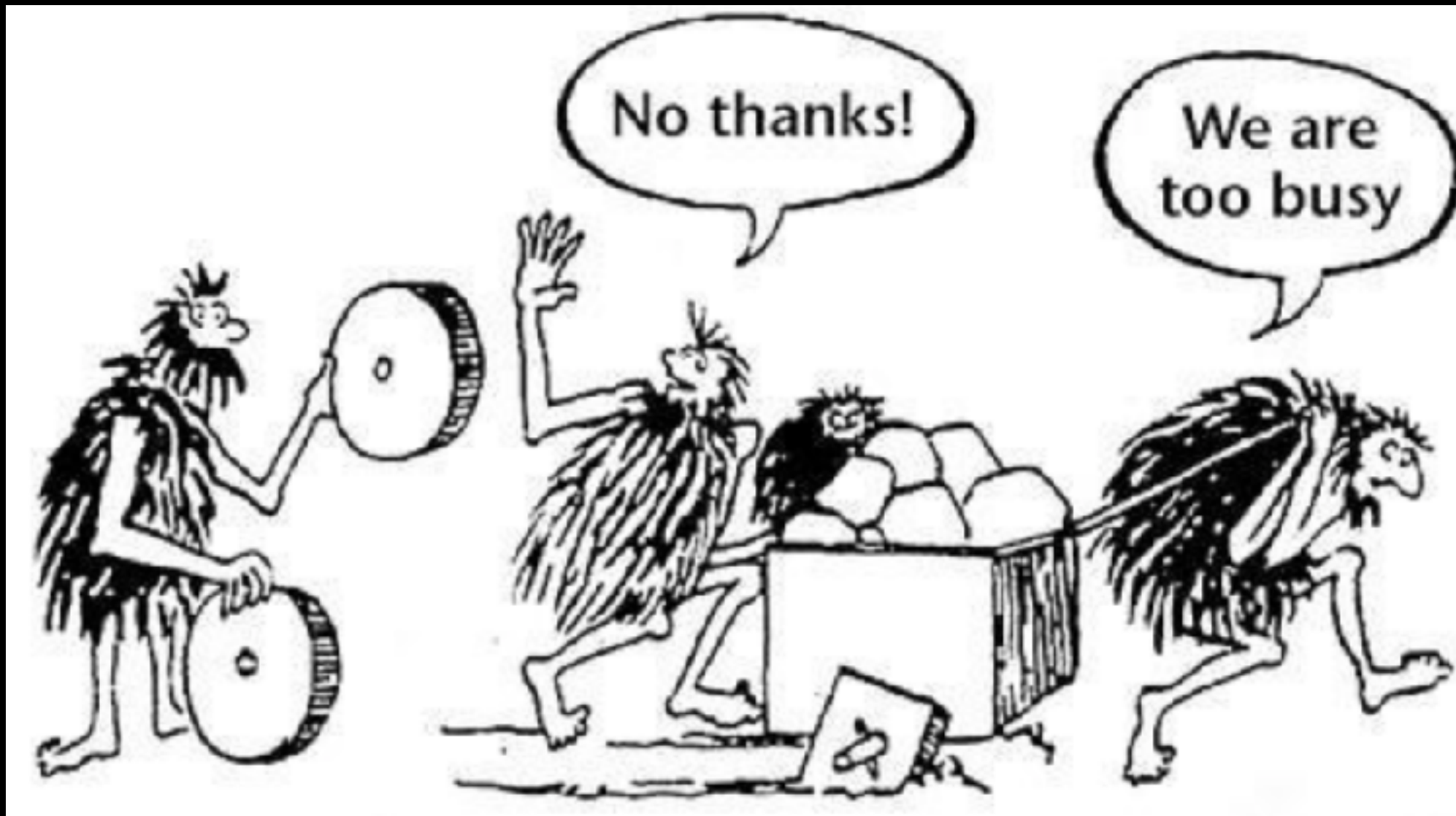


Obscure but useful nerve blocks



Arun Nagdev, MD
Director, Emergency Ultrasound
Highland General Hospital
Clinical Associate Professor, UCSF



July 5, 2015



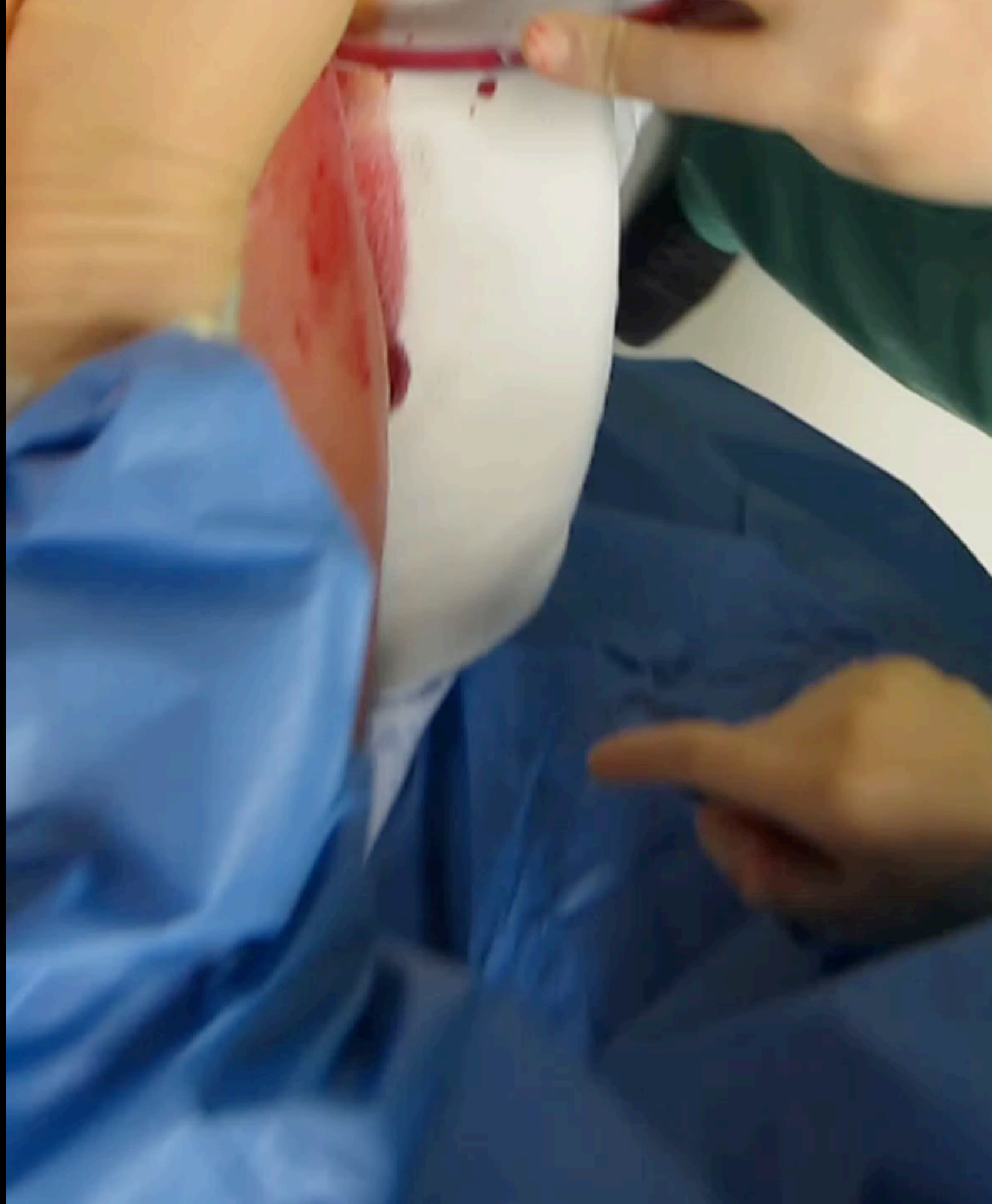
IDU

Recent Meal

Smoker

Sleep Apnea

Hep C

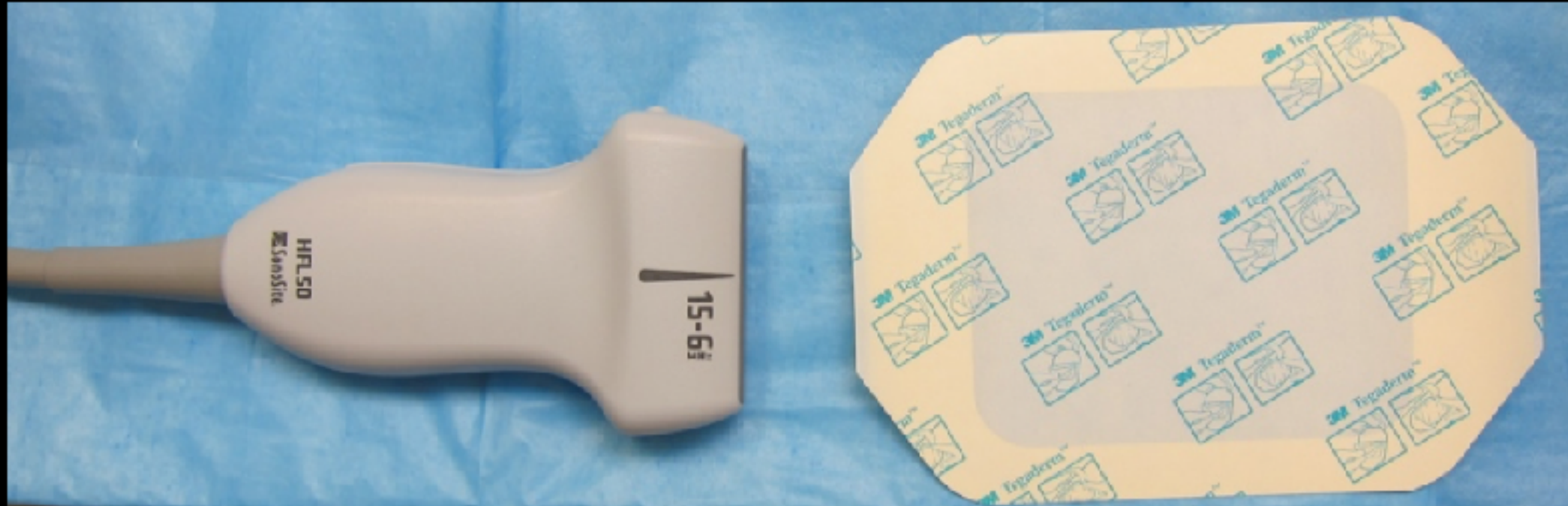




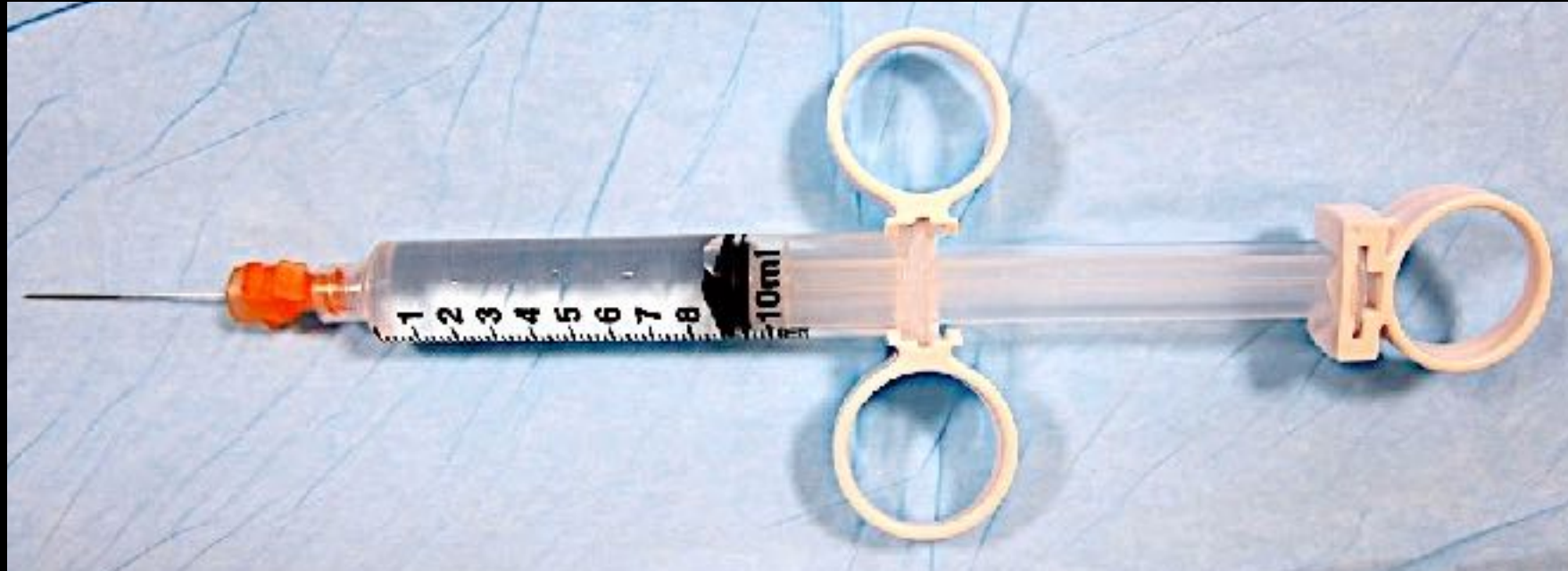


Basics

Probe Cover and Sterility

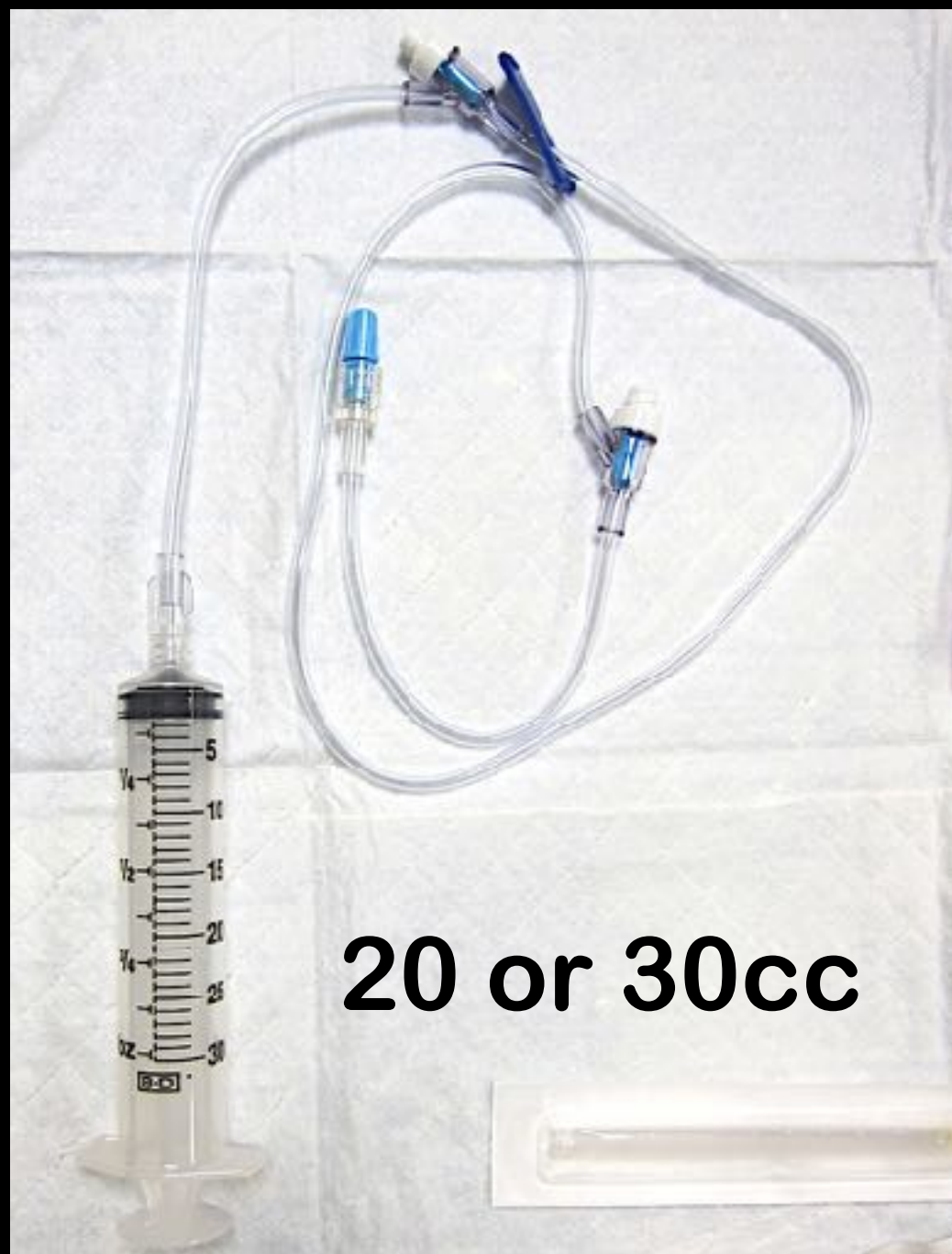


Needle and Syringe

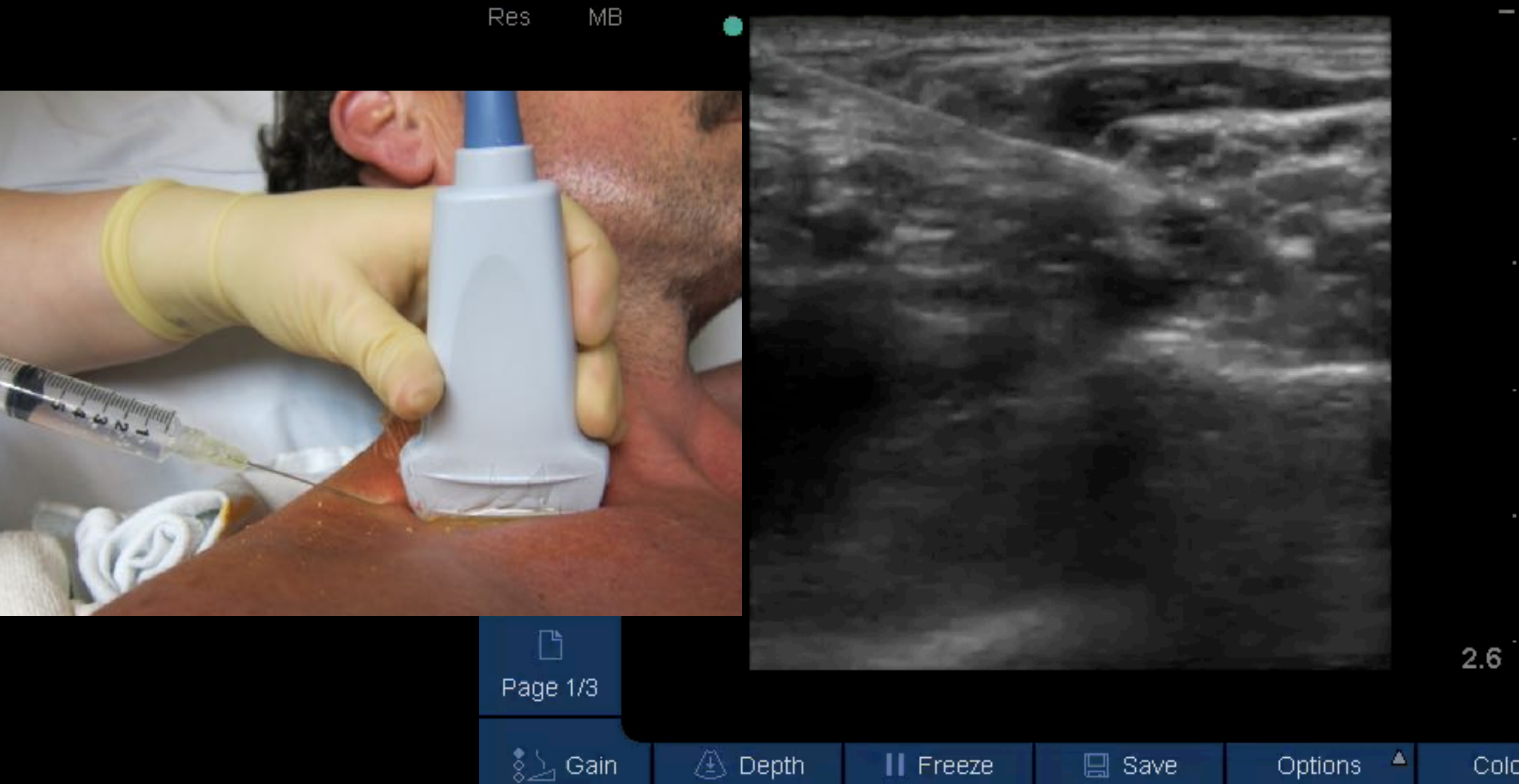


vs.



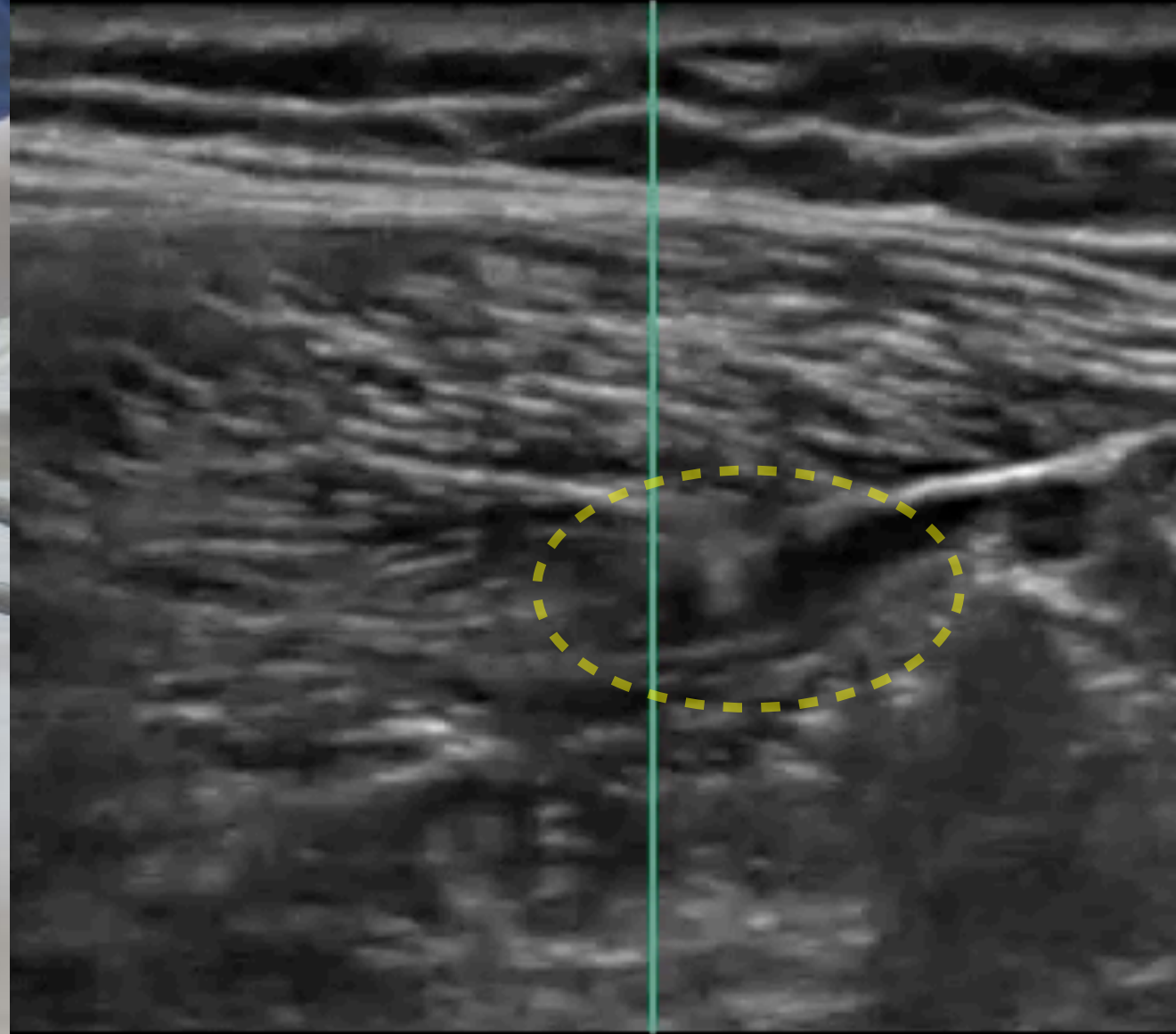


In-plane versus Out-of Plane

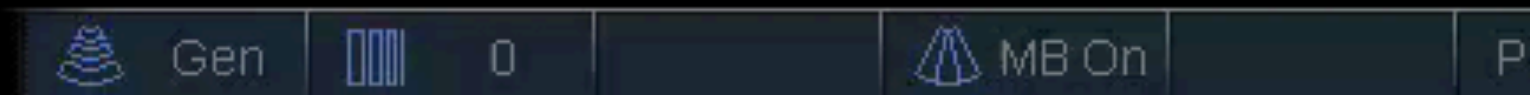


In-plane versus Out-of Plane

2



****More advanced**



Nerves on Ultrasound



2.7



Gen



0



Guide

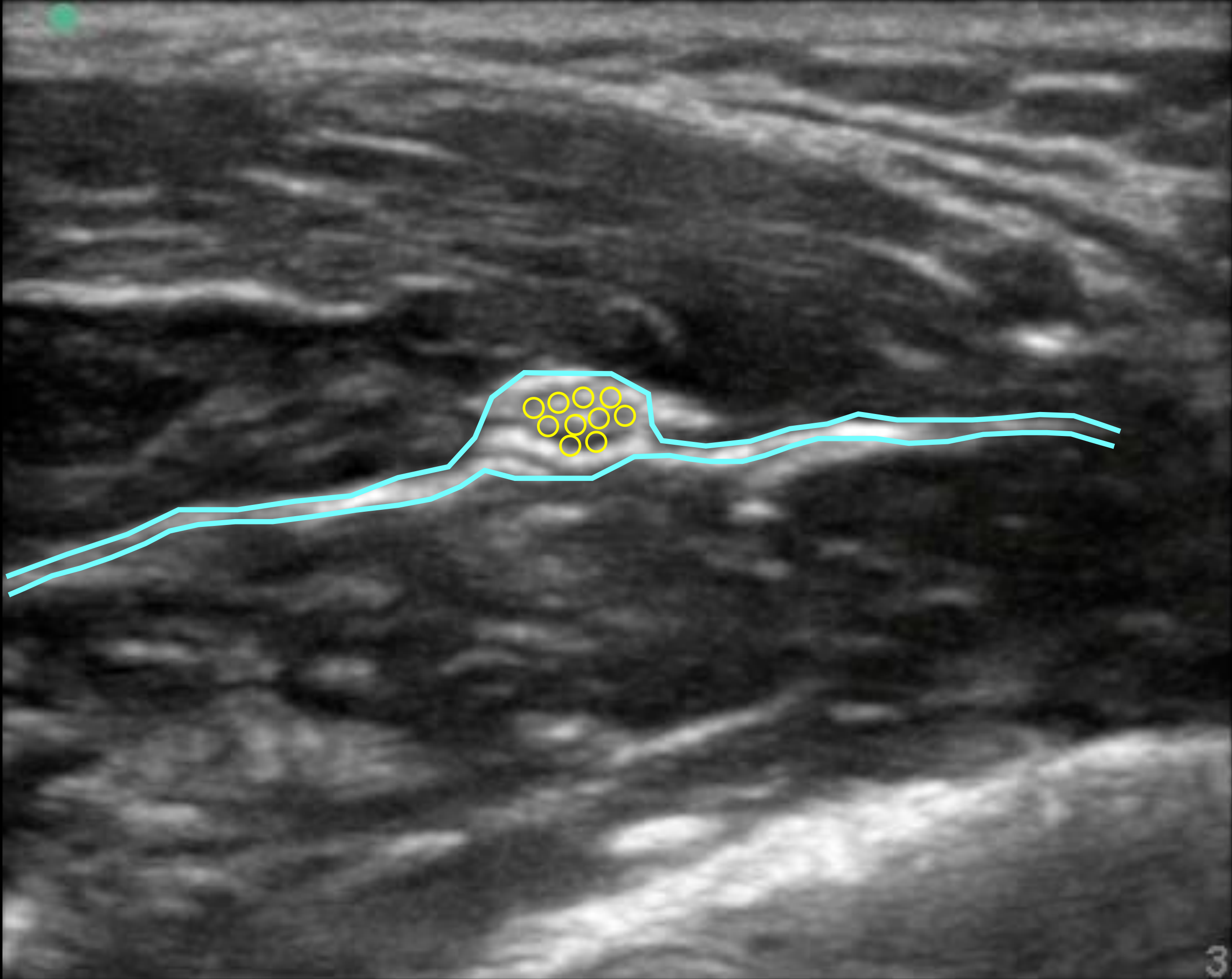


MB On



Dual

Page 1/2

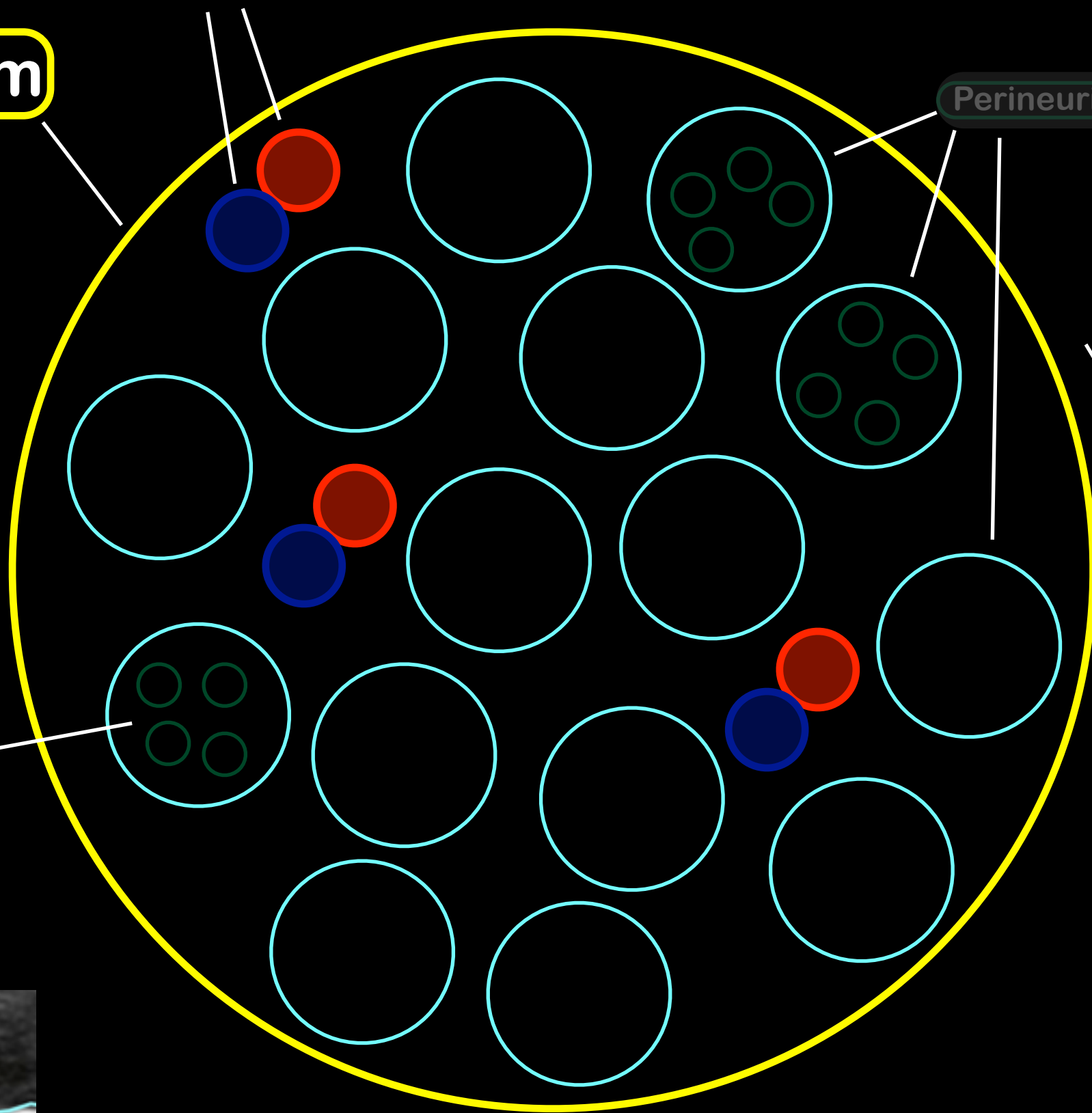


Epineurium

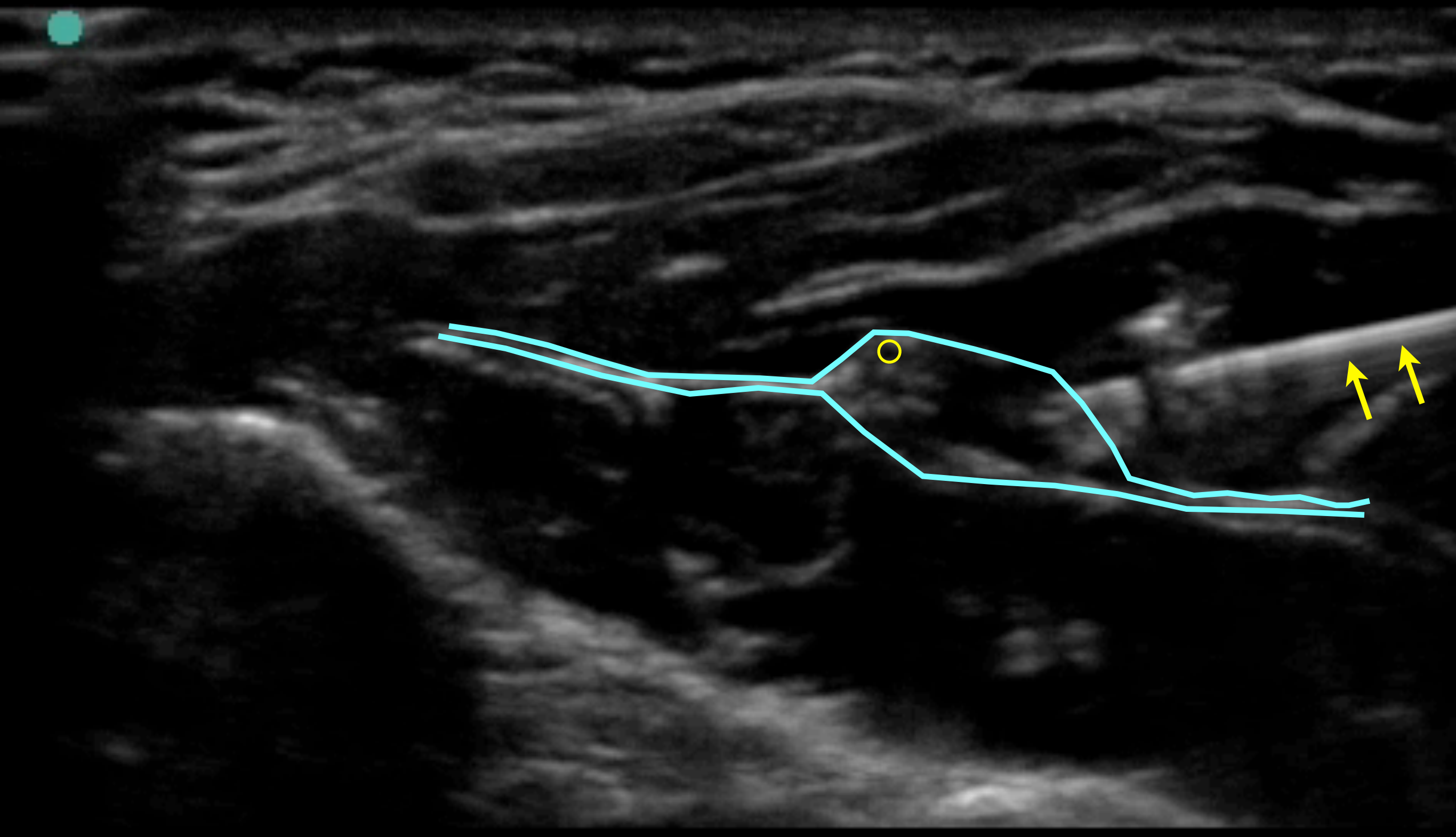
Vasculature

Perineurium

Endoneurium



Needle Proximity



Peripheral Nerve Injury (PNI)

**Persistent neuro deficits
post block**

1-3 per 100,000

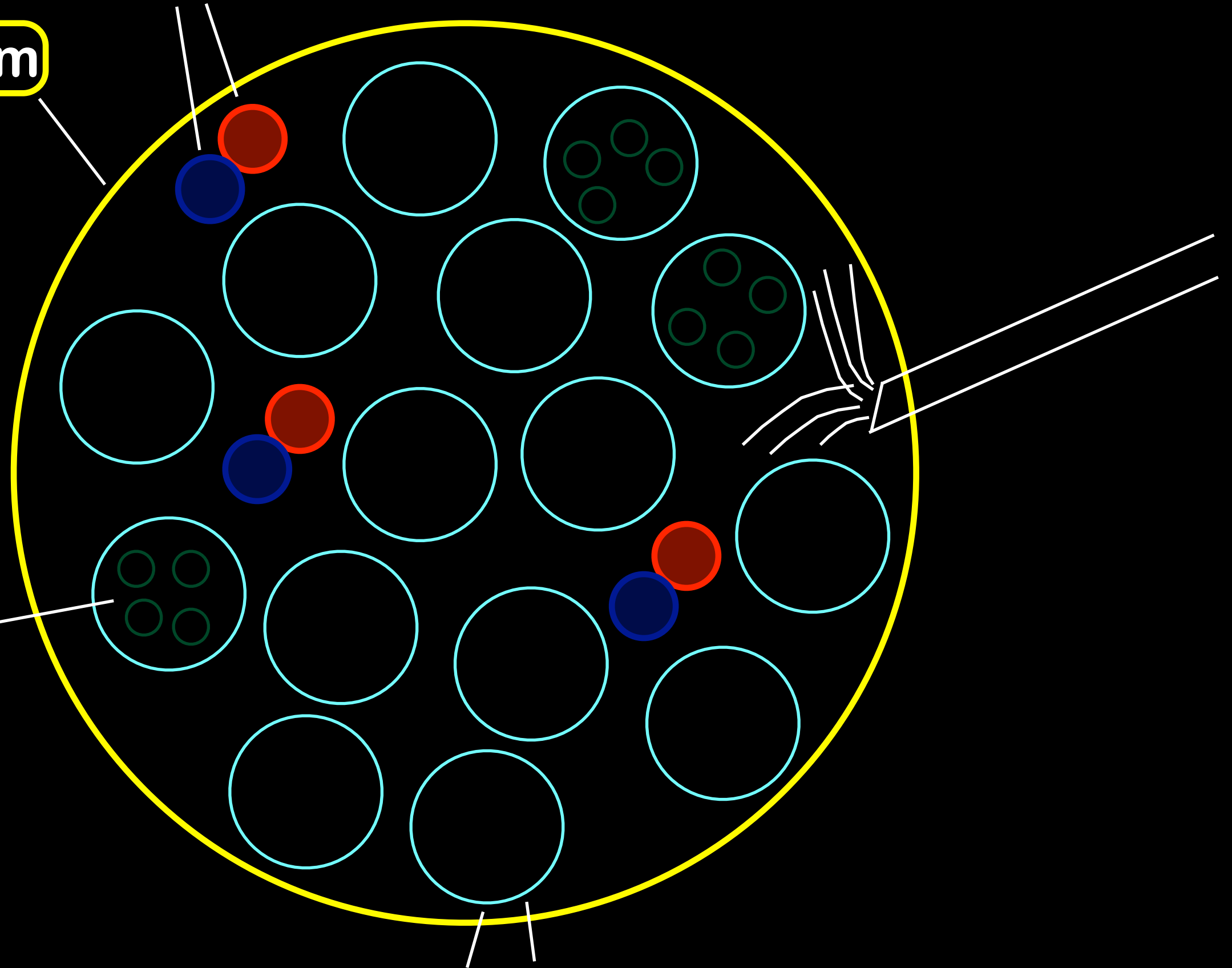
**Mechanical Trauma
Anesthetic Toxicity
Microvascular Ischemia**

Epineurium

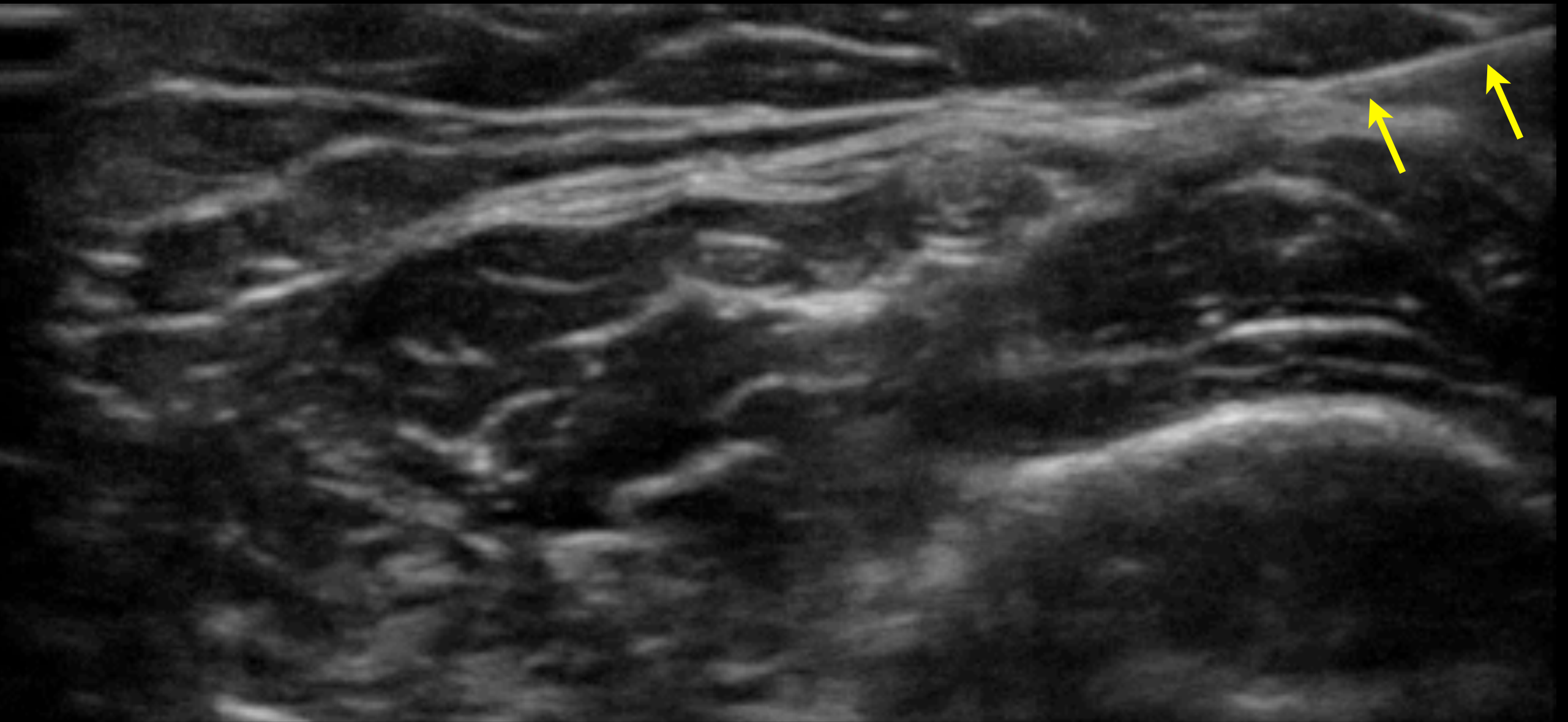
Vasculature

Endoneurium

Perineurium



Intraneural Injection?



Local Anesthetic Systemic Toxicity (LAST)

Intravascular injection

CNS and Heart

Intralipid Infusion

Anesthetic Choice

Lidocaine +/-
EPI

vs

Bupivacaine

Anesthetic Choice

Duration

Short



Long

3% 2-Chloroprocaine

60-90m

1.5% Mepivacaine

2-3h

Ropivacaine

4-10h



whyatt

Superficial Cervical Plexus

RAPTIR

SAPB

Superficial Cervical Plexus Block

American Journal of Emergency Medicine (2012) 30, 1263–1267



ELSEVIER

The
American Journal of
Emergency Medicine

www.elsevier.com/locate/ajem

Clinical Notes

The ultrasound-guided superficial cervical plexus block for anesthesia and analgesia in emergency care settings^{☆,☆☆}

Andrew A. Herring MD^{a,*}, Michael B. Stone MD^{a,b}, Oron Frenkel MD^a,
Annie Chipman MD^a, Arun D. Nagdev MD^{a,b}

^aDepartment of Emergency Medicine/Alameda County Medical Center, Highland General Hospital, Oakland CA, USA

^bUniversity of California, San Francisco CA, USA

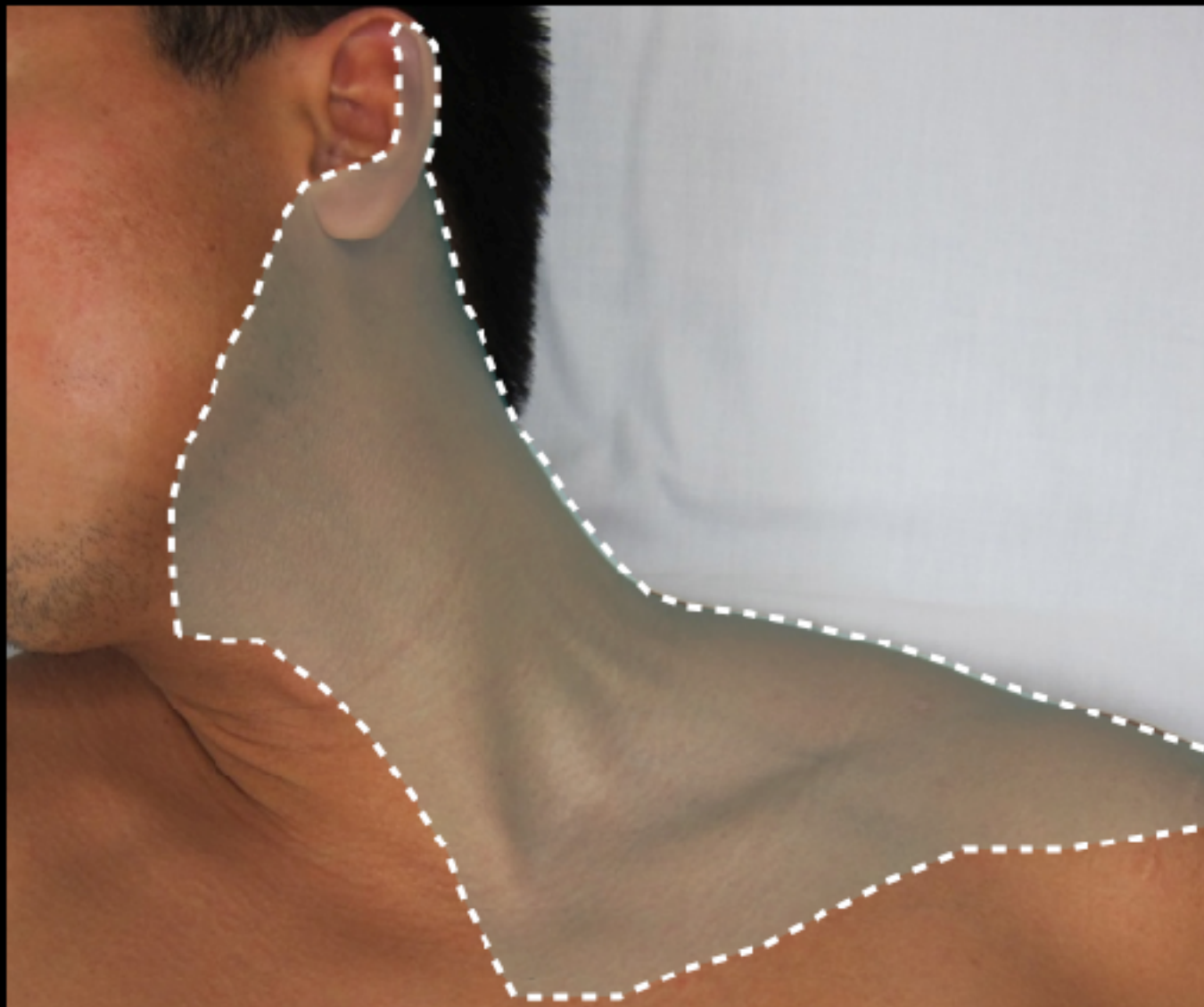
Why?

- Is there a way to provide anesthesia for clavicle fractures?
- How to obtain pain control for lower facial abscesses or lacerations?

Superficial Cervical Plexus Block

Innervation

Common ED Indications



1) Analgesia for clavicle fracture

2) Skin anesthesia for IJ CVC

3) Earlobe anesthesia

(laceration repair or abscess drainage)

4) Submandibular anesthesia

(laceration repair or abscess drainage)







Supplies for Superficial Cervical Plexus Block

- 1) 6-8cc lidocaine 1-2% with epi or 0.5% bupivacaine
- 2) Chlorhexidine scrub
- 3) 25g 1.5 inch standard needle
- 4) Transparent transducer cover (optional)

**Linear Transducer
(high frequency)**

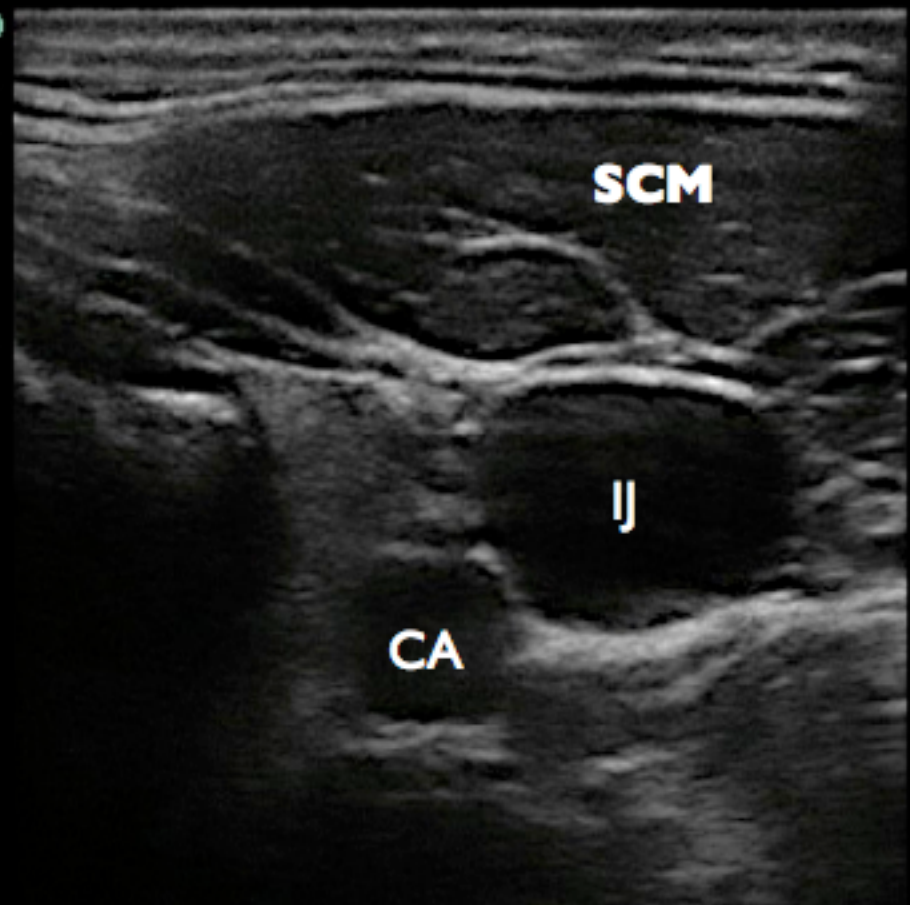
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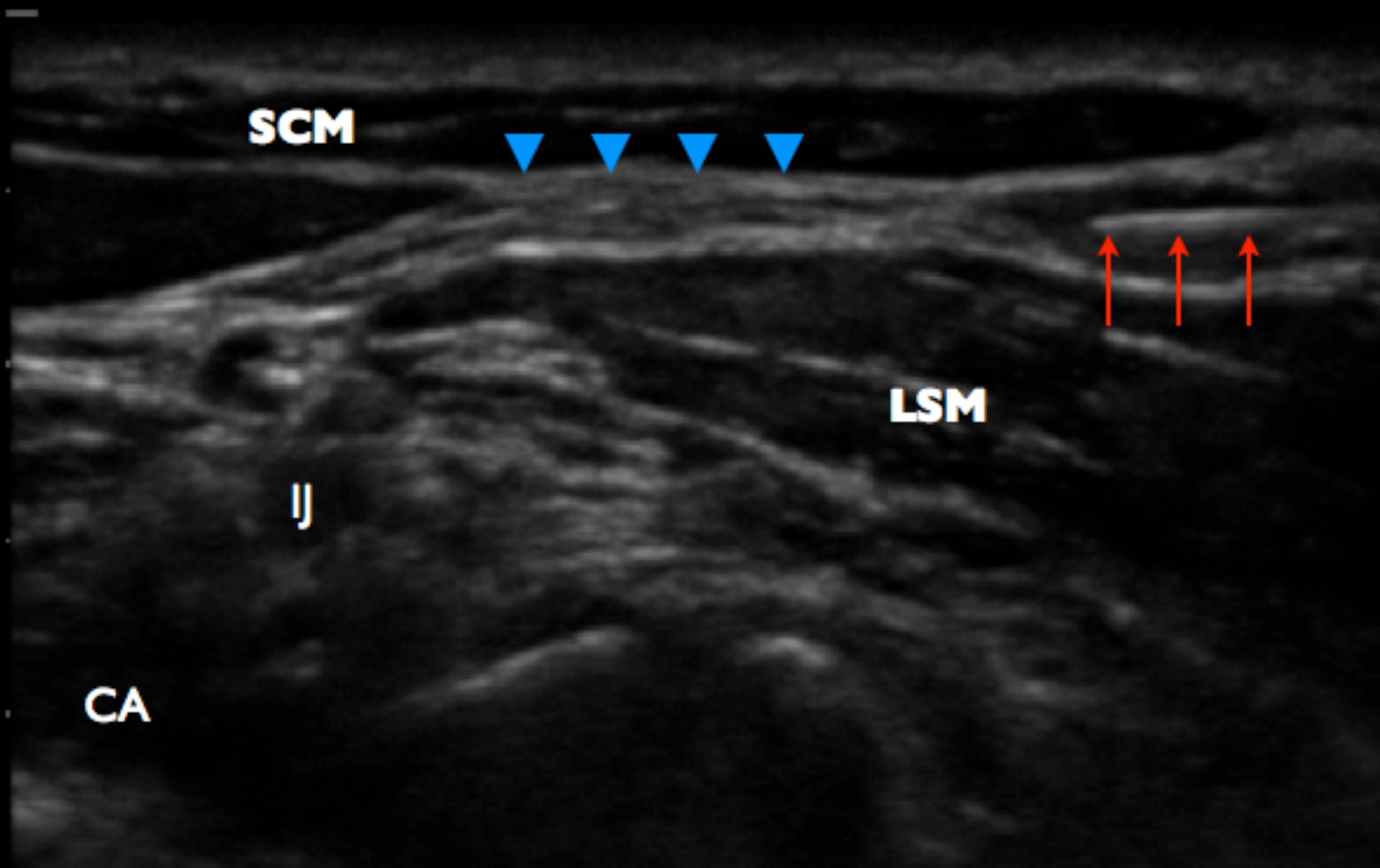
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Sup
Pole
Thyroid
Cartilage





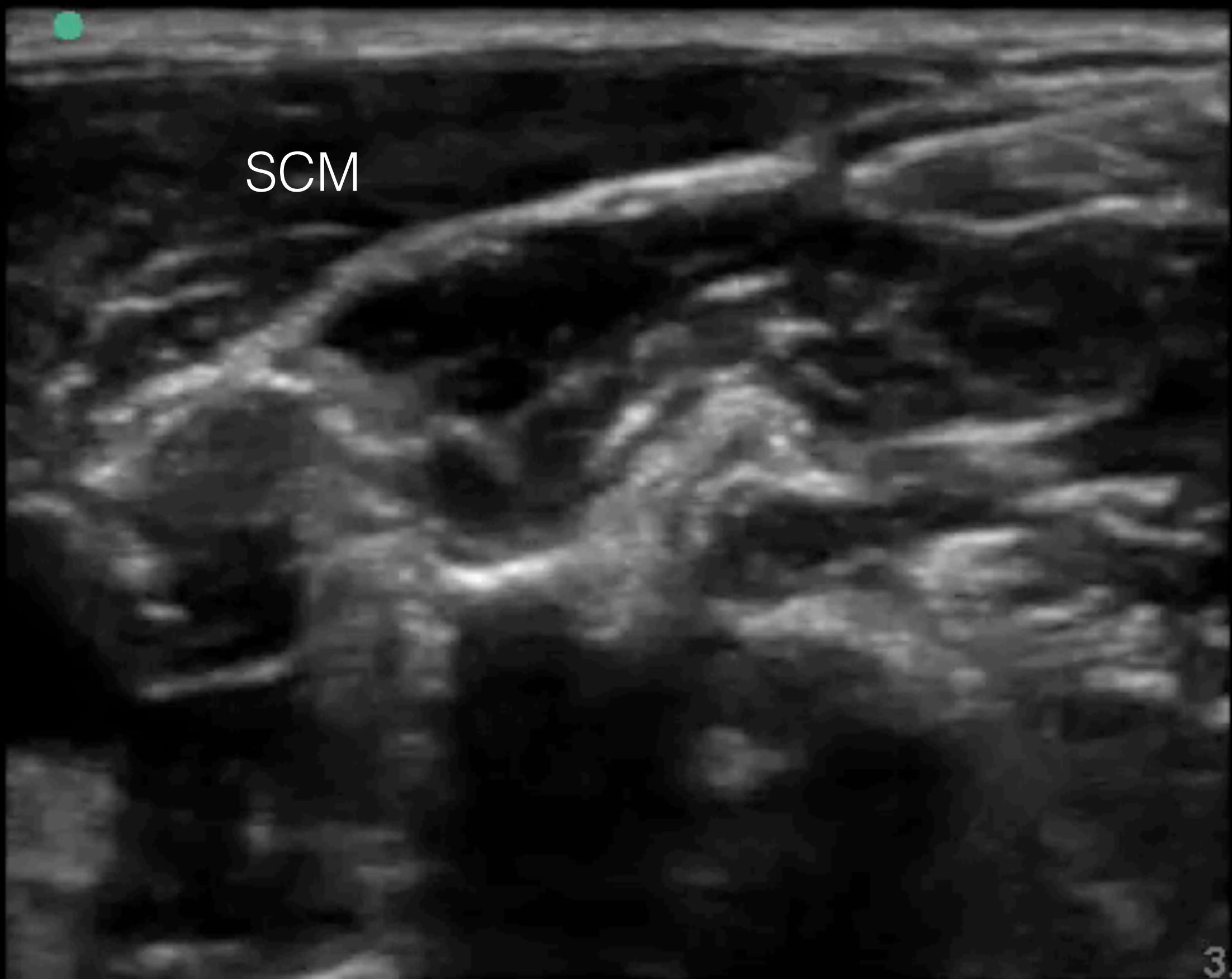
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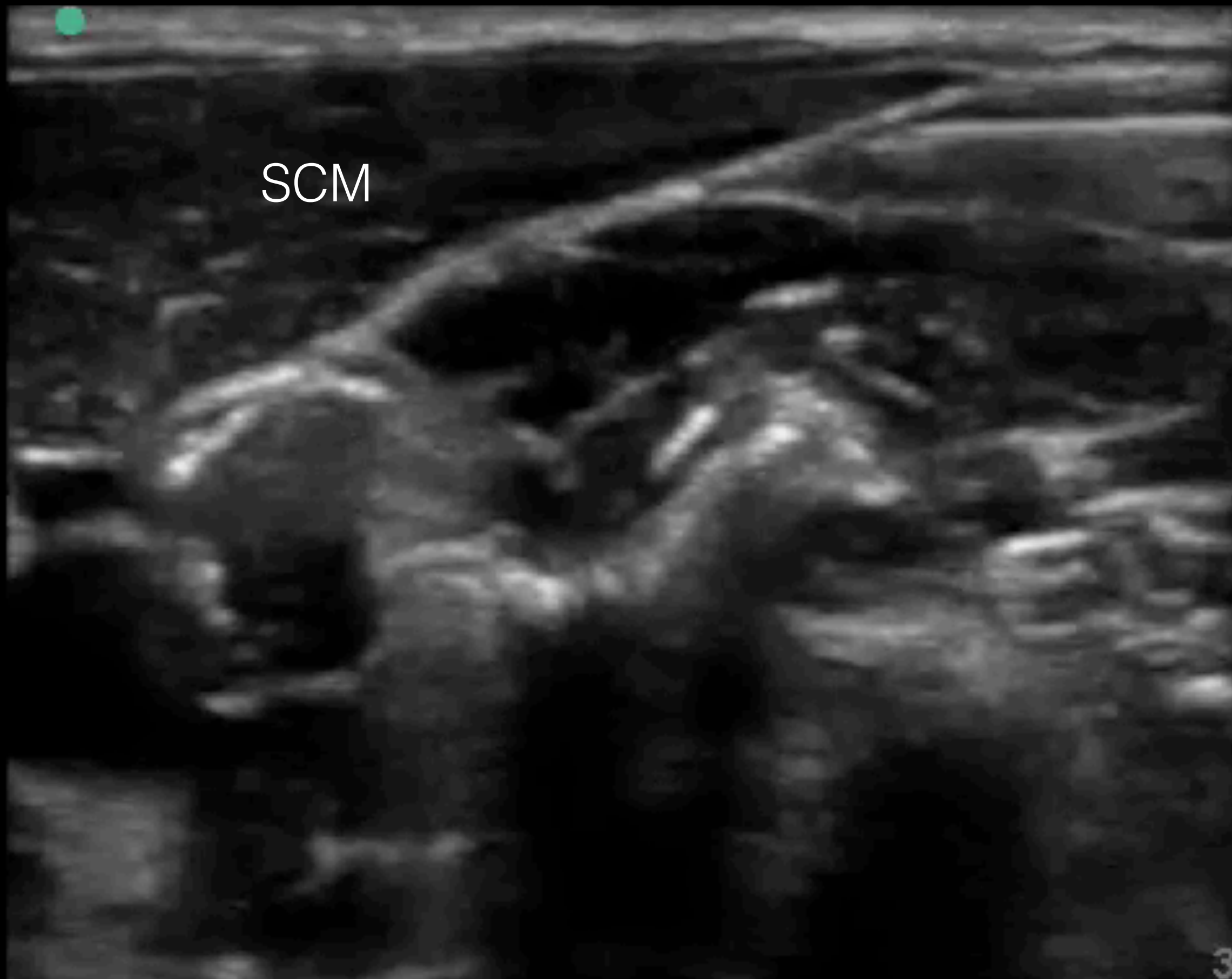
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MB

SCM

IJ

CA



“RAPTIR”

Retroclavicular Approach for the Infraclavicular Brachial Plexus Block

Brief Report

Ultrasound-guided retroclavicular approach infraclavicular brachial plexus block for upper extremity emergency procedures

Josh Luftig, PA^{a,*}, Daniel Mantuani, MD^{a,b}, Andrew A. Herring, MD^{a,b}, Arun Nagdev, MD^{a,b}

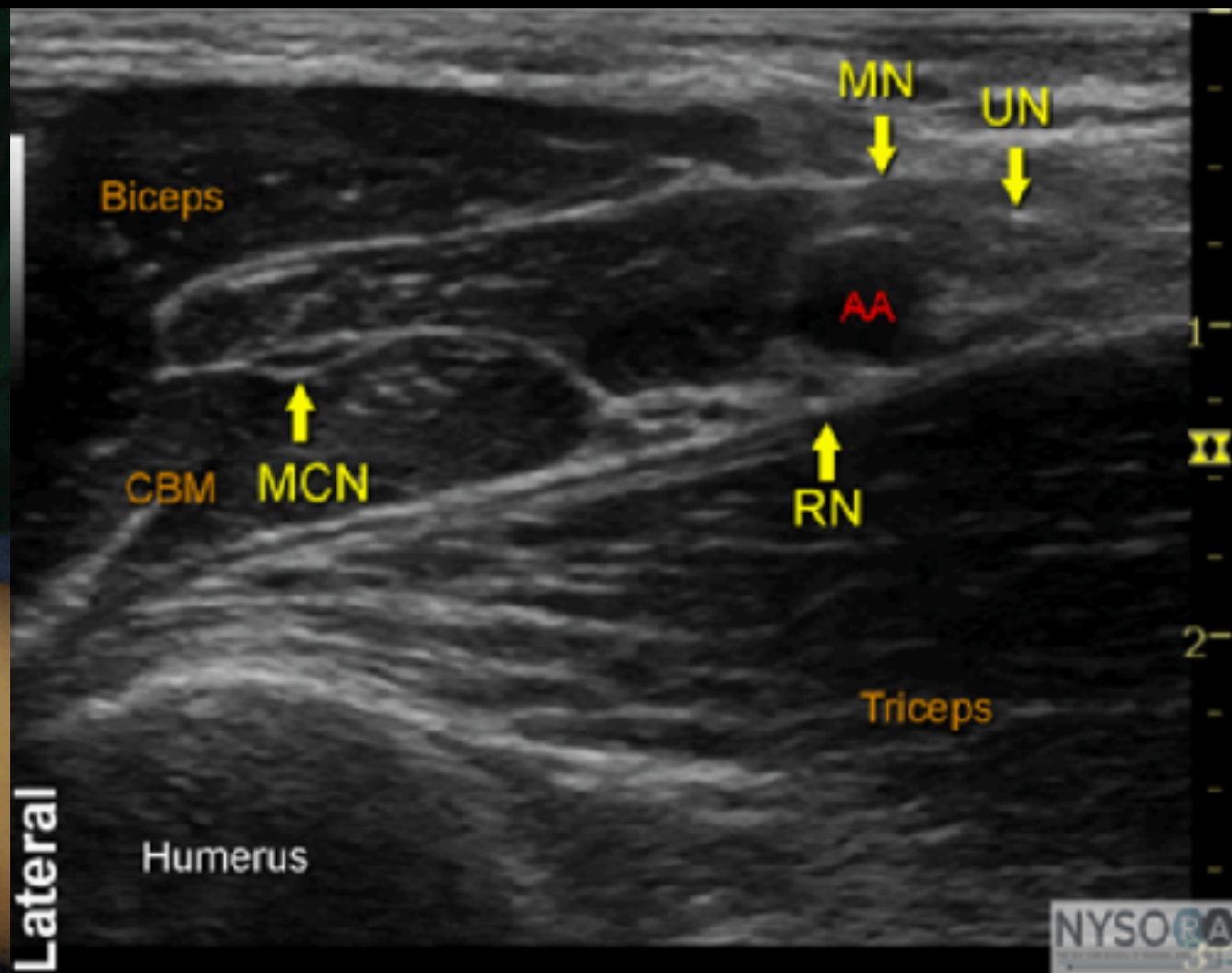
^a Department of Emergency Medicine, Highland Hospital—Alameda Health System, Oakland, CA, United States

^b Department of Emergency Medicine, University of California, San Francisco, San Francisco, CA, United States

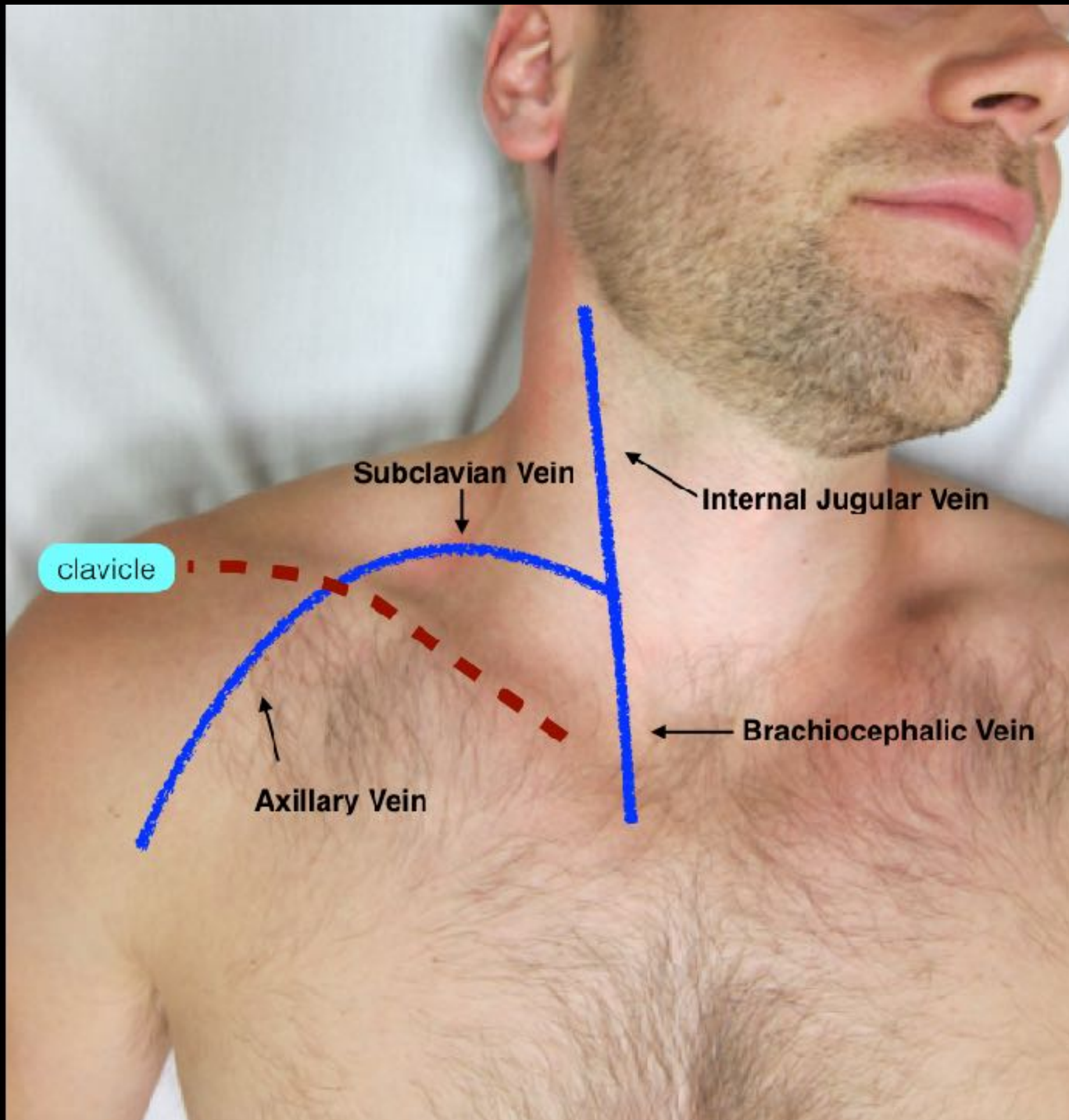
Why?

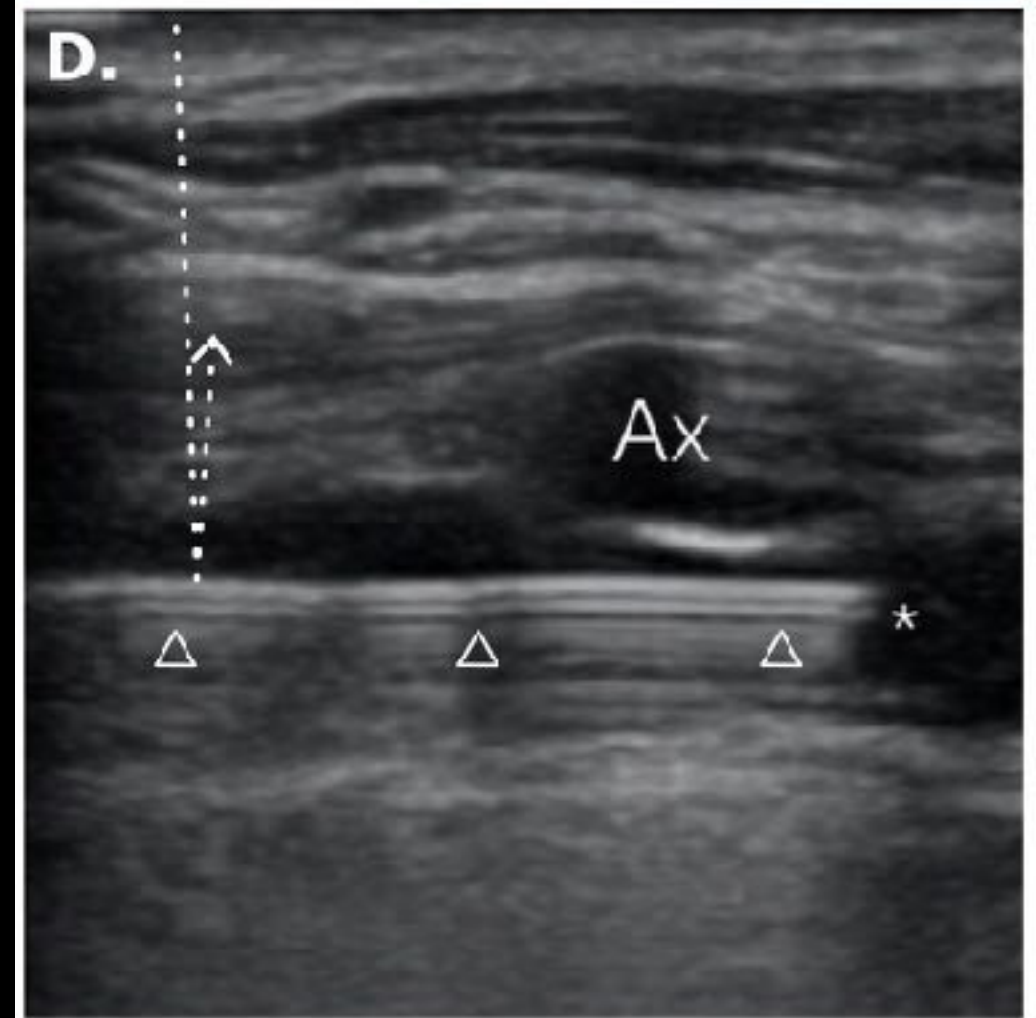
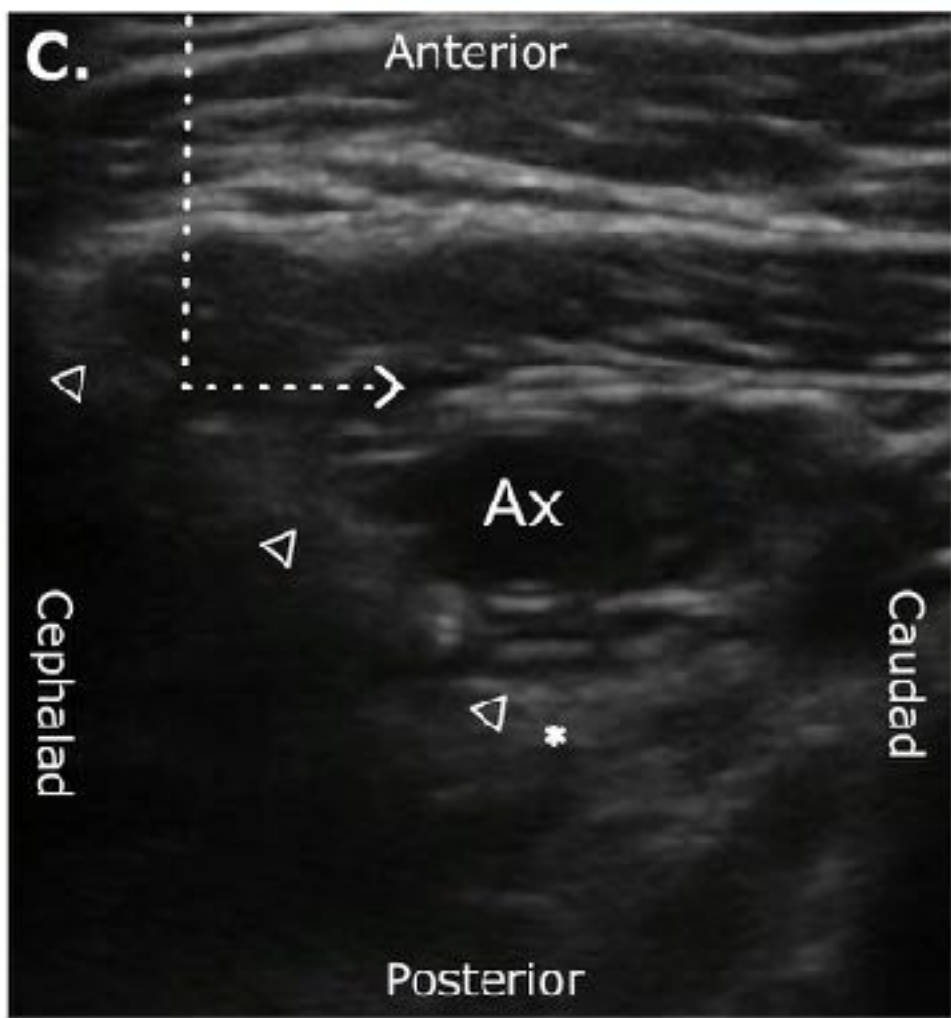
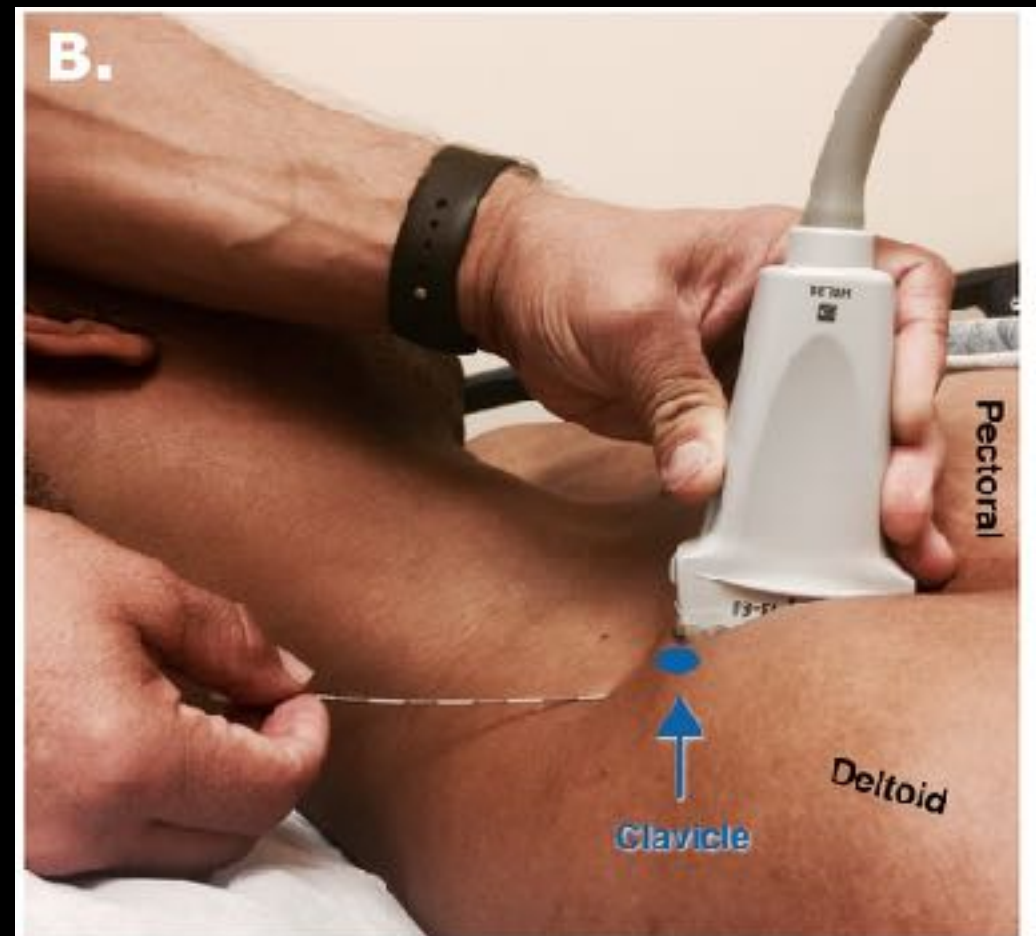
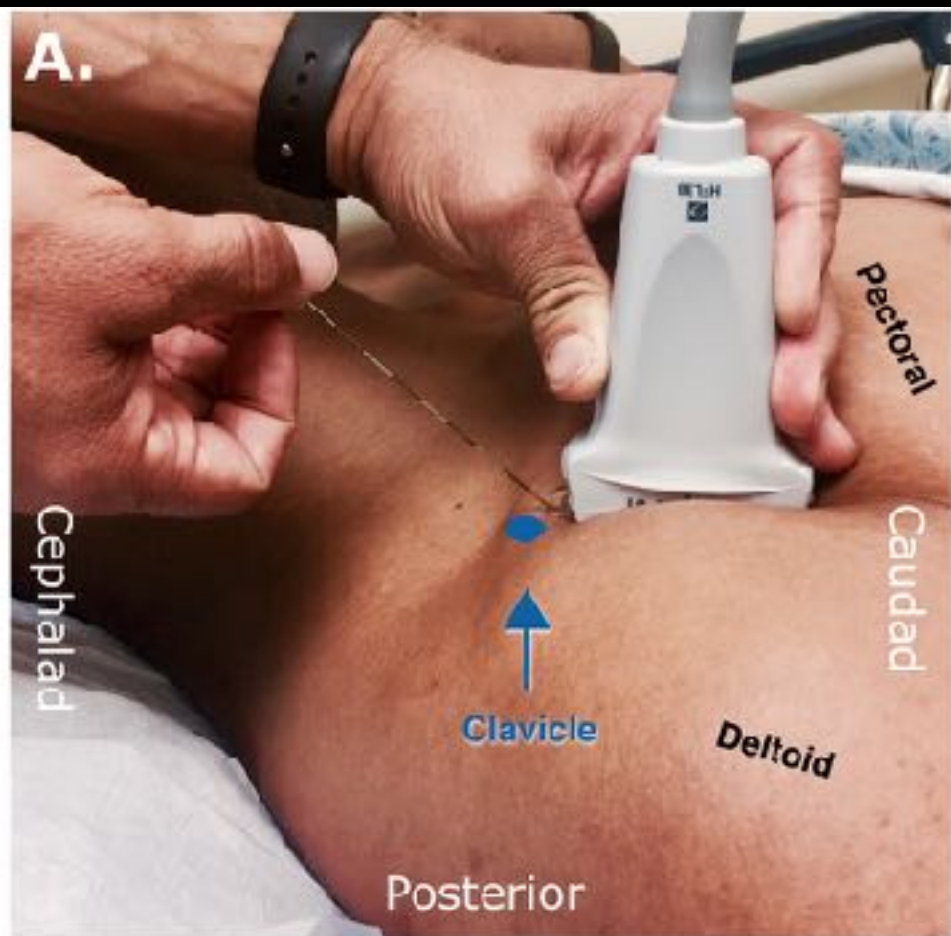
- Not getting anesthesia to the distal upper extremity - specifically Colles' fracture
- Supraclavicular or Interscalene Nerve Block not good enough?
- Classic Axillary Block not easy in the ACUTE setting (poor needle visualization + arm manipulation)

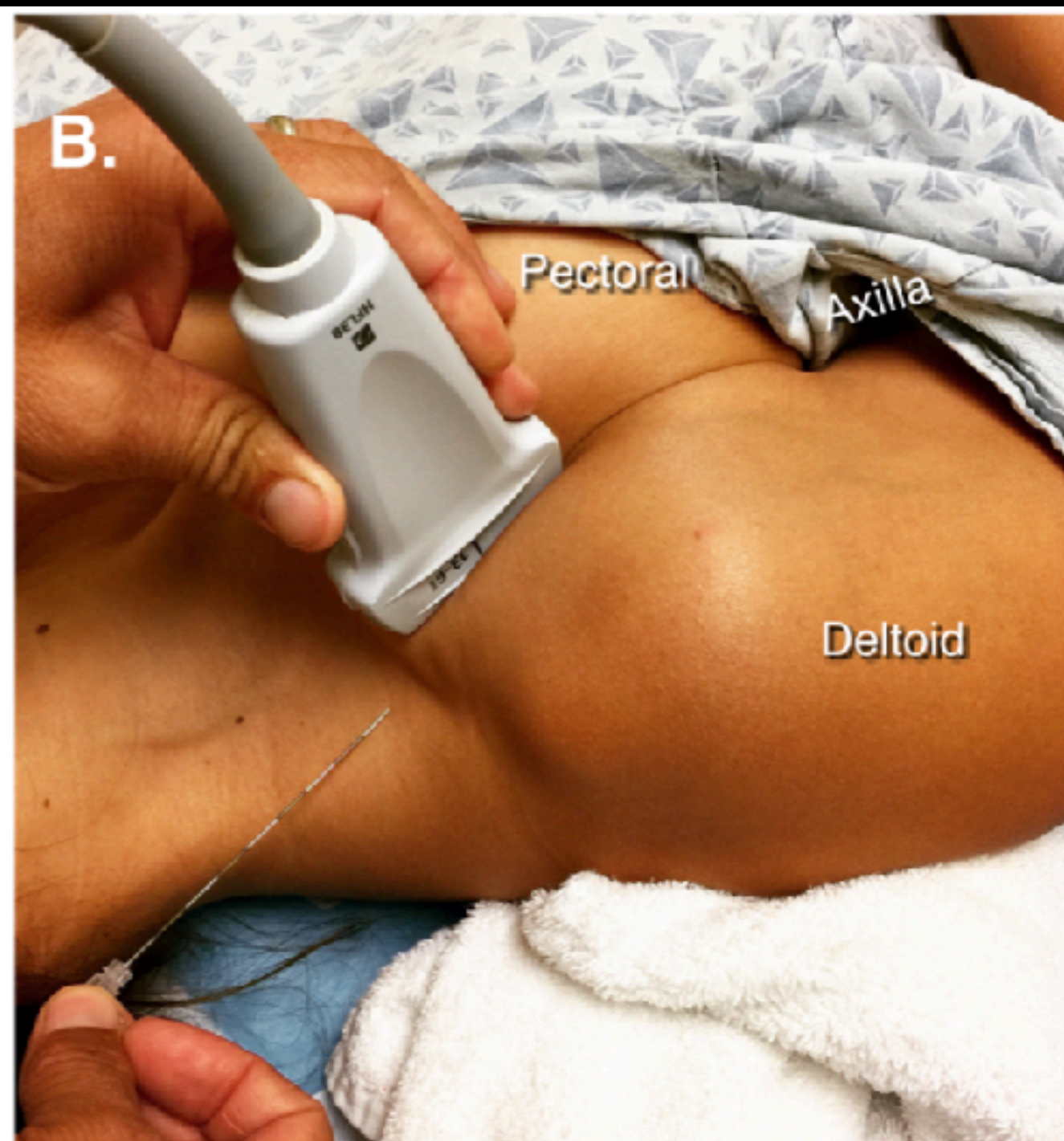
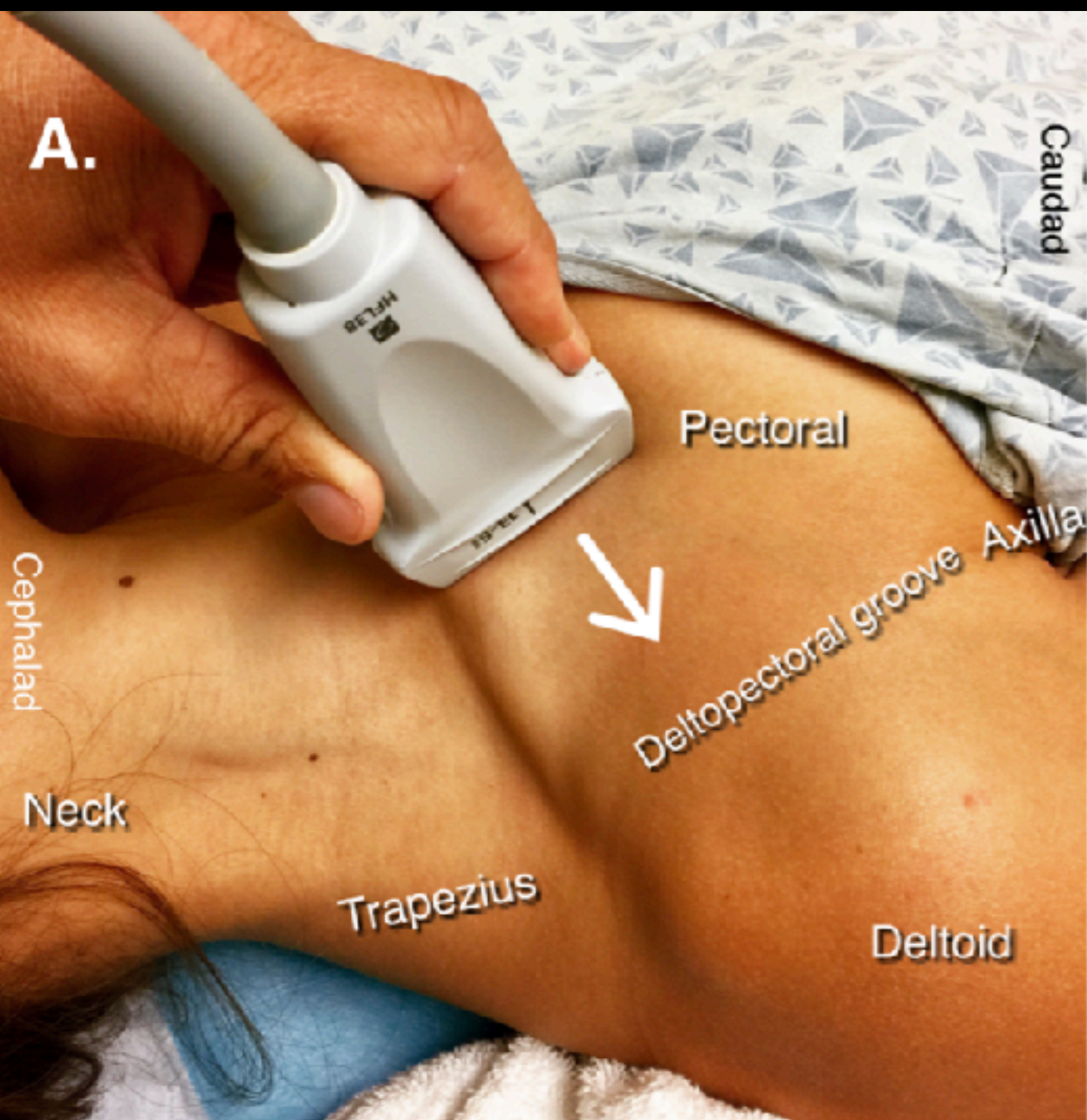
Classic Anesthesiology Approach

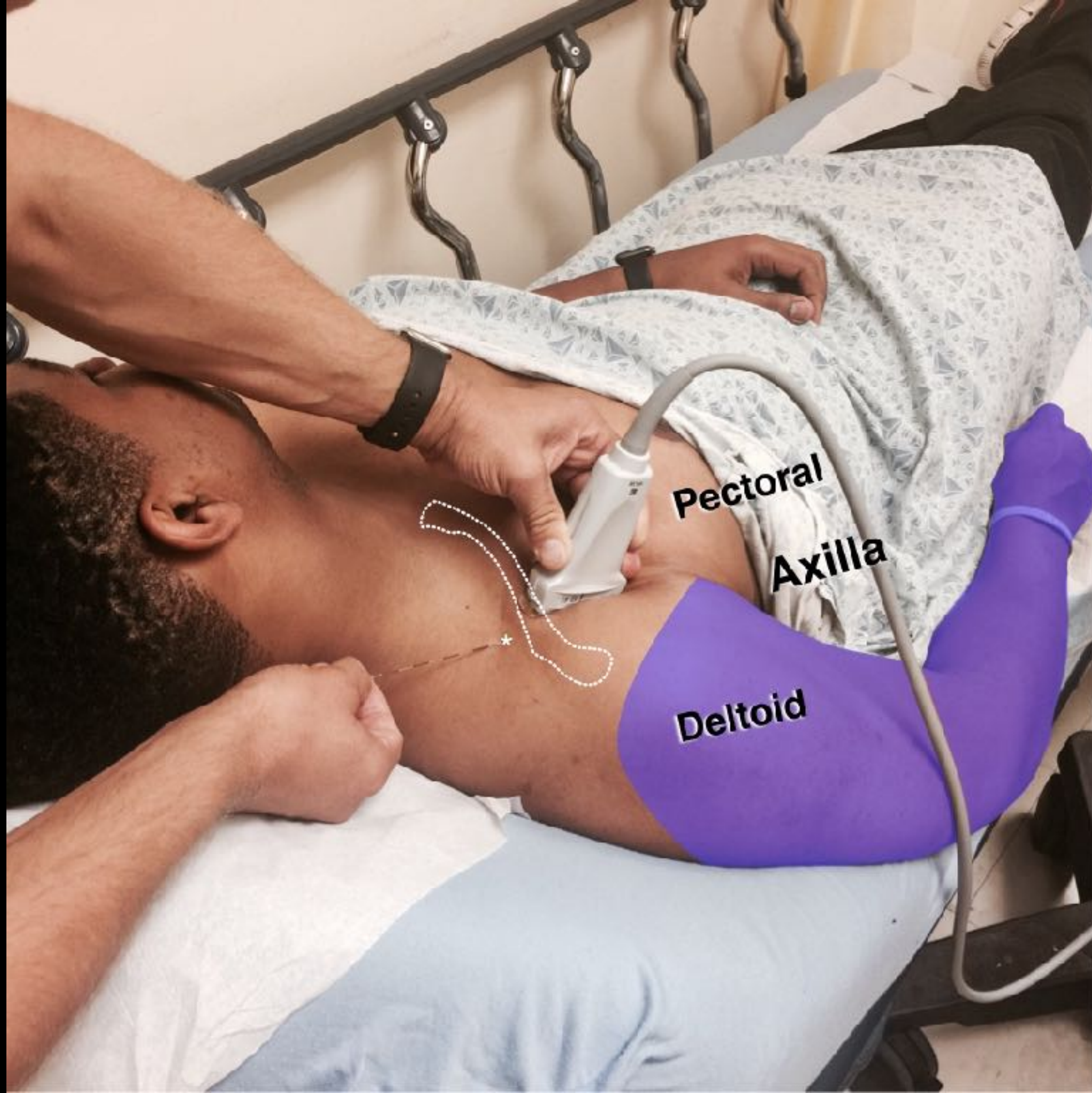








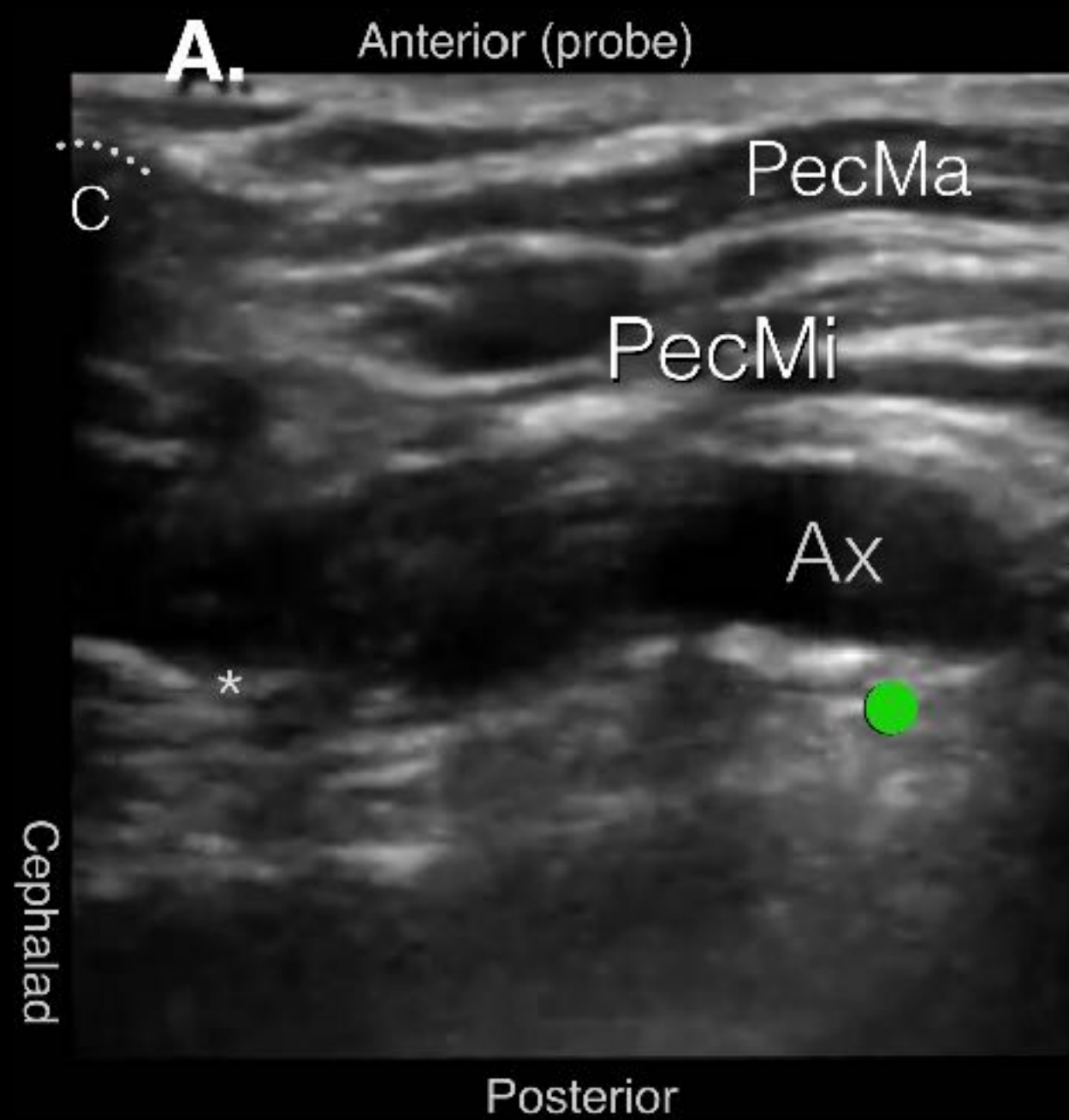


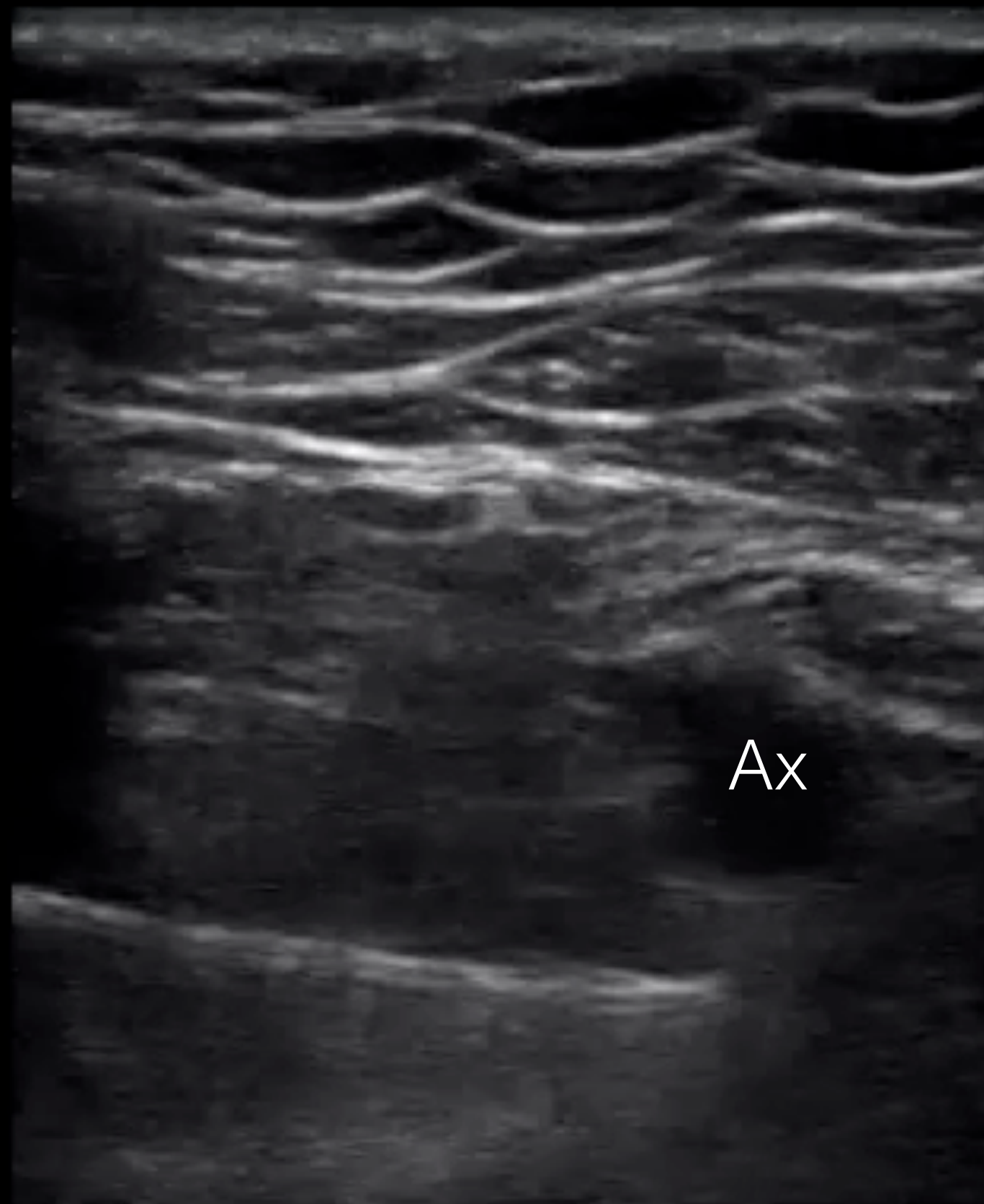


Pectoral

Axilla

Deltoid





Pec
Muscle

Ax



Pec
Muscle

20cc of
Anesthetic

Ax



Fall on Outstretched Hand

Bad COPD

Post Block



Serratus Anterior Plane Block

“SAPB” block

Planar Block

- Large Volume in a Fascial Plane
- 20cc anesthetic + 20cc Normal Saline
- Clinical utility = Rib Fractures, Zoster, ...
- **Game Changer**

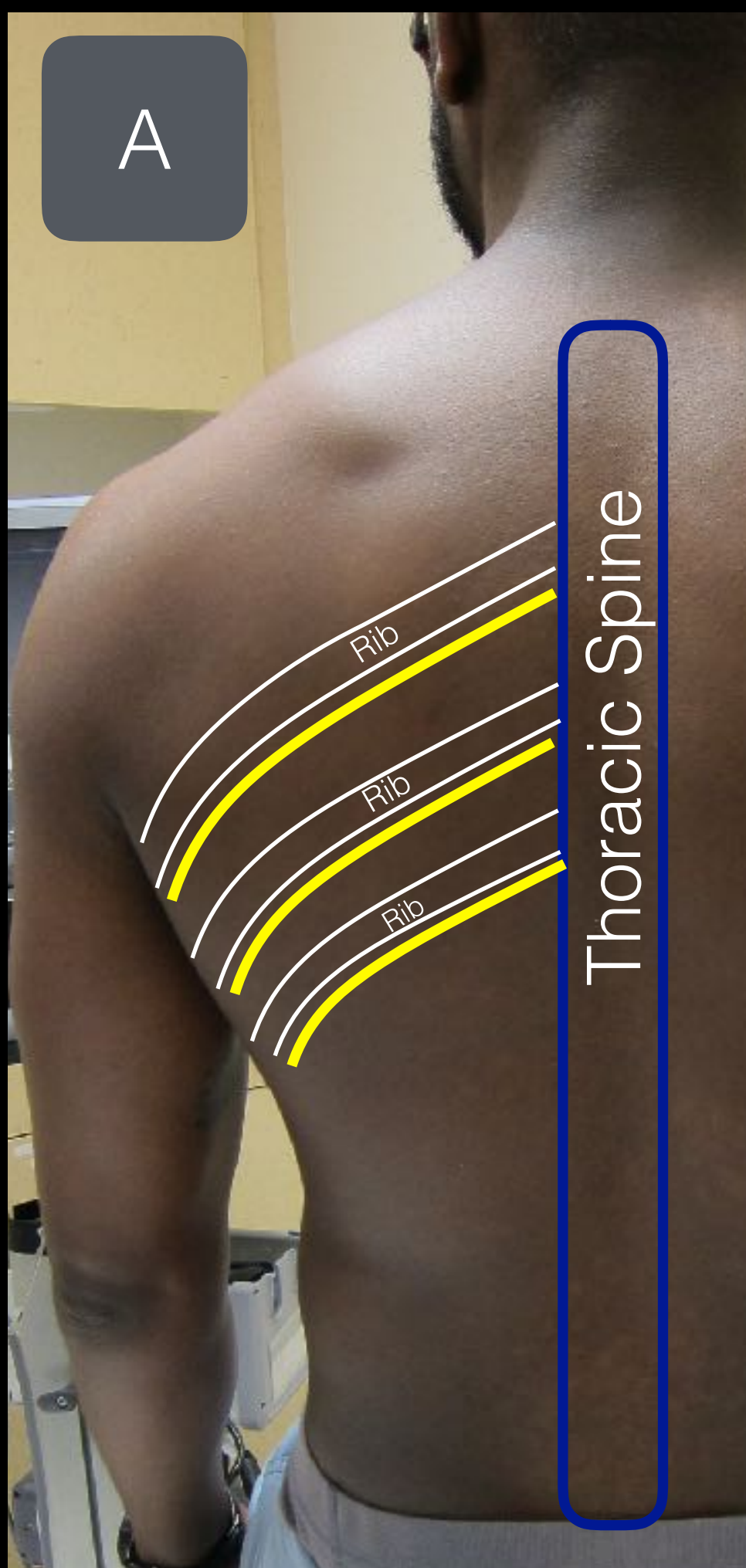
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Rib

Rib

Rib

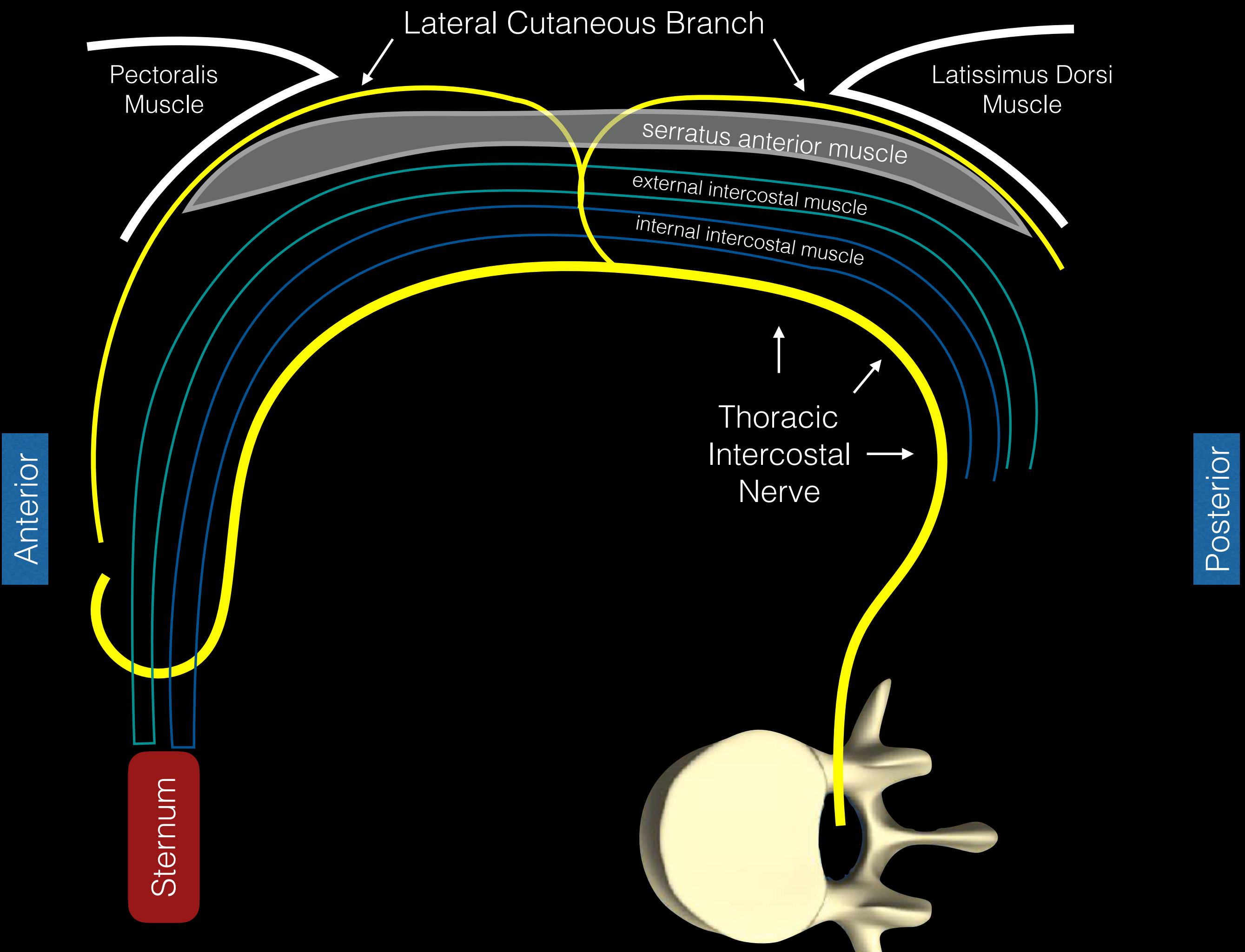
Thoracic Spine



Anterior



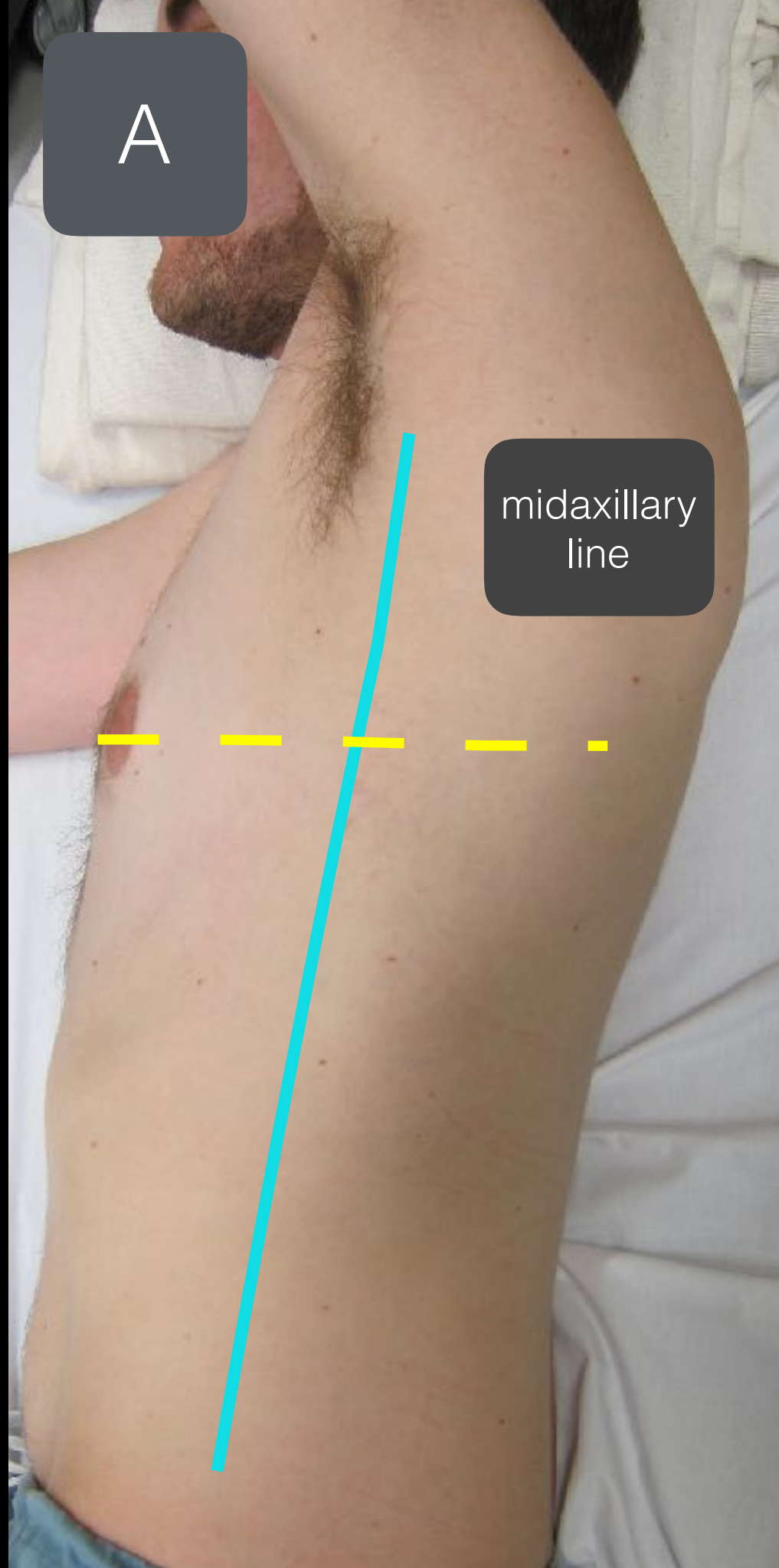
Posterior

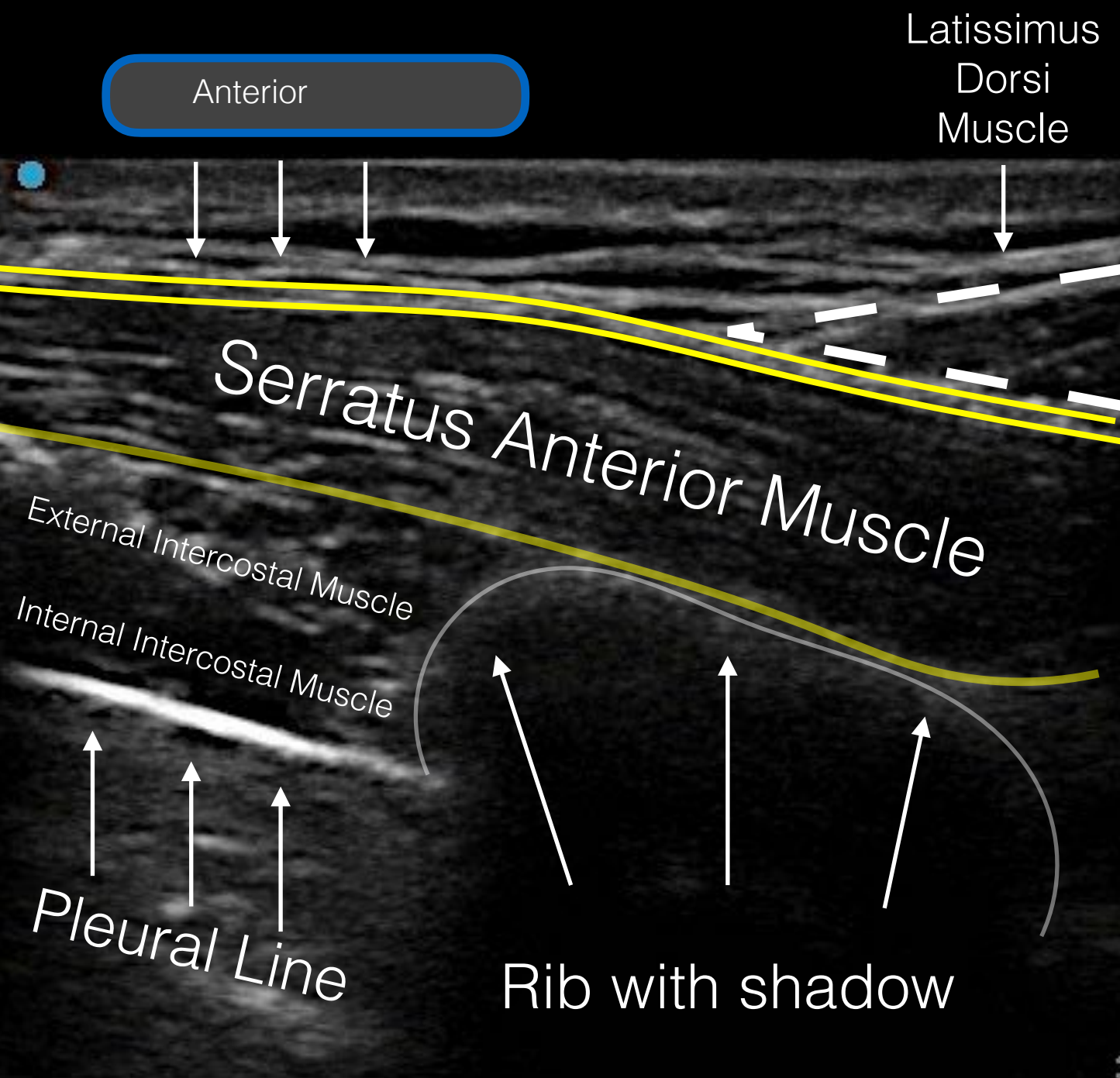


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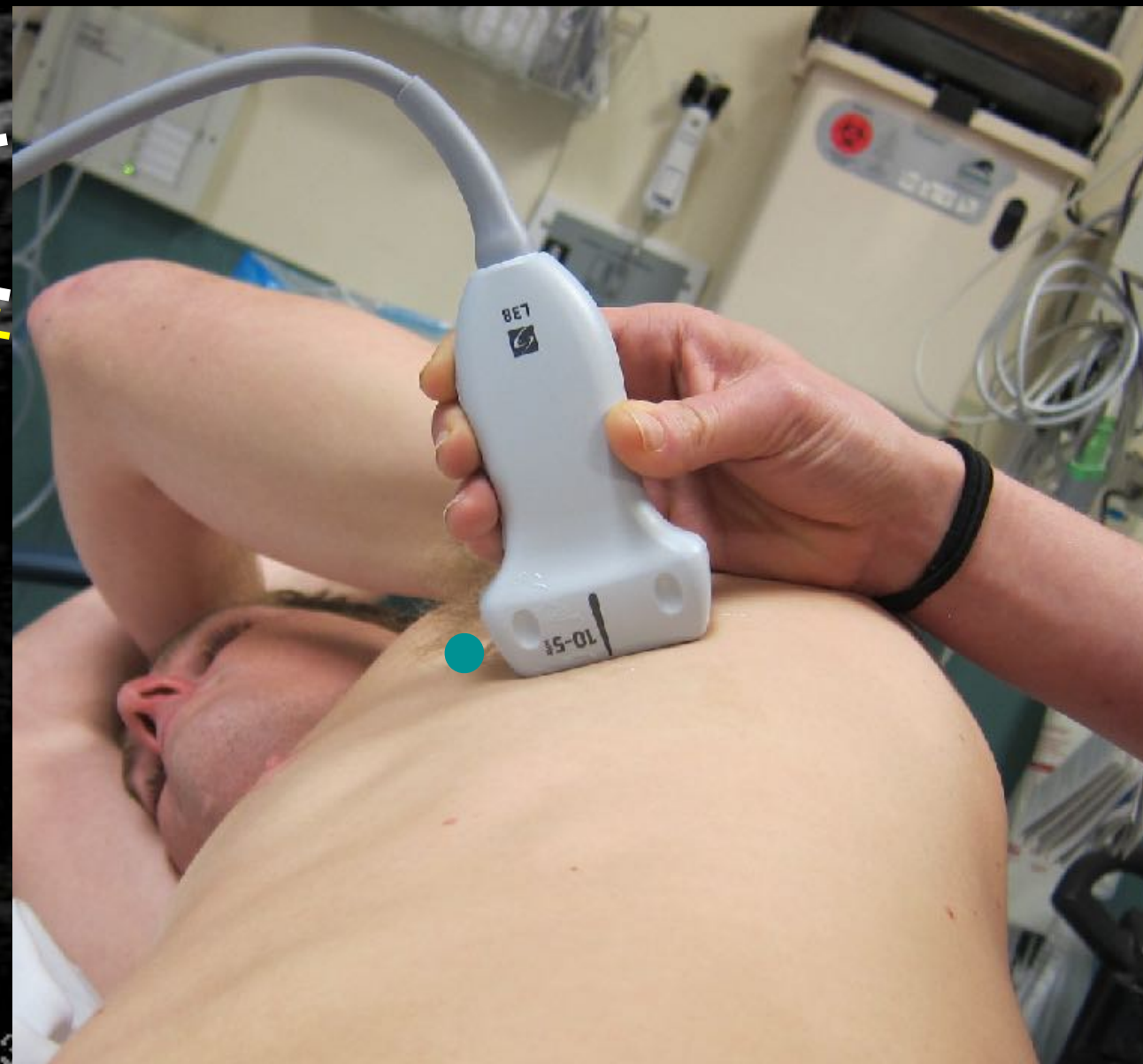
midaxillary
line

B

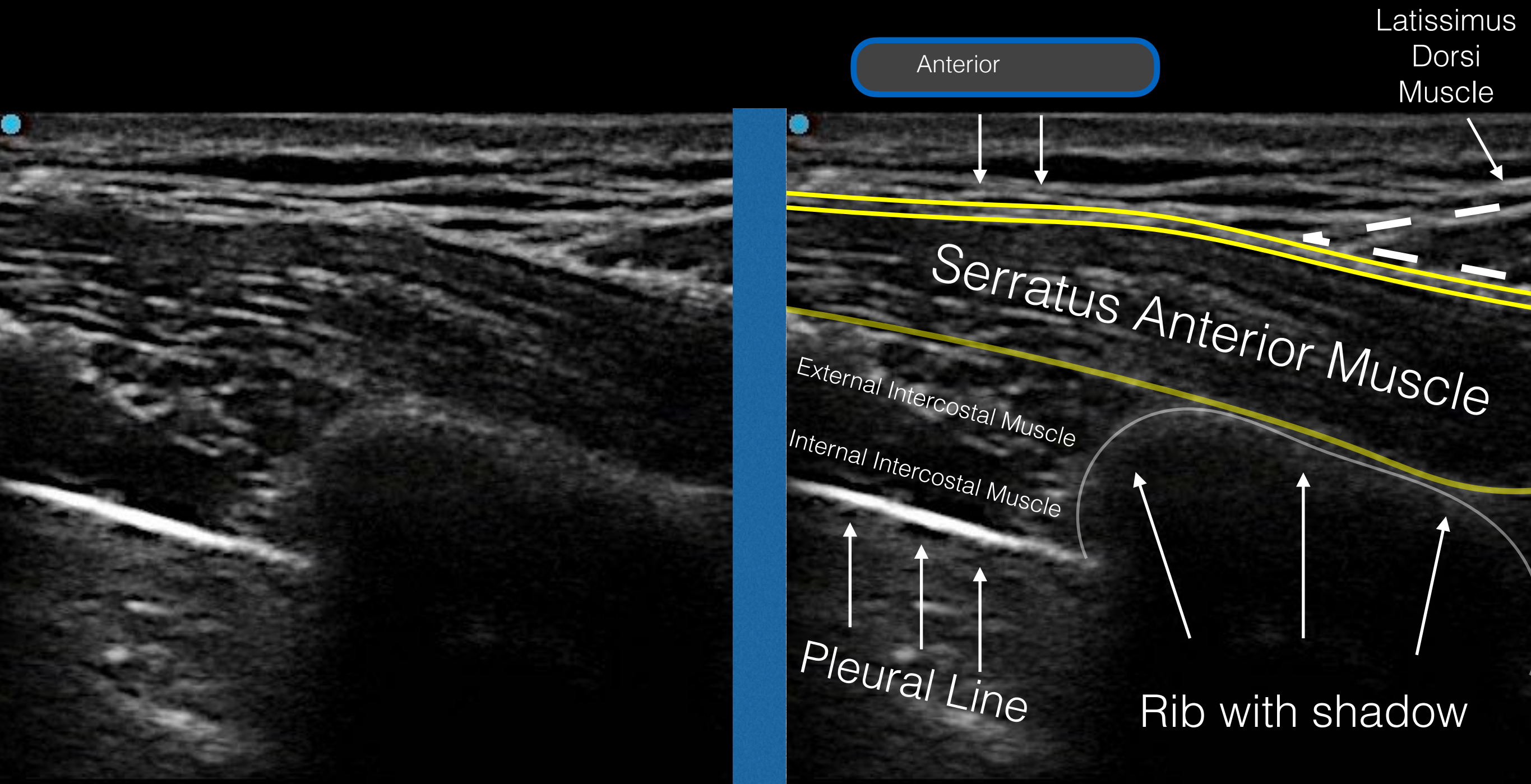




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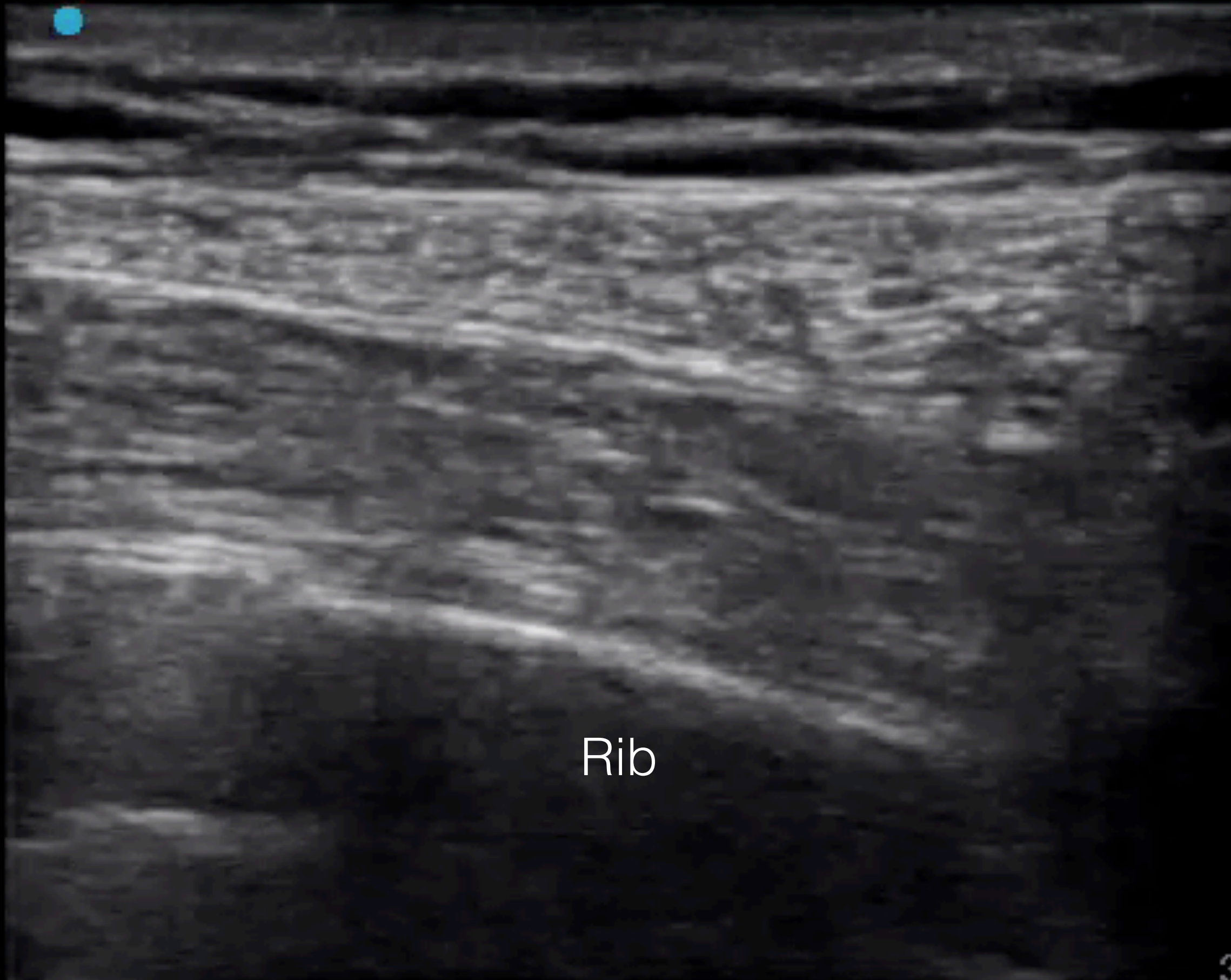
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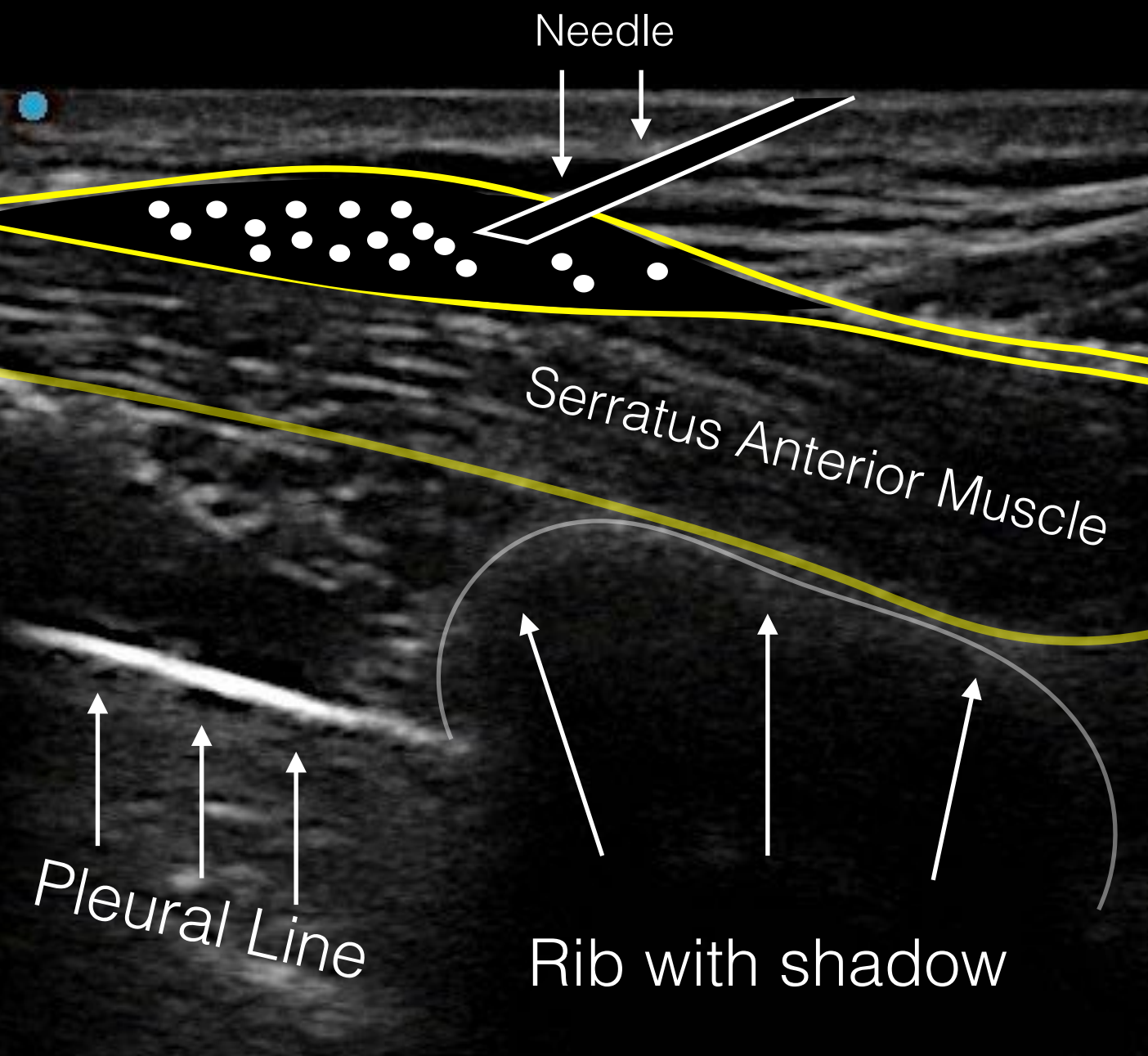
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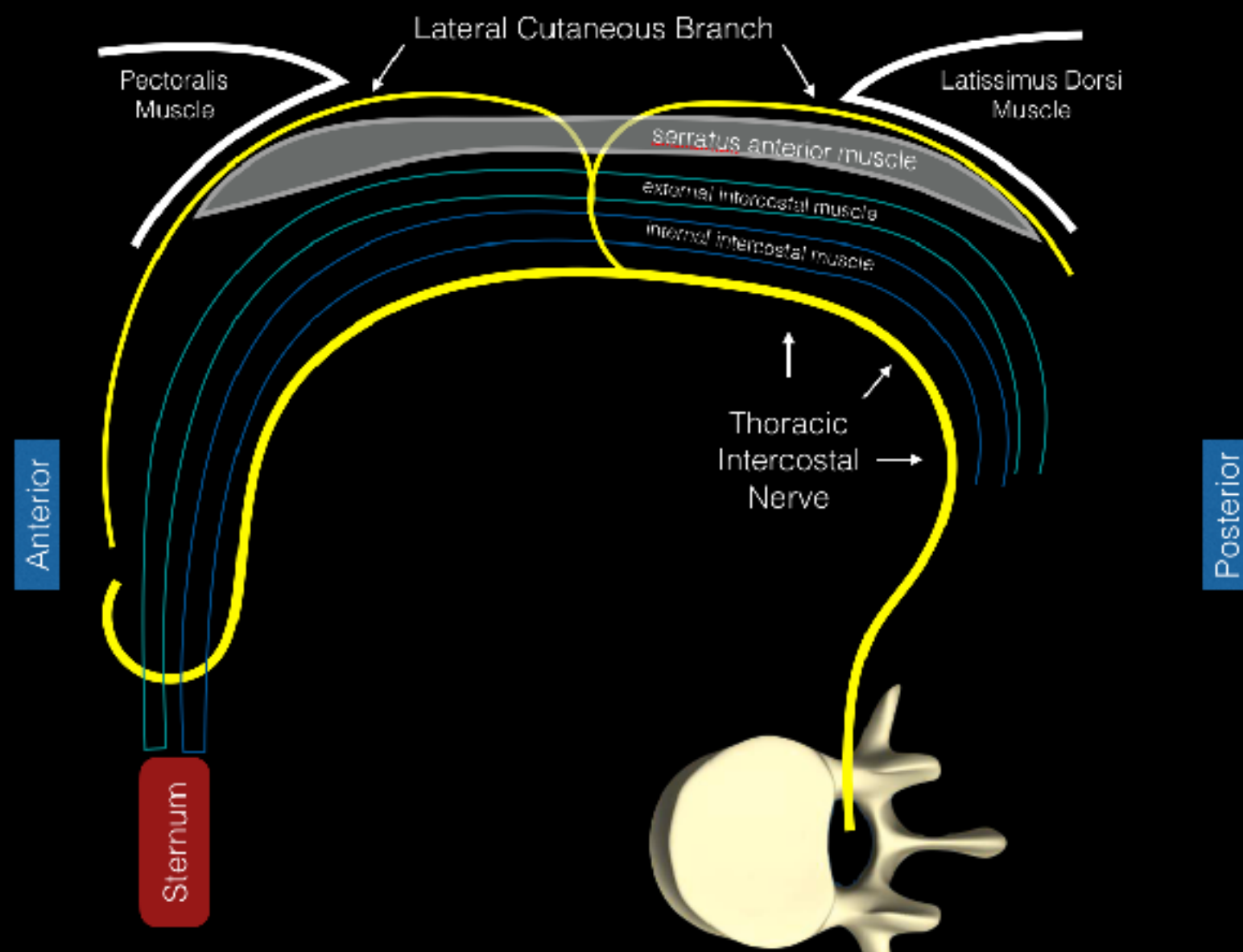
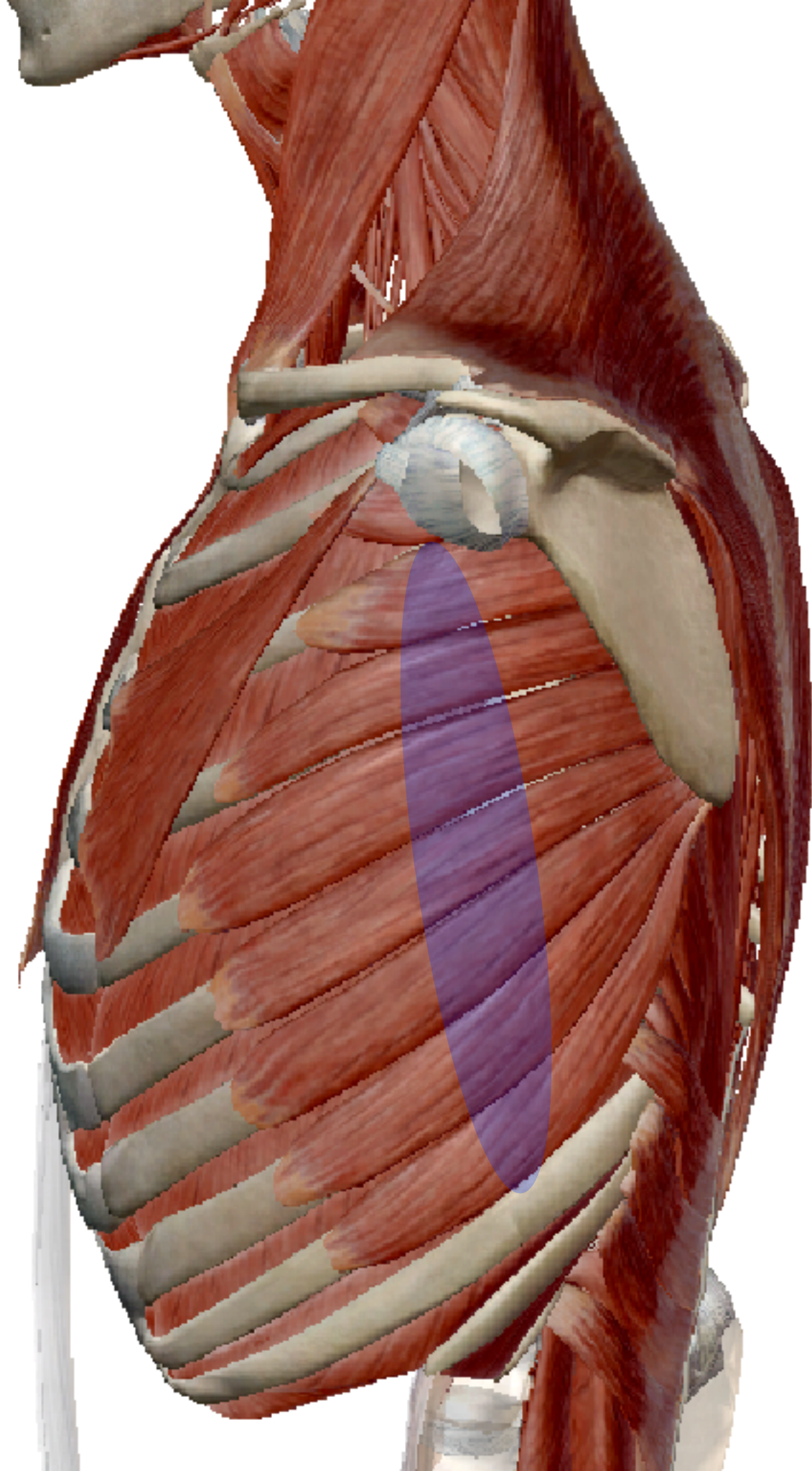
Rib



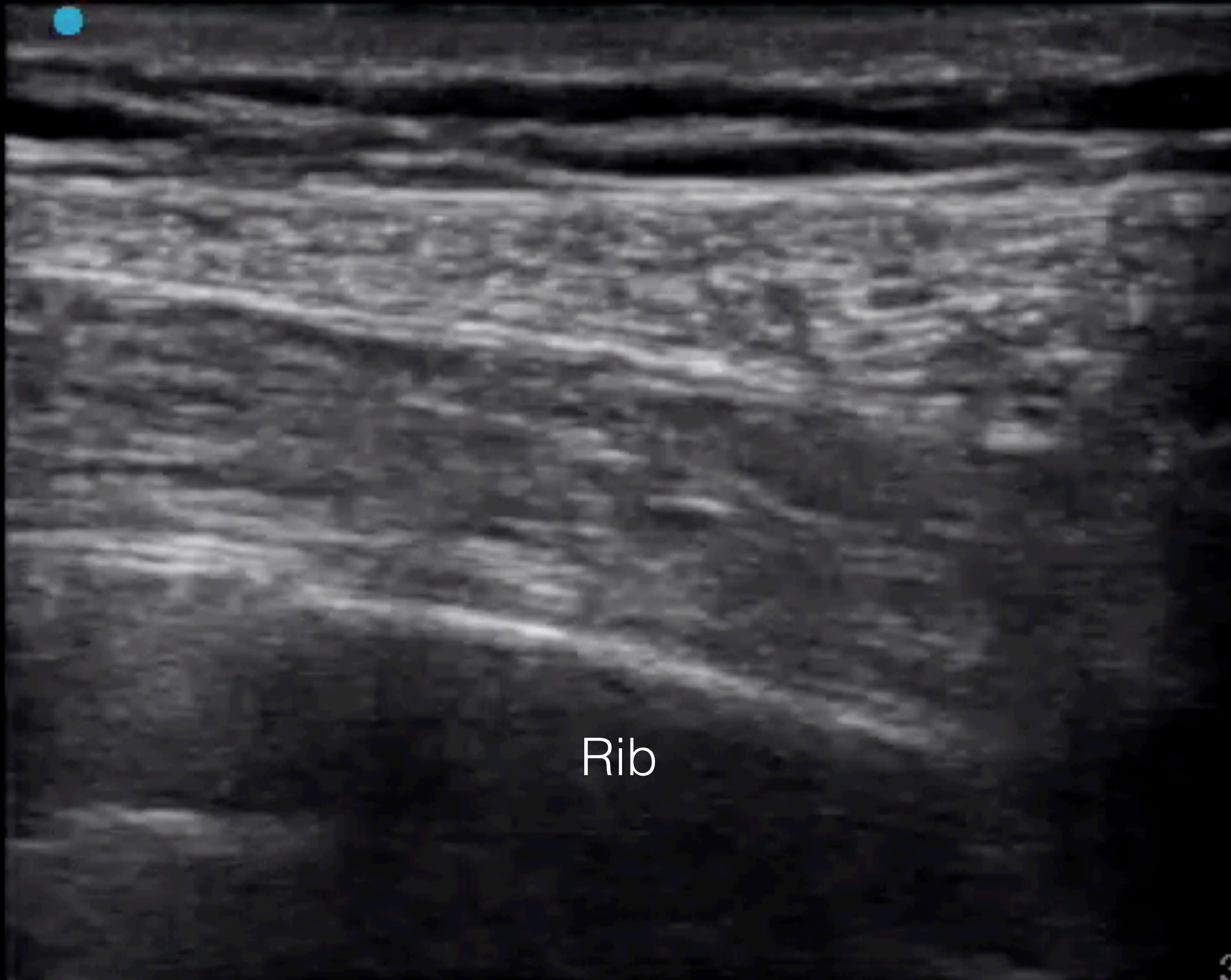
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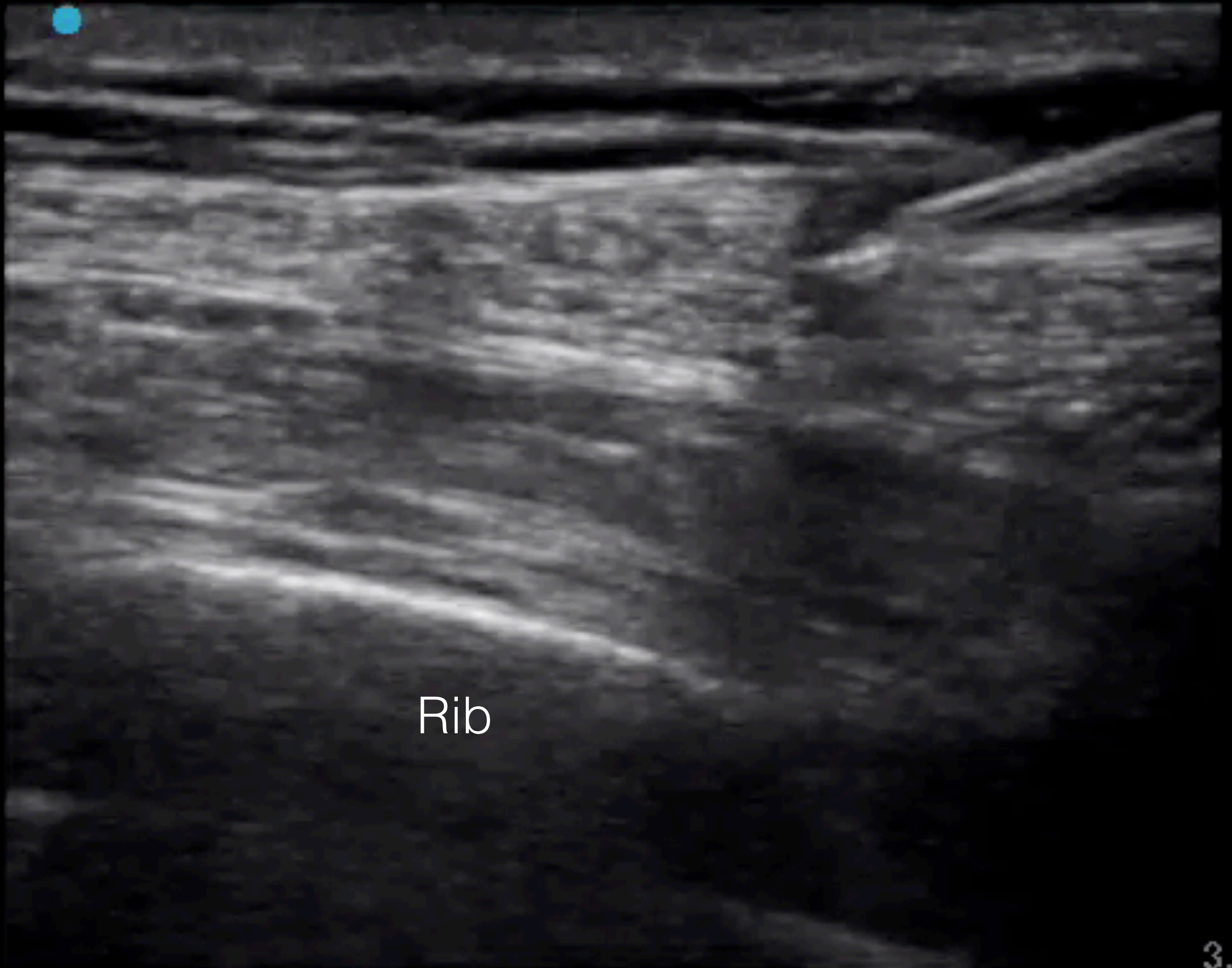


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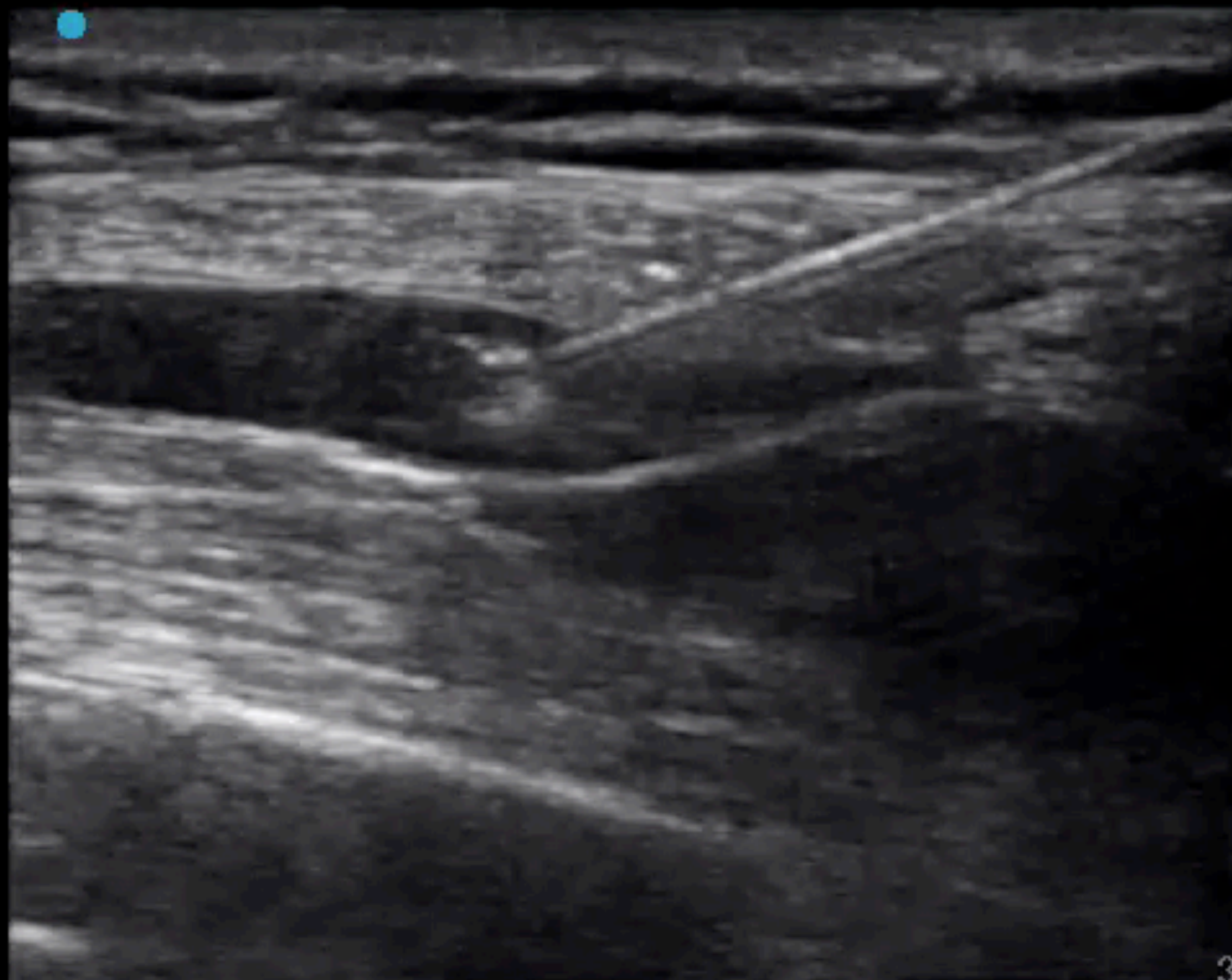
Rib

MB



Rib

MB



3.1

Summary

- The future of pain management is an active process
- Learn Regional Innervation
- Find blocks that work in your clinical practice

Questions?

@NagdevArun