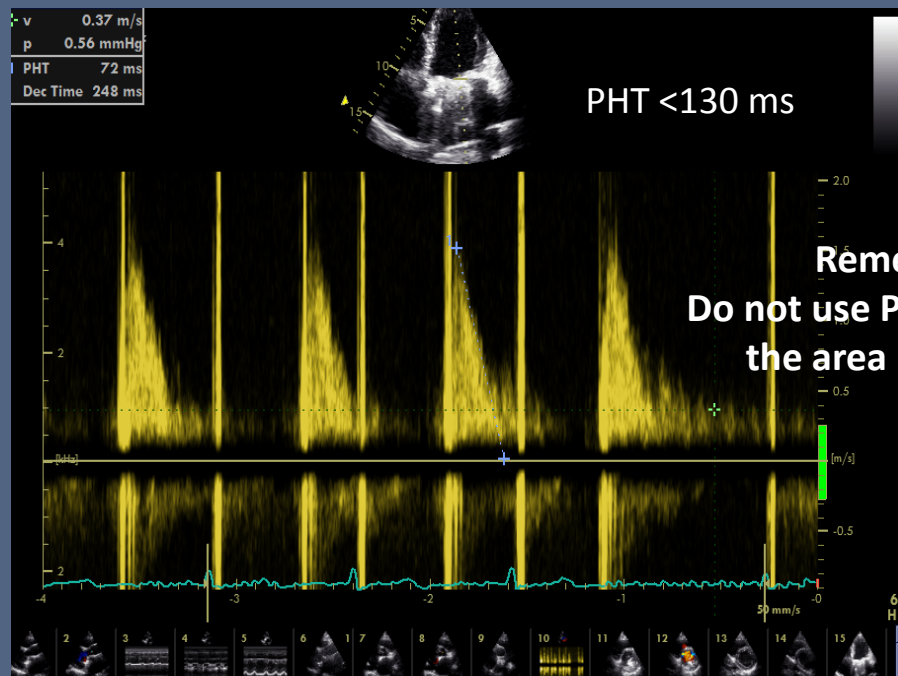
# Echocardiographic and Doppler parameters in evaluation of prosthetic mitral valve function

- PHT Pressure Half Time ( ms)
- PV Peak Velocity (m/s)
- MG Mean Gradient (mmHg)
- EOR Effective Orifice Area ( cm<sup>2</sup>)
- DVI Doppler Velocity Index

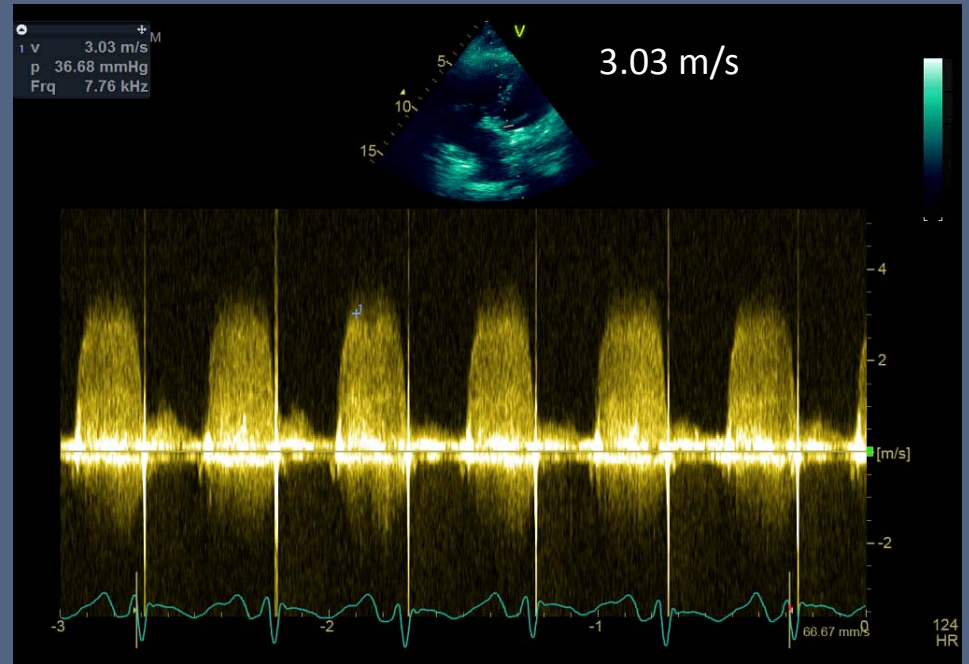
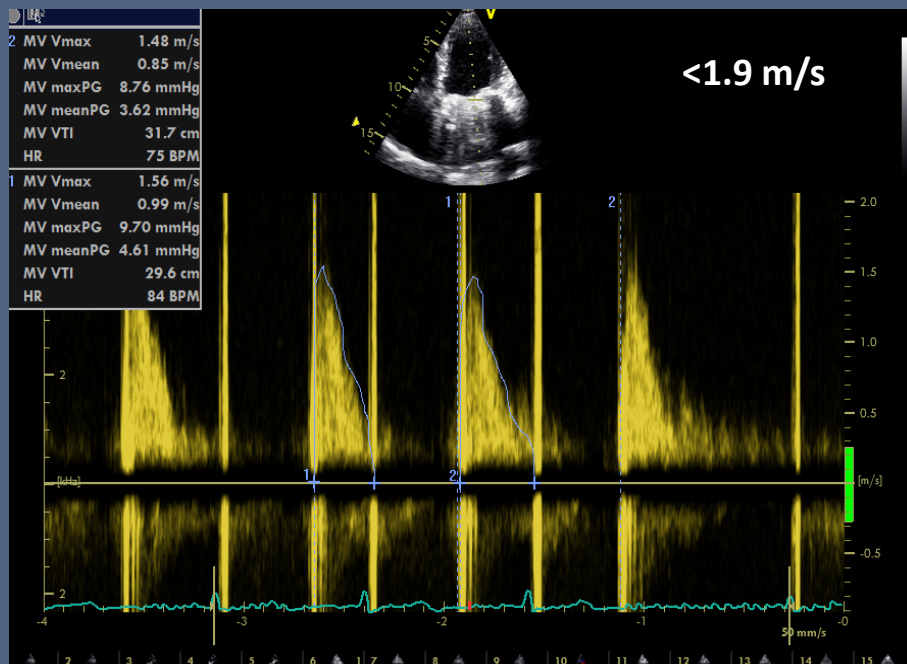


	Normal	Possible obstruction	Significant obstruction
Valve structure / motion	Normal	Often abnormal	Abnormal
PHT ( ms)	<130	130-200	>200
Peak Velocity (m/s)	<1.9	1.9-2.5	≥2.5
Mean gradient (mmHg)	≤5	6-10	≥10
Effective orifice area ( cm <sup>2</sup> )	≥2	1-2	<1
Doppler velocity index	<2.2	2.2-2.5	>2.5

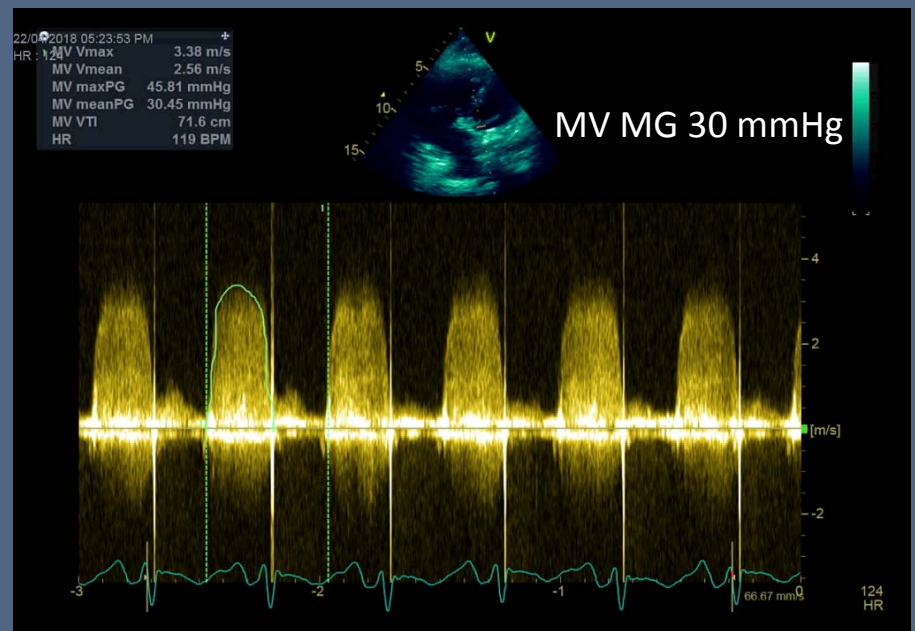
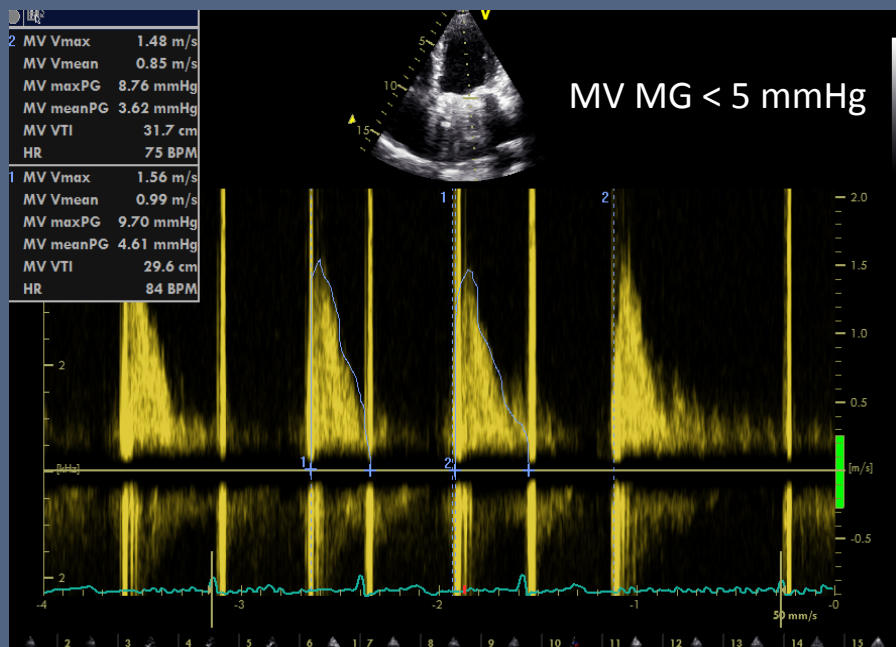
# PHT ( ms )



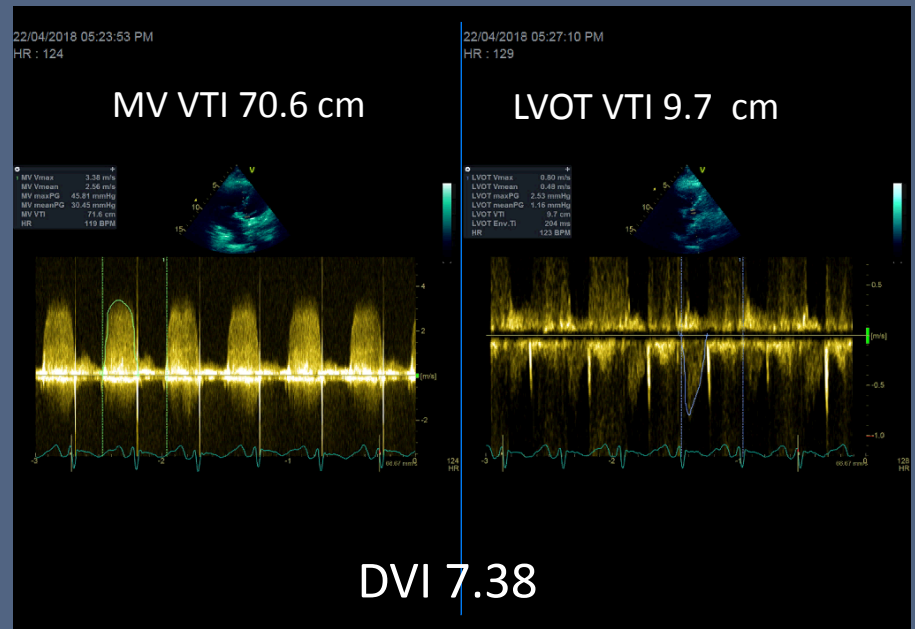
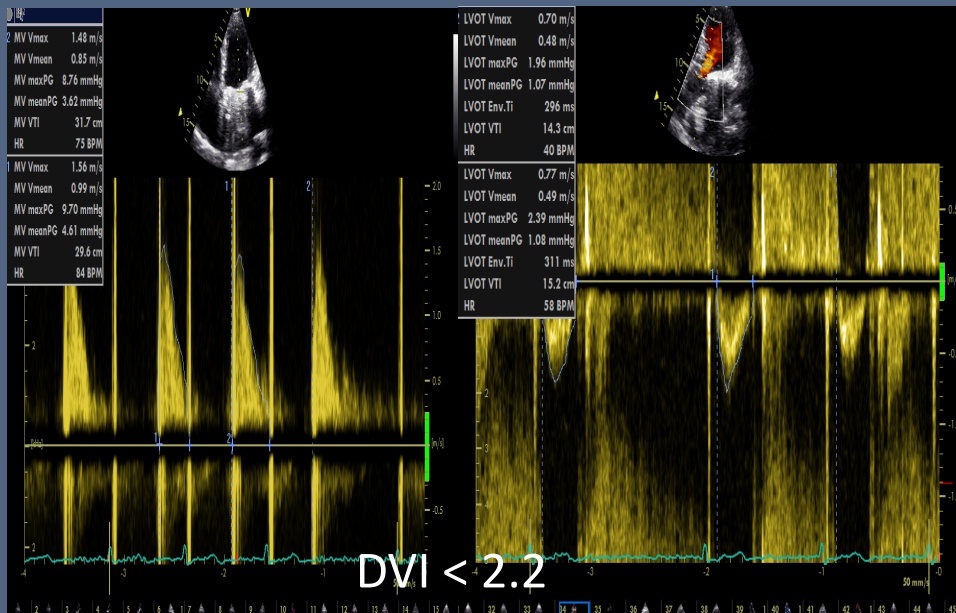
# E velocity ( m/s )



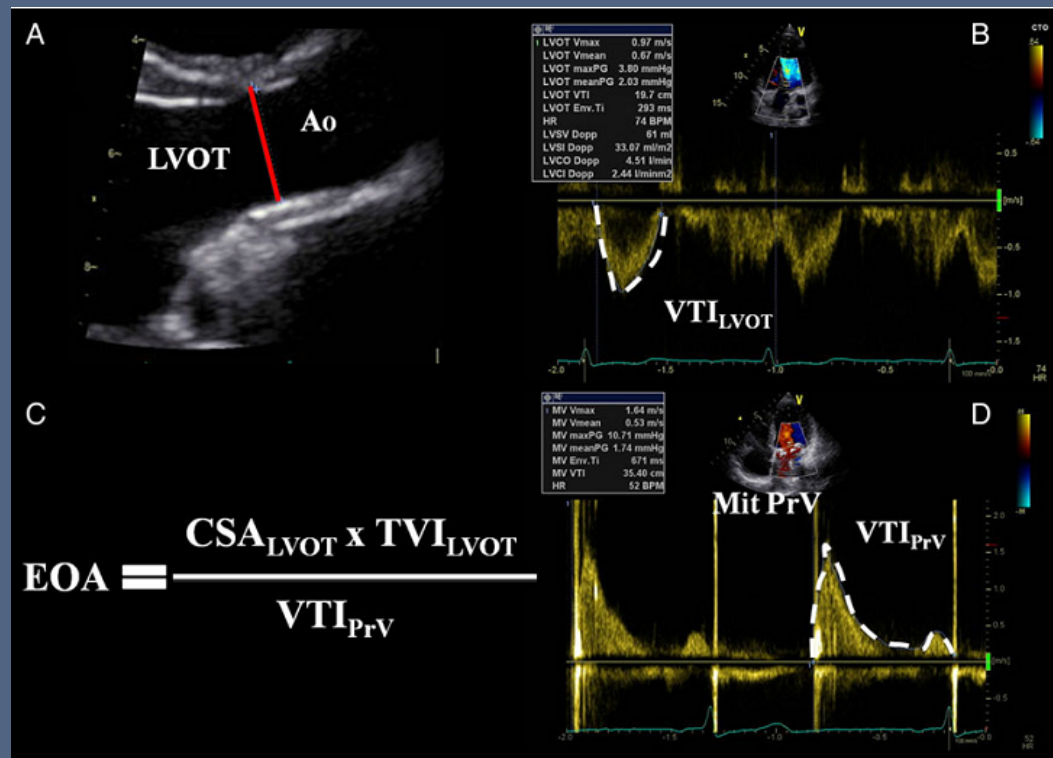
# MV mean Gradient ( mmHg)



# DVI Doppler Velocity Index



# EOA Effective Orifice Area ( cm<sup>2</sup>)

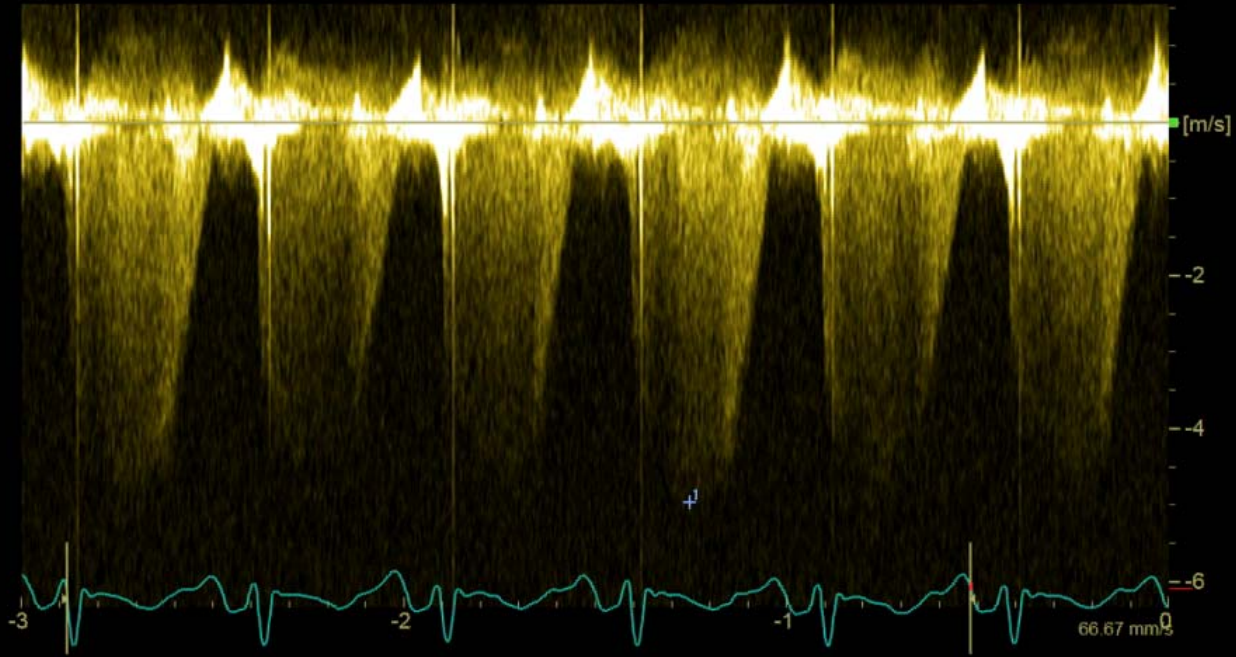


Normal EOA > 2 cm<sup>2</sup>

EOA 0.4 cm<sup>2</sup>

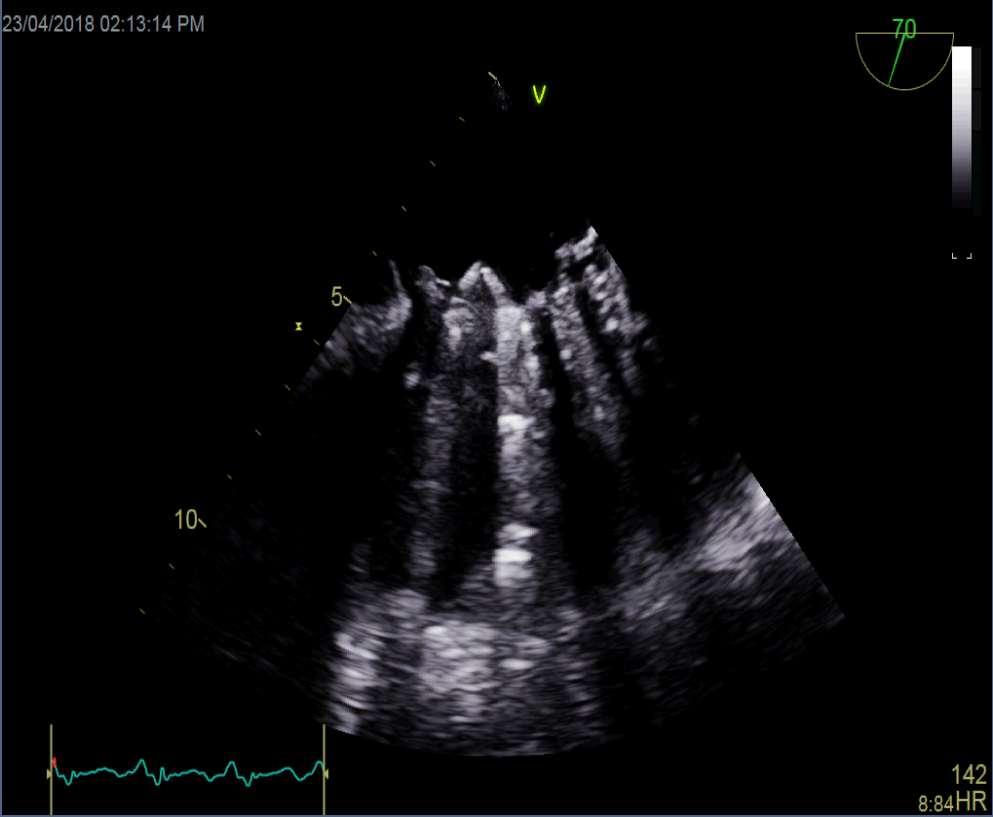
	Normal	Possible obstruction	Significant obstruction	Our Case
Valve structure / motion	Normal	Often abnormal	Abnormal	Abnormal
PHT ( ms)	<130	130-200	>200	193
Peak Velocity (m/s)	<1.9	1.9-2.5	≥2.5	3.03
Mean gradient (mmHg)	≤5	6-10	≥10	30
Effective orifice area ( cm <sup>2</sup> )	≥2	1-2	<1	0.4
Doppler velocity index	<2.2	2.2-2.5	>2.5	7.38

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HR : 123  
RVSP 108.89 mmHg  
TR Vmax 4.97 m/s  
TR maxPG 98.89 mmHg

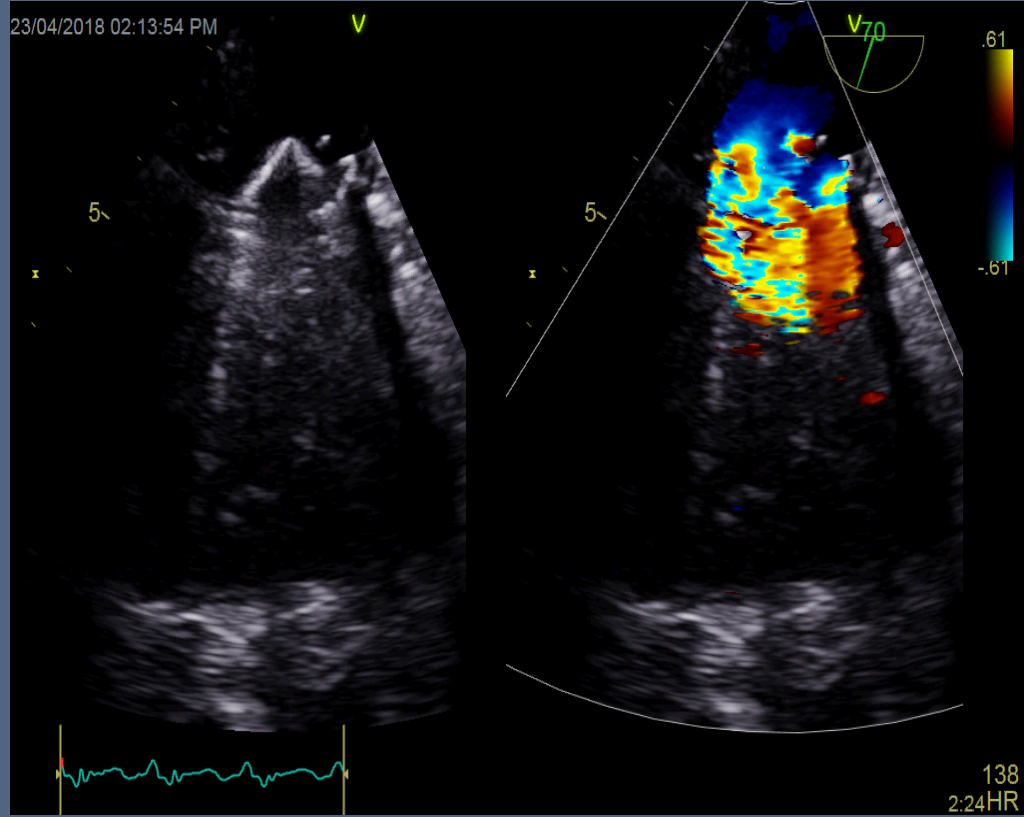


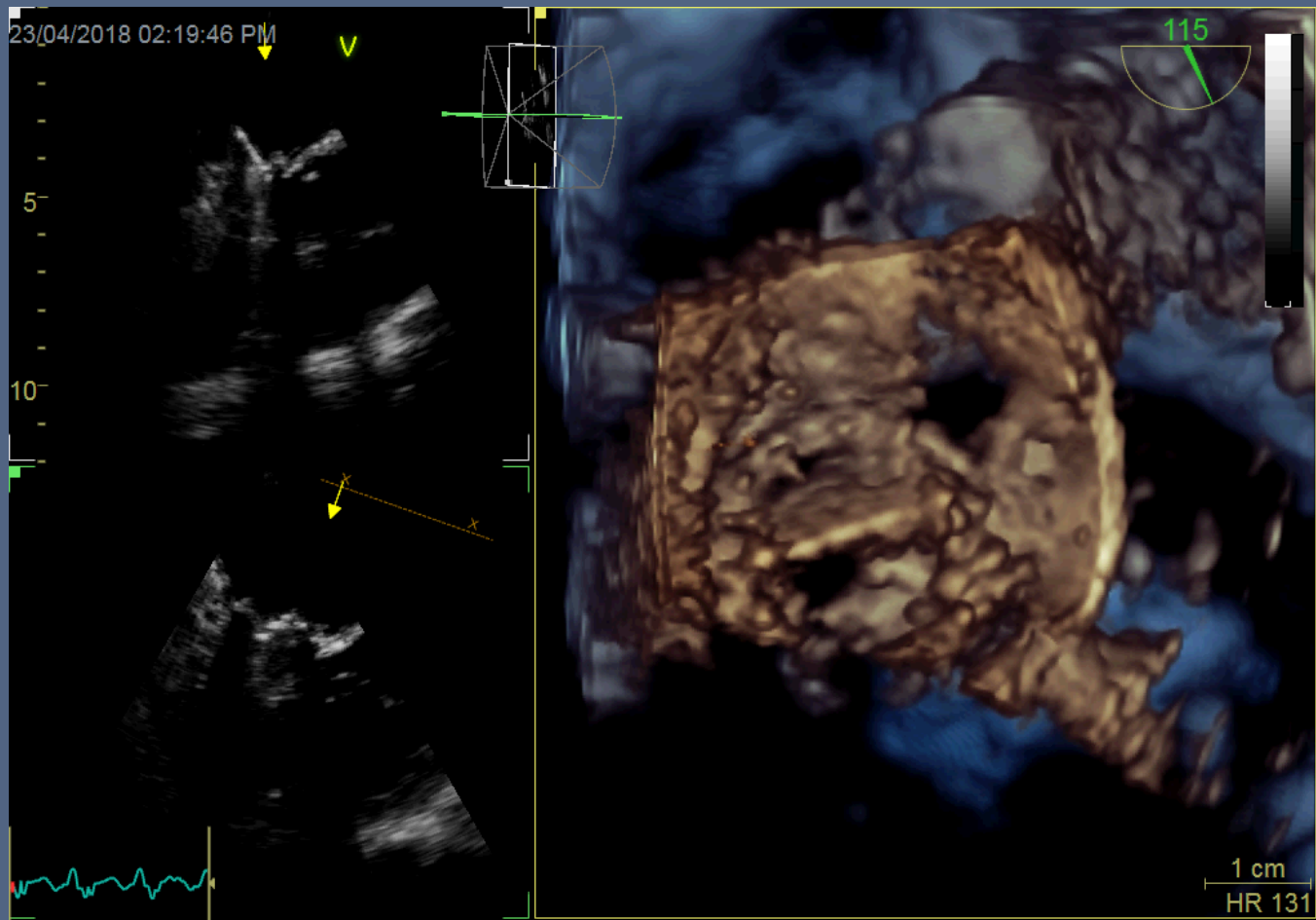


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48.90 RAO  
0.50 CAU

A nighttime photograph of a city skyline, likely Shanghai, featuring numerous illuminated skyscrapers. The buildings are lit up with various colors, including yellow, blue, and red. The lights reflect on the water in the foreground. The text "THANK YOU" is overlaid in the upper right corner.

THANK YOU