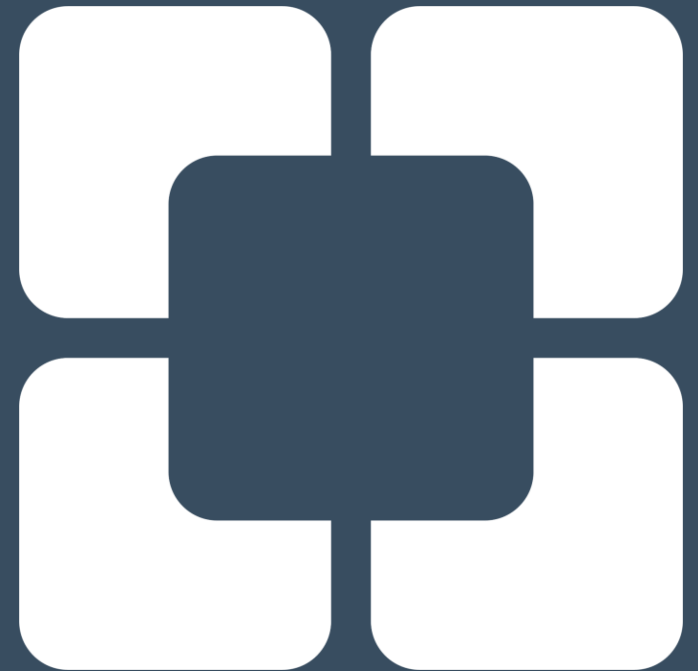


Complex ACHD

NOCIA Imaging Conference 4/27/2019



- 31 year old male with cyanotic congenital heart disease
- Never operated in the past



- Progressively increasing dyspnea on exertion, cyanosis
- Recurrent need for phlebotomy treatments given continued cyanosis and hyperviscosity
- History of multiple TIA's and an episode of embolic stroke resulting in left sided weakness.
- Remote history of endocarditis.
- On warfarin and aspirin due to thrombotic risk



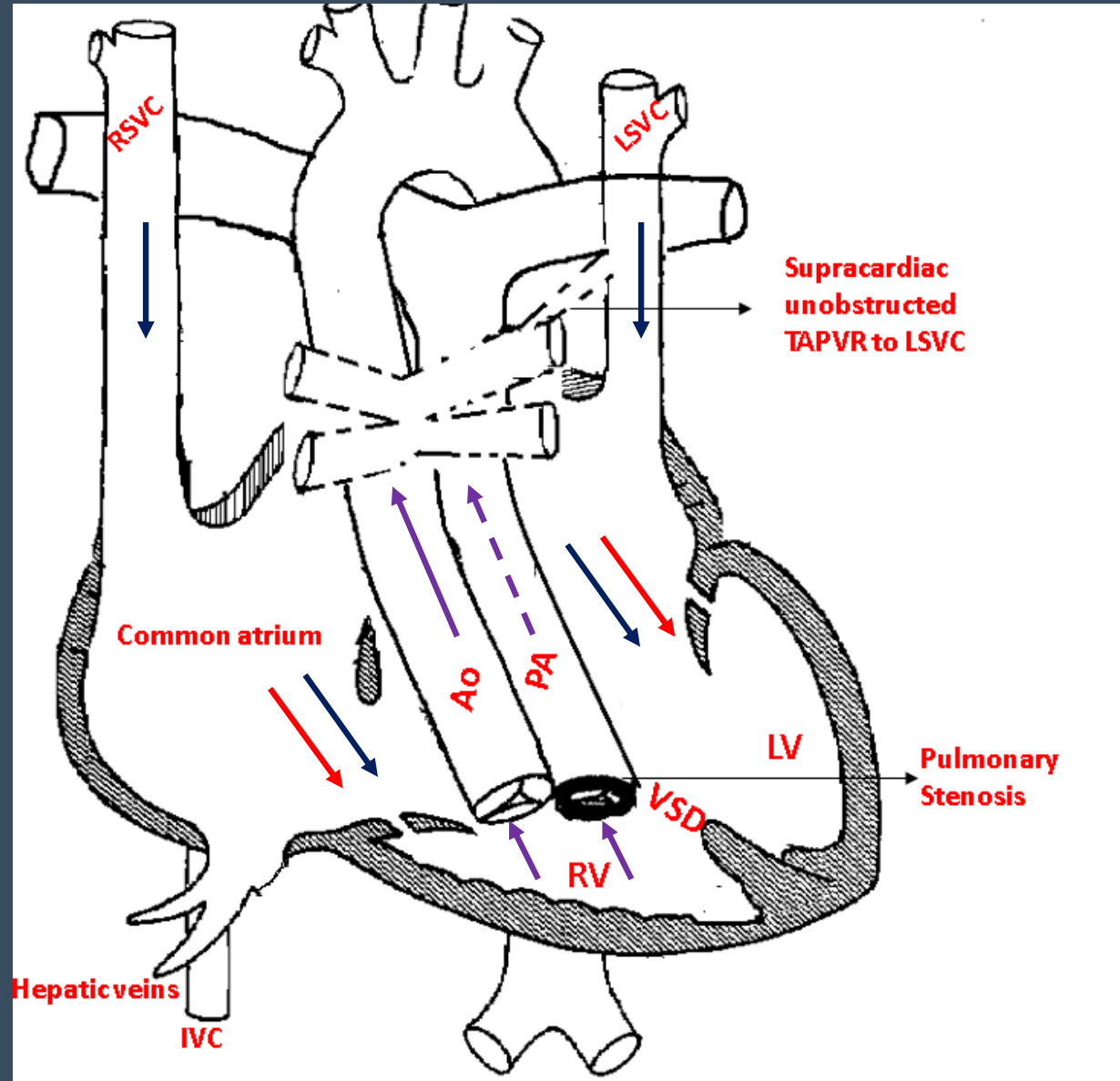
- Deemed inoperable in the past
- Referred to us for further palliative options including possible septation



Diagnosis

- Heterotaxy
- Levocardia
- D looped ventricles
- Complete AV canal with DORV and L- malposed great arteries and pulmonary stenosis
- Bilateral SVC's, Unobstructed left pulmonary venous confluence to the LSVC

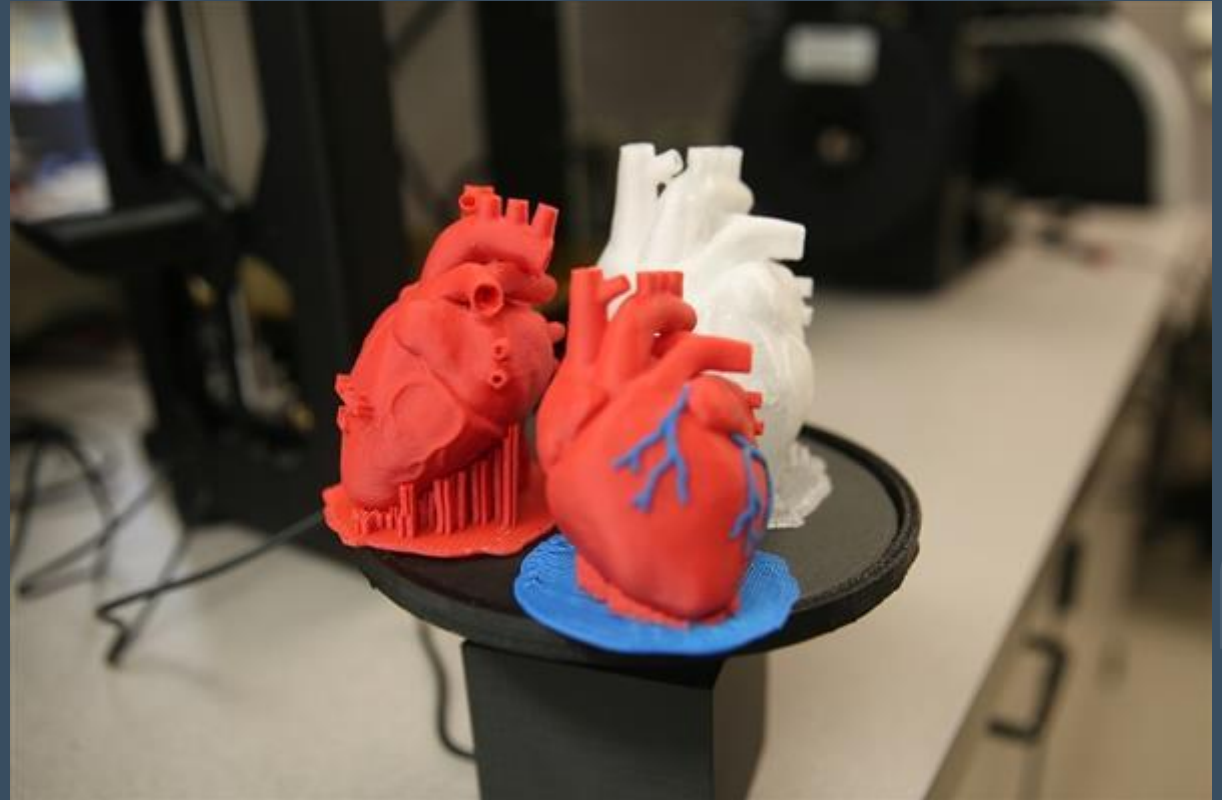
DORV, L-malposed great arteries, Complete AV septal defect with pulmonary stenosis, supracardiac TAPVR (unobstructed)



- Using a 3D model, our surgeons were able to plan an innovative technique that would involve complete septation

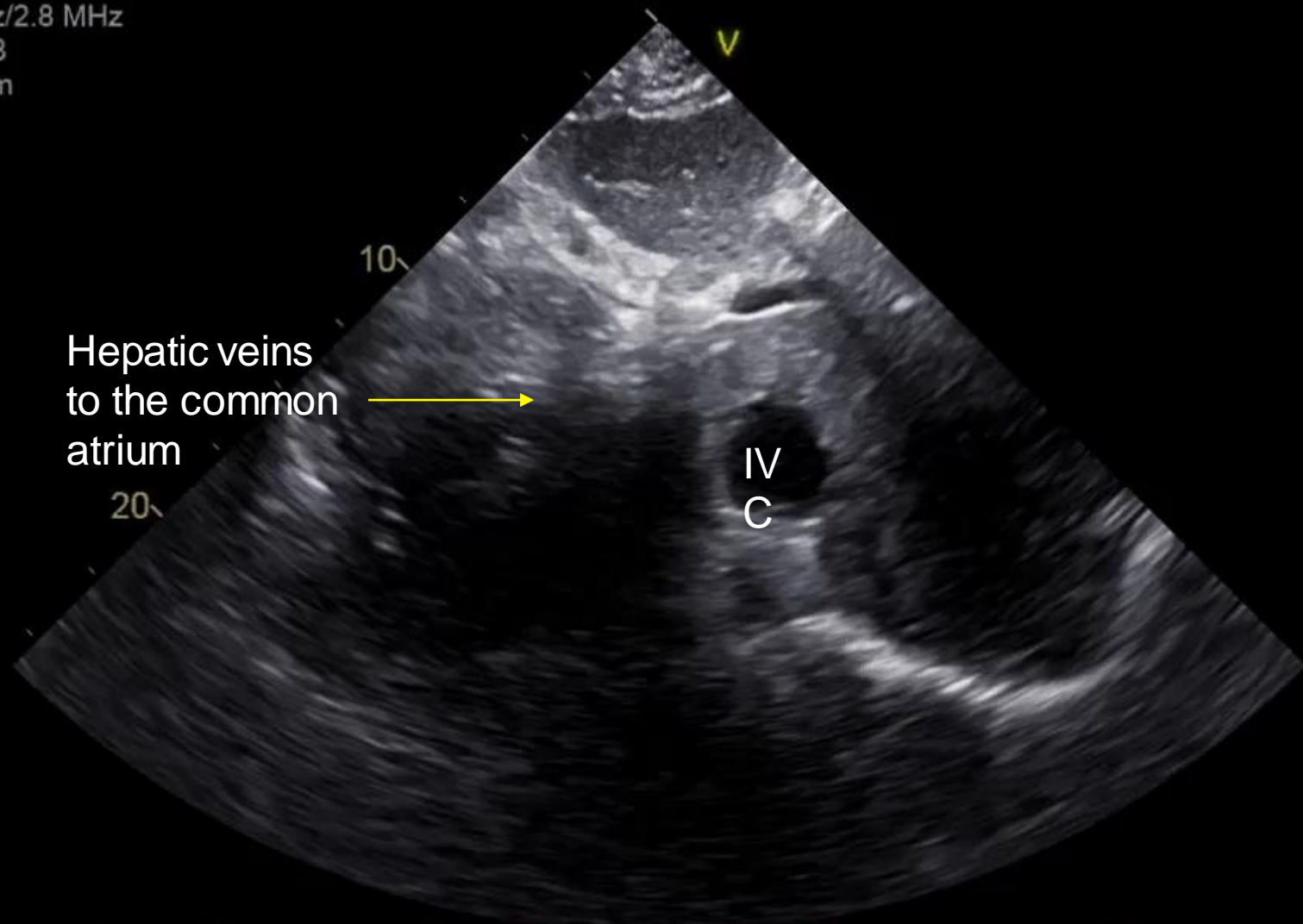


3-D Printing and Modeling



Courtesy : Jared Klein MD

ACE
FPS: 35
f: 1.4 MHz/2.8 MHz
G(t): 0 dB
D: 26.0 cm



Hepatic veins
to the common
atrium



IV
C

67
HR

HD
FPS: 46/
f: 1.4 MHz/2.8 MHz
G(t): 0 dB
D: 28.0 cm

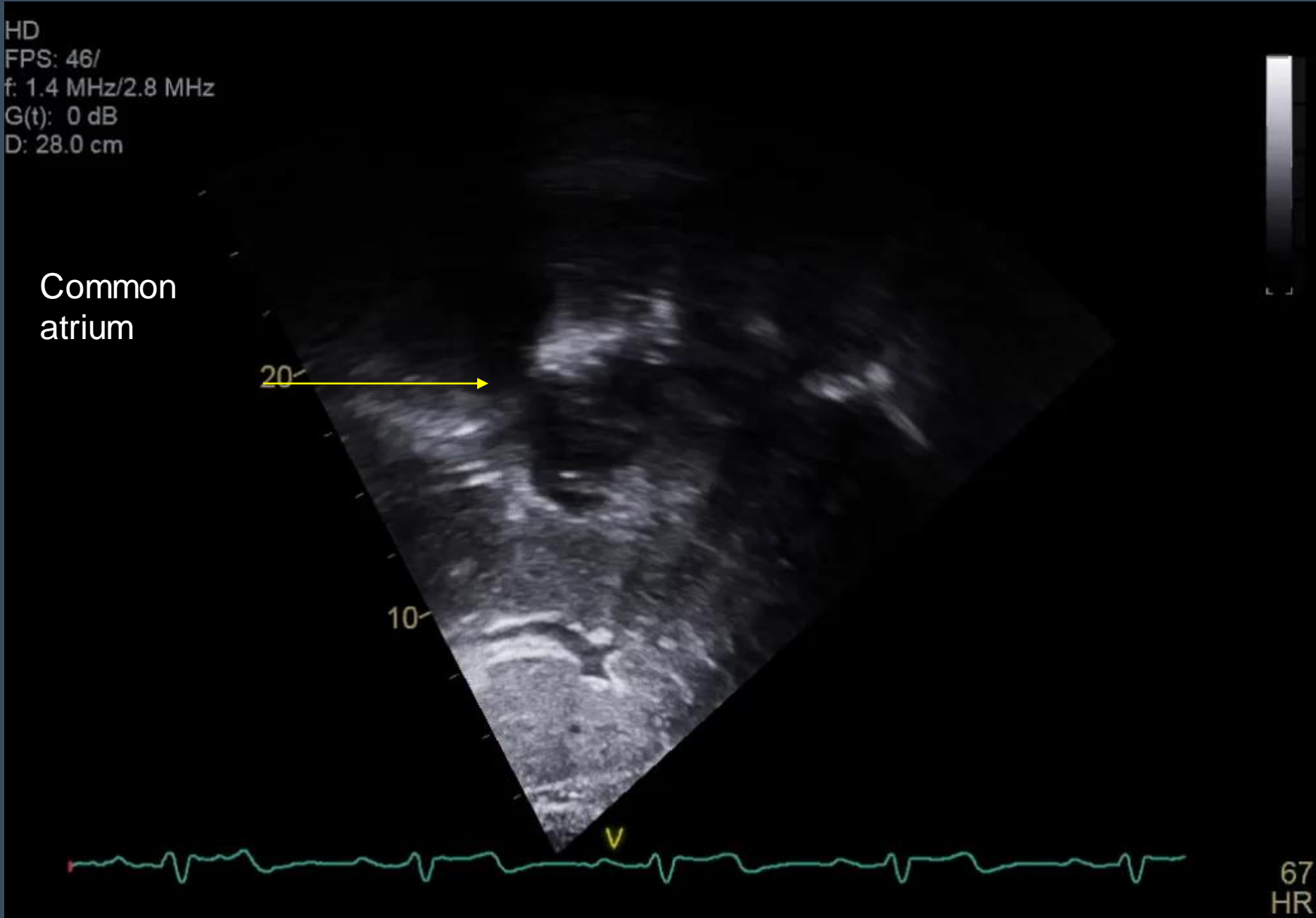
Common
atrium

20 →

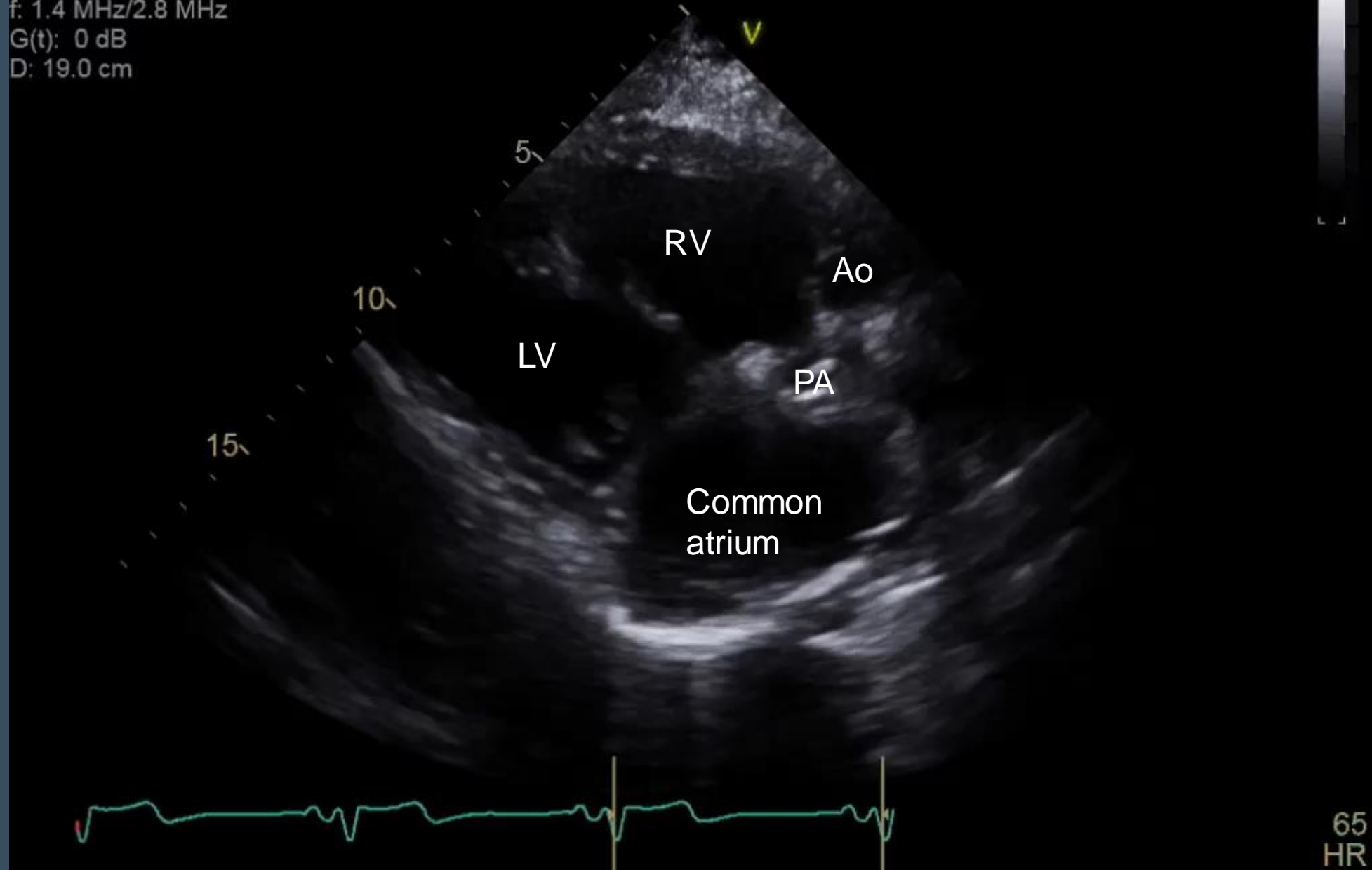
10

v

67
HR

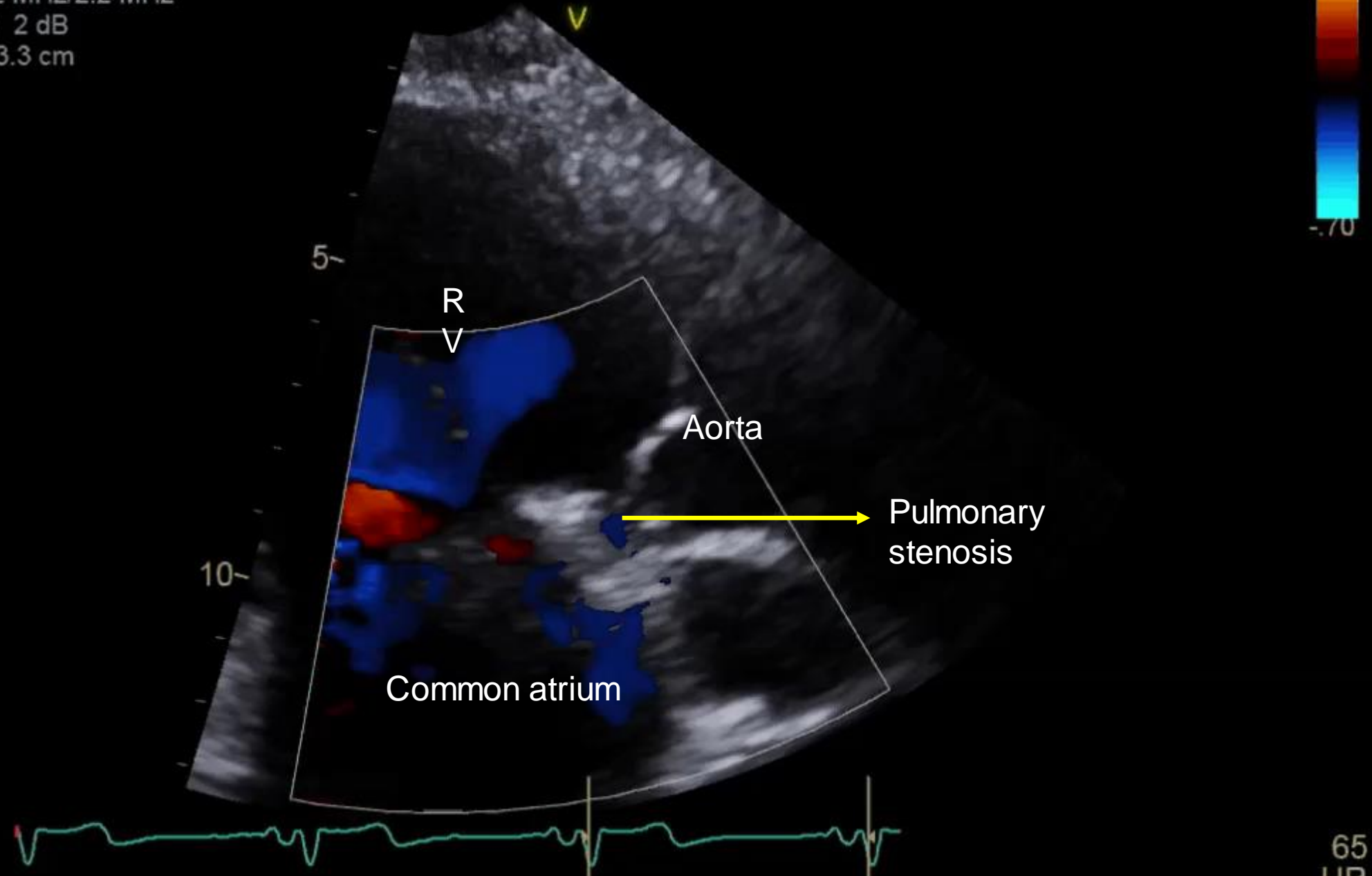


HD
FPS: 51
f: 1.4 MHz/2.8 MHz
G(t): 0 dB
D: 19.0 cm

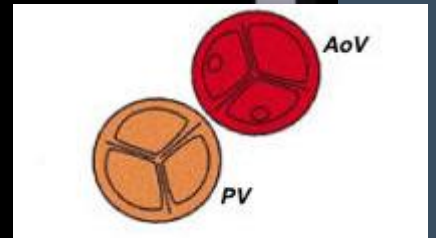
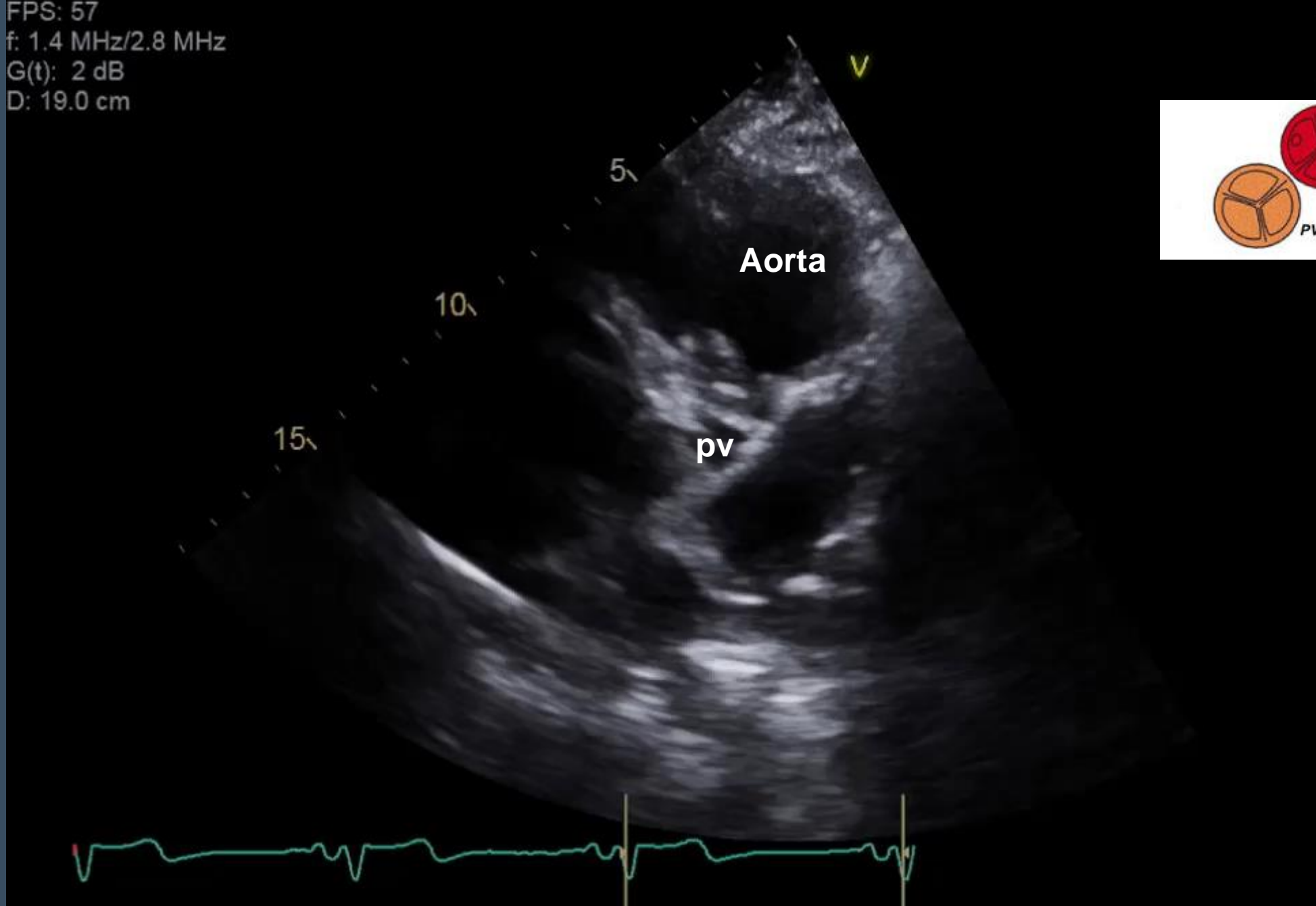


65
HR

HD
FPS: 21/21
f: 2.2 MHz/2.2 MHz
G(t): 2 dB
D: 13.3 cm



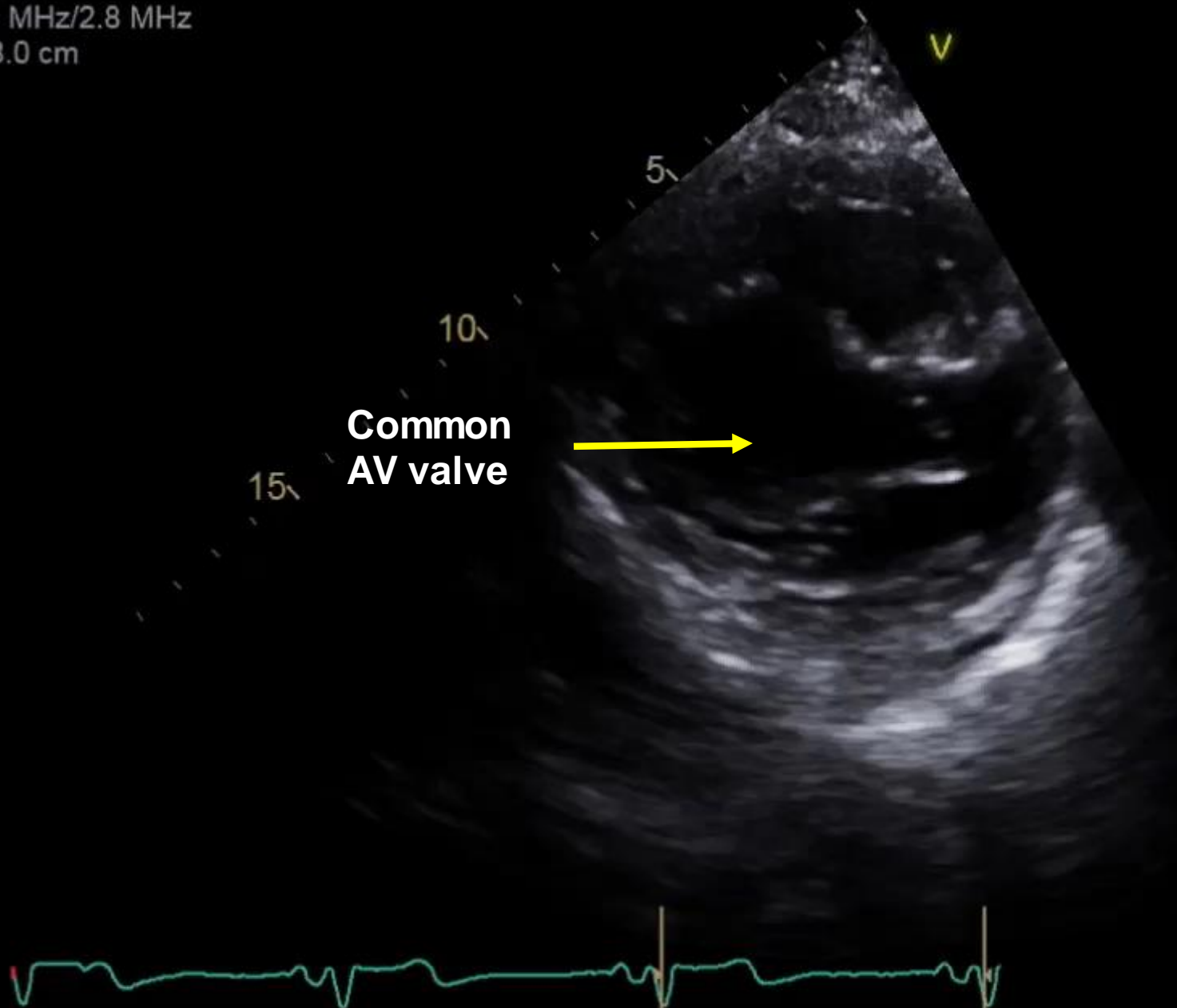
HD
FPS: 57
f: 1.4 MHz/2.8 MHz
G(t): 2 dB
D: 19.0 cm



65
HR

HD
FPS: 57/
f: 1.4 MHz/2.8 MHz
D: 18.0 cm

Soft

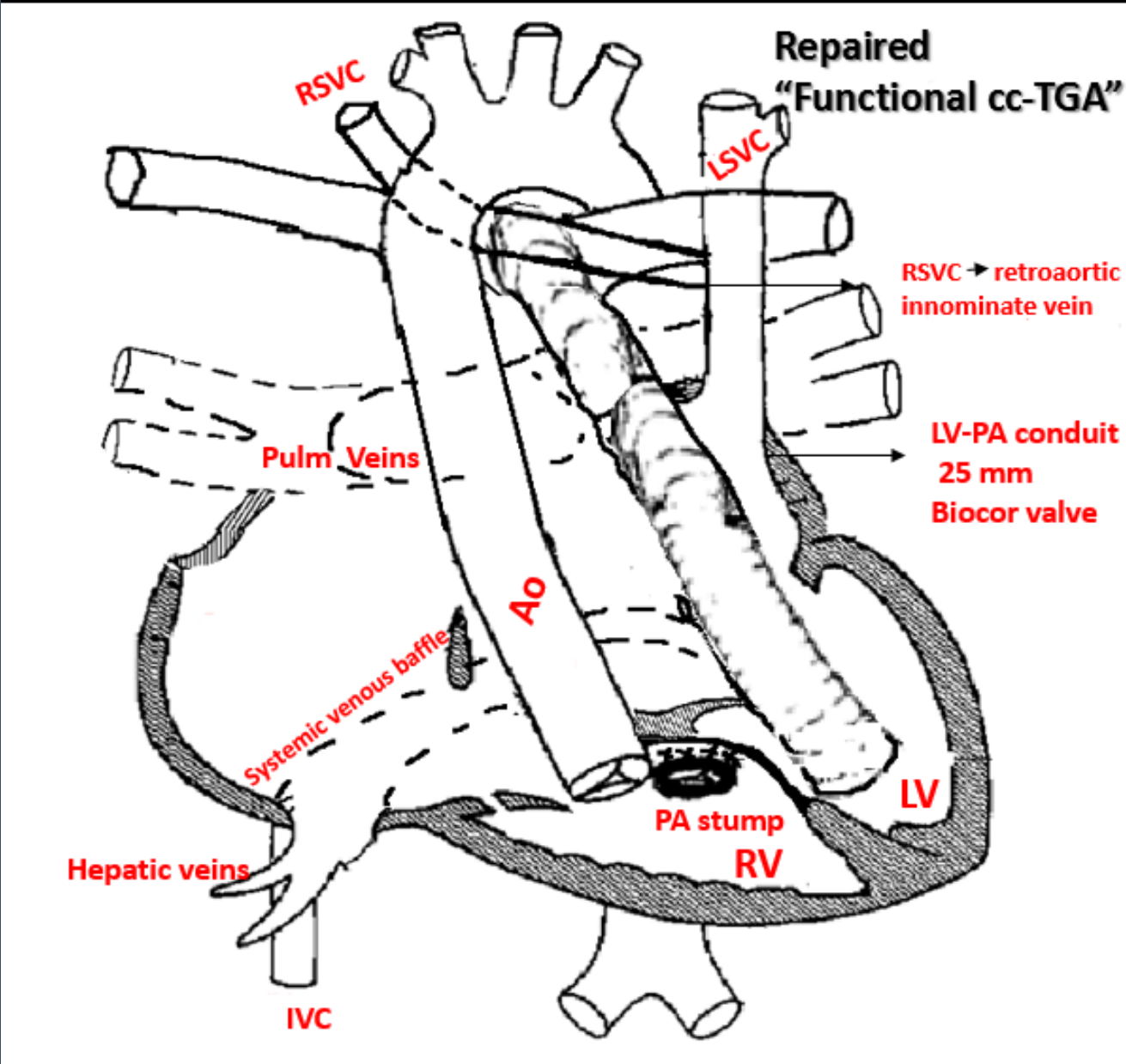


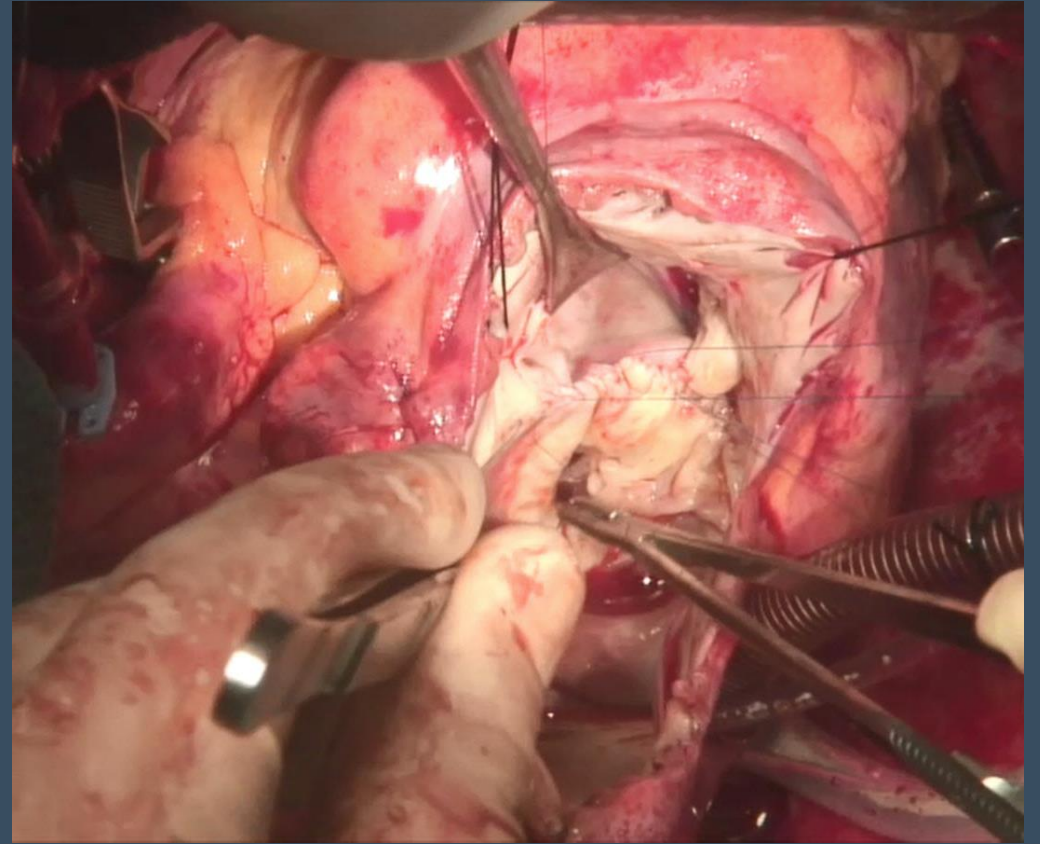
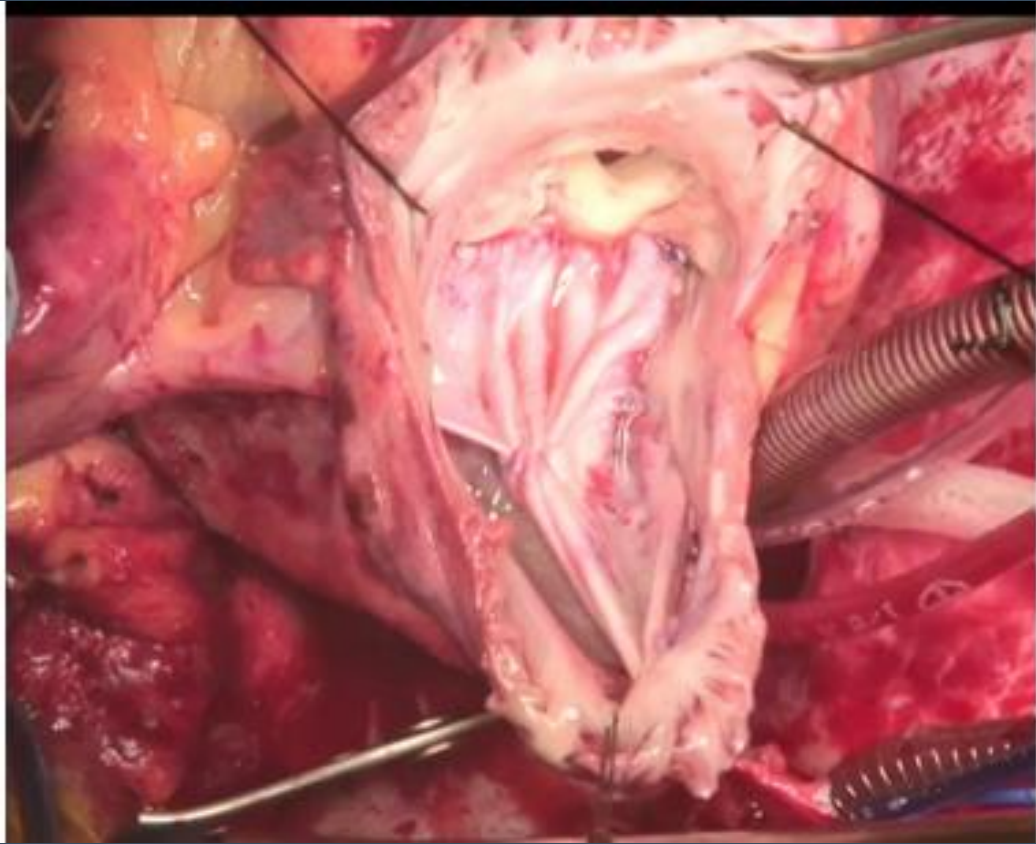
**Common
AV valve**



65
HR

Complete septation, s/p atrial switch, RSVC to LSVC anastomosis with baffling of hepatic veins + IVC to LV, LV to PA conduit, VSD closure

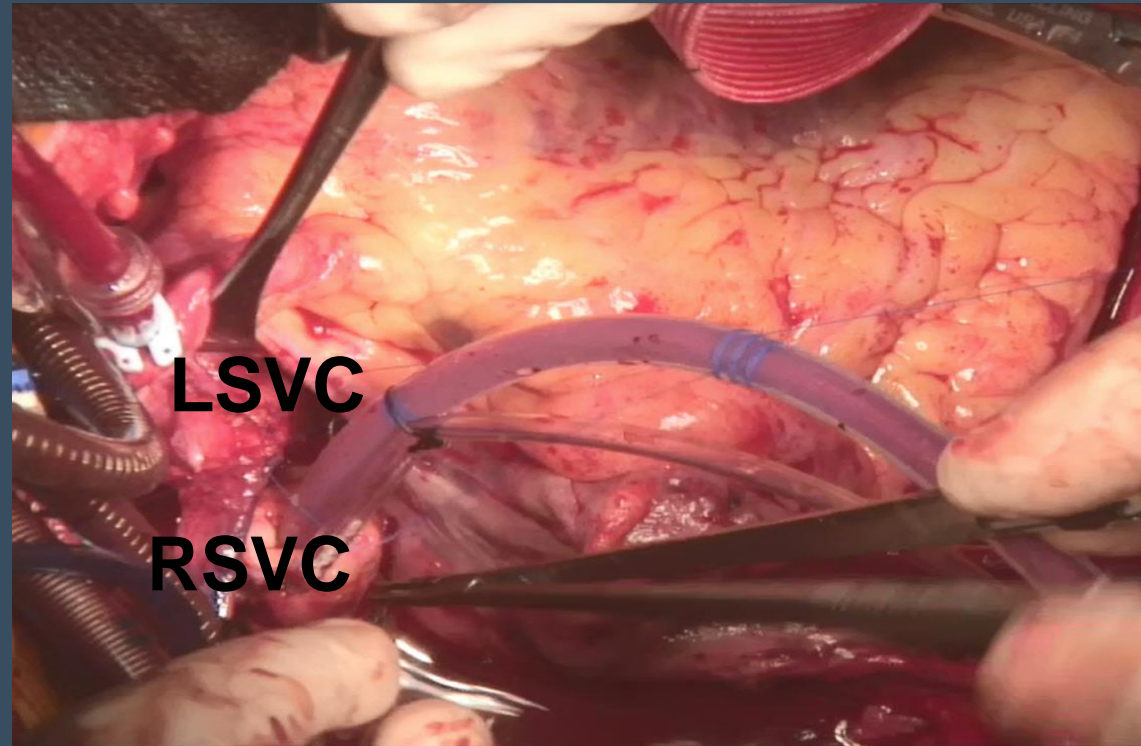




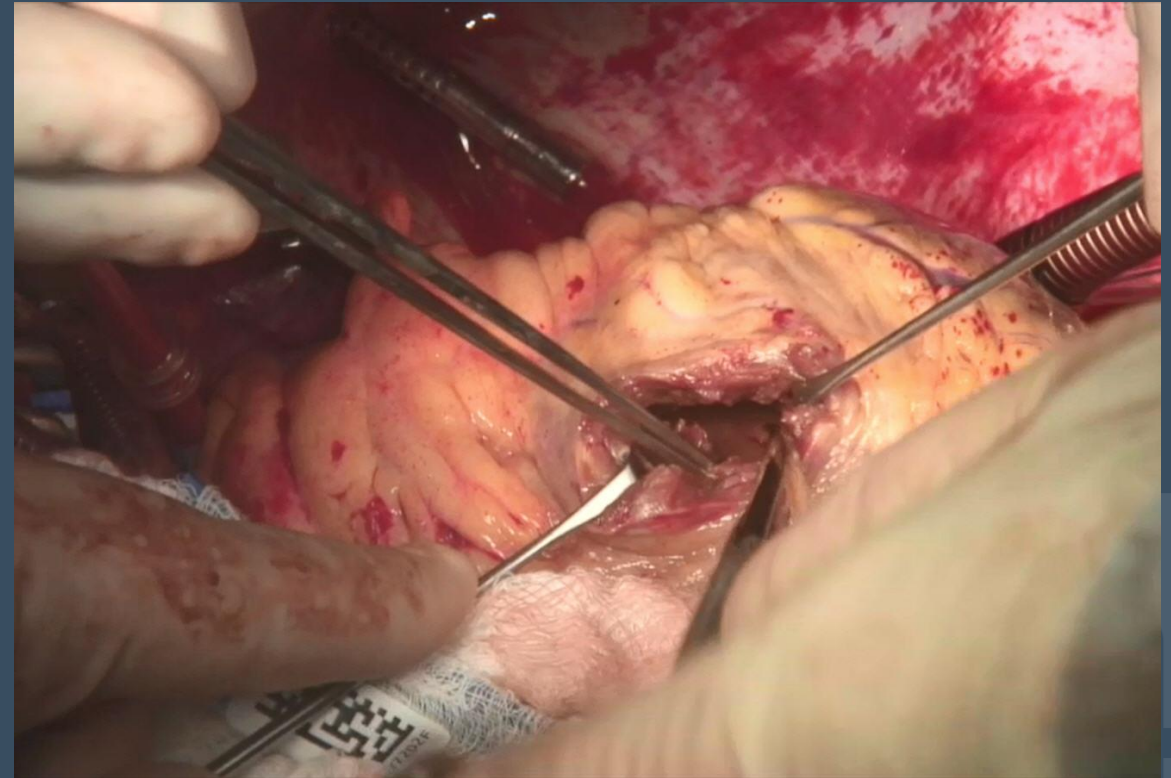
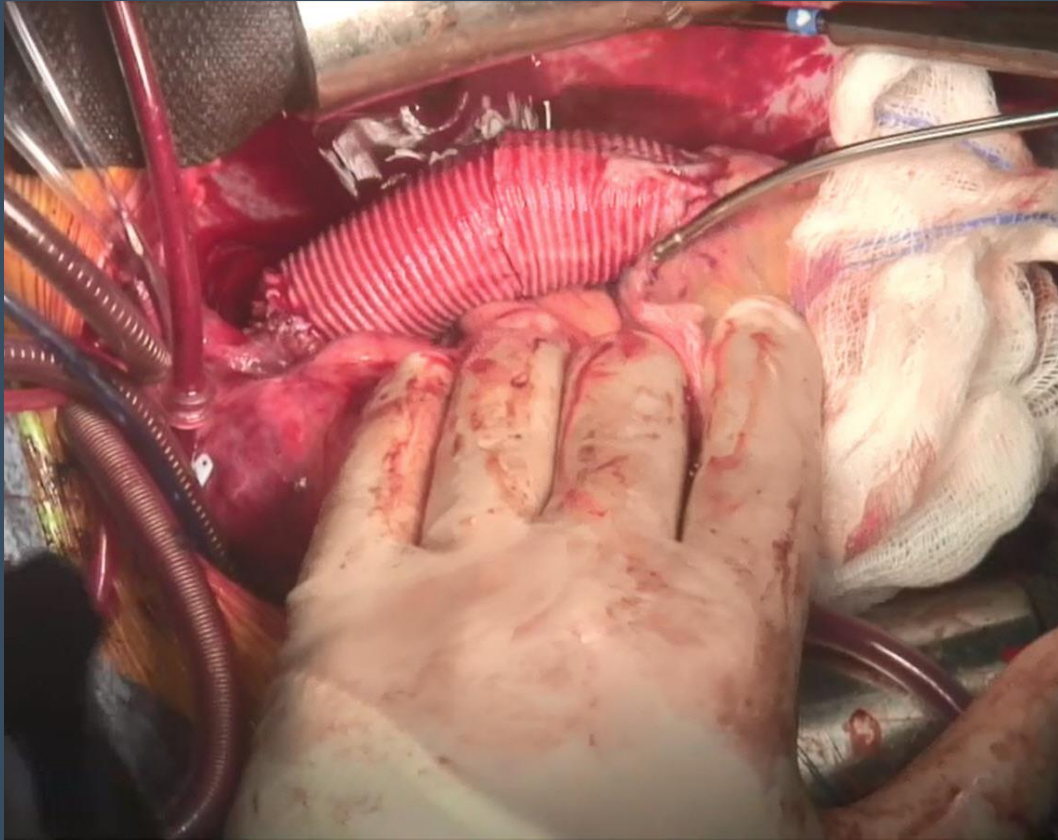
**AVSD septation
LSVC, IVC, Hepatic veins to LAVV**



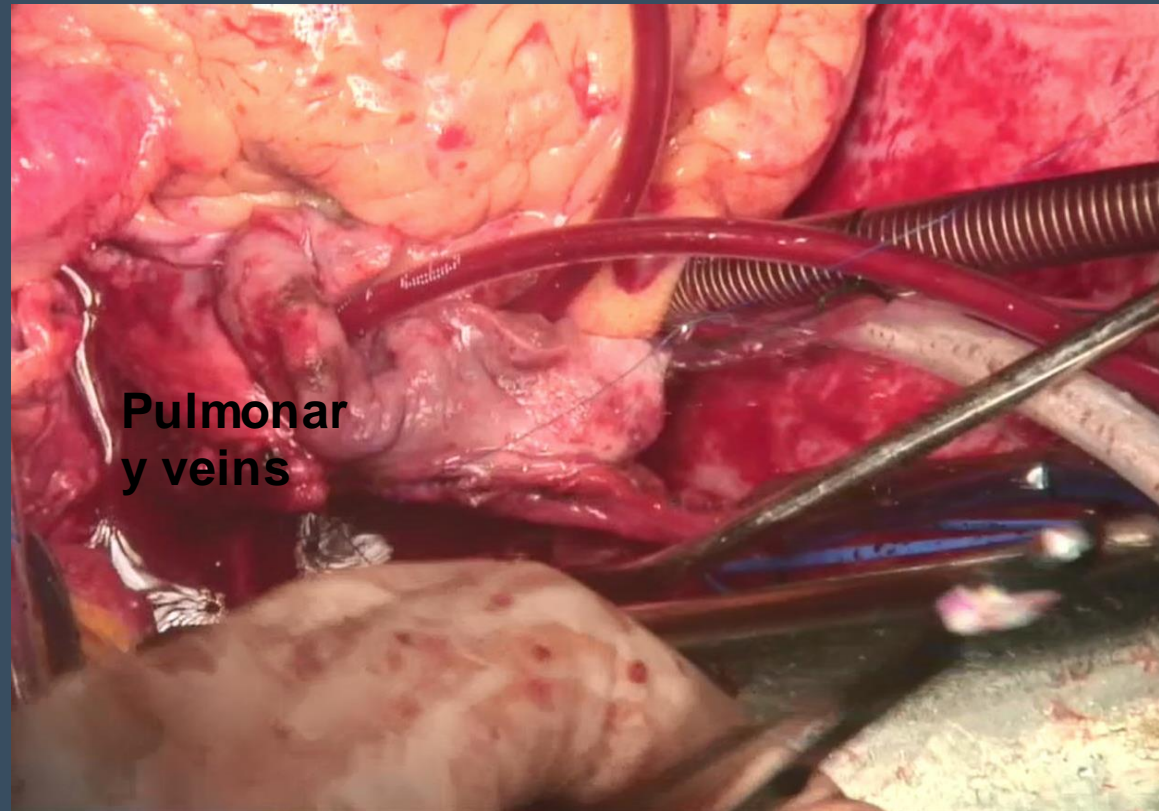
RSVC anastomosis to LSVC (“new retroaortic innominate vein”)



LV to PA conduit



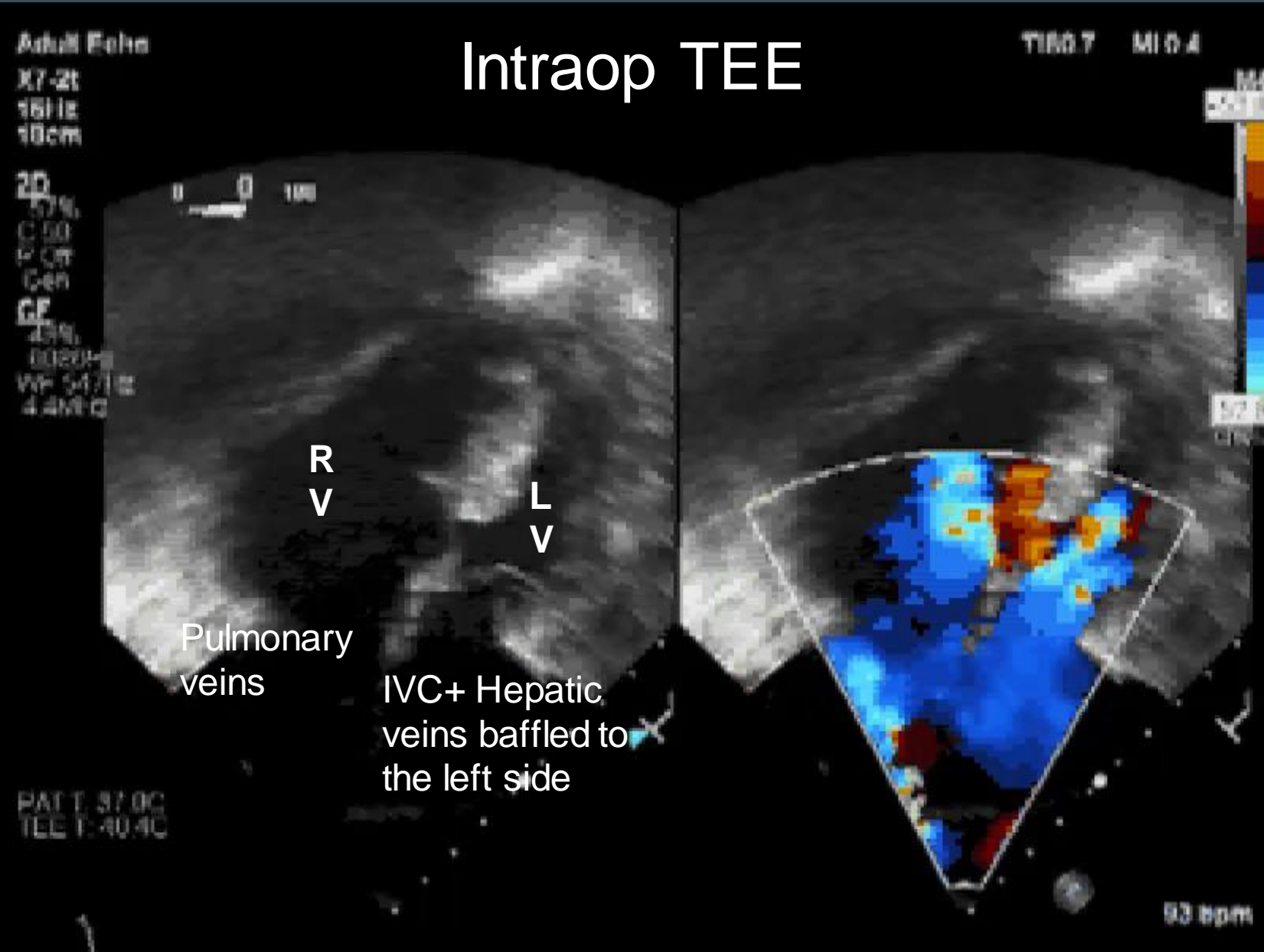
Pulmonary veins anastomosed to RA



Pulmonary
veins



Intraop TEE



Adult Echo
X7-2t
12Hz
14cm

TIS0.7 MI 0.4

2D
45%
C 50
P Off
Pen
CF
48%
5328Hz
WF 479Hz
4.4MHz

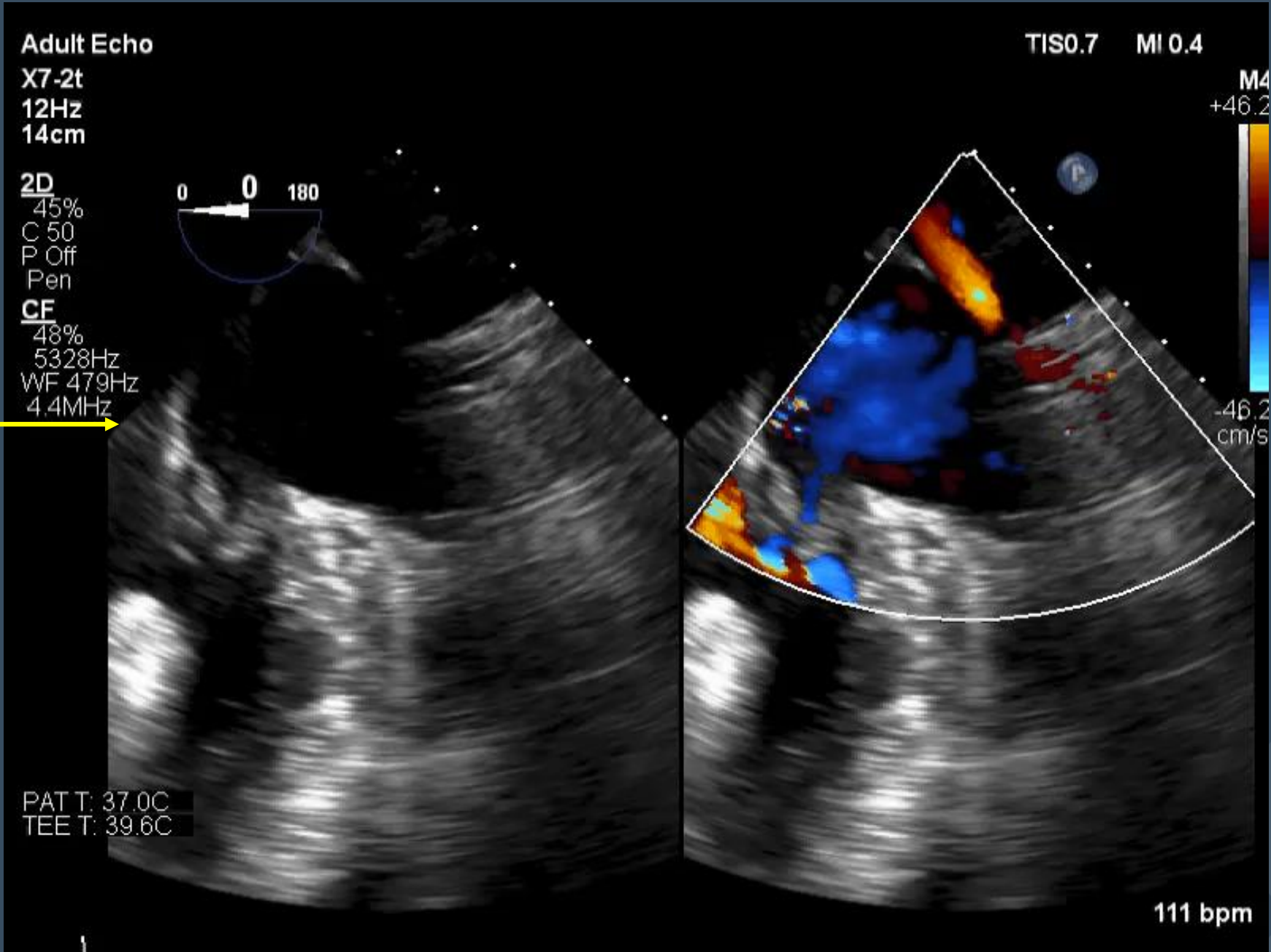
M4
+46.2
-46.2
cm/s



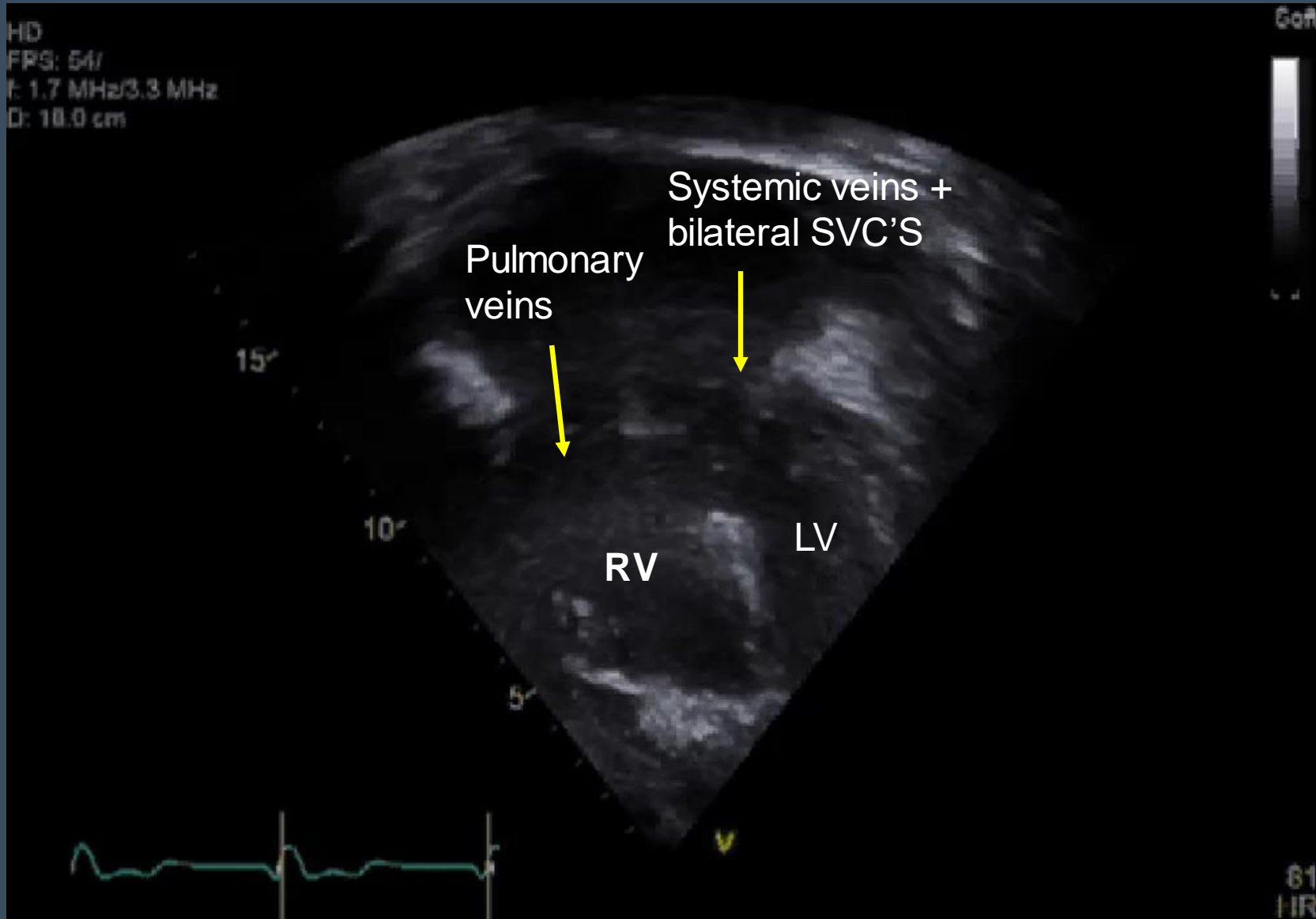
Pulmonary veins
to right sided
atrium to the LV

PAT T: 37.0C
TEE T: 39.6C

111 bpm



Post op Echocardiogram:



HD
FPS: 27/27
f: 2.2 MHz/2.2 MHz
D: 18.0 cm

15-

10-

5-

V

LV-PA valved conduit

Soft
.67
-.67

HD
FPS: 27/27
f: 2.2 MHz/2.2 MHz
D: 18.0 cm

81
HR

10-

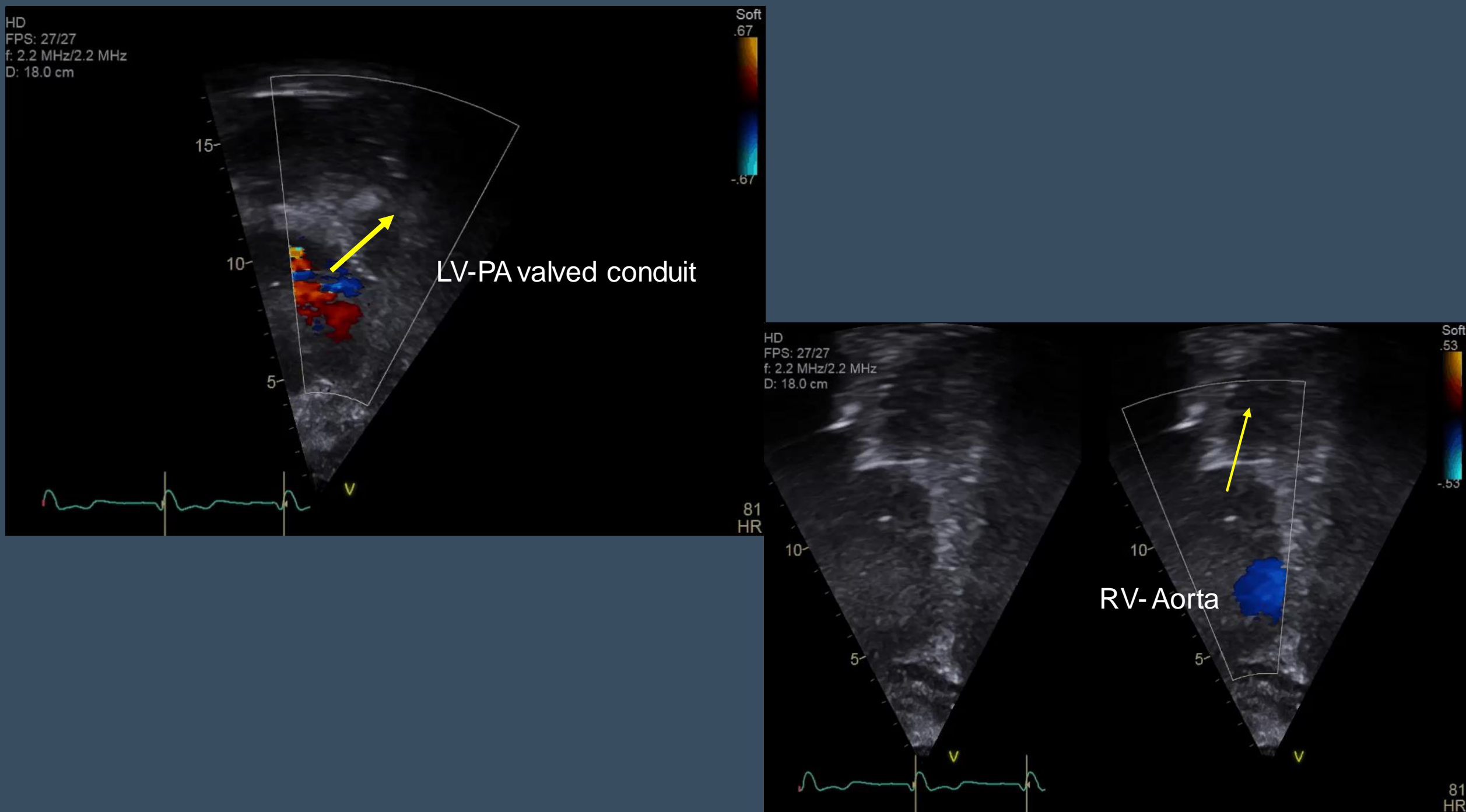
5-

V

RV- Aorta

Soft
.53
-.53

81
HR



Follow up:

- Saturations 98-100%

- Improved Exercise Tolerance





THANK YOU