

Critical Care Primer: Point of Care Ultrasound

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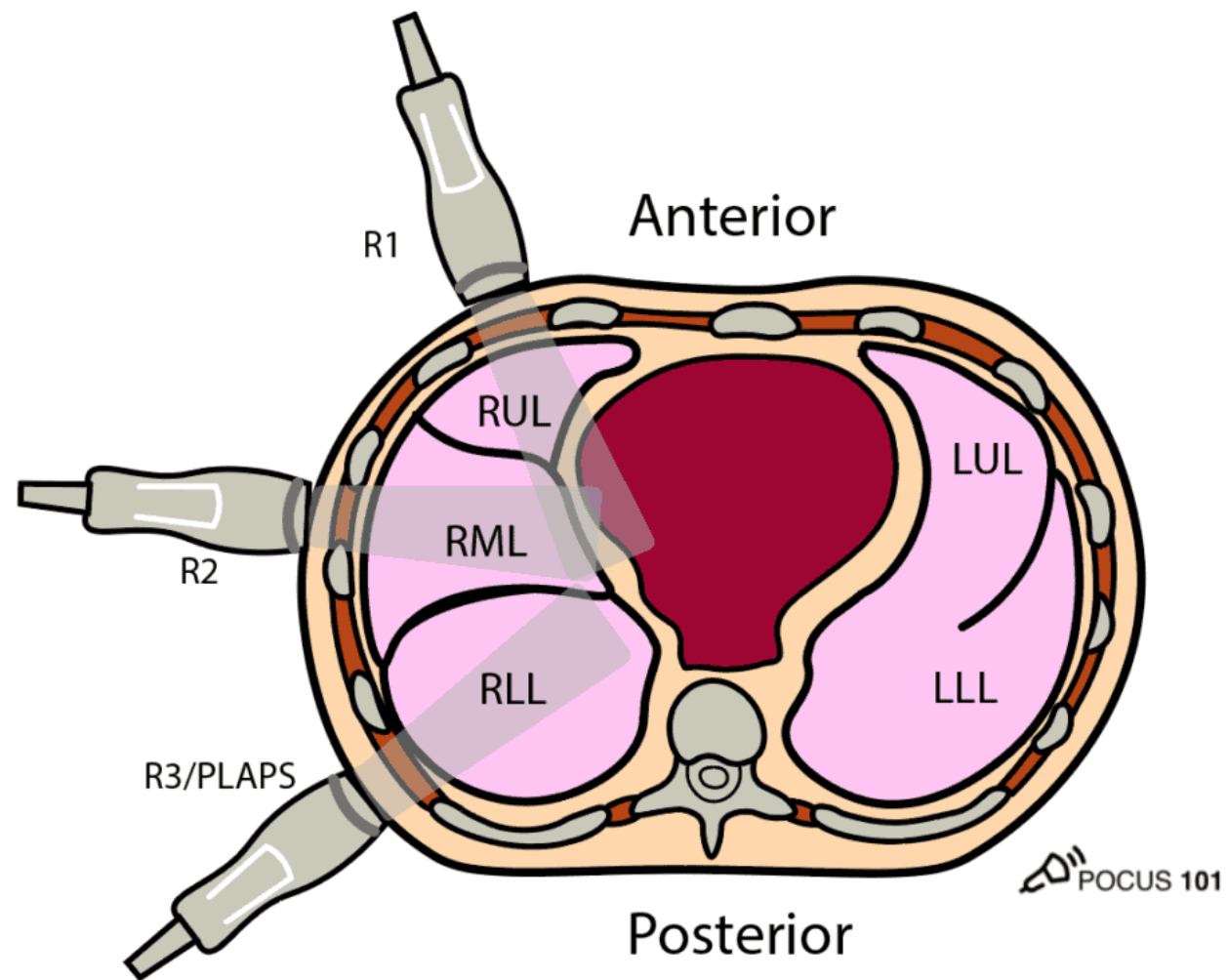
Dept of Pulmonary, Critical Care, Sleep, and Allergy Medicine
Allegheny Health Network

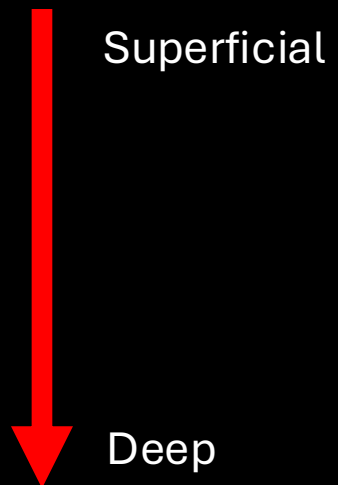
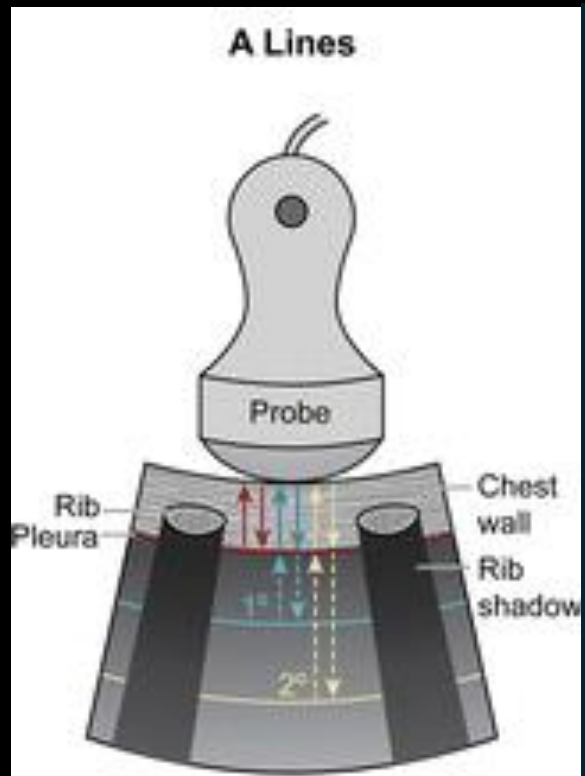
Goals

1. Begin your foundation in Point of Care Ultrasound
2. Know what organ systems/pathology can be rapidly identified using POCUS.
3. Develop a mindset of normal vs abnormal findings

What won't we be covering....

- Physics of Ultrasound
- Probe Selection
- Knobology
- Holding, maneuvering of Ultrasound Probe
- Integration of multiple systems
- “Volume Status” assessments
- Details of Echocardiography
- US for Procedural Guidance
- Many more!





Pulmonary



C

Pleural line



1st A line



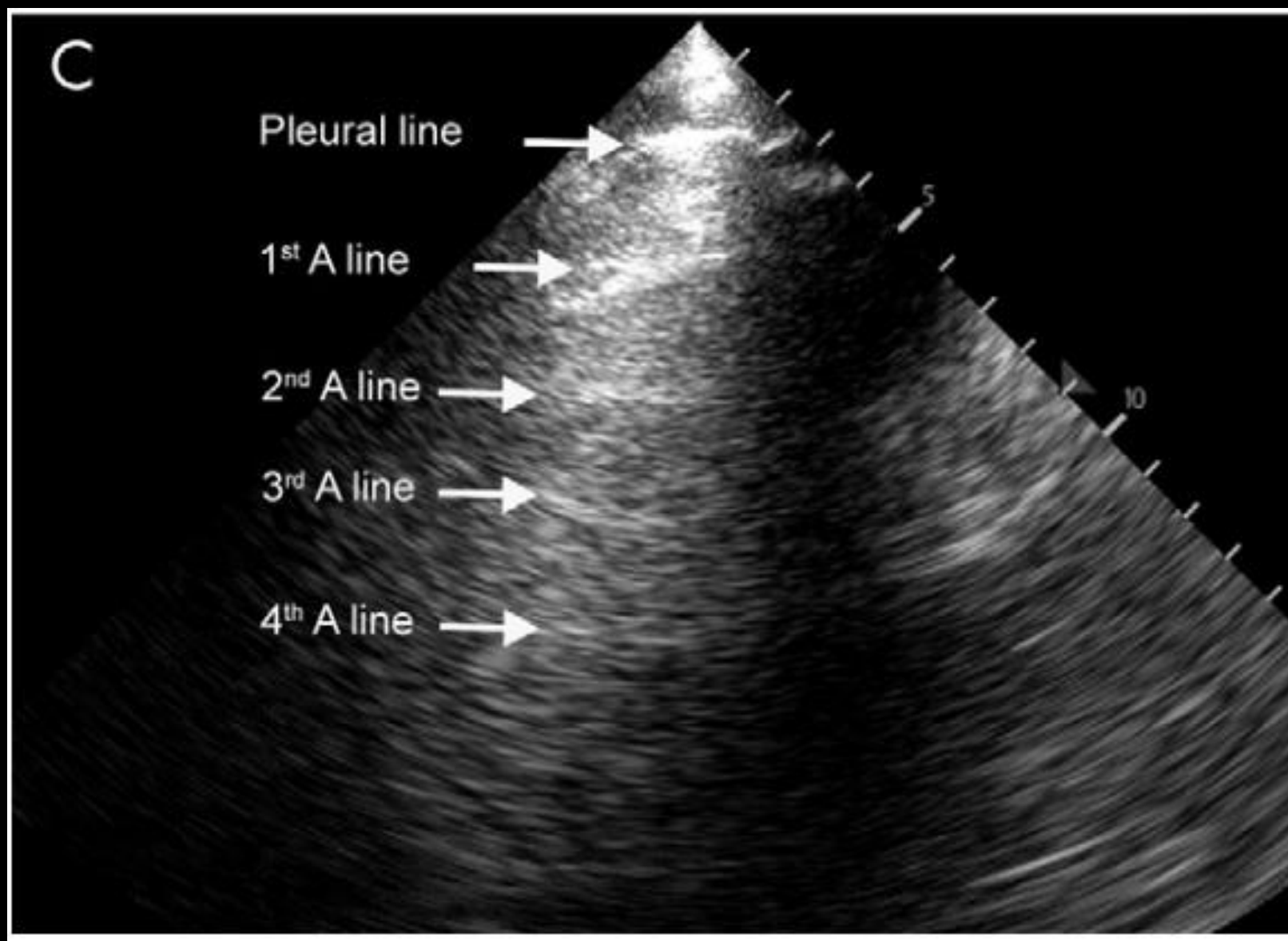
2nd A line



3rd A line



4th A line

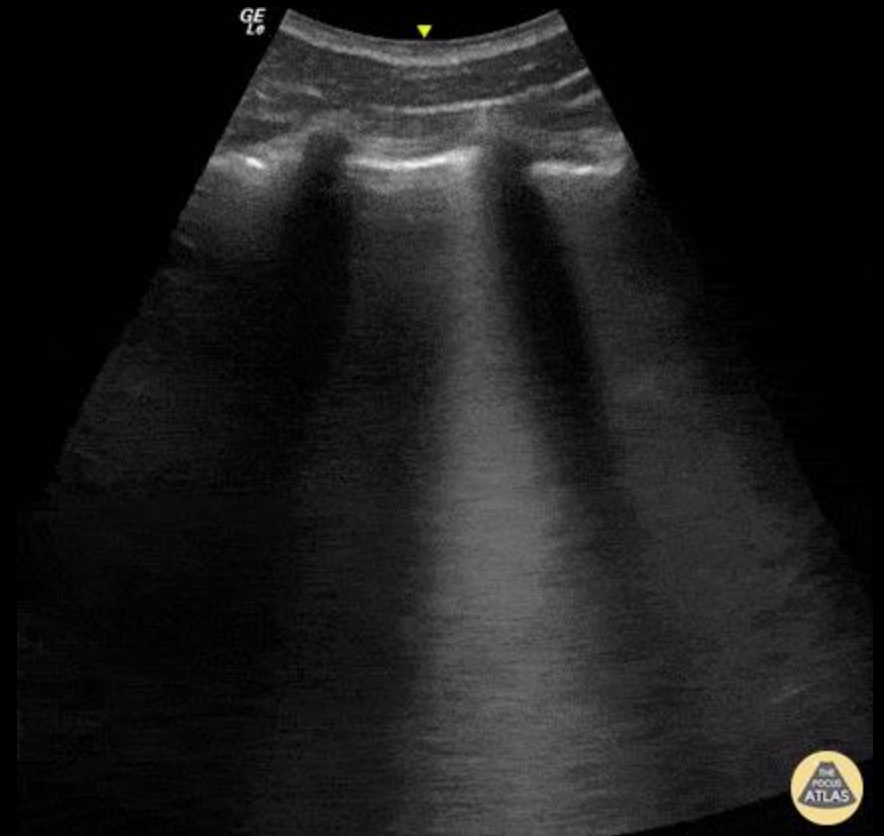


Normal

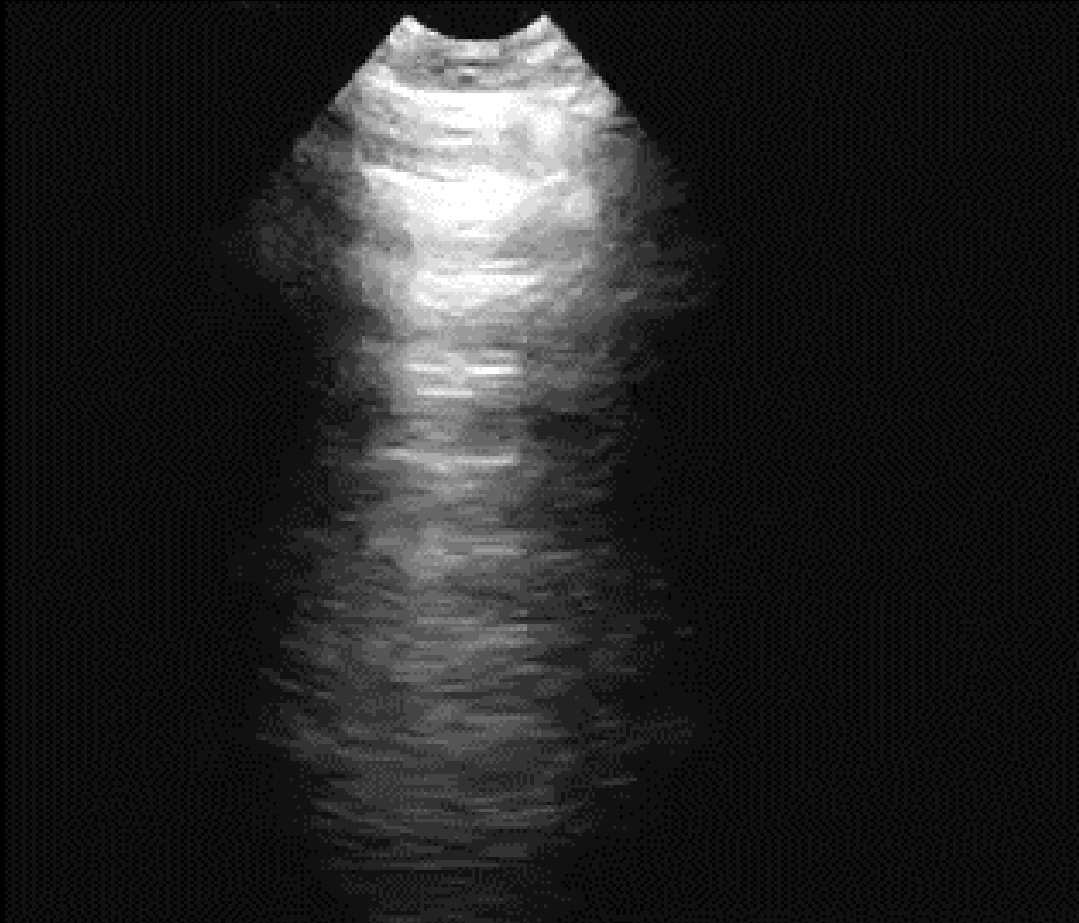


11.0 cm

Abnormal



Normal



Abnormal



Abnormal

PHILIPS

LUNGmo.
C6-2
25Hz
19.0cm

2D
Gen
Gn 57
65
2/3/3

MI 0.5
TIS 0.0
RIGHT MIDDLE

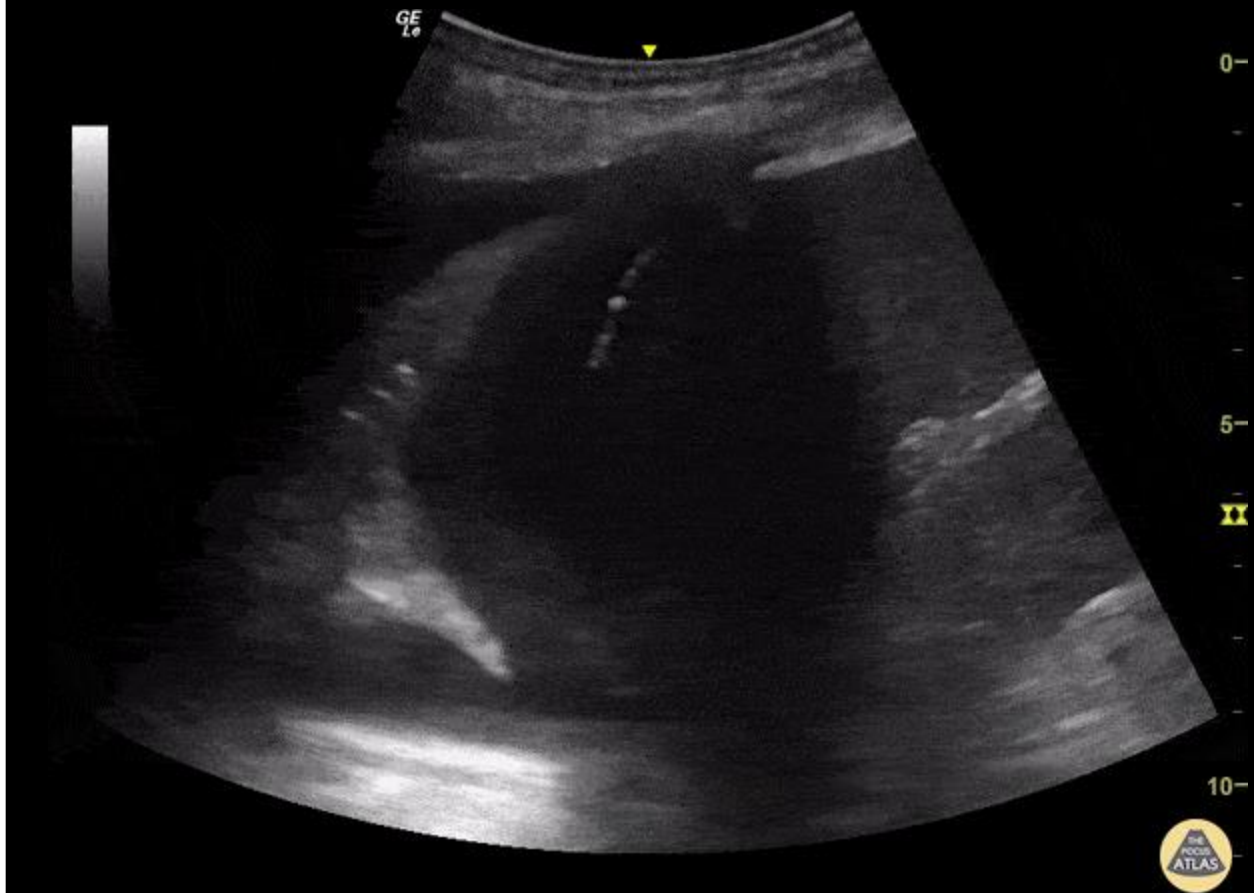


G
P R
2.0 6.0

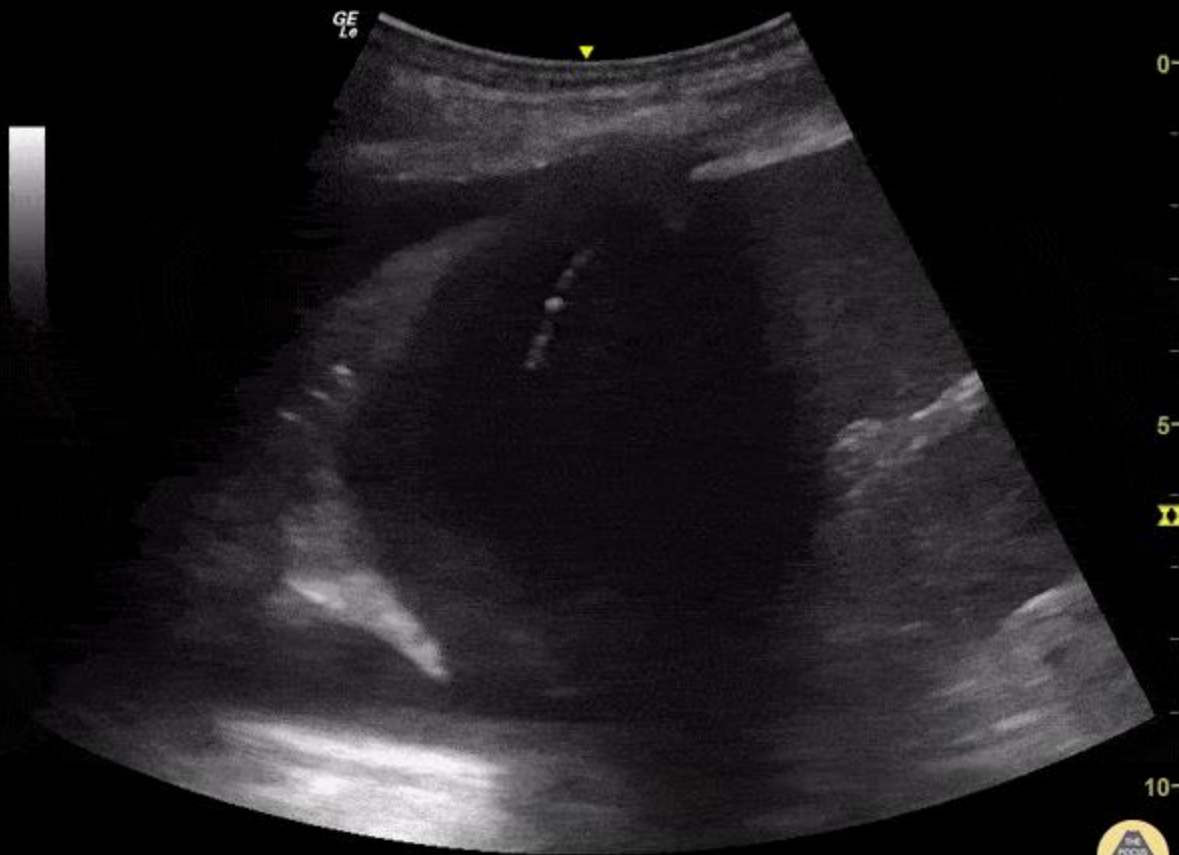
19.0cm



Abnormal



Pleural Effusions...



Simple 👍

PHILIPS
0-
CARDIAC M
S4-2
27Hz
20.0cm
2D
HGen
Gn 52
50
3 / 2 / 0
75 mm/s

IX

10-

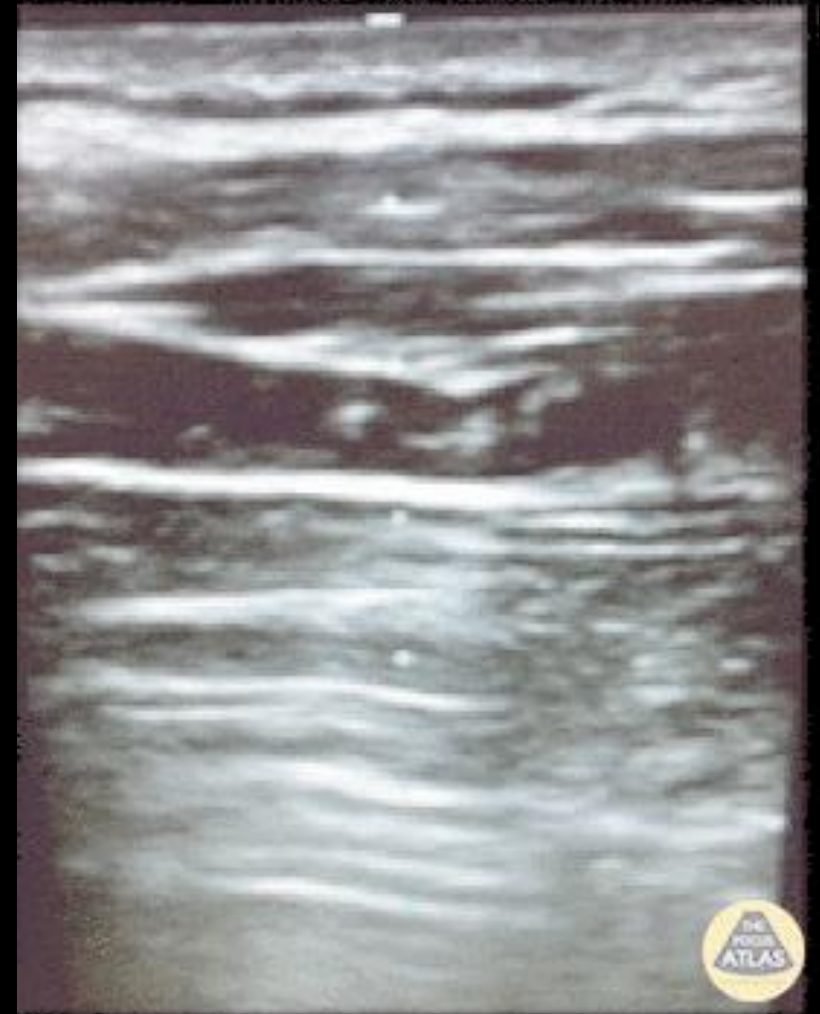


Complex 👎

Normal Pleura



Abnormal



Cardiac



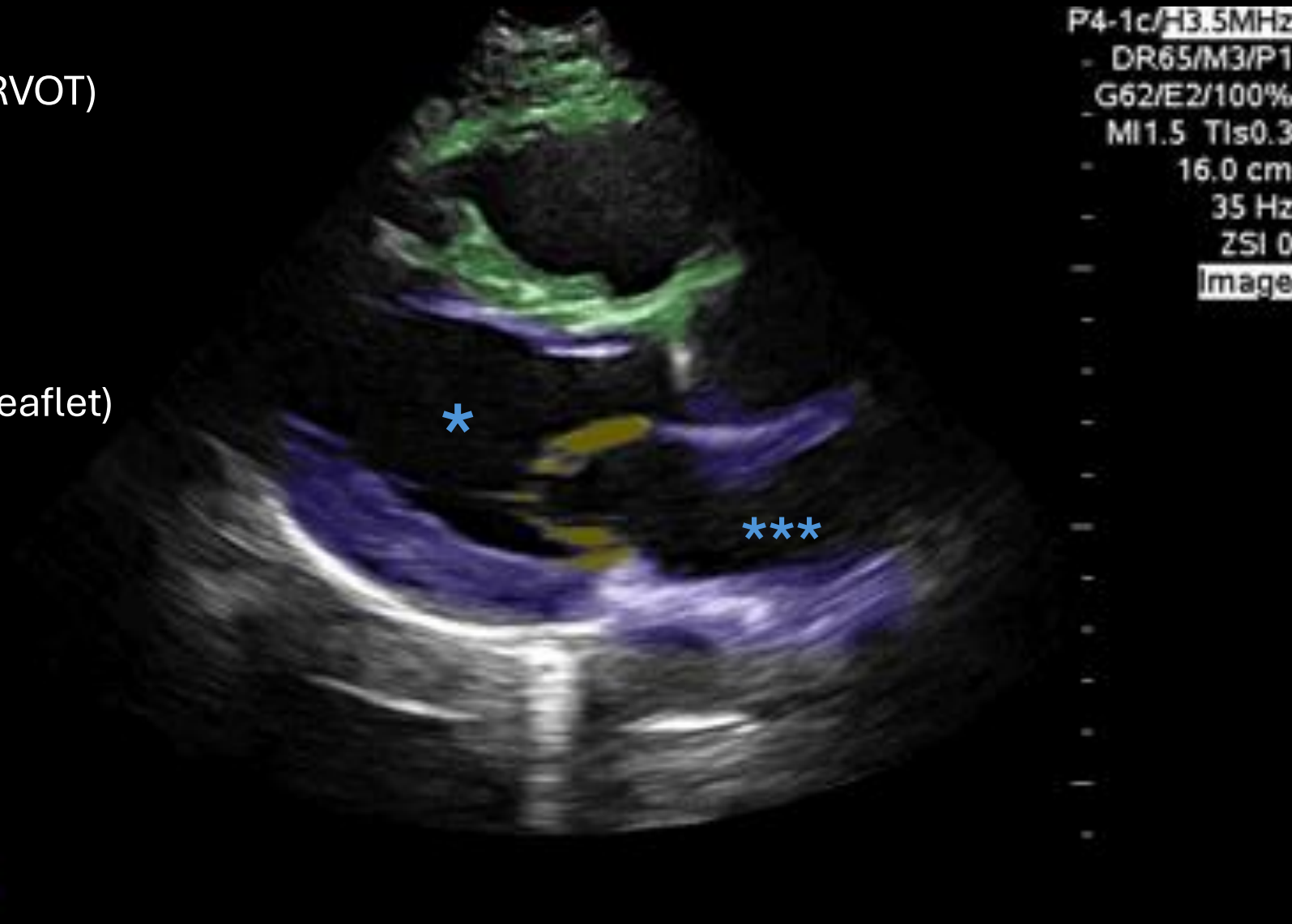
Basic Anatomy

Green – Right Ventricle Outflow Tract (RVOT)

Blue* - Left Ventricle

Blue *** - Left Atrium

Yellow – Mitral Valve (Anterior + Post. Leaflet)



Normal



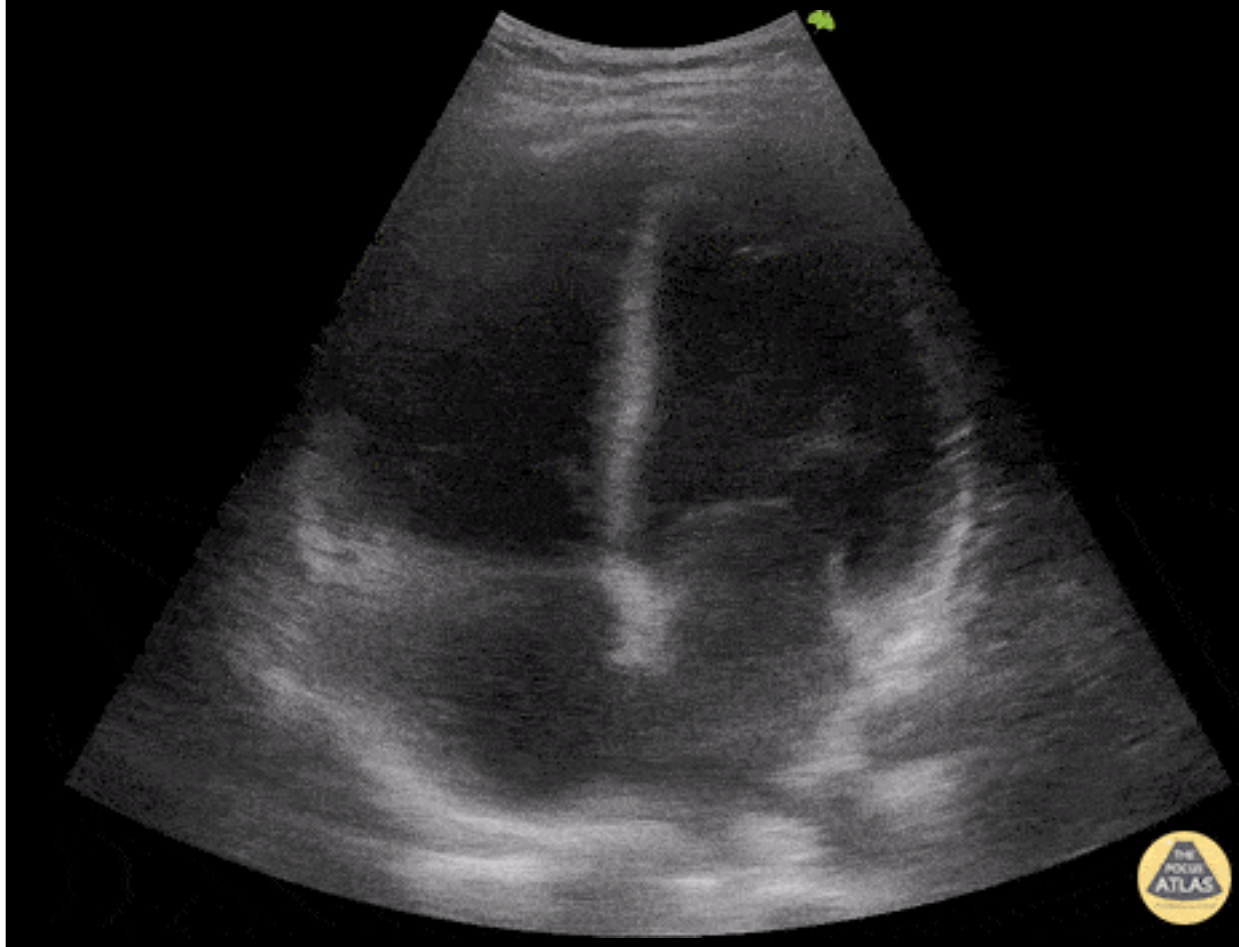
Abnormal



Normal



Abnormal

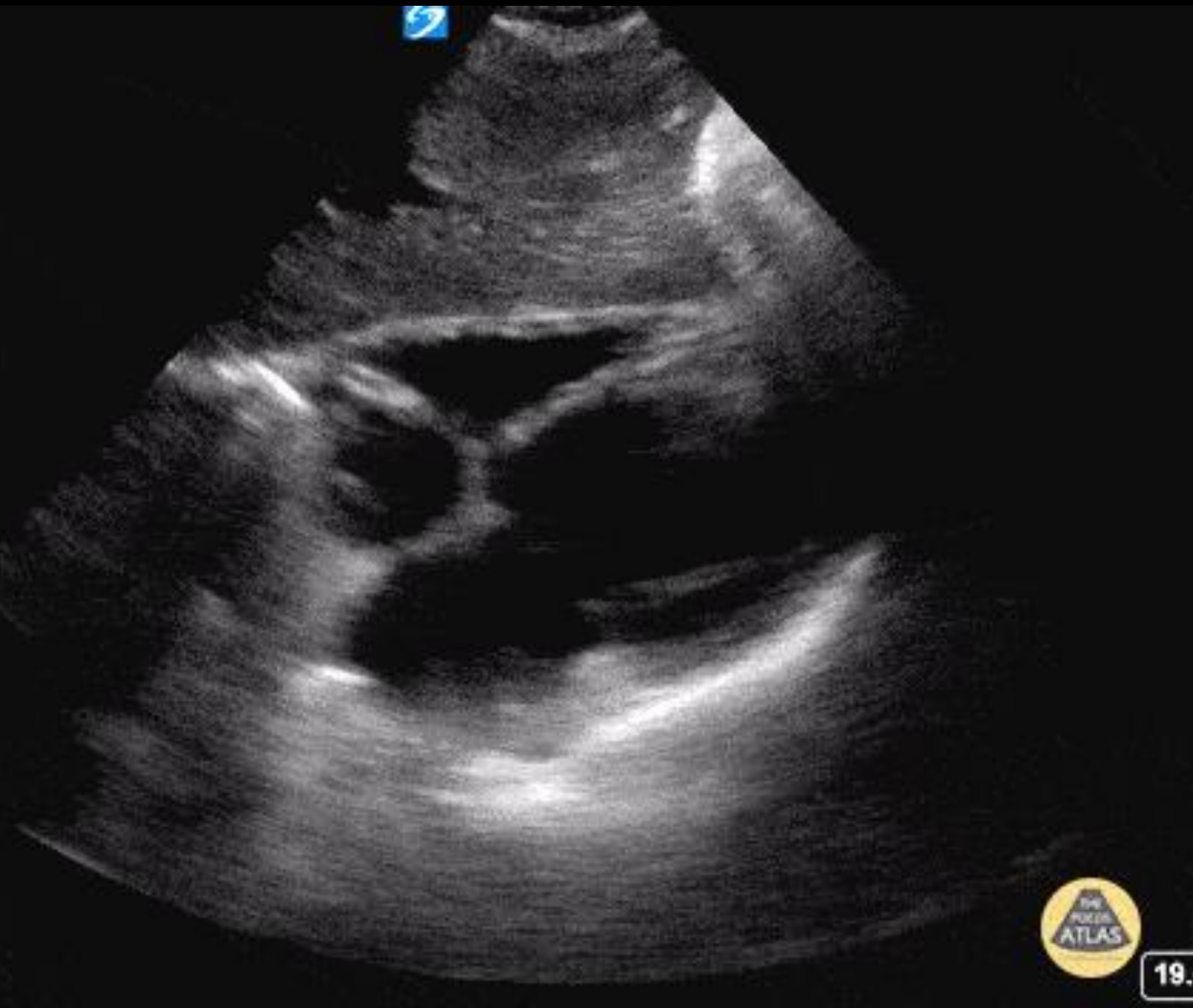


ECHO KCHC
S4-2
31 Hz
17.0cm

2D
HGen
Gn 50
43
3/2/0



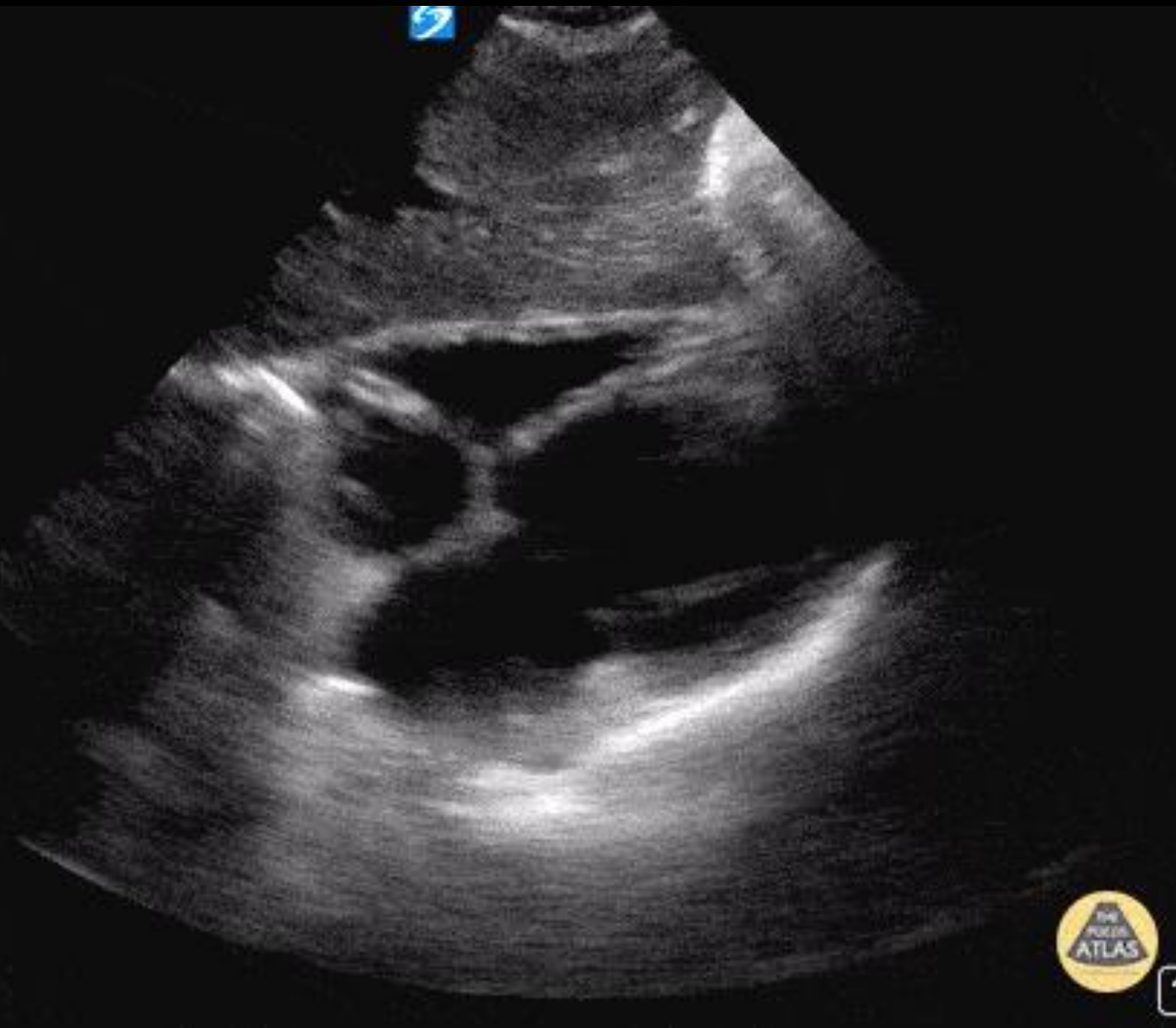
Normal



Abnormal



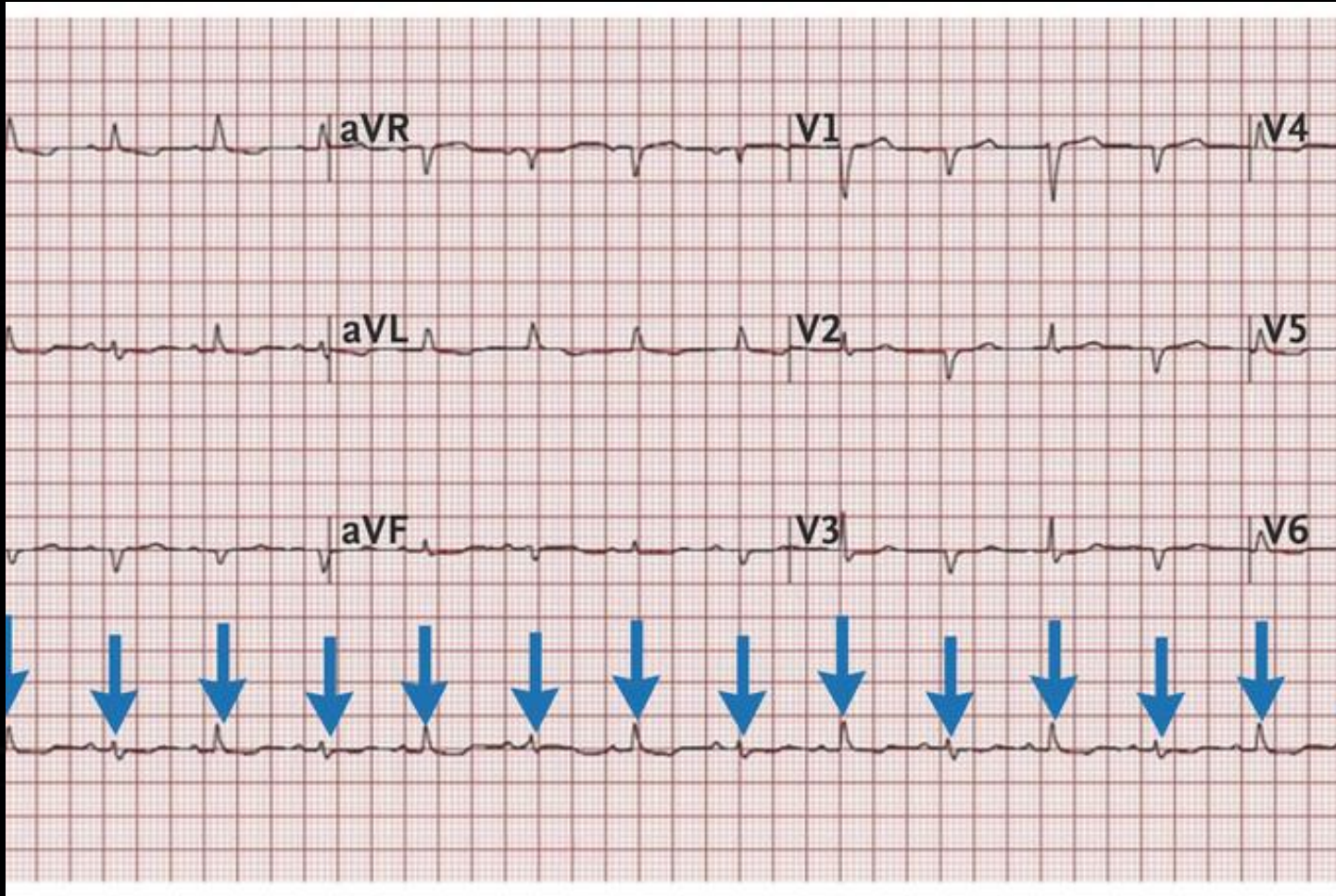
Normal



Abnormal

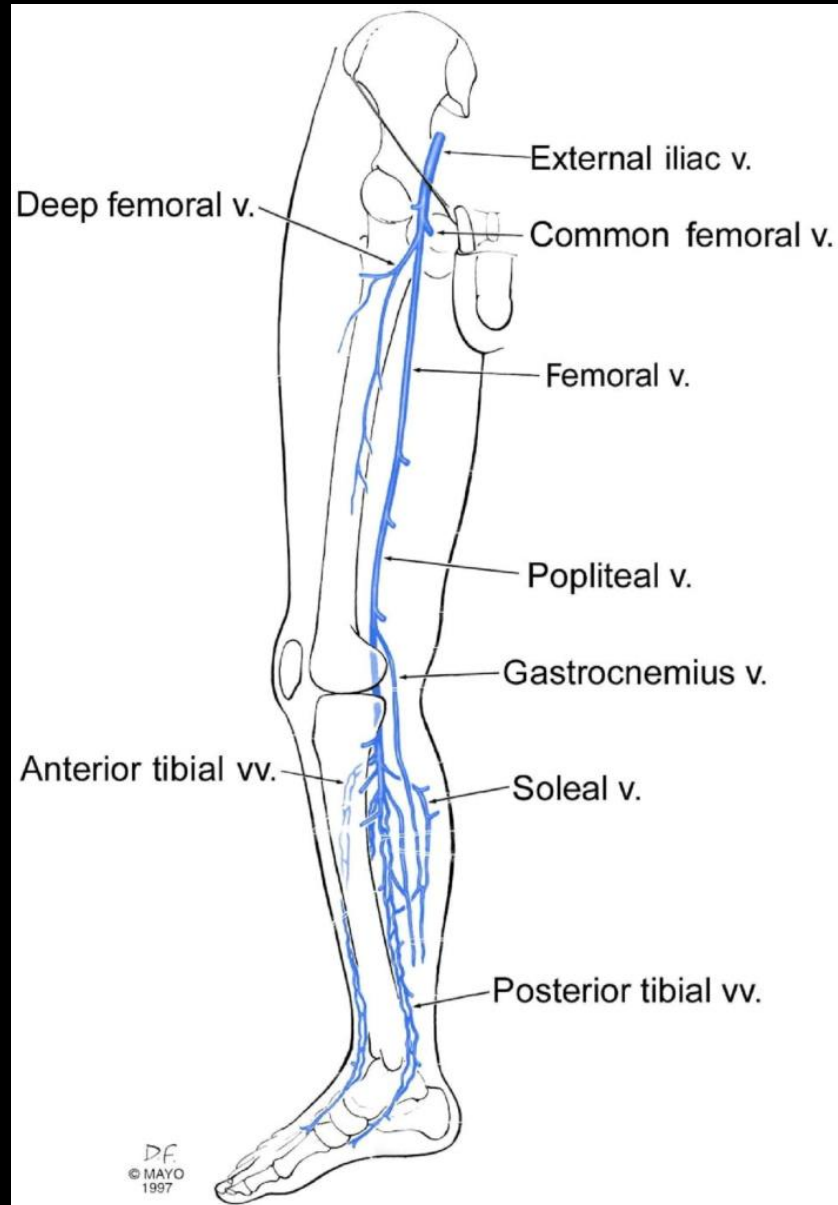


Electrical alternans



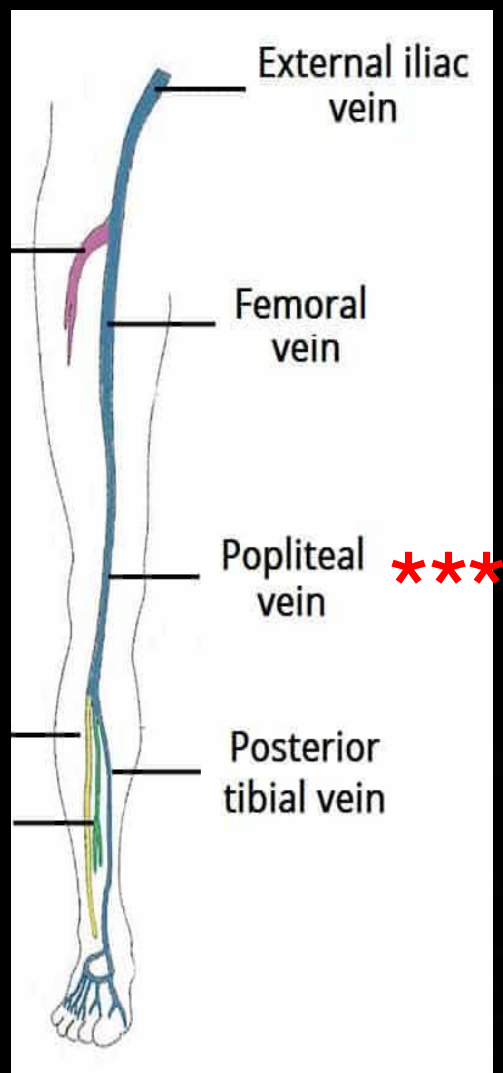
Lower Extremity Deep Veins

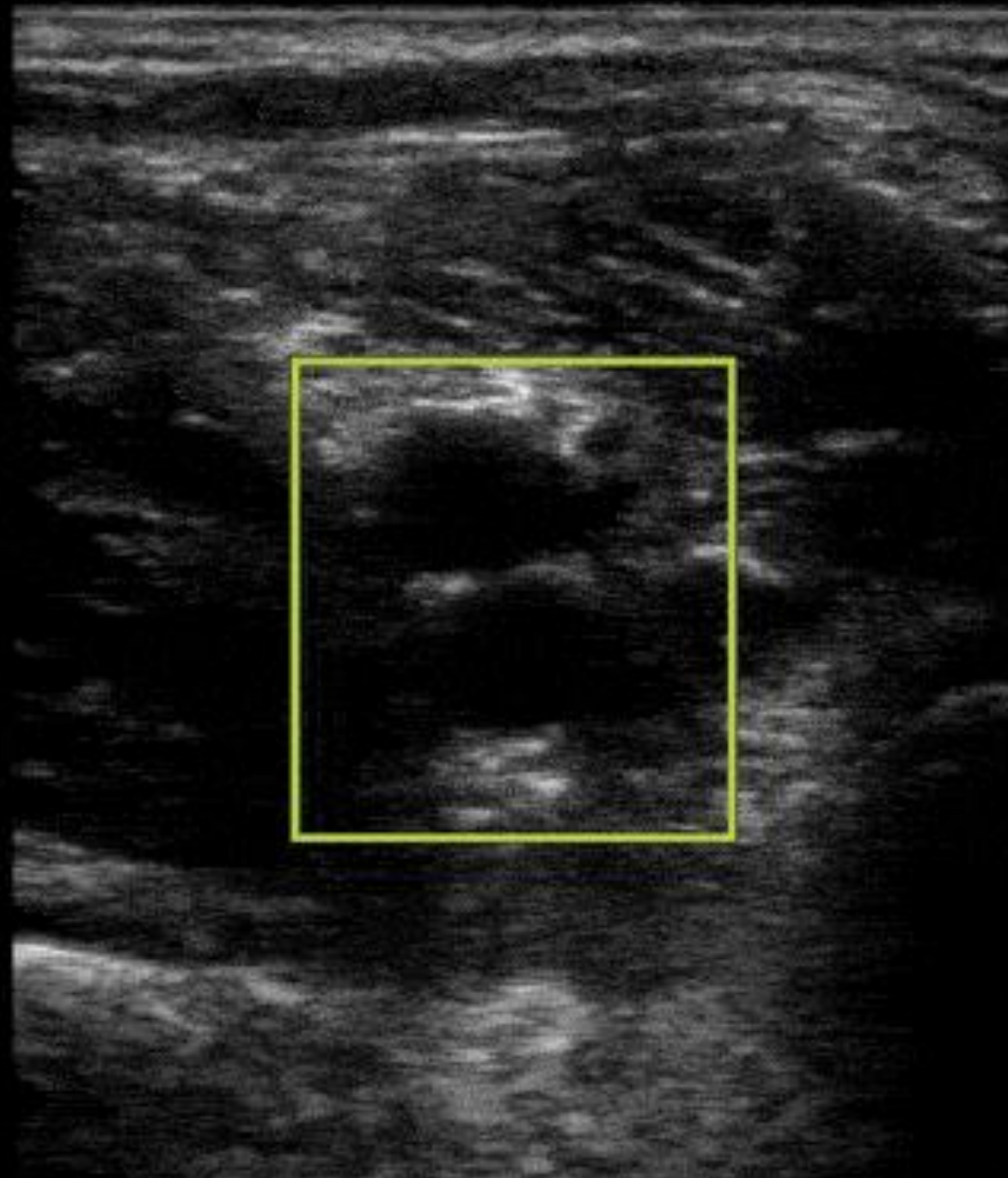
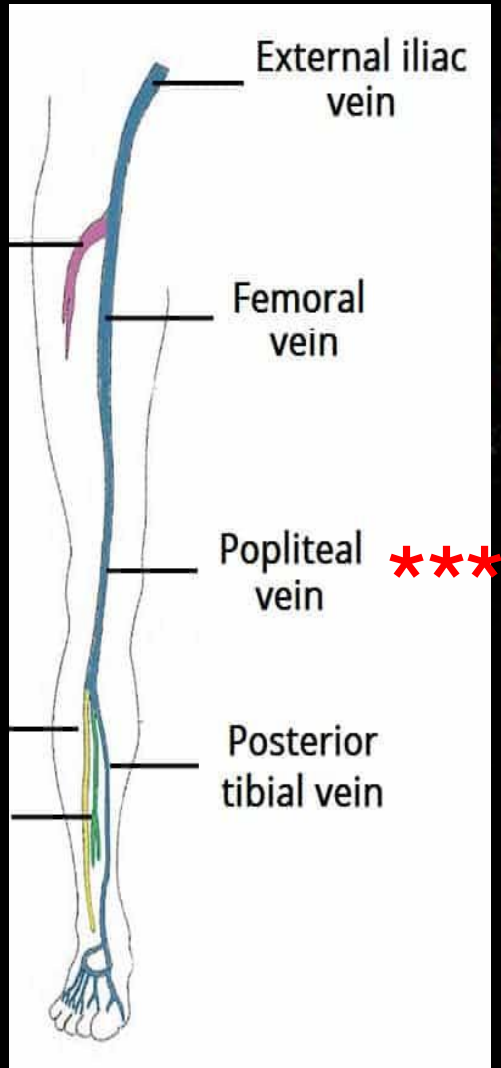


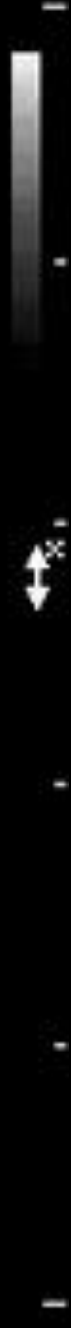


Despite many Deep Veins of Importance...
POCUS typically focuses on 3 Veins

1. Common Femoral Vein
2. Femoral Vein
3. Popliteal Vein

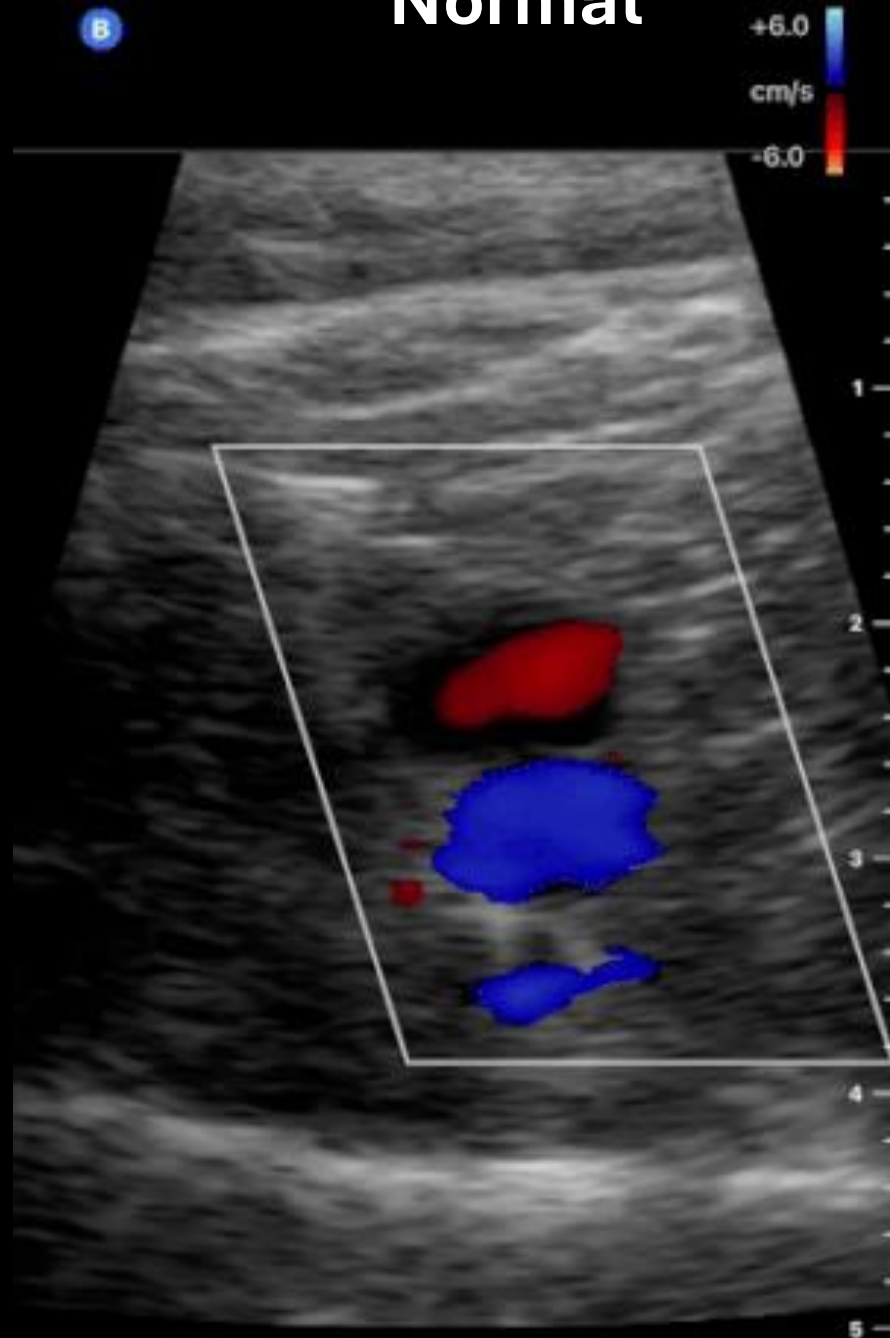




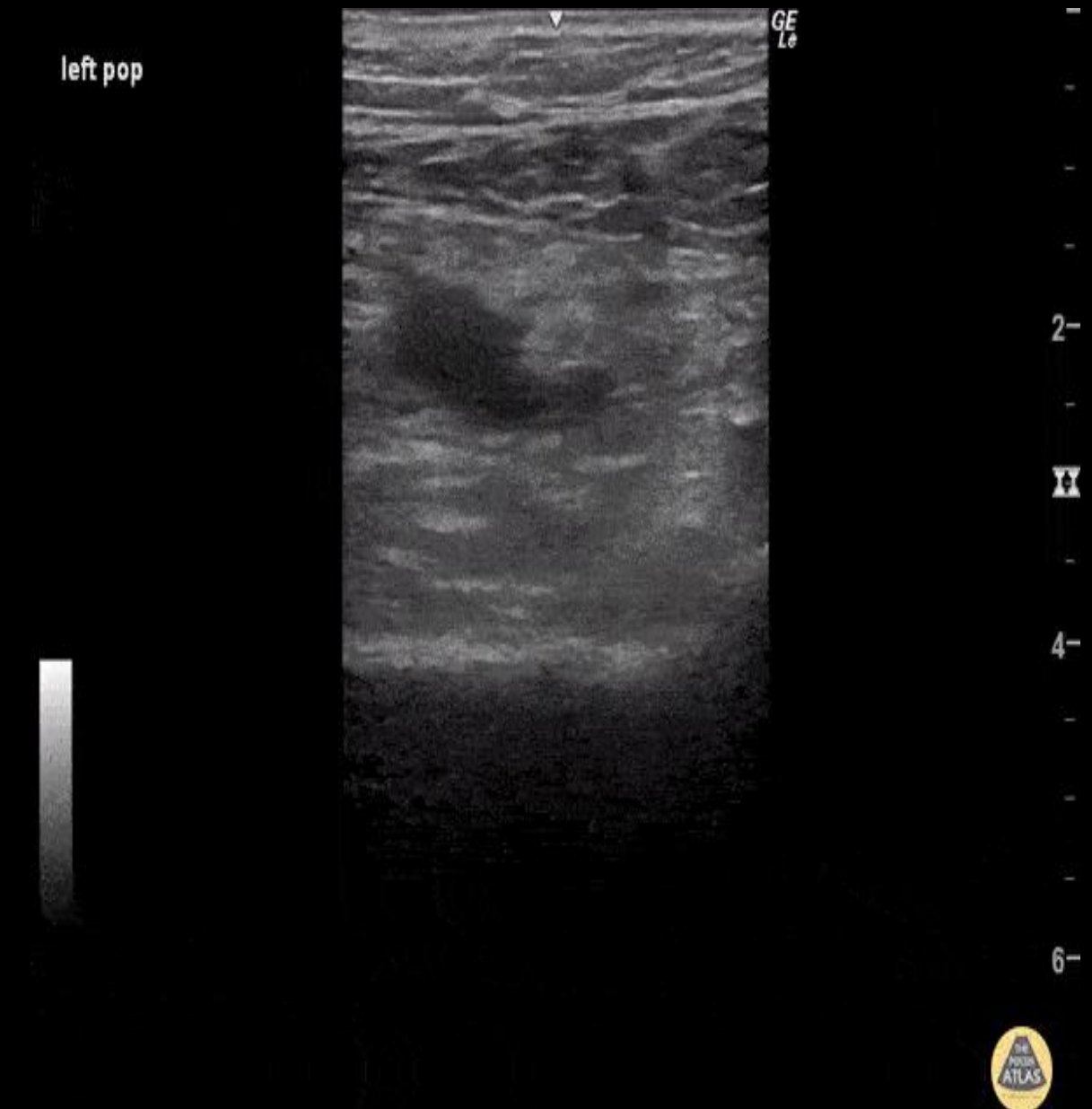


Normal
Or
Abnormal??
?

Normal



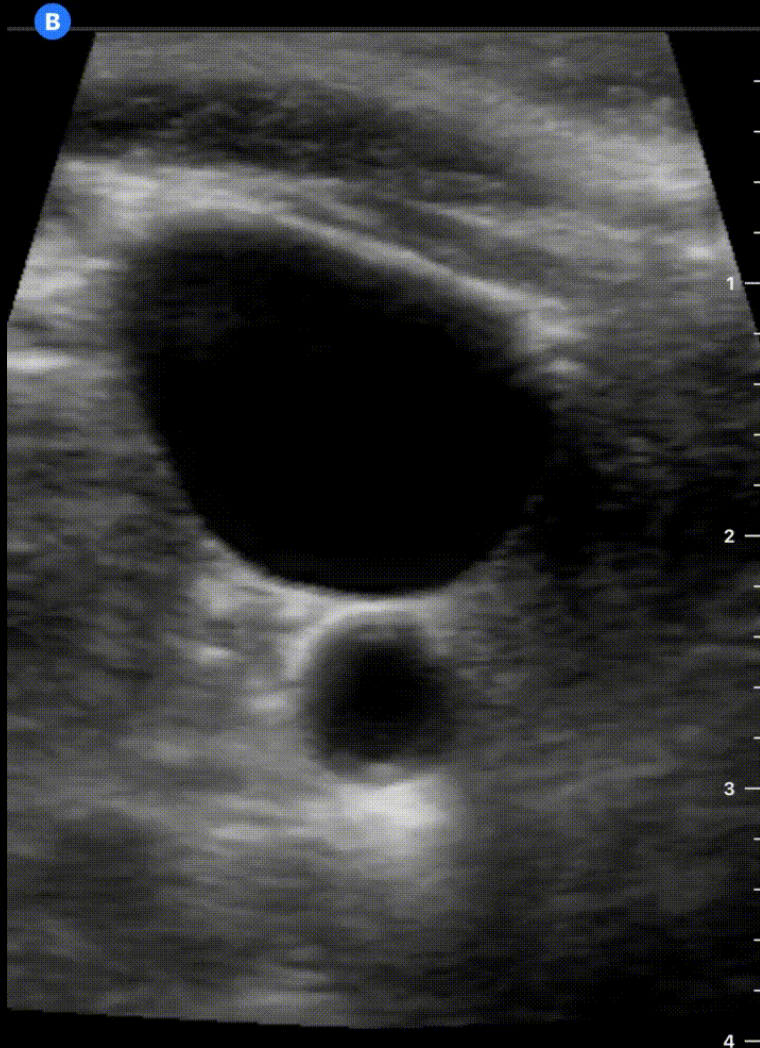
Abnormal



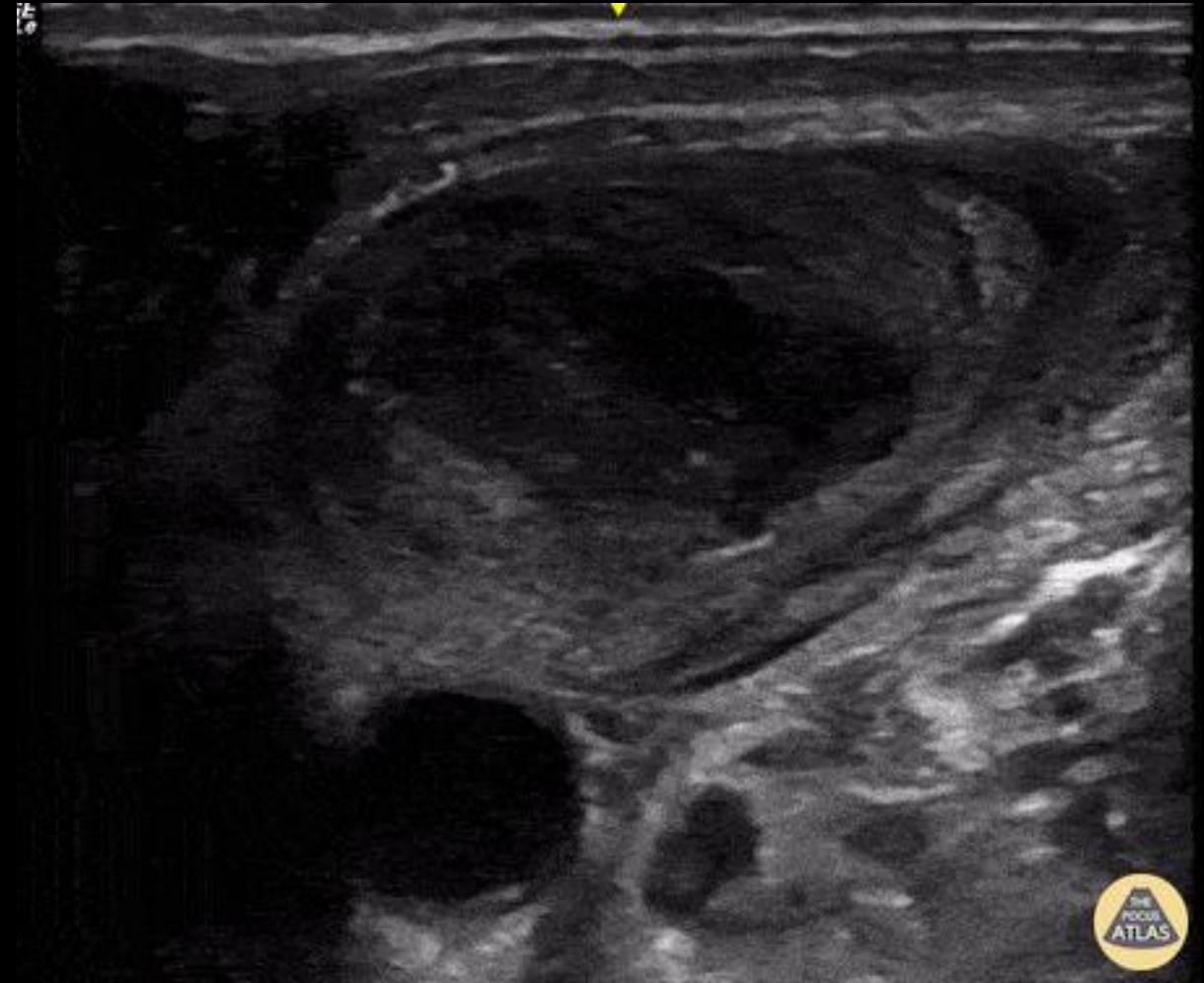
Neck Vasculature – Internal Jugular

Normal

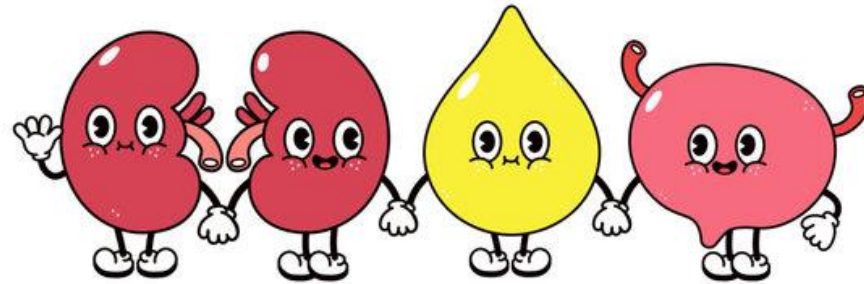
TIS: 0.01, MI: 0.26, Vascular: Carotid



Abnormal



Kidney + Bladder



You're Almost There!

3 Jun 2016 / 10:13

L KID

GE
L₀



BELLEVUE ED

SonoSite

P21xp/5-1 Abdomen
MI: 1.2 TIS: 0.6

11.0 cm

2D: G: 50
DR: 0



THI

Normal

RT KIDNEY

ⓐ
P △ R
2.1 4.2



Abnormal

Right

0 —

4 —

8 —

12 —

16 —

16.2 cm

C5-1
Abdomen





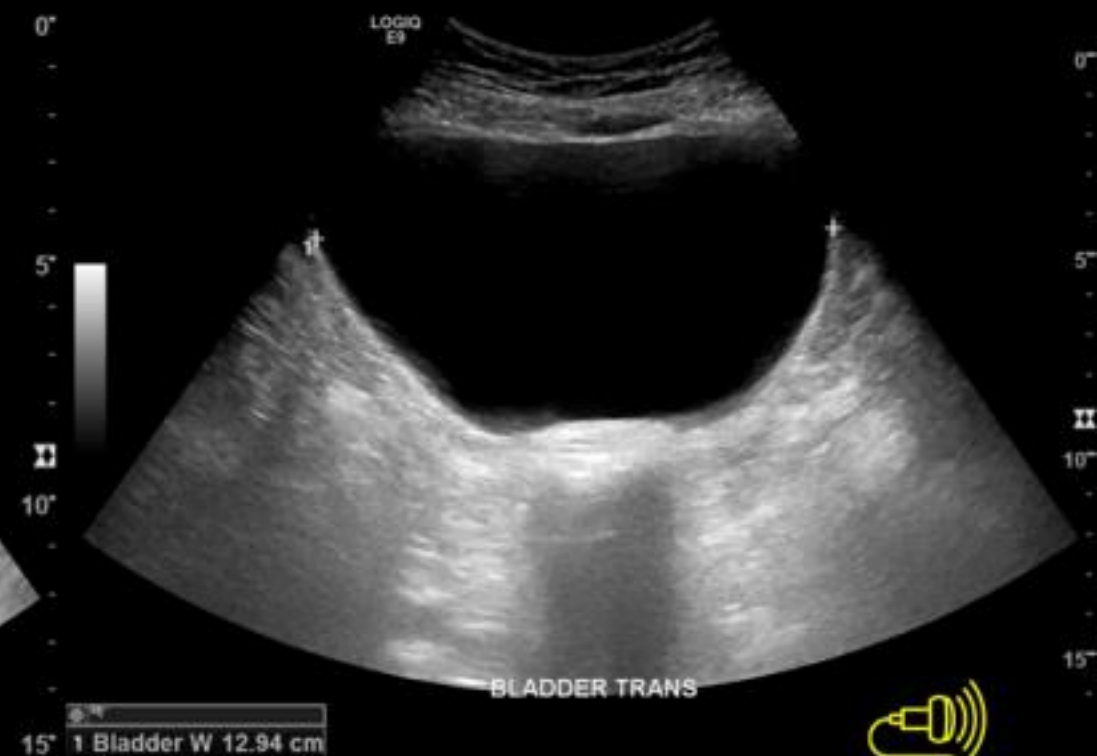
Sagittal view

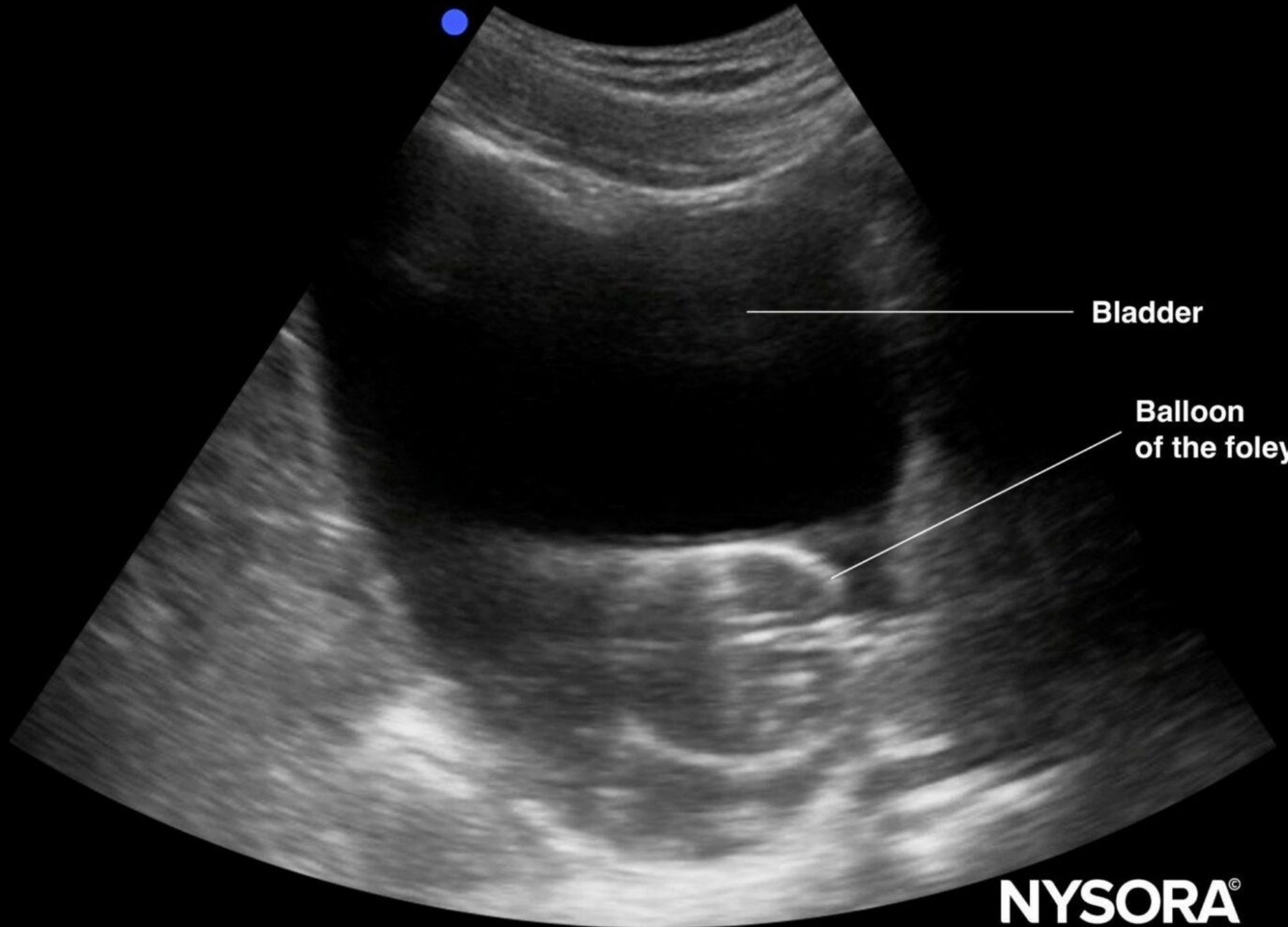


**Transverse
view**



1 Bladder L	16.51 cm
2 Bladder H	7.43 cm
Bladder Vol 831.28 ml	





Bladder

Balloon
of the foley

NYSORA[®]

P  R
2.1 4.2

SAG



**Save Yourself.
Learn POCUS.**

Thank You!



**Because There Are More Important Things than
Knowing if it's a Boy or a Girl**