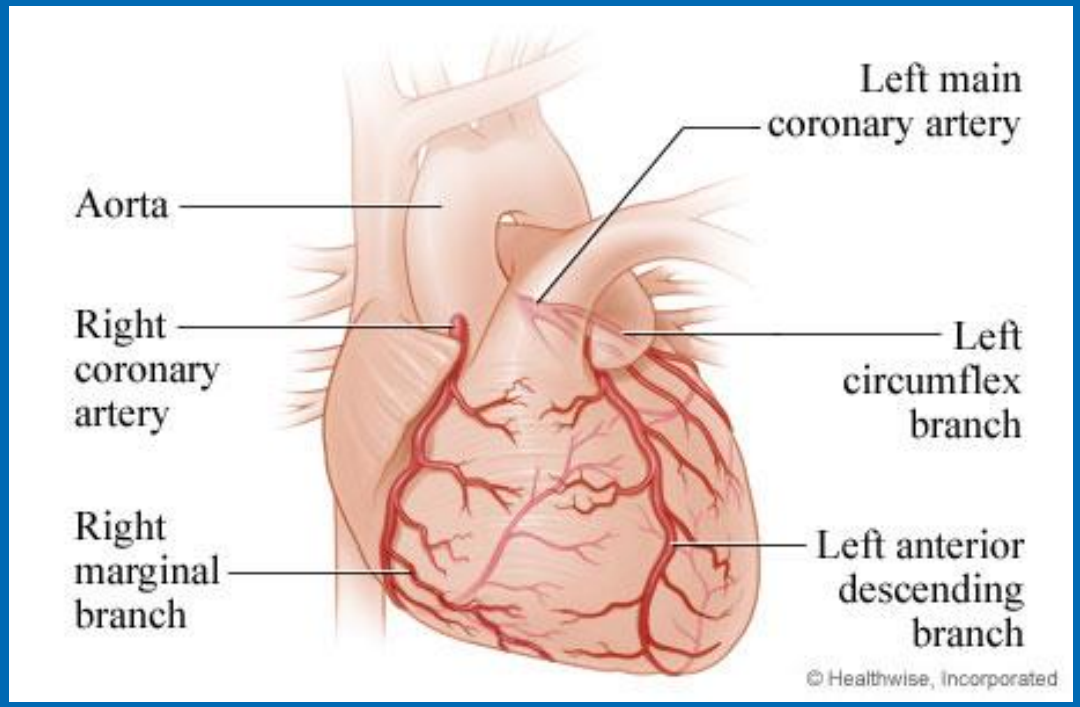
SEPTEMBER 7TH, 2024

Coronary abnormalities and their Red Flags



https://myhealth.alberta.ca/Health/Pages/conditions.aspx?hwid=tp13648&lang=en-ca

By Alexandra Woodbury, B.S., RDCS (AE,PE)

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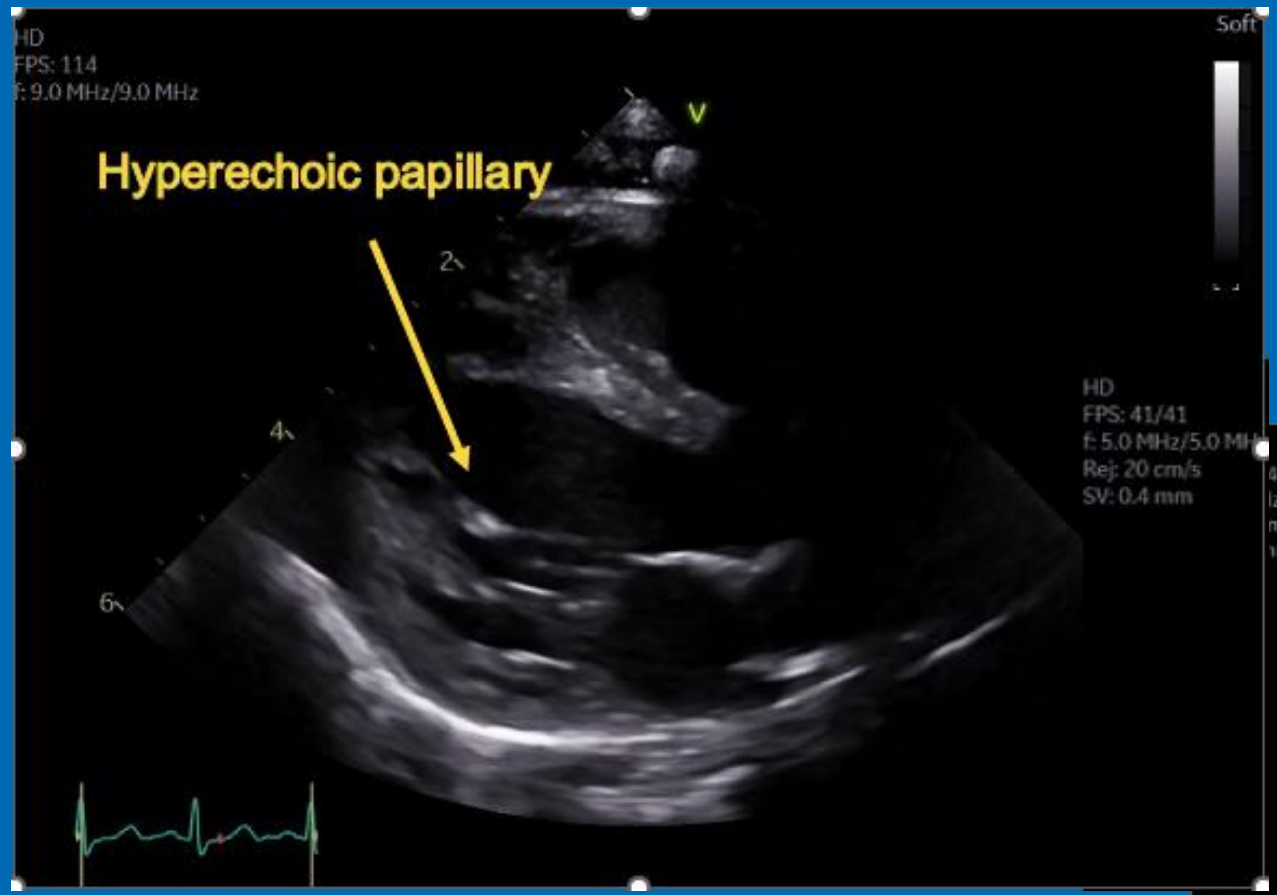
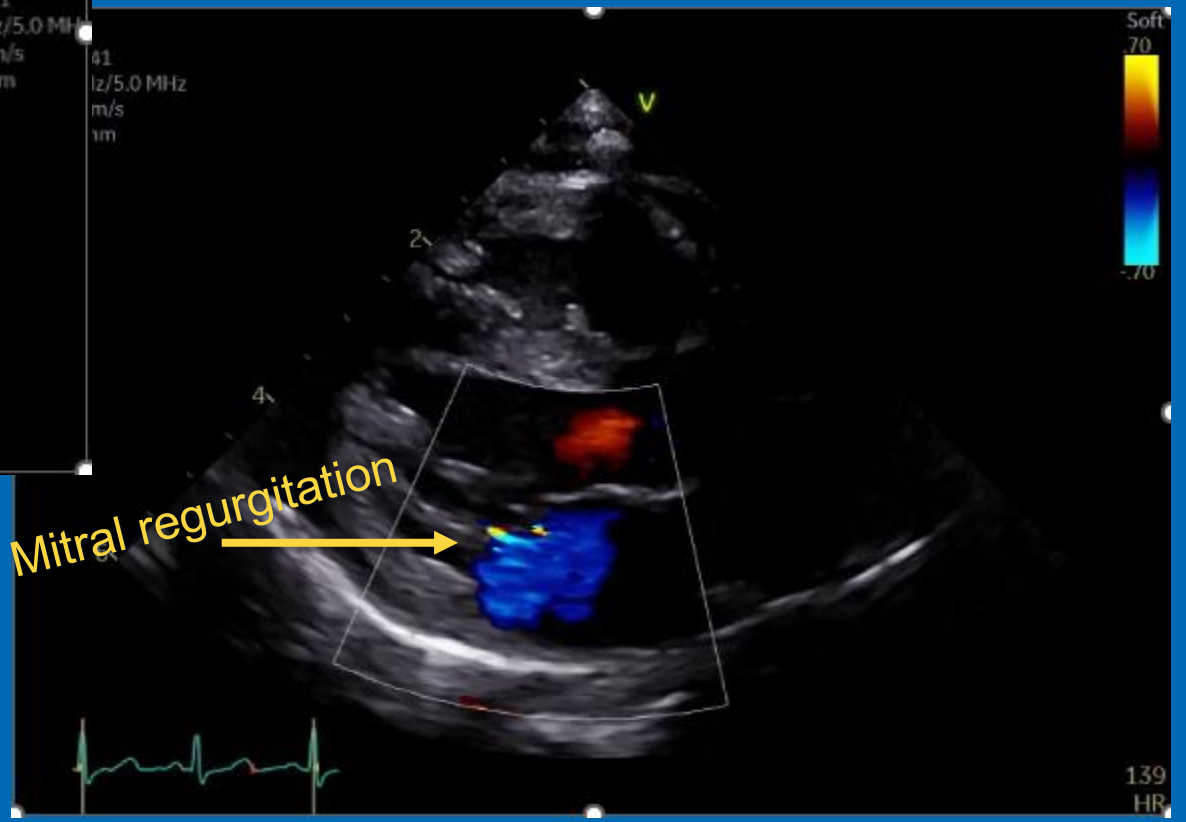
Disclosures

There are no disclosures

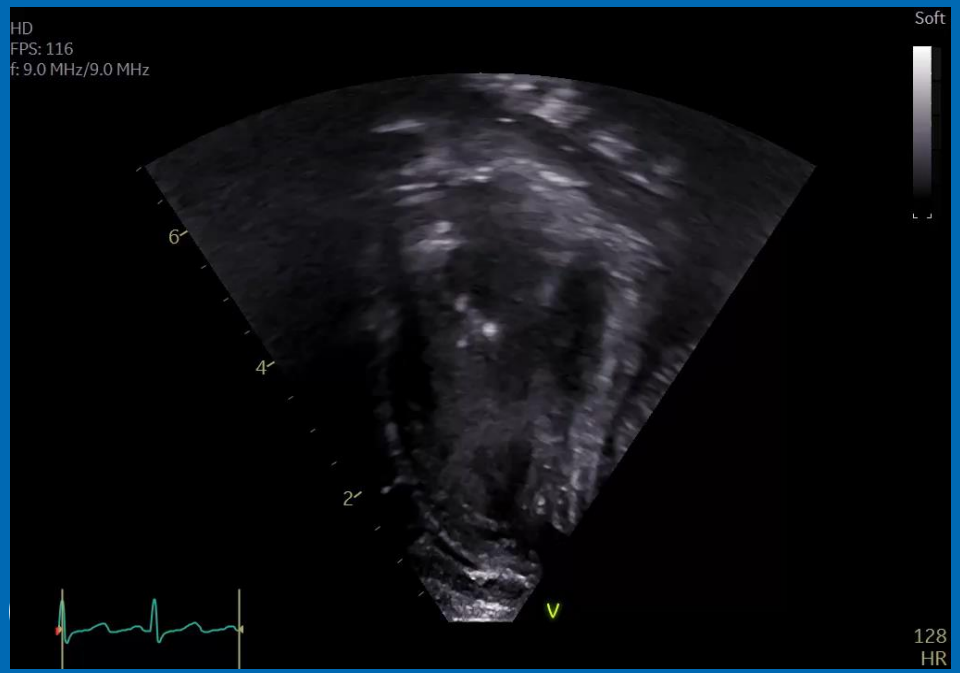
CASE 1

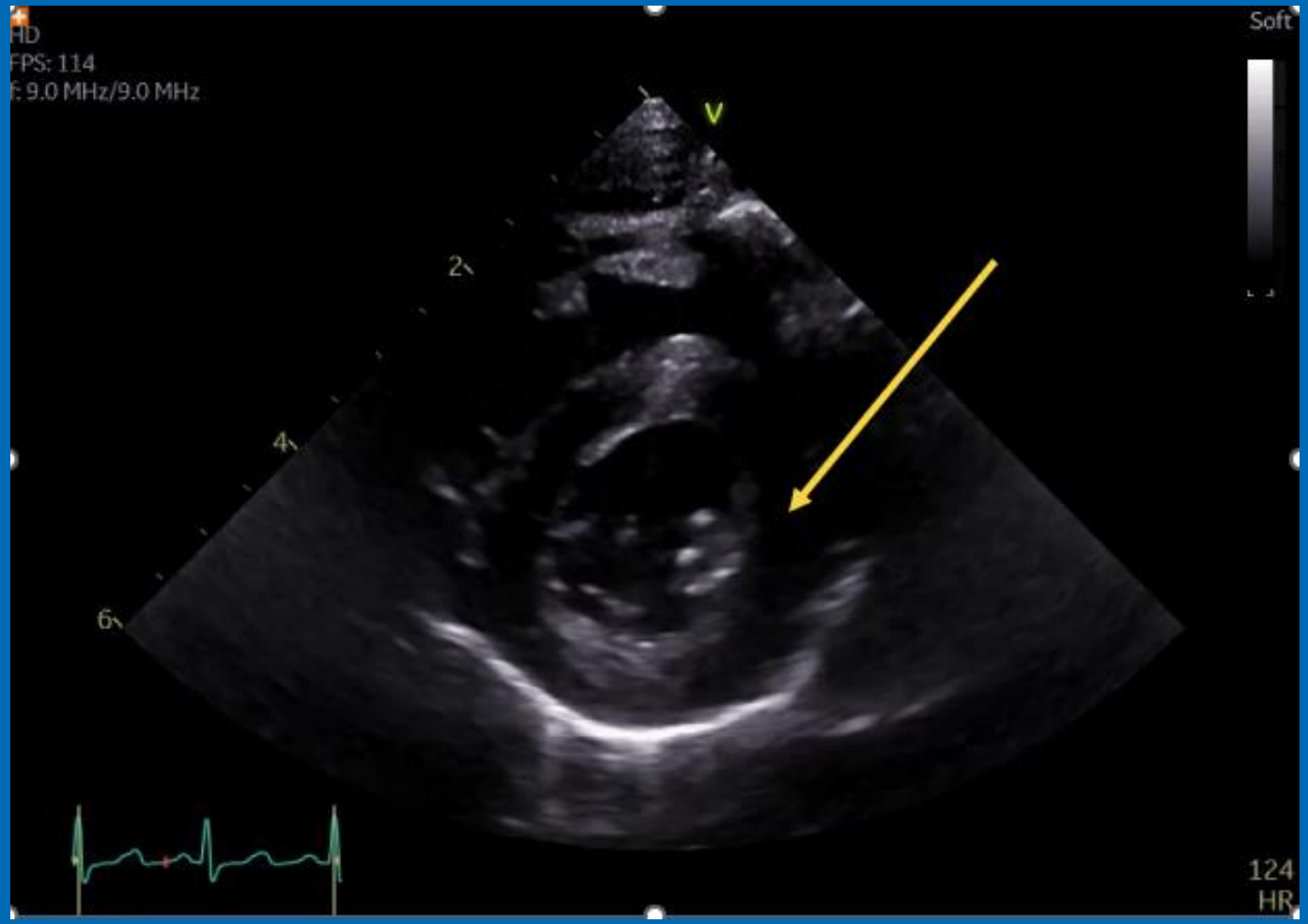
- Referred for failure to regain birthweight
- Episodes of cyanosis/noisy breathing
- Diagnosed with laryngomalacia
- Readmitted with failure to thrive

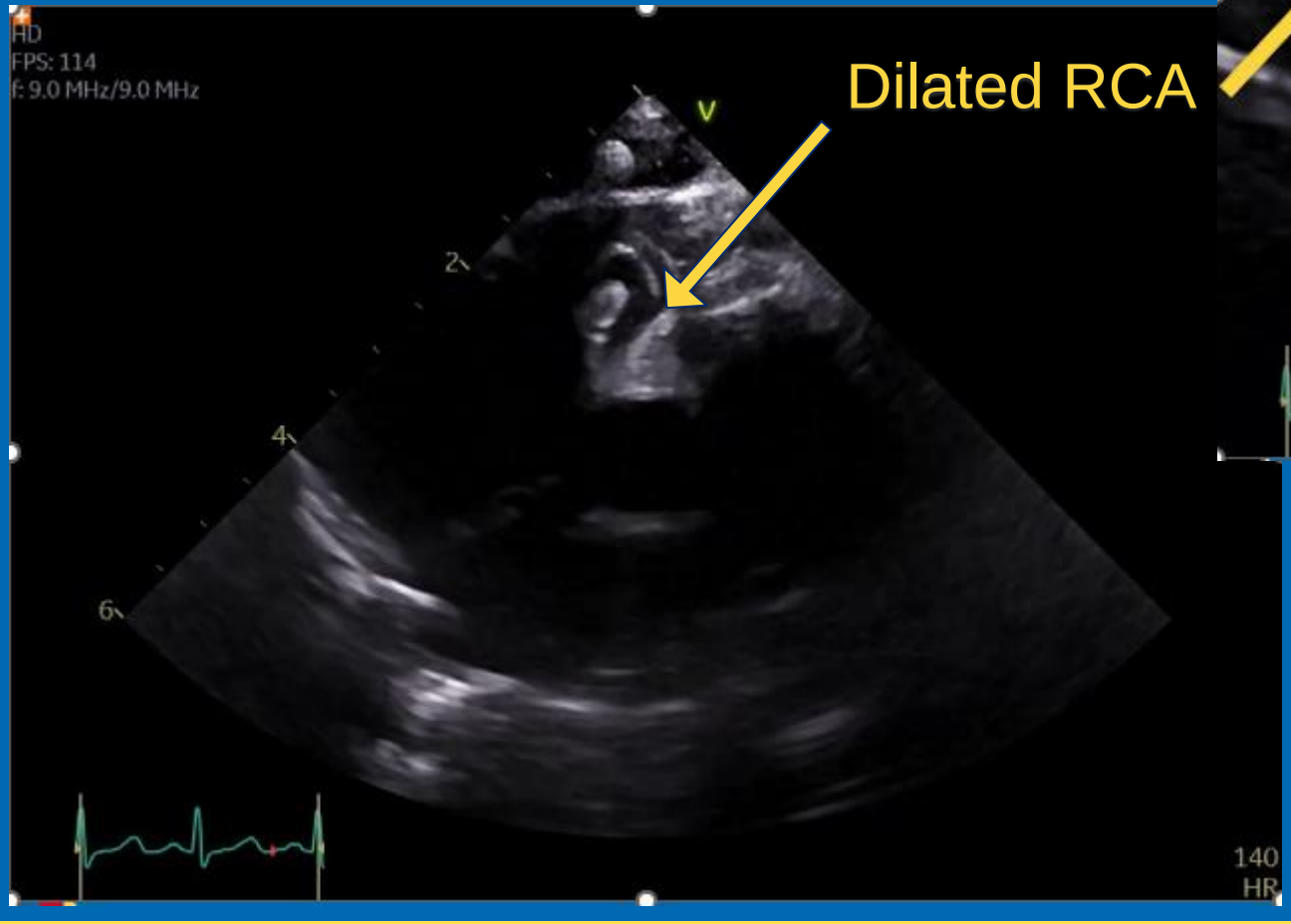

HD
FPS: 114
f: 9.0 MHz/9.0 MHz
Soft
Hyperechoic papillary
HD
FPS: 41/41
f: 5.0 MHz/5.0 MHz
Rej: 20 cm/s
SV: 0.4 mm

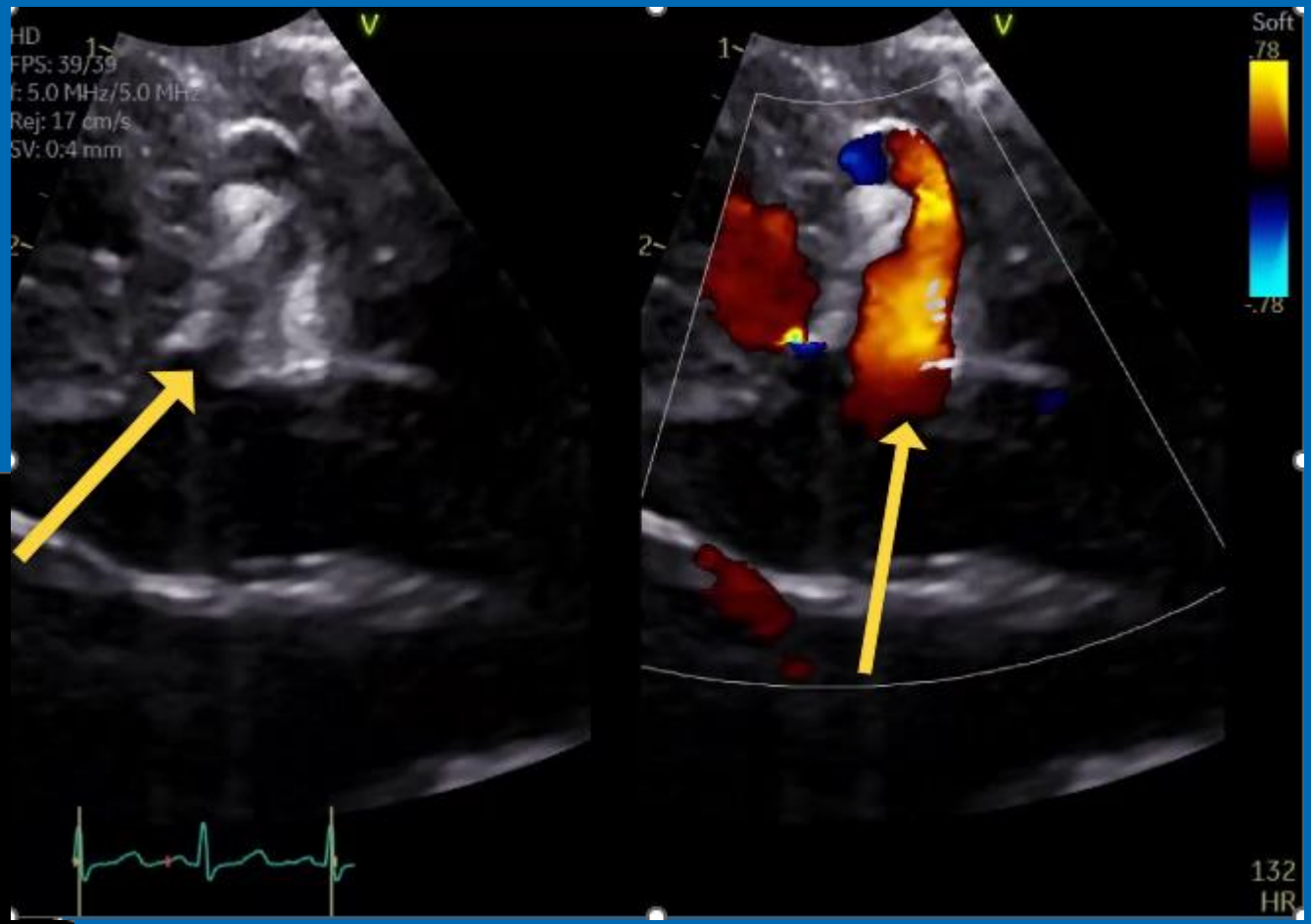

Soft
Mitral regurgitation
139
HR


HD
FPS: 116
f: 9.0 MHz/9.0 MHz
Soft
6
4
2
V
142
HR


HD
FPS: 116
f: 9.0 MHz/9.0 MHz
Soft
6
4
2
V
128
HR


HD
FPS: 114
f: 9.0 MHz/9.0 MHz
Soft
V
2
4
6
124
HR


HD
FPS: 114
f: 9.0 MHz/9.0 MHz
Dilated RCA
140
HR


HD
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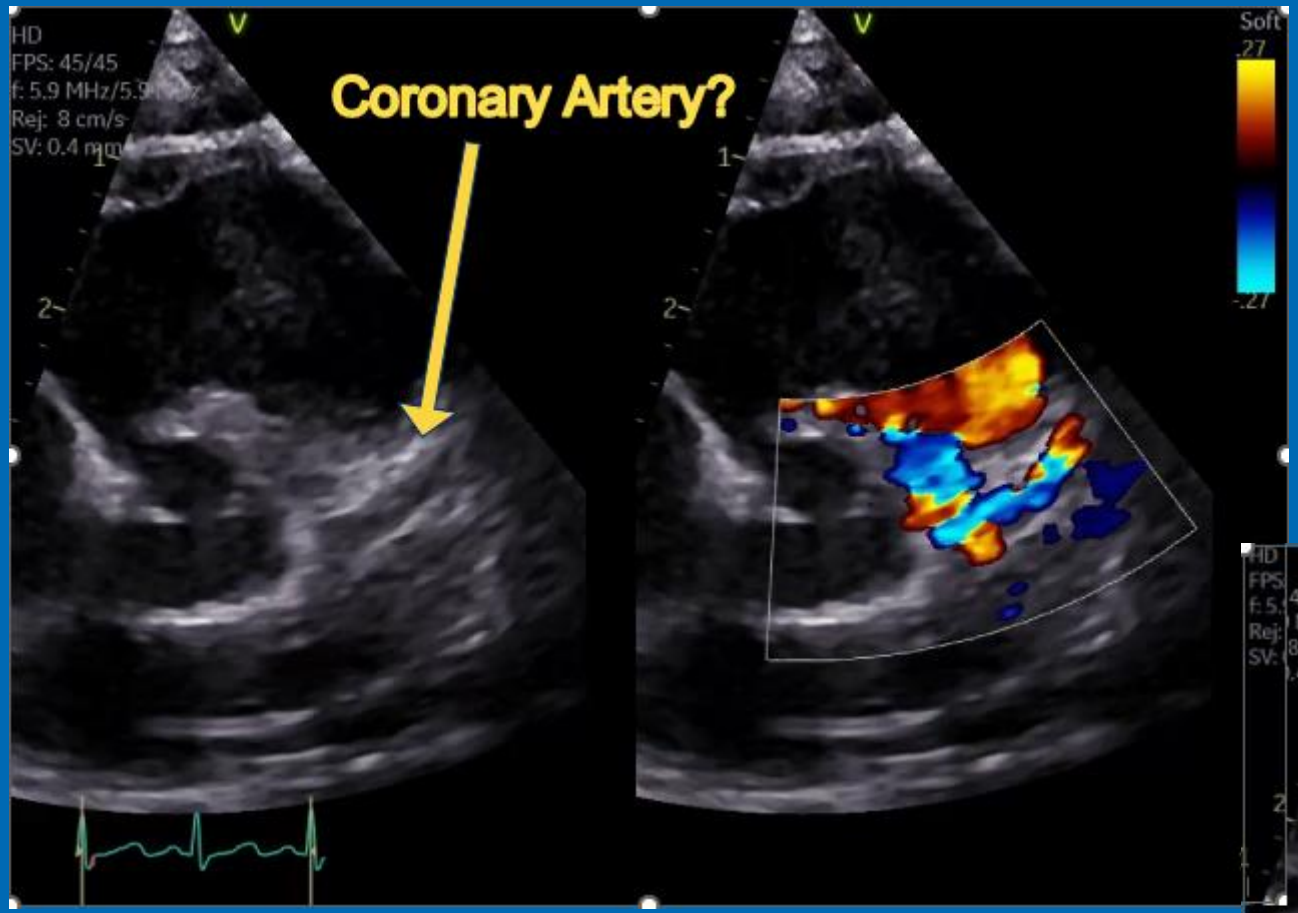
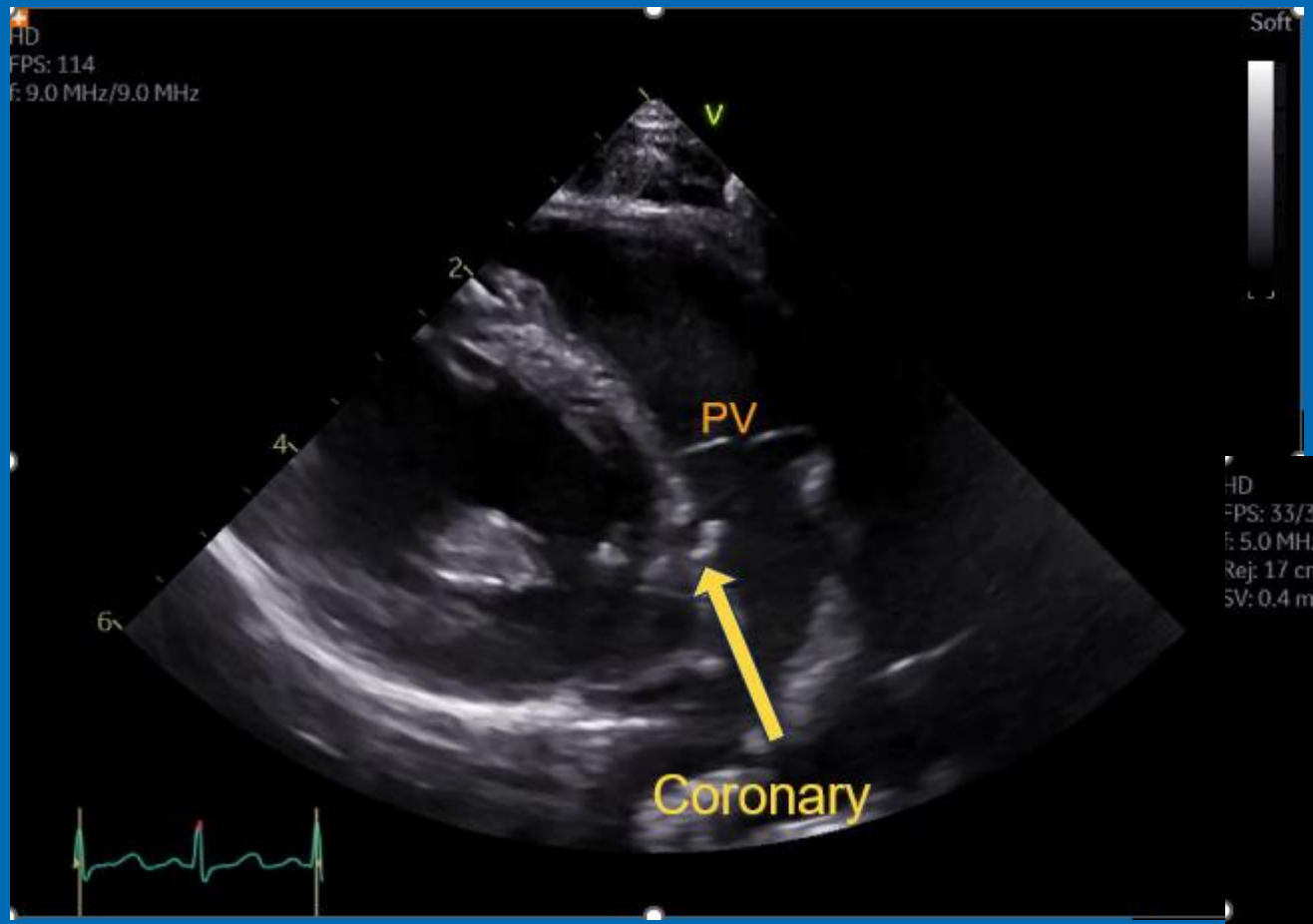
f: 5.0 MHz/5.0 MHz
Rej: 17 cm/s
SV: 0.4 mm
Soft
.78
-.78
132
HR


Coronary Artery?
HD
FPS: 45/45
Rej: 8 cm/s
Soft

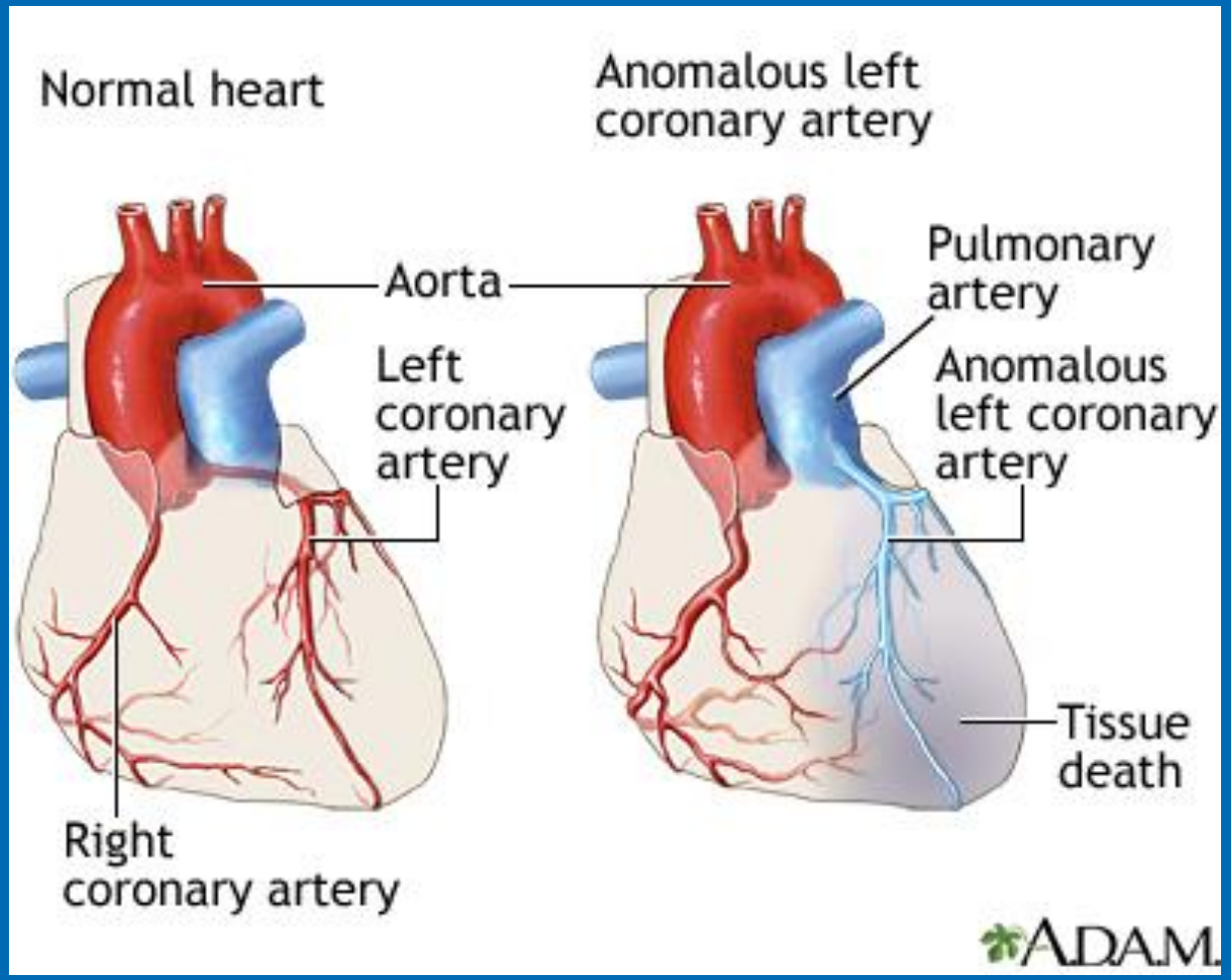

HD
Soft
137
HR


HD
FPS: 114
f: 9.0 MHz/9.0 MHz
Soft
V
2
4
6
PV
Coronary


HD
FPS: 33/33
f: 5.0 MHz/5.0 MHz
Rej: 17 cm/s
SV: 0.4 mm
Soft
78
-78
V
2
4
6
141
HR

Diagnosis

Anomalous left coronary artery from the pulmonary artery, or ALCAPA.



Anomalous left coronary artery: MedlinePlus Medical Encyclopedia Image

ALCAPA

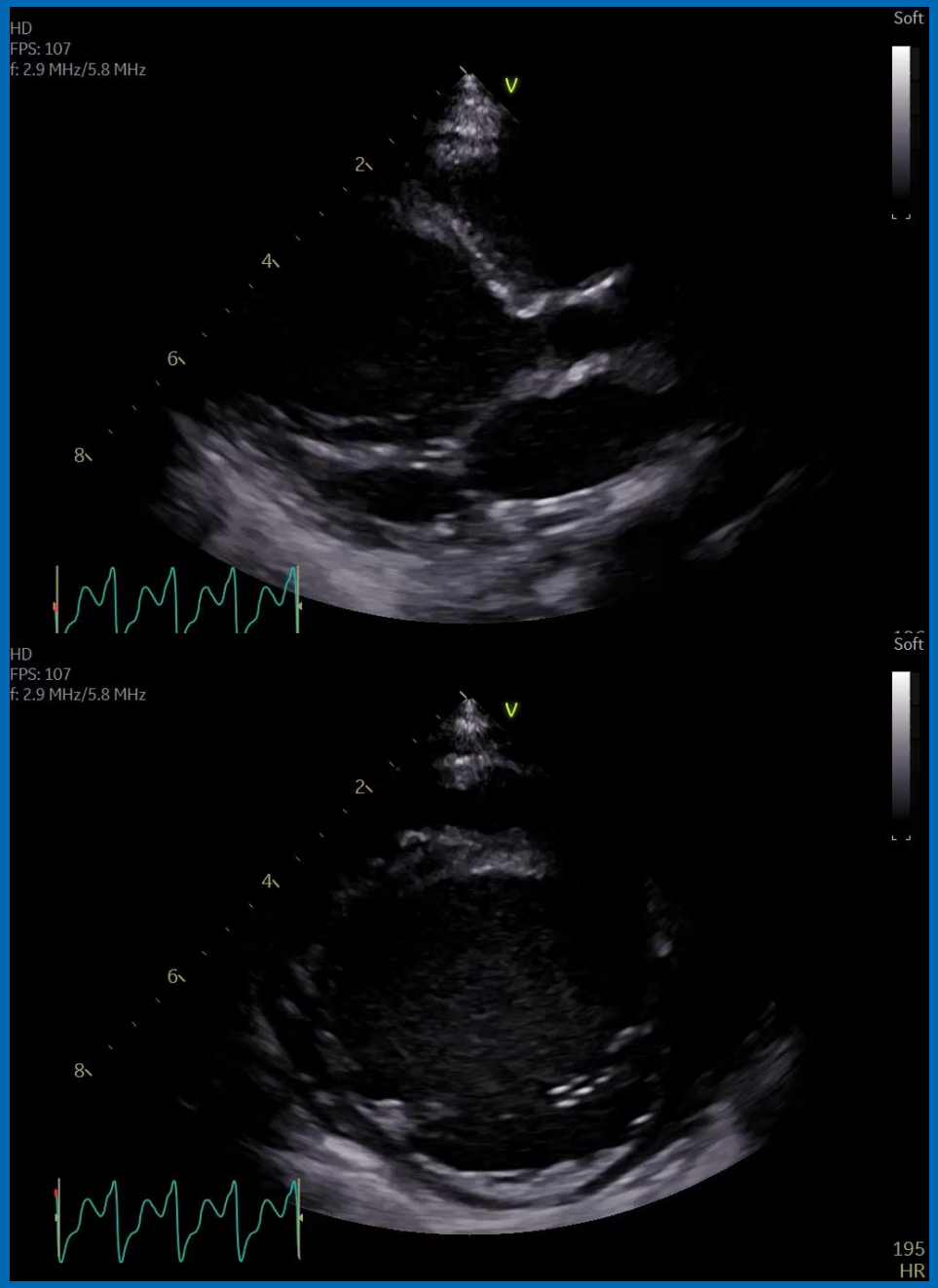
- ALCAPA is present in 1 out of 300,000 live births
- Patients often present at 3-4 months of age
- Symptoms are consistent with heart failure
  - Failure to thrive
  - Difficulty with feedings
  - Breathing issues/cough
- Can also be referred for:
  - Murmur
  - Abnormal ECG

Electrocardiogram shows deep Q wave and inverted T wave in lead I, aVL, and left precordial leads (V5-V6)

ALCAPA

Echocardiographic findings

- Signs of cardiac ischemia
  - Left ventricular dilation
  - Left ventricular dysfunction
  - Echo-bright papillary muscles/mitral valve chordae ("Chopstick" chordae)
  - Mitral regurgitation
- Ectasia of the right coronary artery system
- Flow reversal in the left coronary artery system



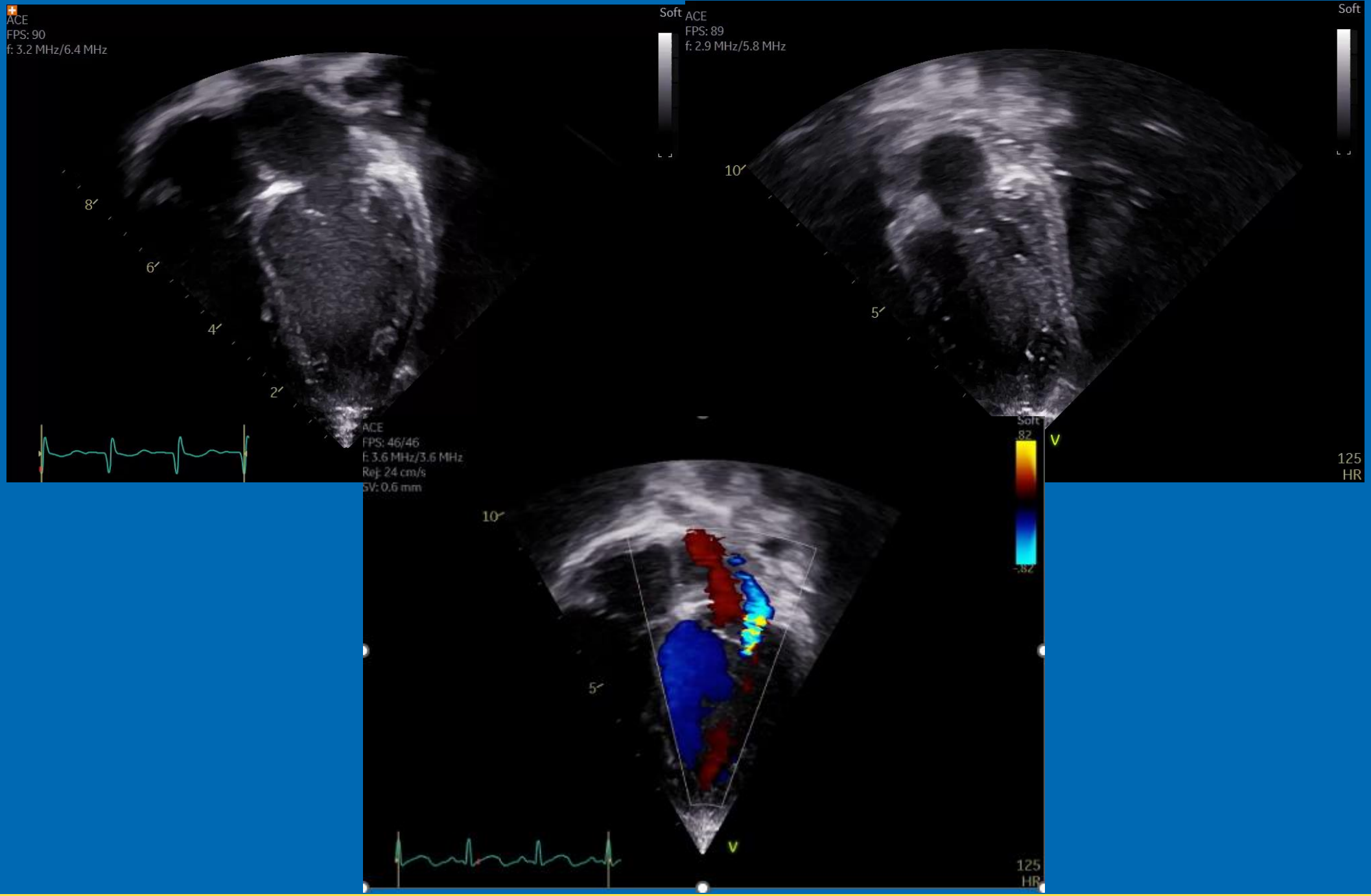
CASE 2

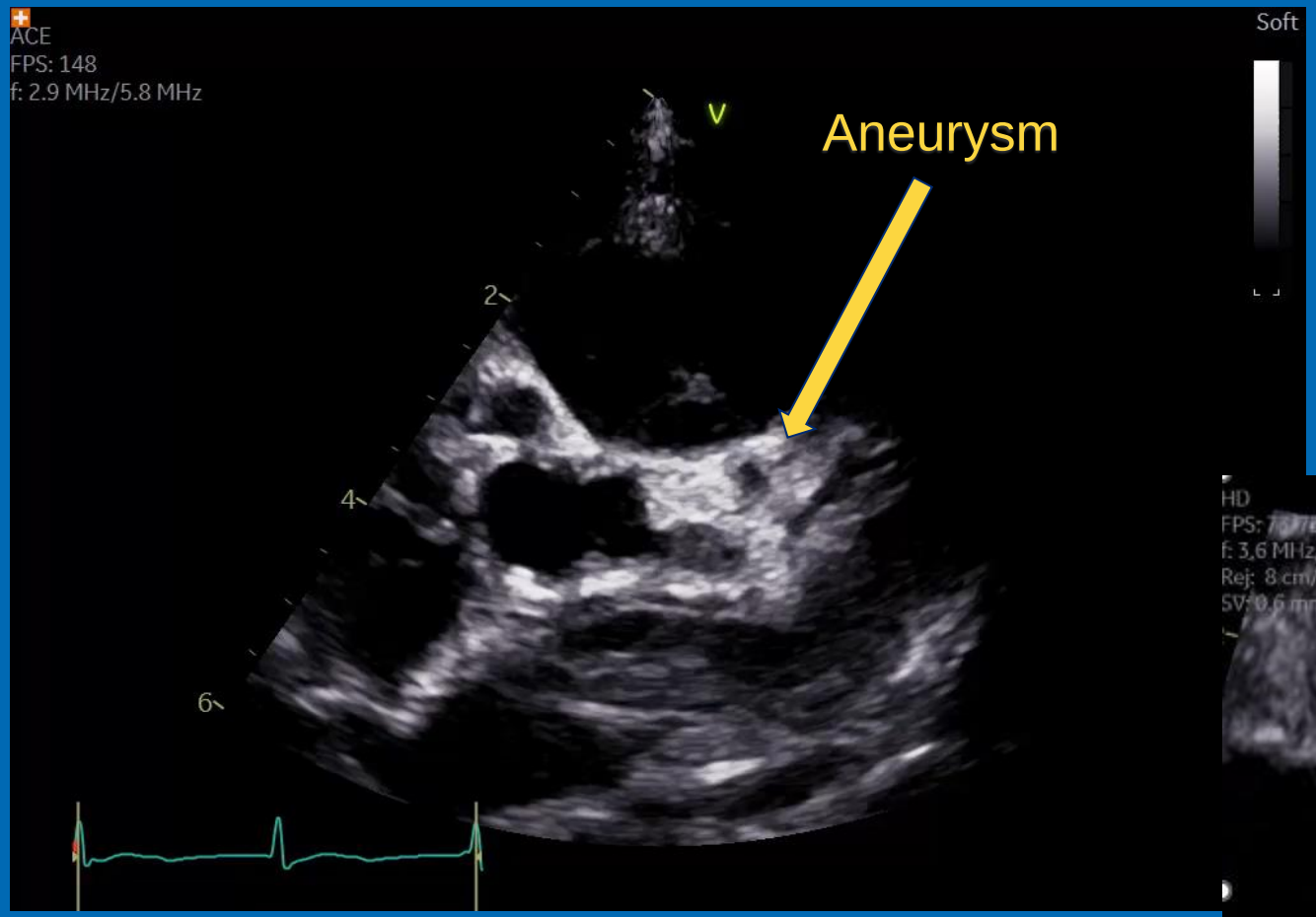
Presented with 2 weeks of symptoms

Symptoms

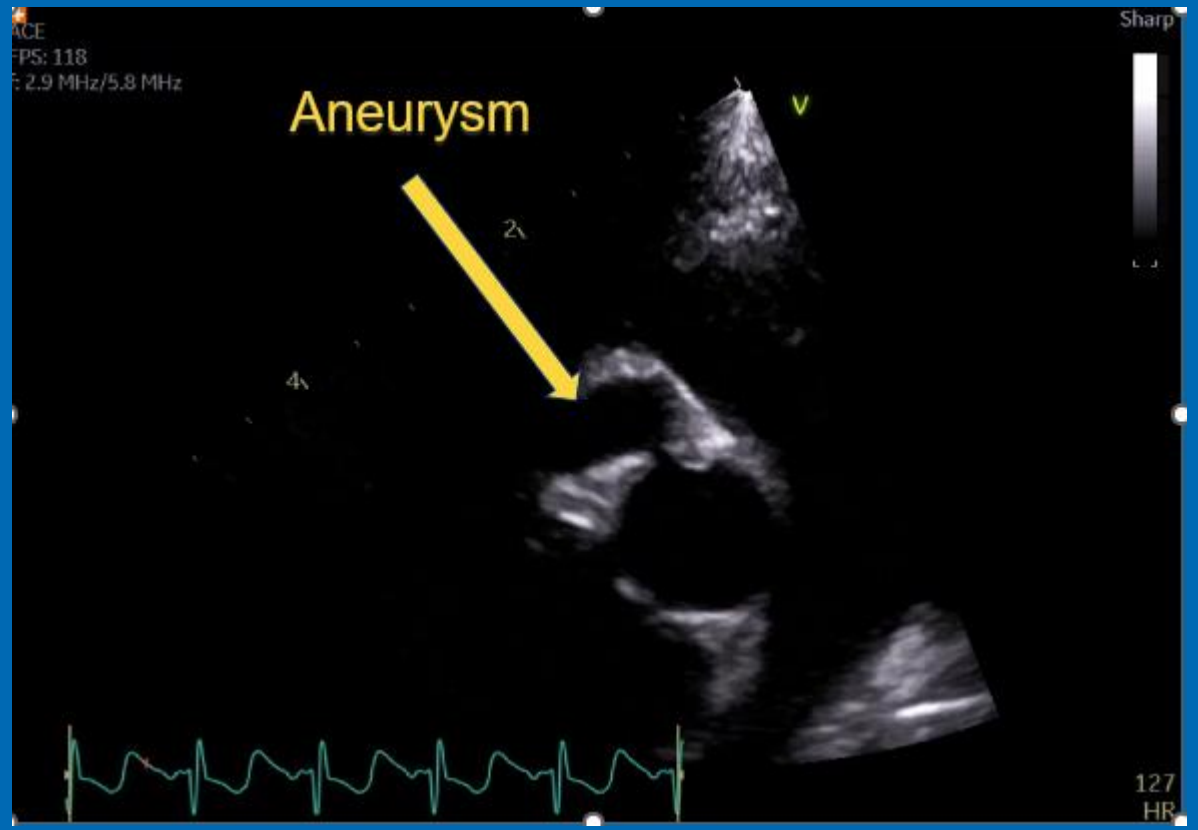
- Prolonged fevers
- Conjunctivitis
- Swelling of the feet
- Rash
- Elevated inflammatory markers
- Poor PO intake

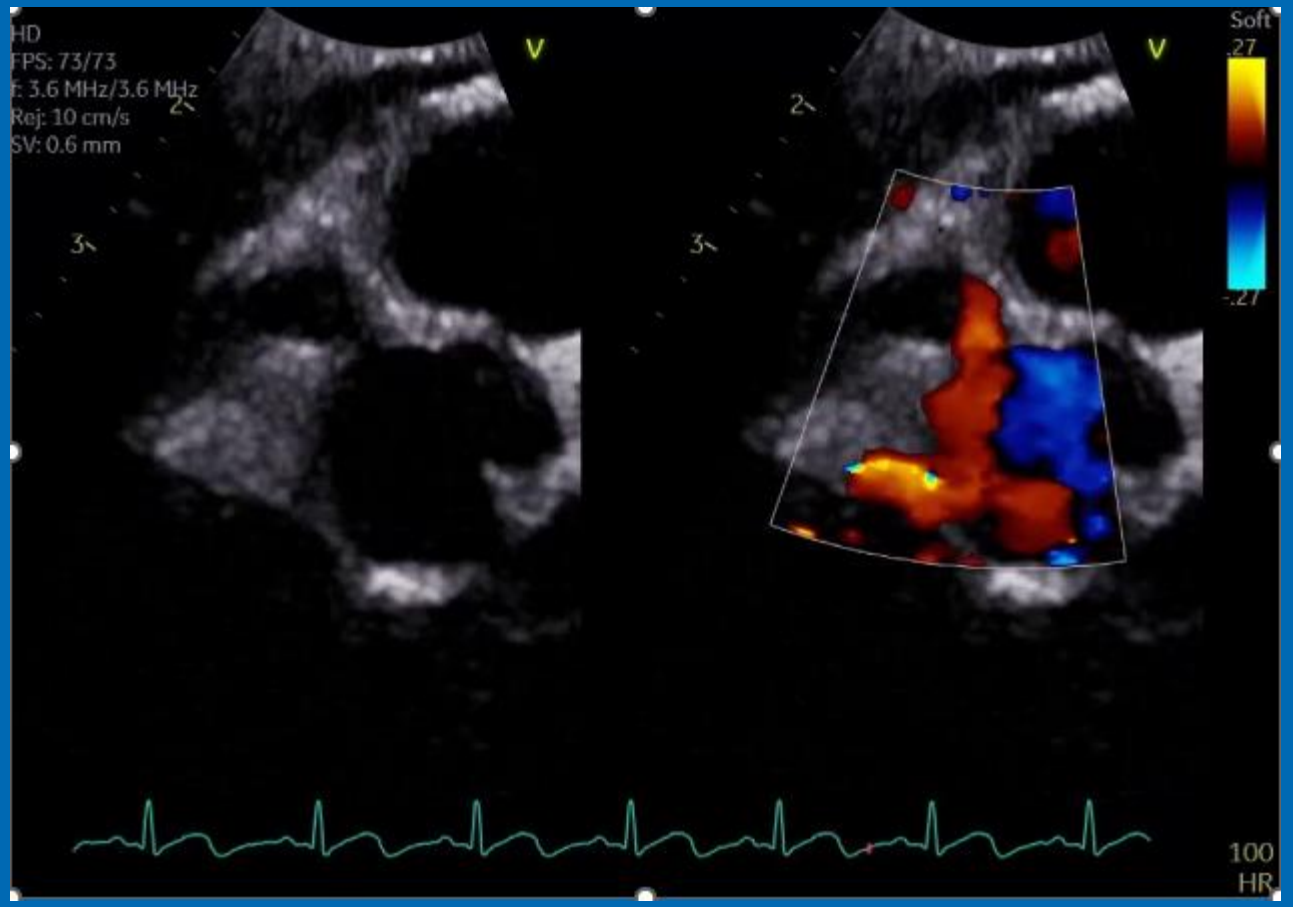
Admitted then transferred to PICU

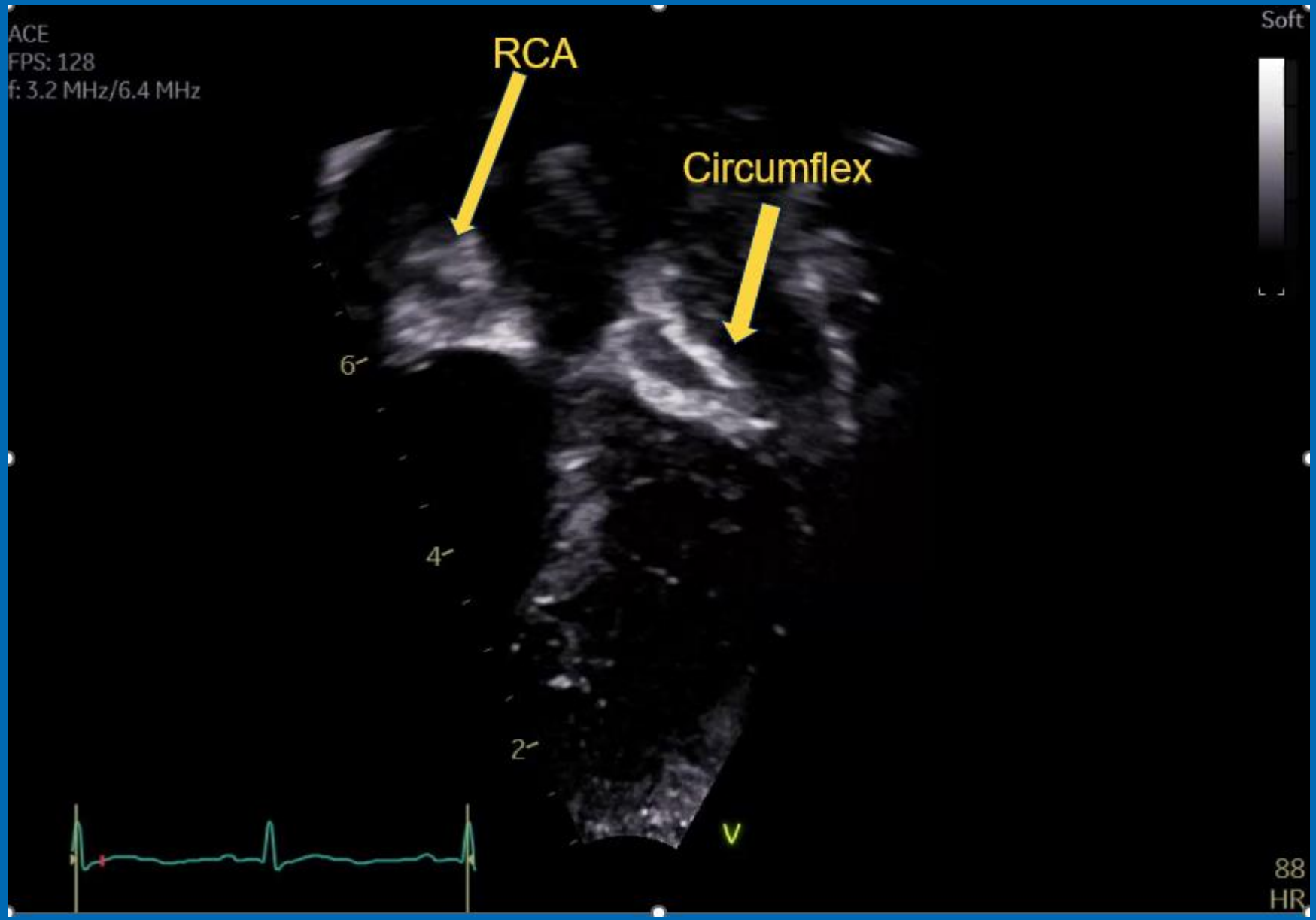

ACE
FPS: 90
f: 3.2 MHz/6.4 MHz
8
6
4
2
Soft
ACE
FPS: 89
f: 2.9 MHz/5.8 MHz
10
5
Soft
V
125
HR
ACE
FPS: 46/46
f: 3.6 MHz/3.6 MHz
Rej: 24 cm/s
SV: 0.6 mm
10
5
Soft
82
-82
V
125
HR

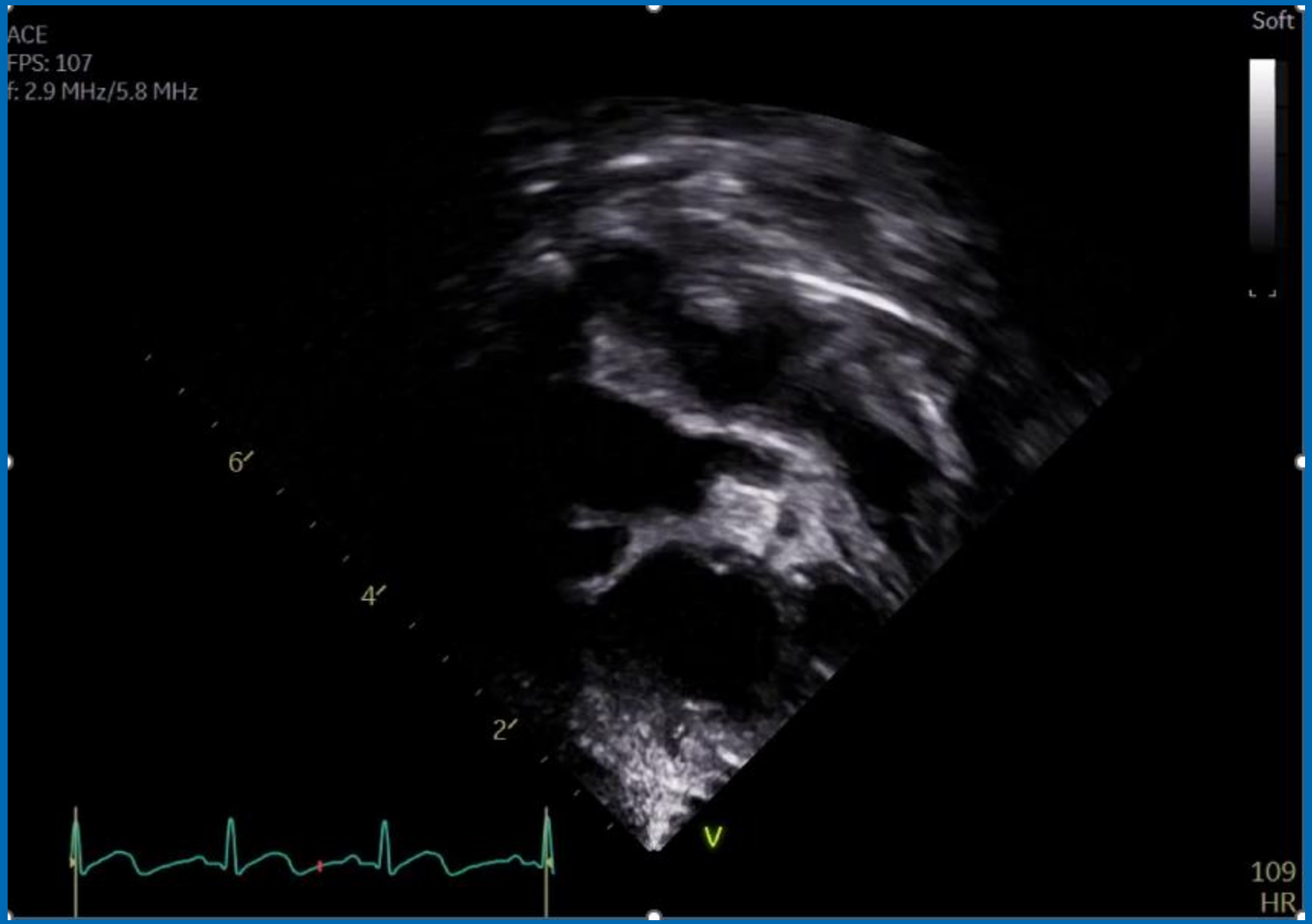

ACE
FPS: 148
f: 2.9 MHz/5.8 MHz
Soft
Aneurysm
2
4
6

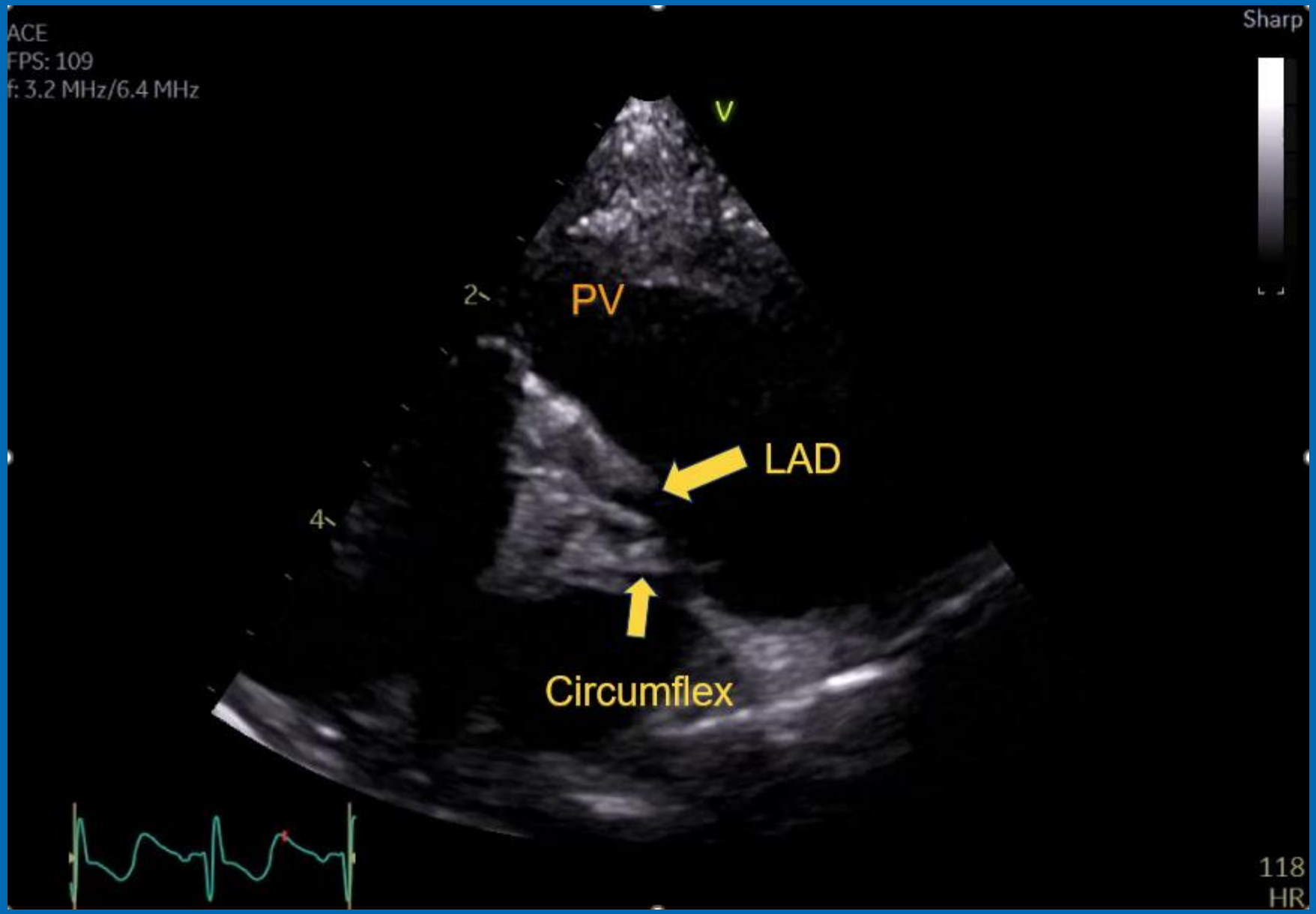

HD
f: 3,6 MHz/3.6 MHz
Rej: 8 cm/s
Soft
93
HR


Aneurysm
Sharp
127
HR


HD
FPS: 73/73
f: 3.6 MHz/3.6 MHz
Rej: 10 cm/s
SV: 0.6 mm
Soft
100
HR


ACE
FPS: 128
f: 3.2 MHz/6.4 MHz
RCA
Circumflex
Soft
6
4
2
V
88
HR

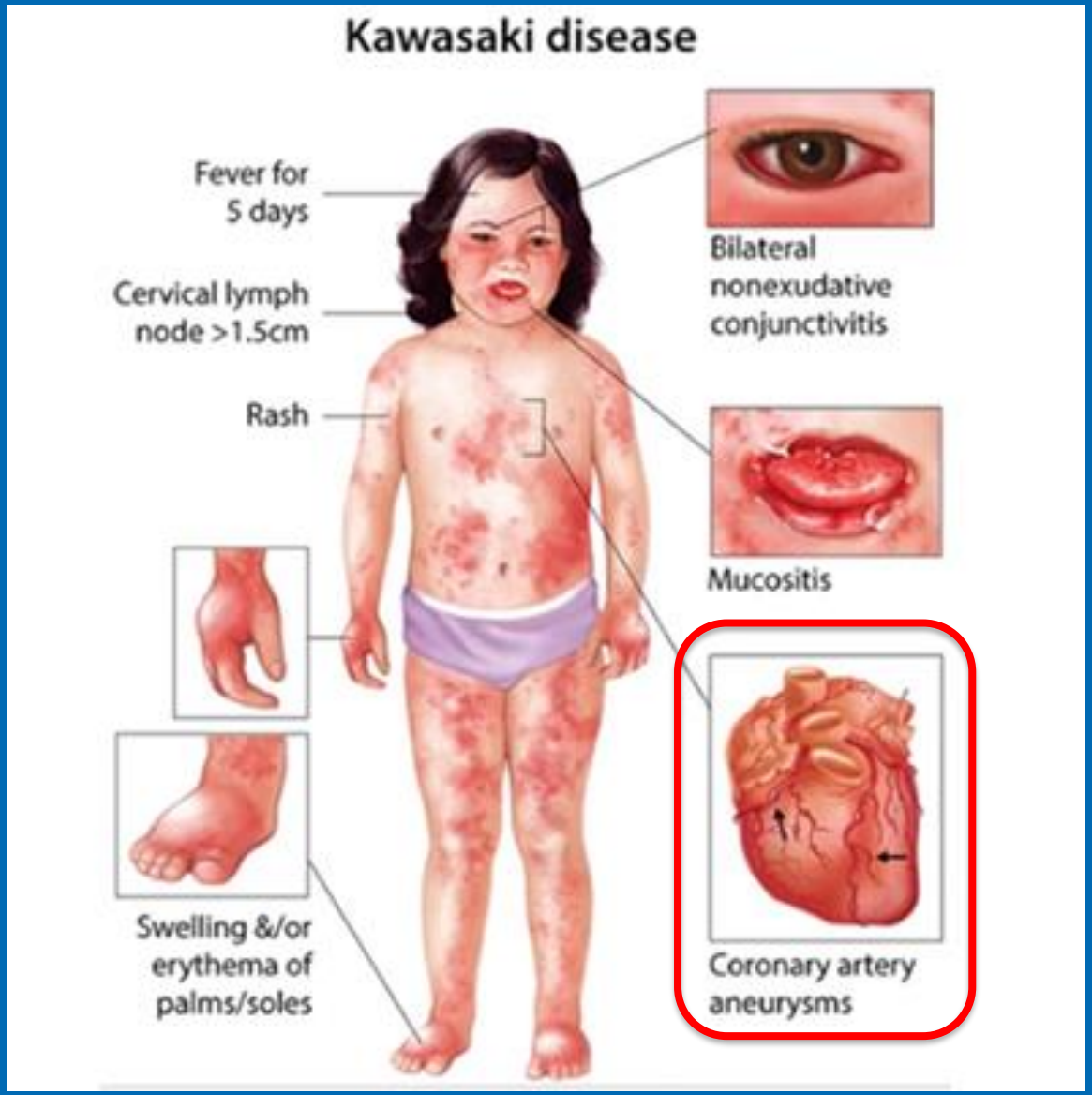

ACE
FPS: 107
f: 2.9 MHz/5.8 MHz
Soft
6′
4′
2′
V
109
HR


ACE
FPS: 109
f: 3.2 MHz/6.4 MHz
Sharp
V
2
PV
LAD
4
Circumflex
118
HR

Diagnosis

Kawasaki disease

- Acute, systemic vasculitis
- Clinical diagnosis
  - Typical Kawasaki disease
  - Atypical Kawasaki disease
- Echocardiography



Kawasaki Disease

- Transthoracic echocardiography should be obtained as soon as the patient's symptoms suggest the diagnosis.
- Positive echo and diagnosis
- Multiple imaging planes for extensive diagnosis
- Patients who do not initially present with coronary involvement should still be followed by cardiology
- Thrombosis or stenosis

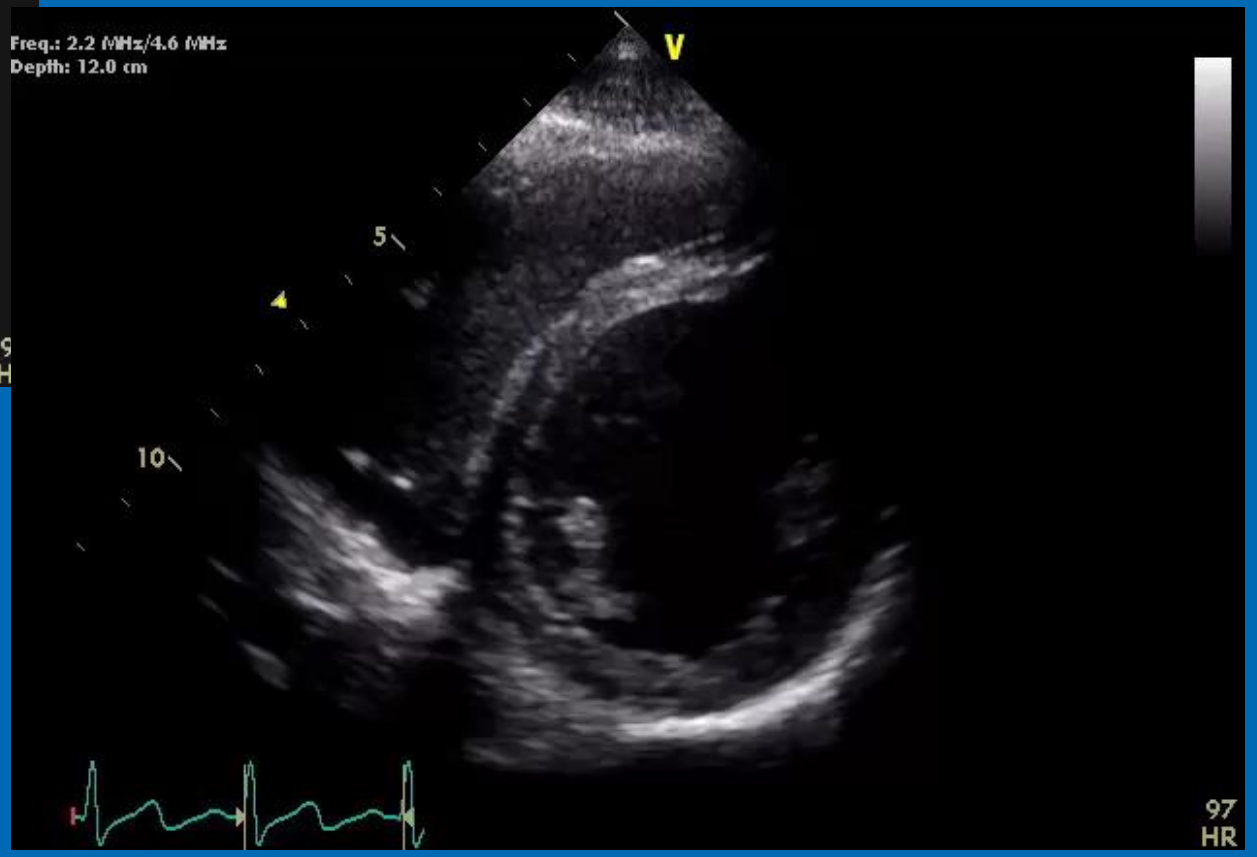
Case 3

14 y.o. male admitted following cardiac arrest

Collapsed and unresponsive without pulse and at sports practice

CPR initiated and was found to be in V-fib

Was previously seen by cardiology for chest pain



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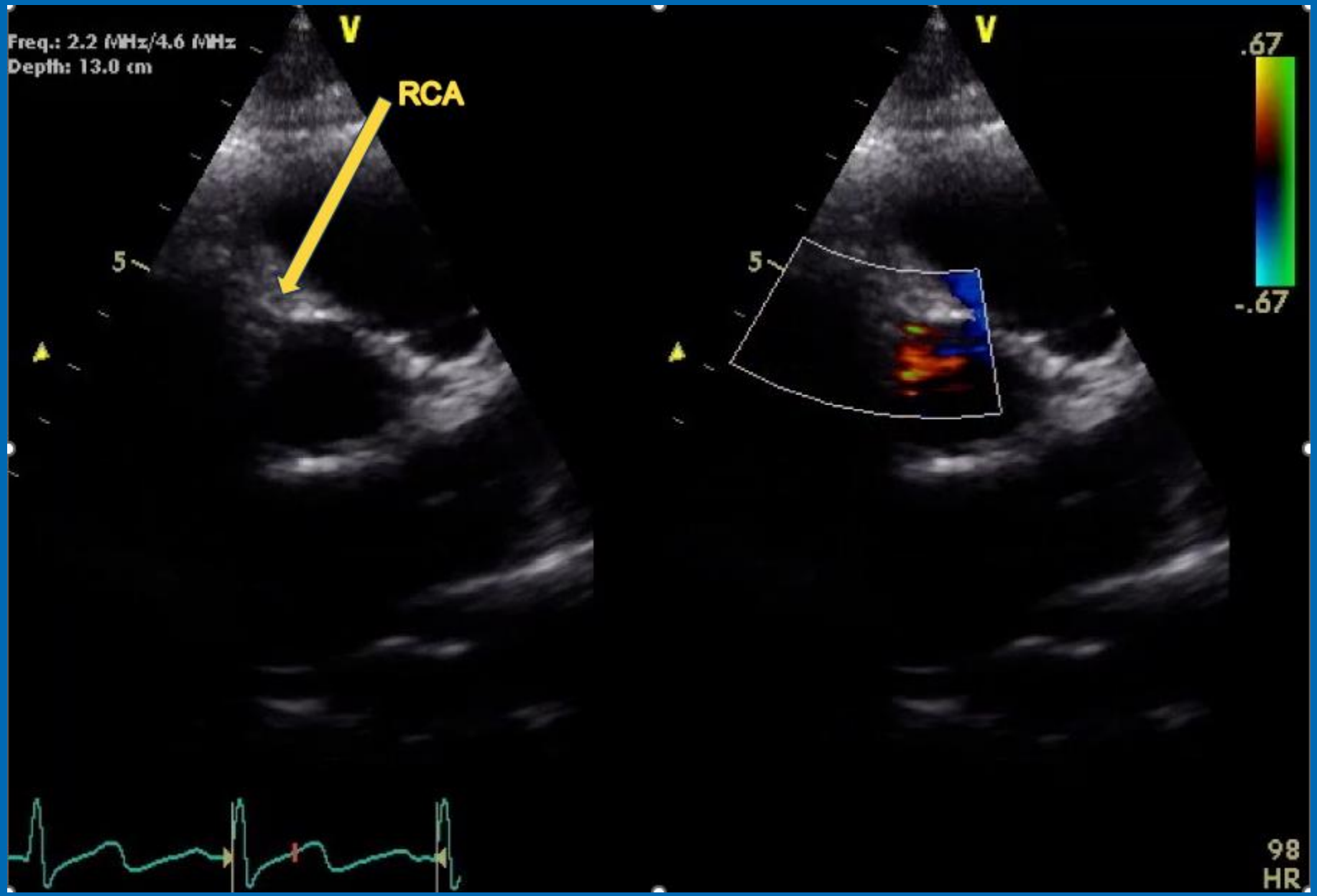

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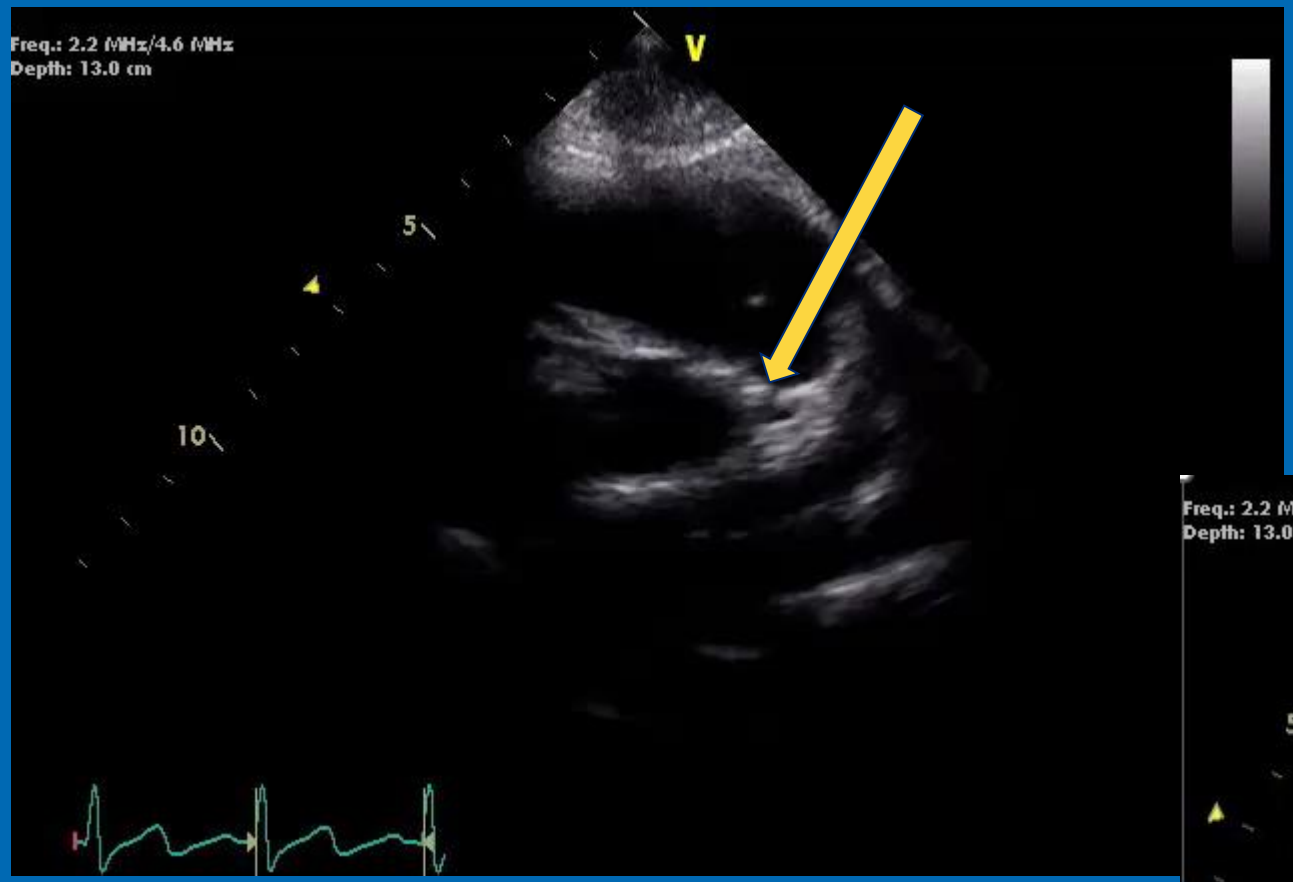

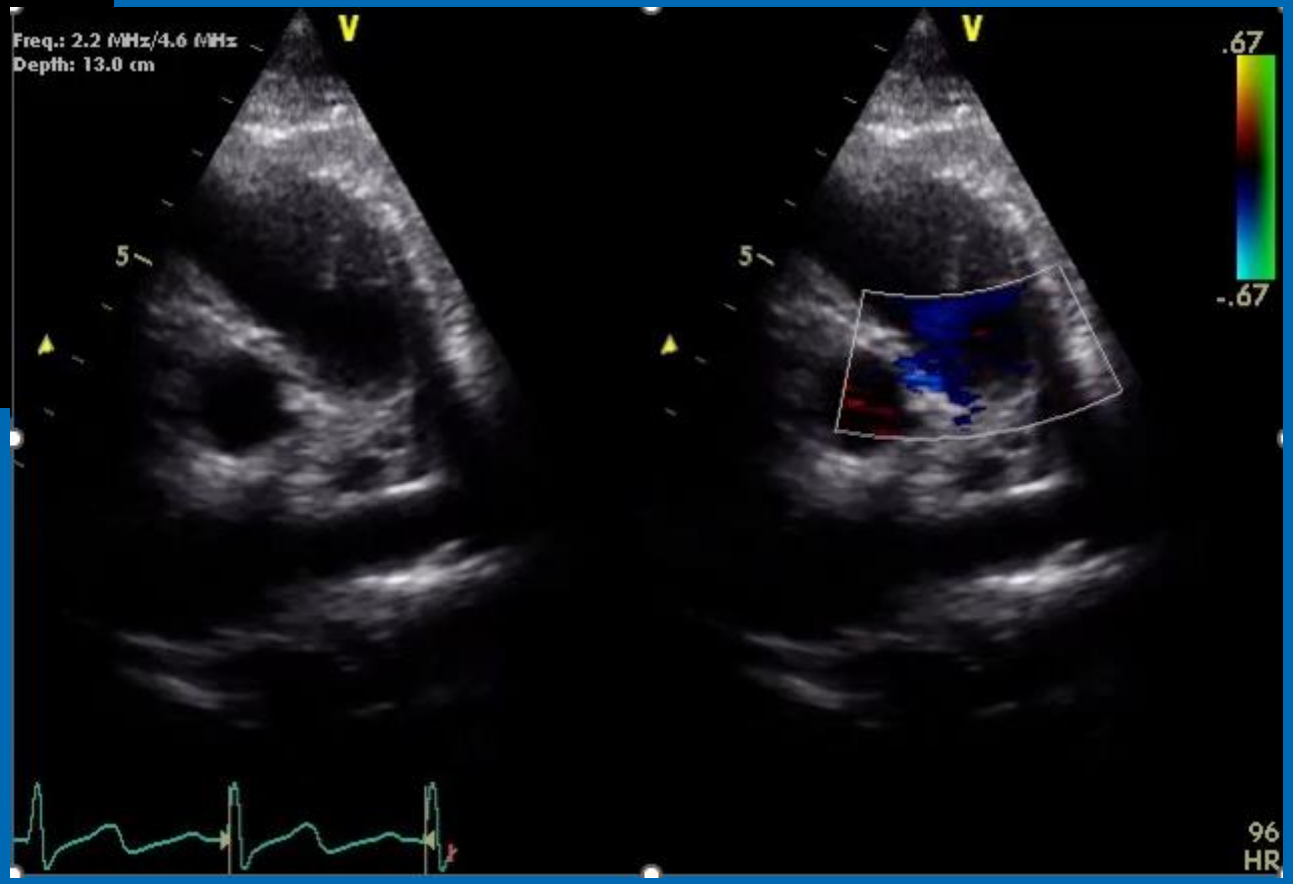

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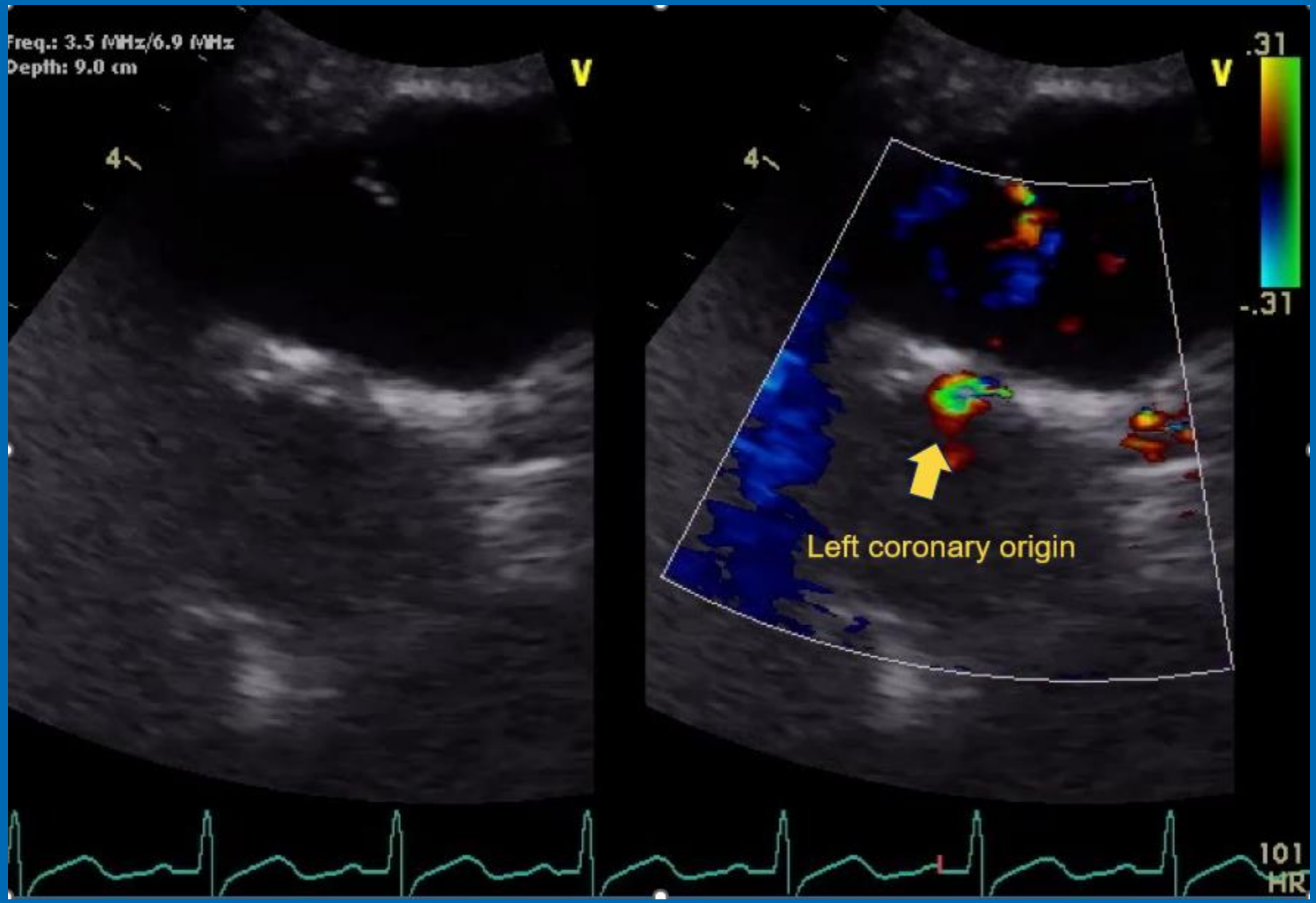

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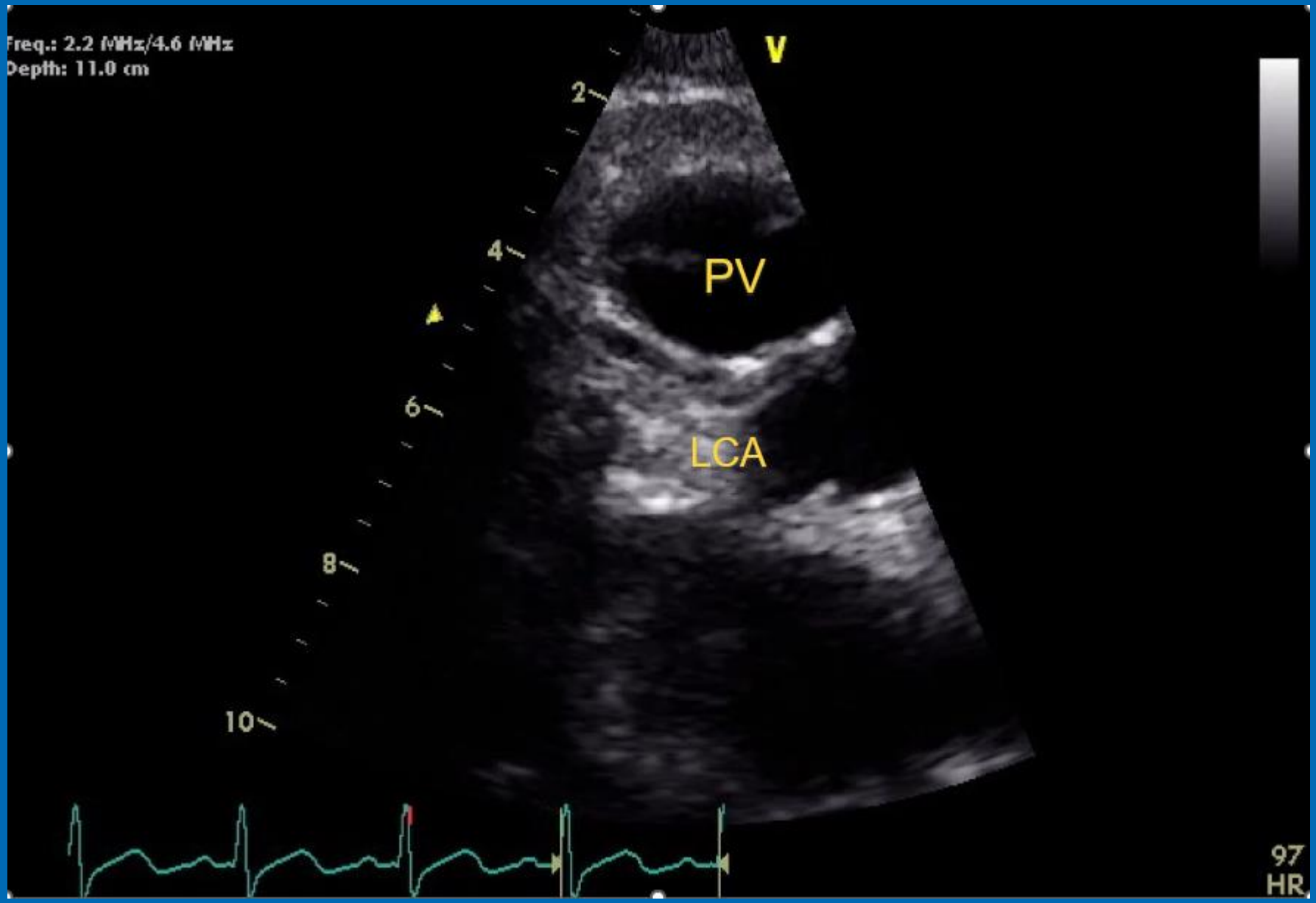

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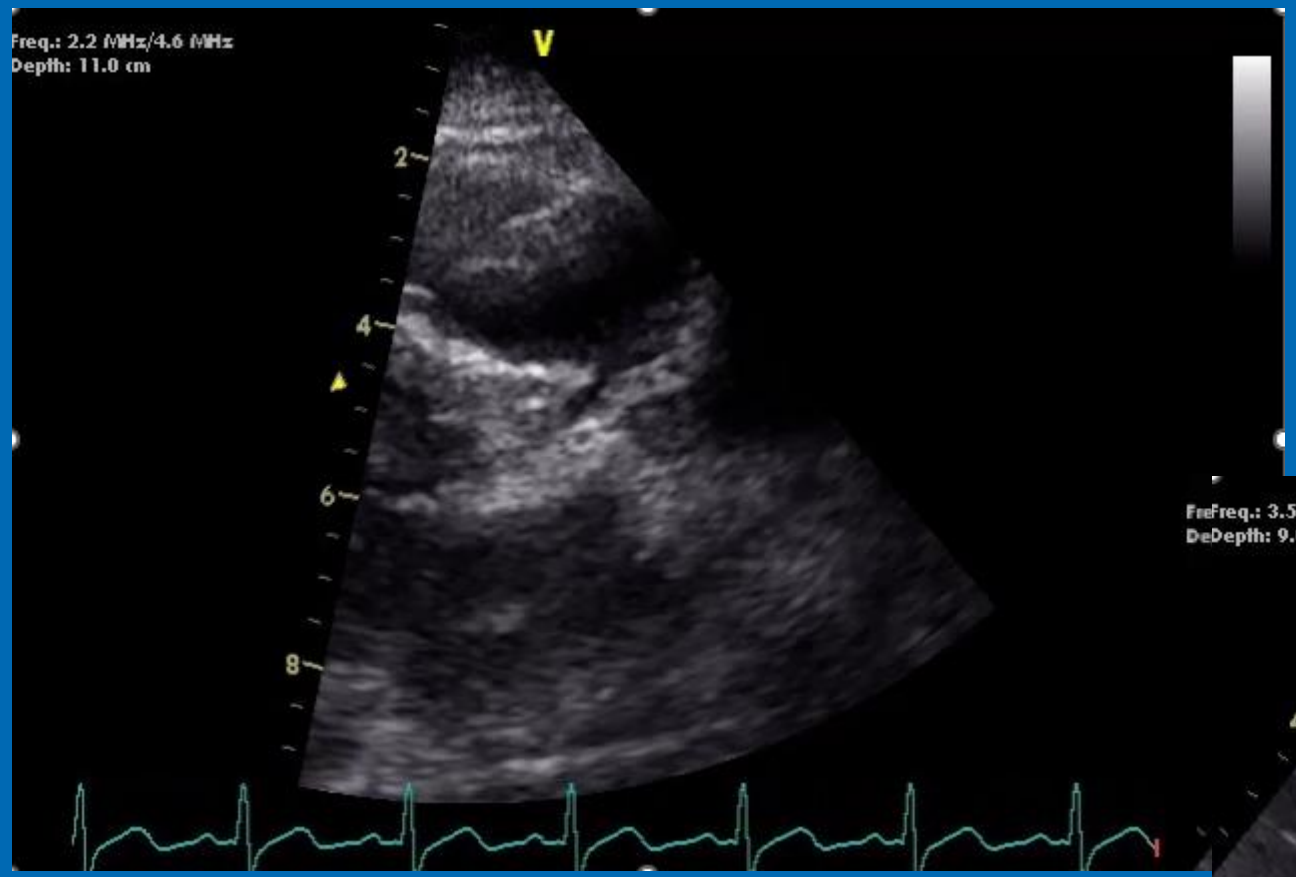

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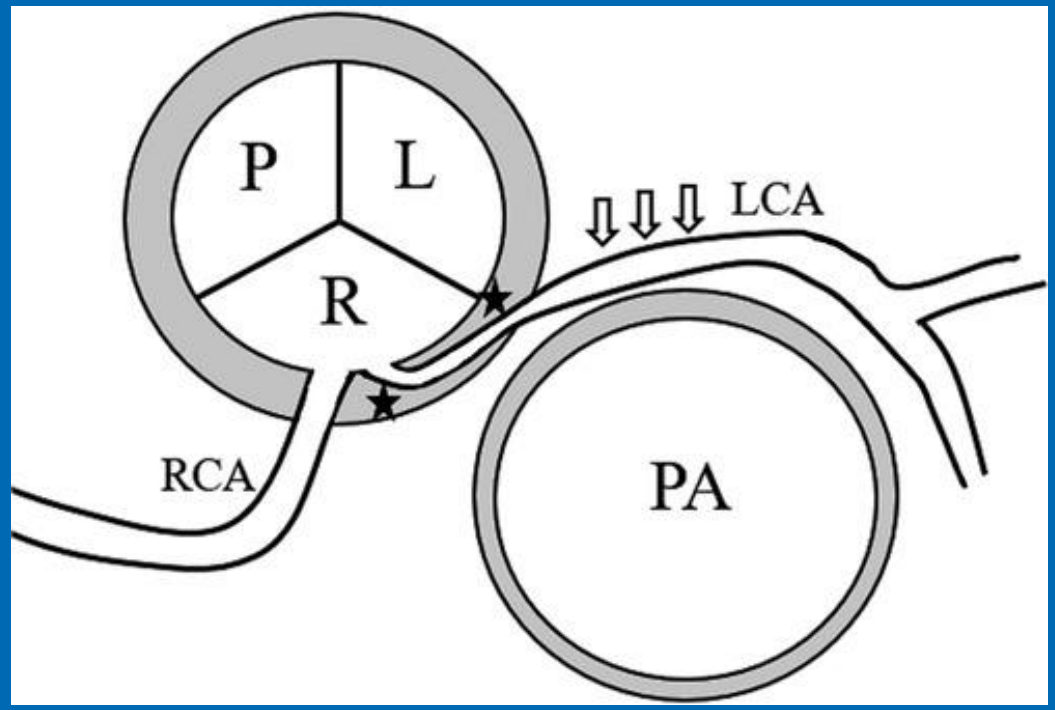
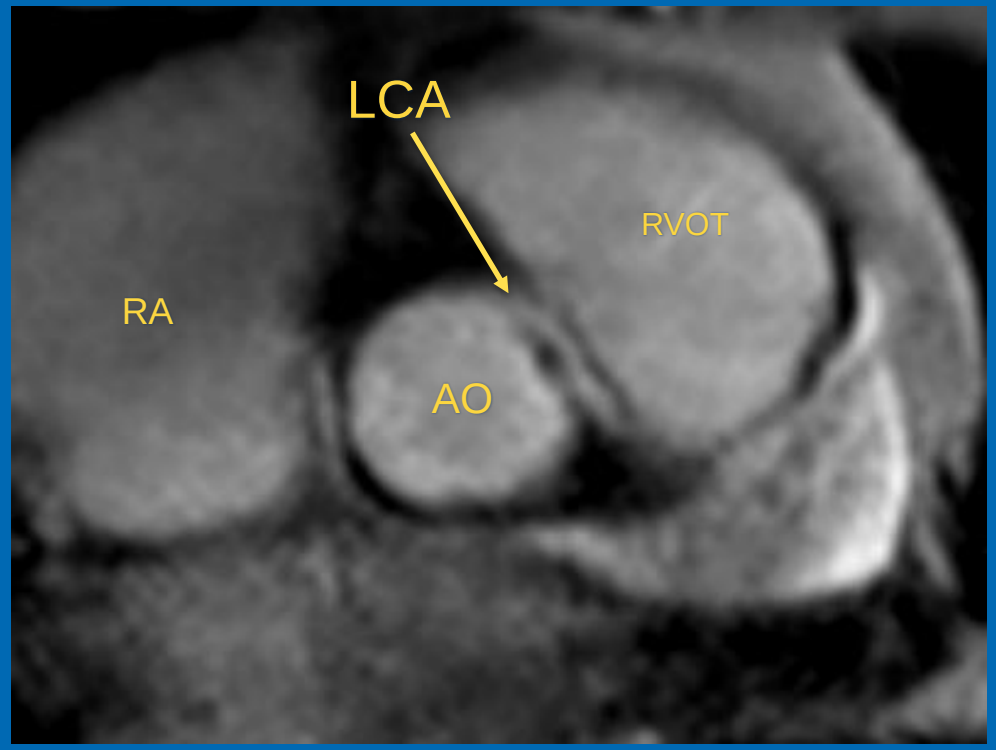
Diagnosis

Anomalous aortic origin of the left coronary artery, or AAOLCA



AAOLCA

- Incidence: 1 to 5 of every 1,000 people
- Symptoms
    - chest pain
    - syncope
- Risks:
    - myocardial ischemia
    - arrythmias
    - sudden cardiac death
- Sudden cardiac arrest
    - occlusion and/or compression
    - ostial abnormalities



Thank You

Resources

Tan, N. L., Tuan, T. V., Hoang, D. D., Hung, N. X., Le, N. T., & Phu, B. D. (n.d.). *Establishment of a Two Coronary Artery System in Anomalous Origin of Left Coronary Artery from Pulmonary Artery*. https://austinpublishinggroup.com/disease-markers/fulltext/jdm-v1-id1009.php

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