

# Ultrasound Highlights

September 2022

Regional anesthesia addition!

There's been tons of great regional anesthesia in the department lately so I've picked three cases to highlight here.

Remember, if there is ever a block you want to do but don't feel like you have enough experience, feel free to page the ultrasound team (PIC 9374). If someone is available we will come give you a hand!

# Case 1: The signout disaster



This patient was seen in the peds ED at 5:58 am, which is just the absolute worst. Too much time left in the overnight shift to leave it for the day team, but performing a sedation is going to cause you to stay late and miss breakfast, the most important meal of the day. (Please follow up with Dr. Sande regarding importance of post night shift burritos)

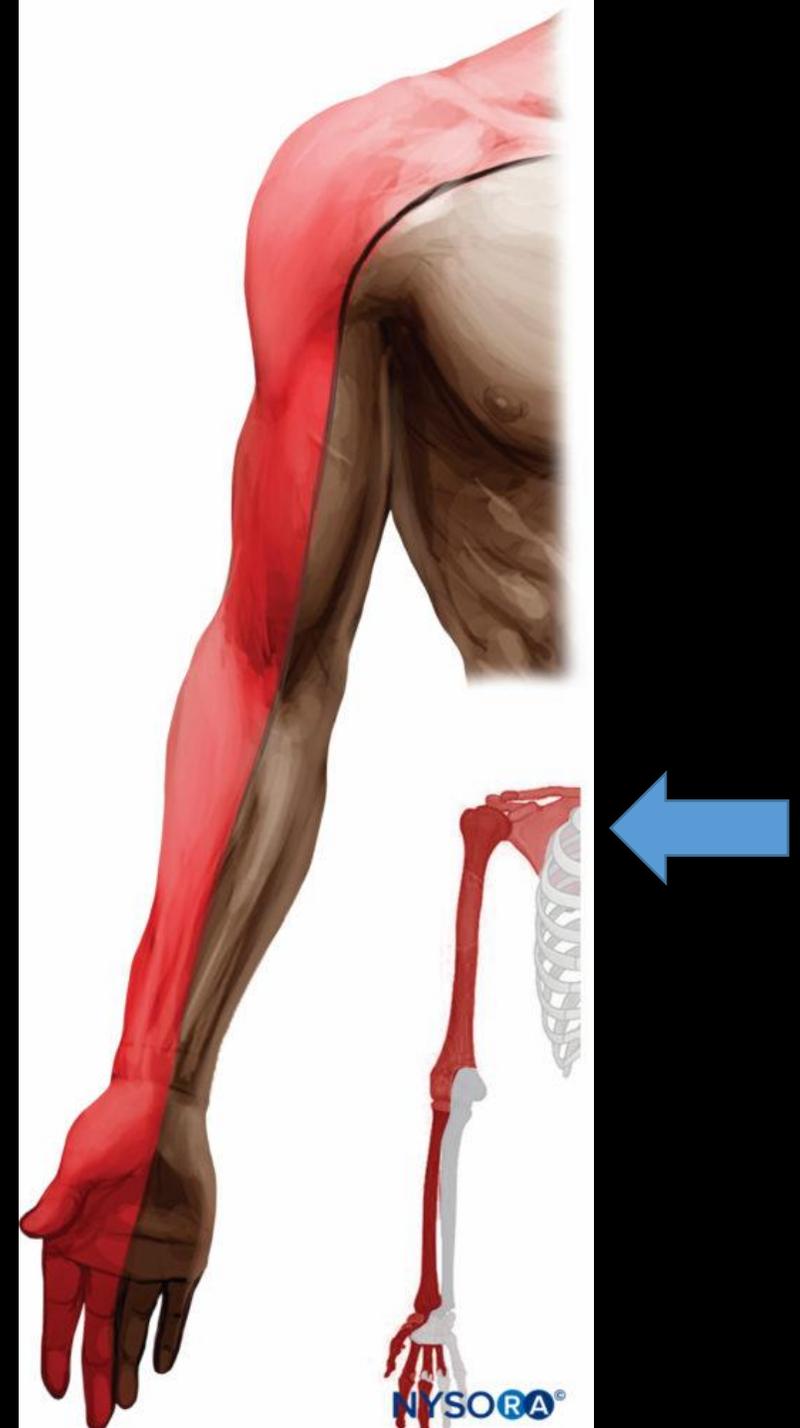
Signing out sedations is a cardinal sin in emergency medicine.

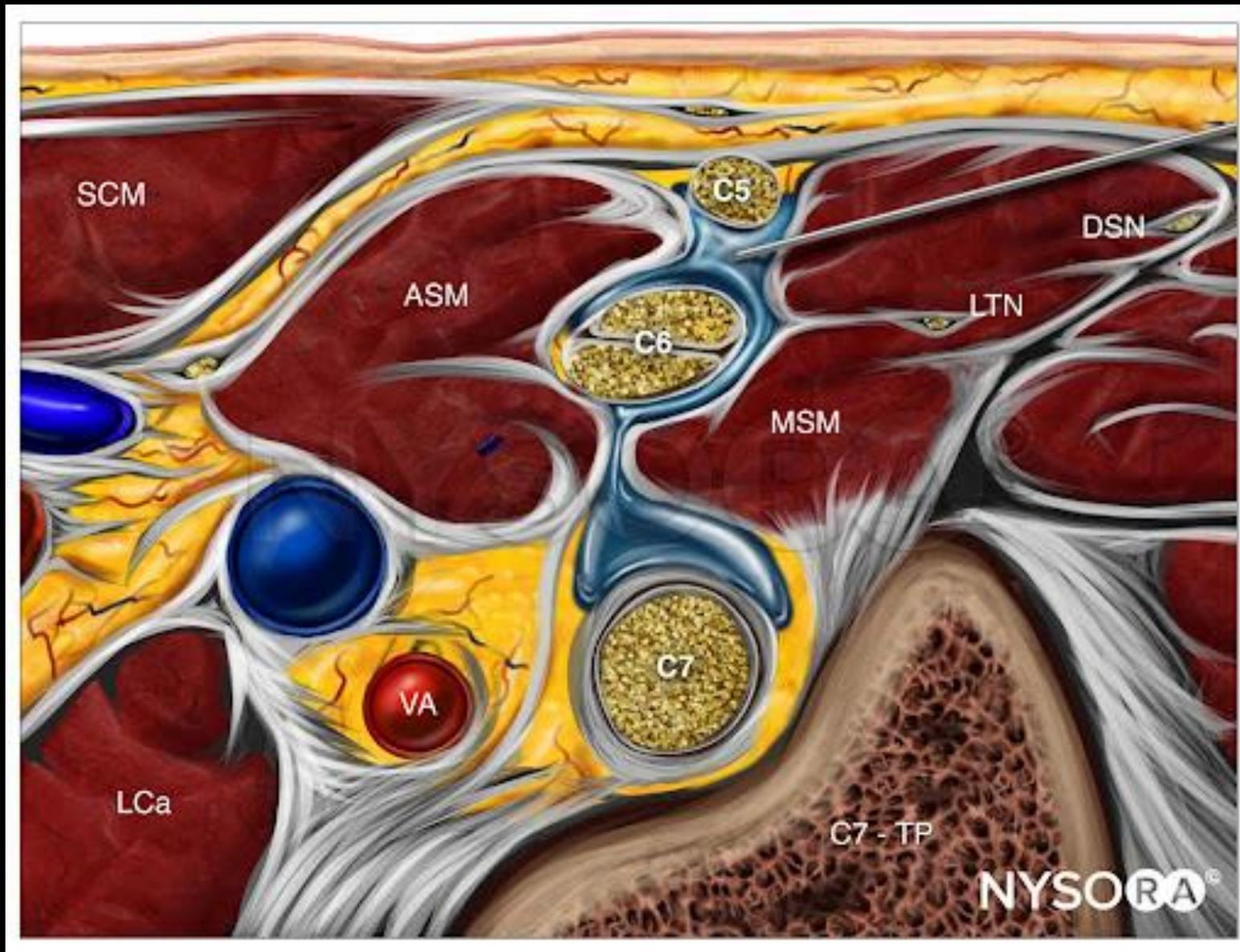
# options

- Intra-articular lidocaine and manipulation
- Hanging with traction
- Change the chief complaint on the board and pretend you didn't see them
- Interscalene nerve block!

# Interscalene Block

- Achieves anesthesia of the entire shoulder by anesthetizing nerve roots C5, C6, and C7 in the brachial plexus
- Use roughly 10cc of the available short acting anesthetic (lidocaine)
- No need for bupivacaine or other long acting agents, it will only take you a short time to reduce the shoulder

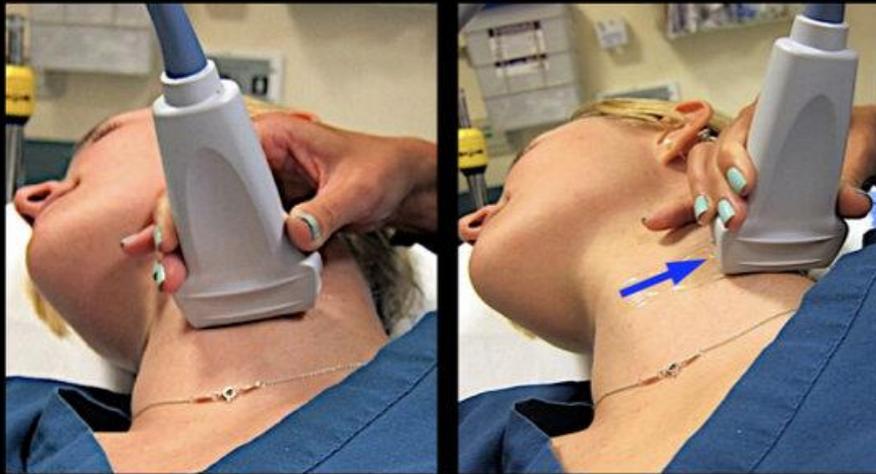




The selected nerves are located between the anterior and middle scalenes at roughly the level of the cricoid

## Interscalene Brachial Plexus Block

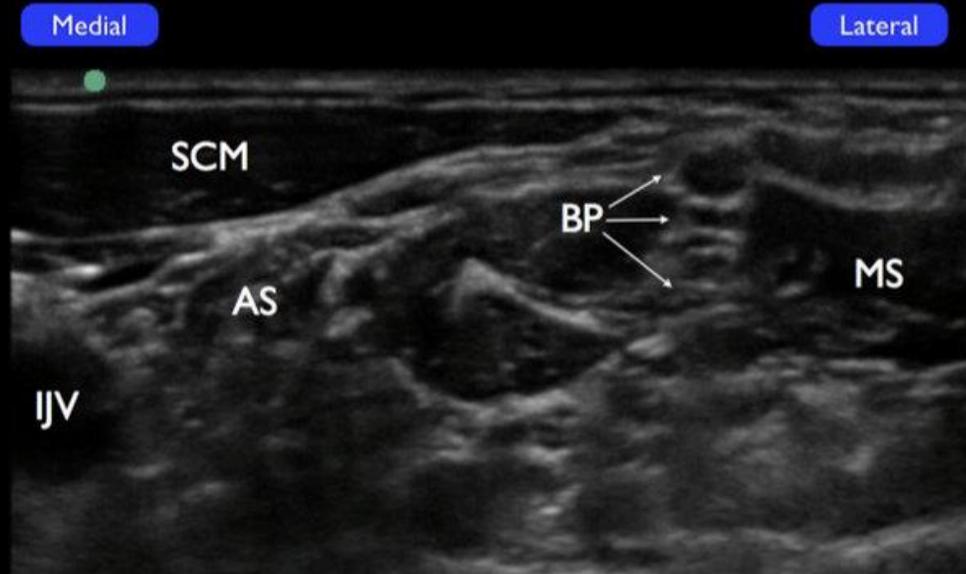
**1) Find familiar landmarks (internal jugular vein (IJV) and carotid artery)**



Move probe lateral

**2) Approx at level of cricoid cartilage, move the probe lateral**

**3) Notice tapering sternocleidomastoid (SCM) + visualization of anterior scalene(AS) & middle scalene(MS) muscles**



A helpful guide to finding the nerves

Patient positioning:

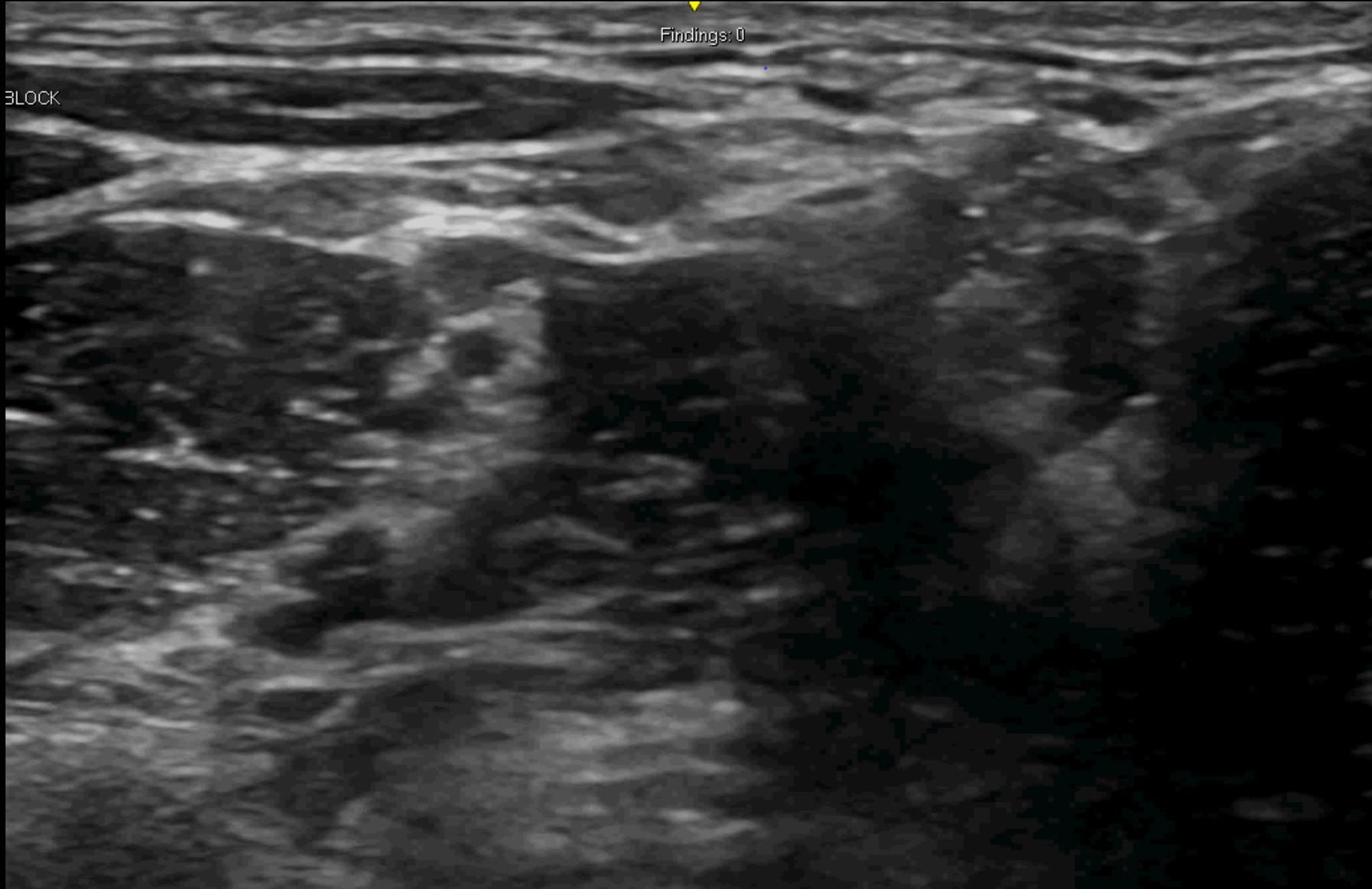
1. Head turned away, exposing the SCM
2. In-plane needle technique
3. Ultrasound placed on the opposite side of the bed so you can see the screen easily



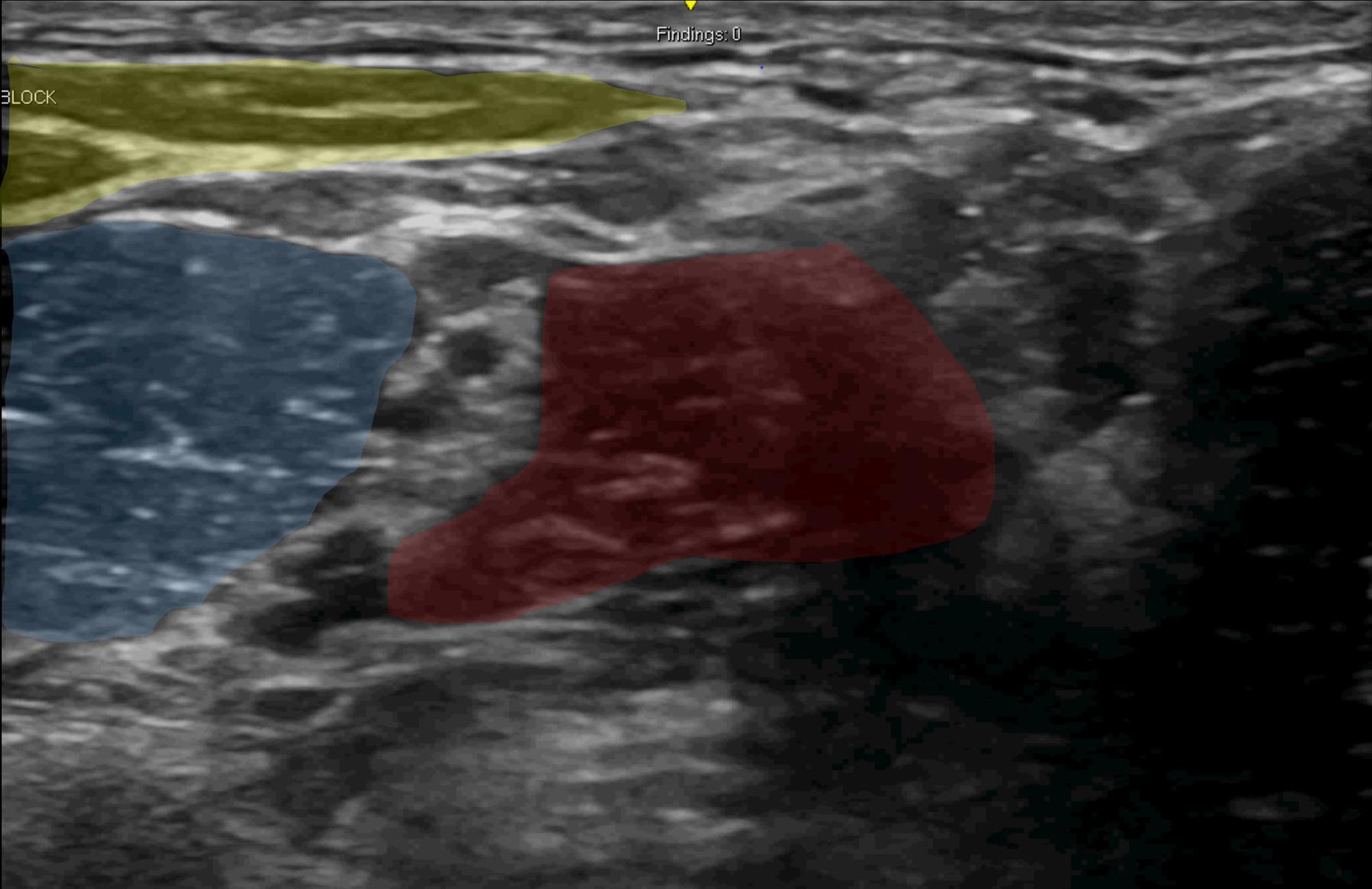
**Shoulder Roll**

**Direct View of  
US Screen**

# On to our case...

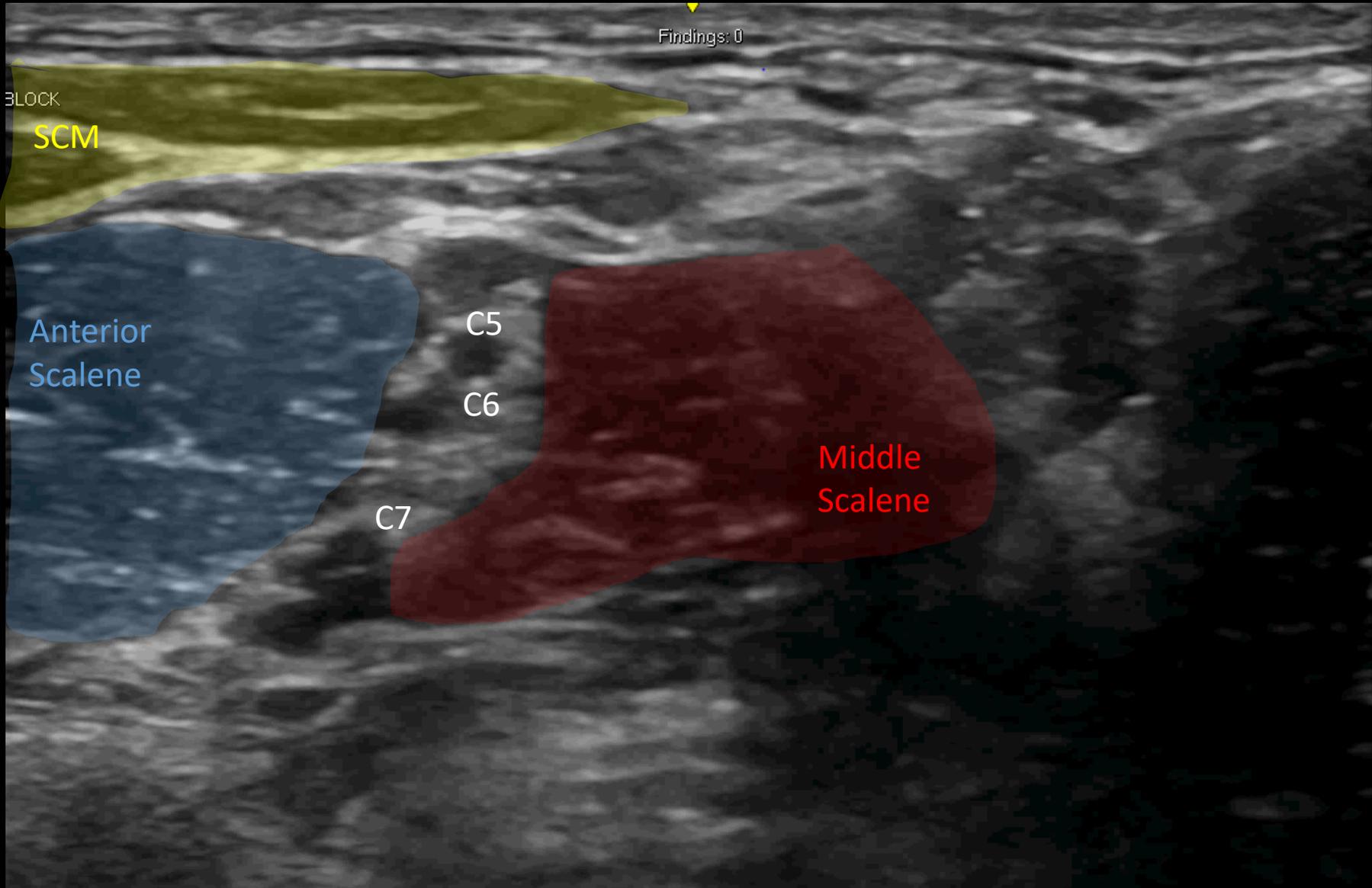


See if you can label the relevant structures here



Findings: 0

BLOCK



Findings: 0

BLOCK

SCM

Anterior  
Scalene

C5

C6

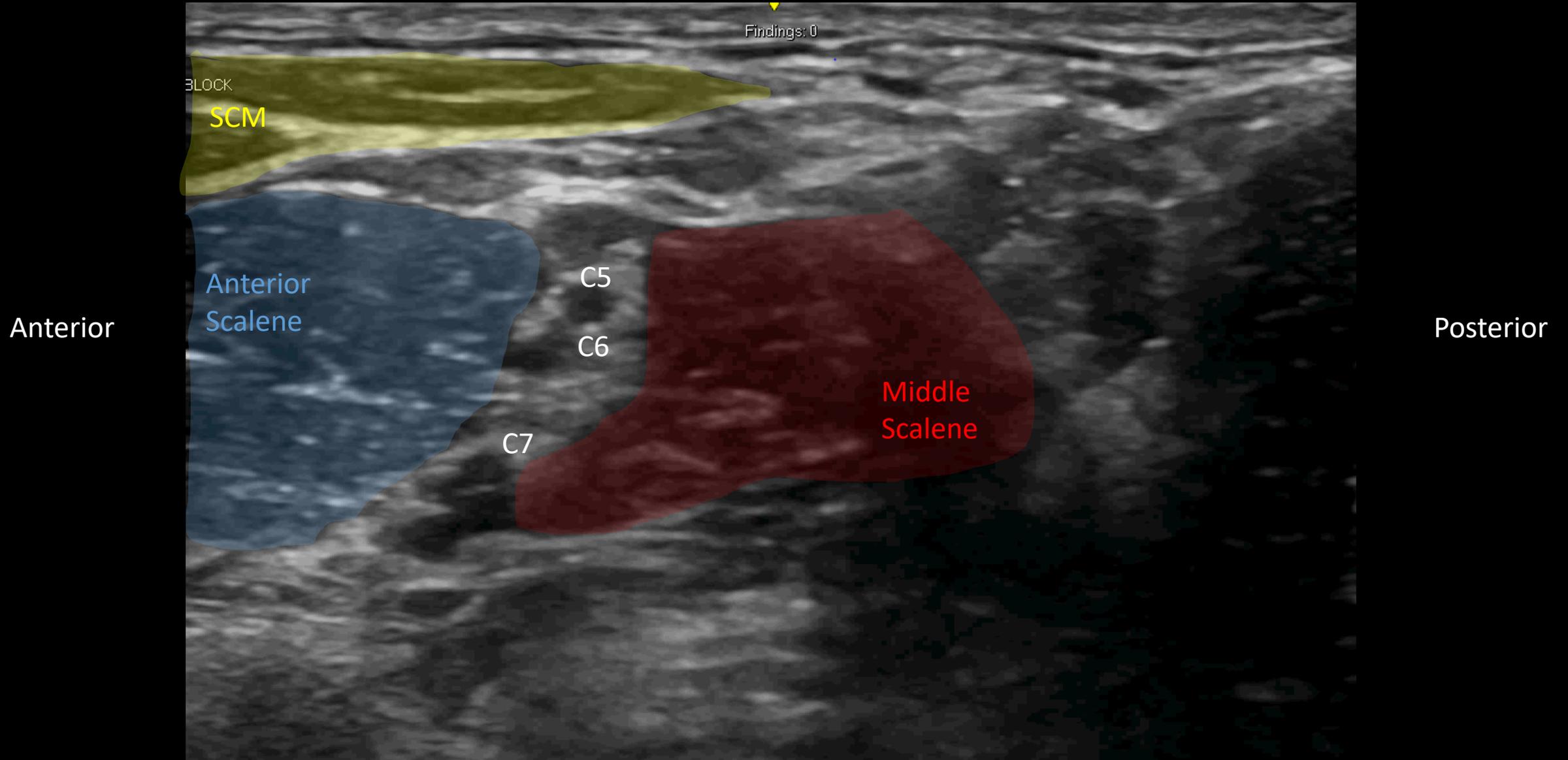
C7

Middle  
Scalene

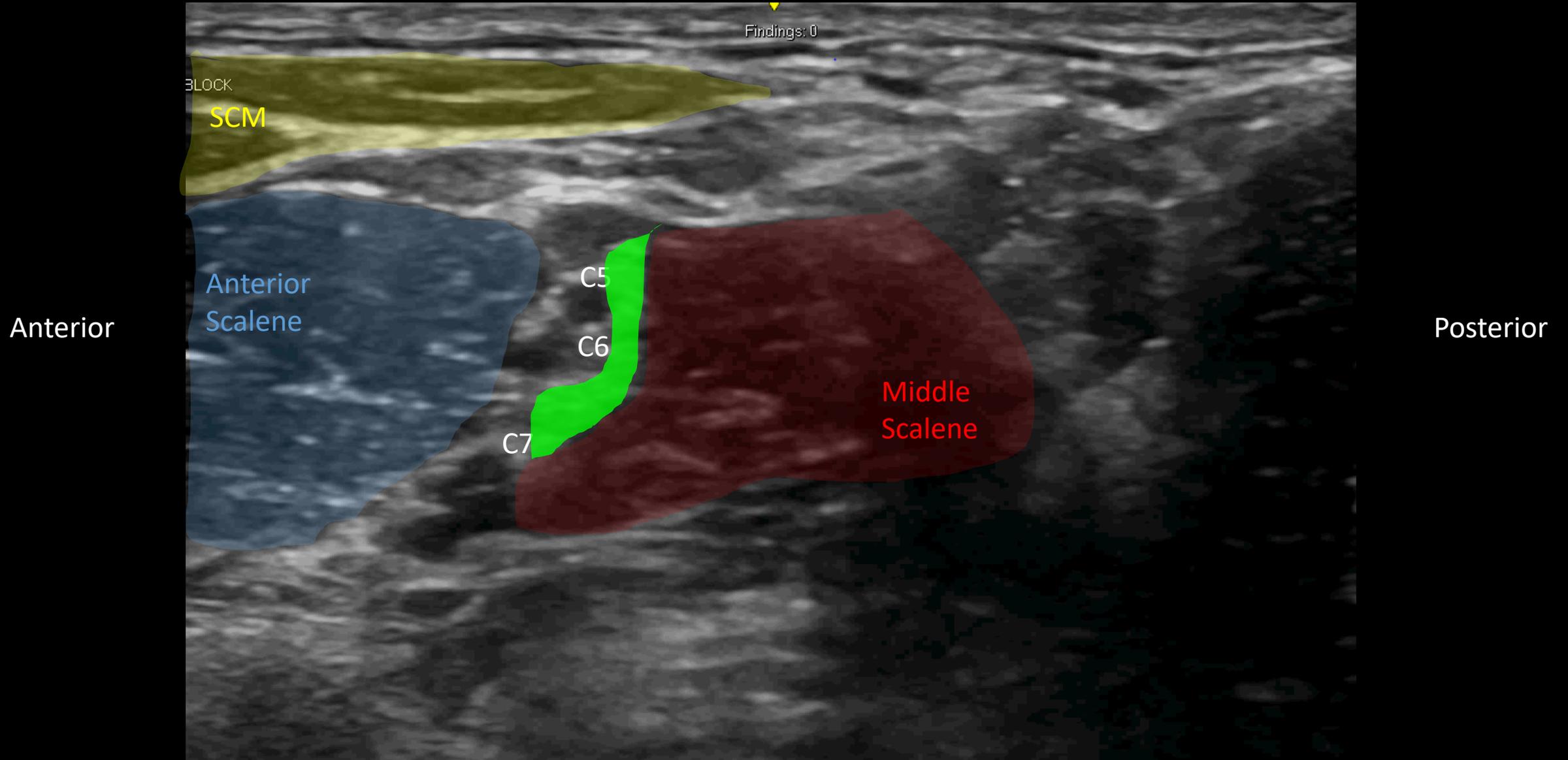
Anterior

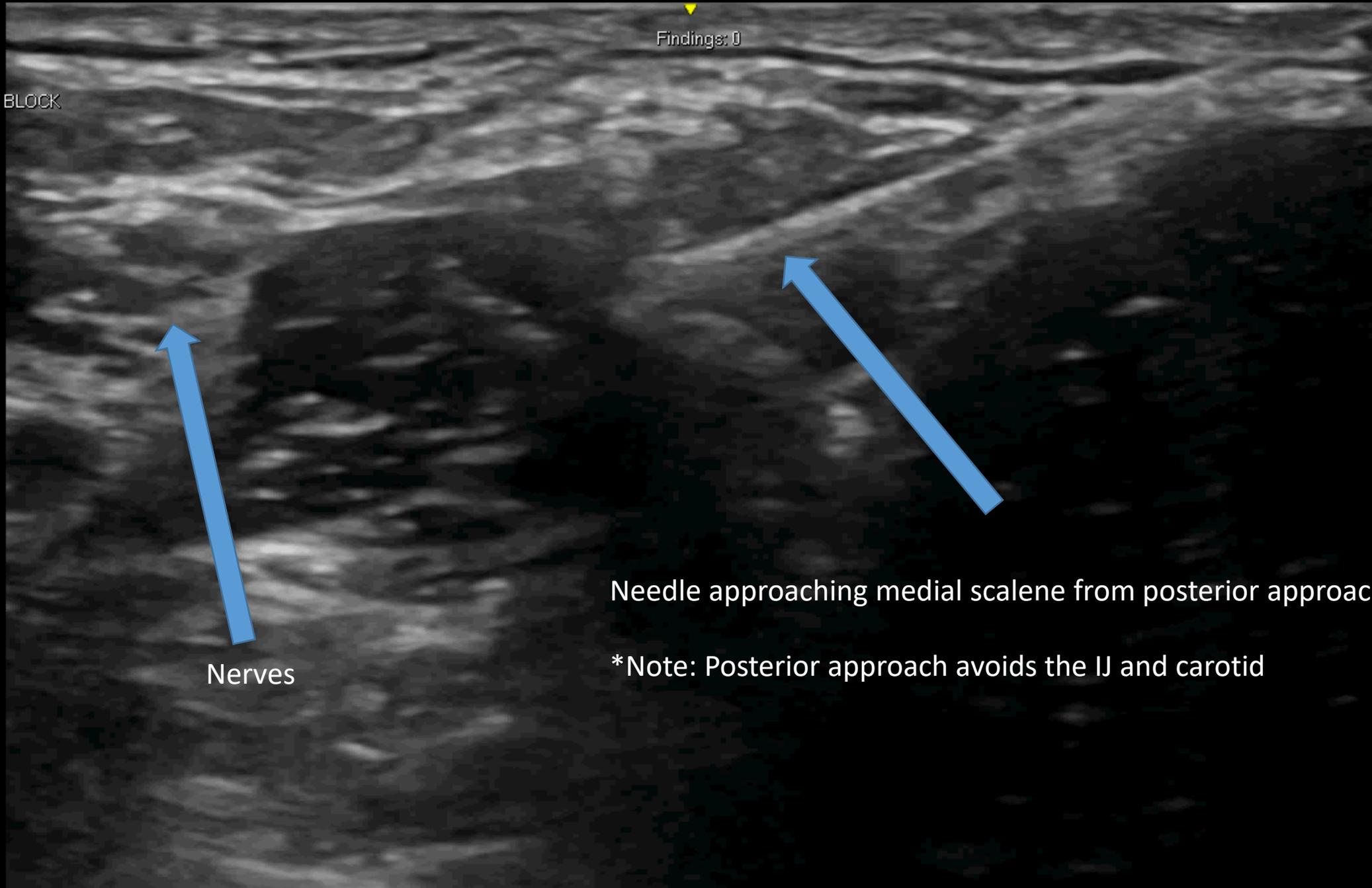
Posterior

Where do you want your lidocaine to end up?



Where do you want your lidocaine to end up?





BLOCK

Findings: 0

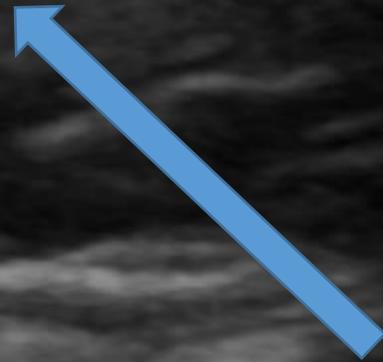
Nerves

Needle approaching medial scalene from posterior approach

\*Note: Posterior approach avoids the IJ and carotid

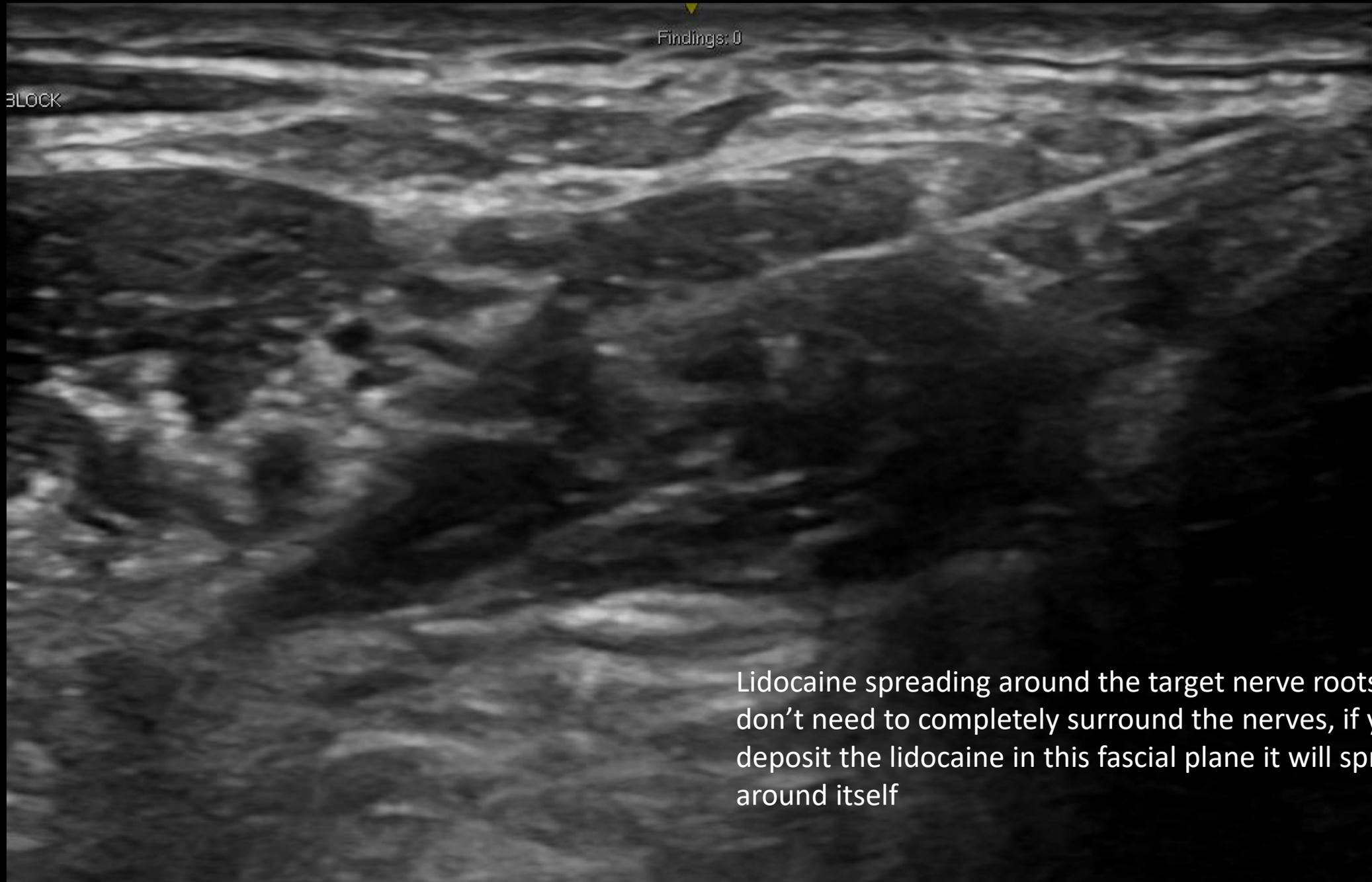
Findings: 0

BLOCK



Needle has gone through the middle scalene and is adjacent to the nerves. Lidocaine should be deposited here

\*Note: You'll feel a pop when you get through this fascial plane

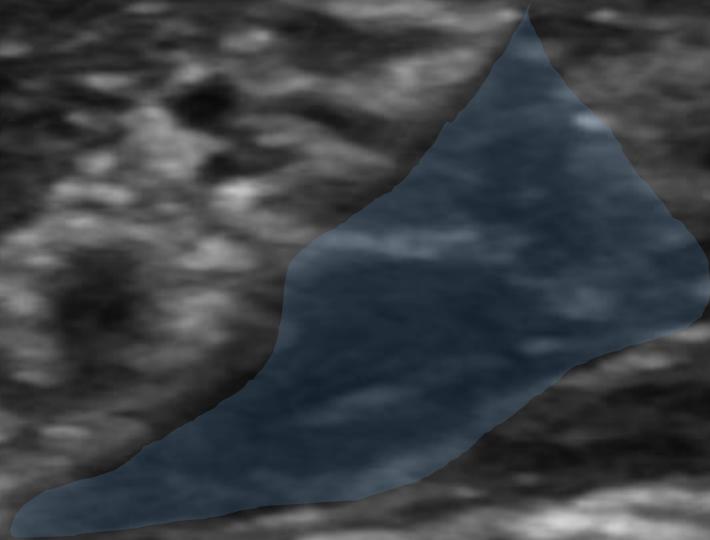


Lidocaine spreading around the target nerve roots. You don't need to completely surround the nerves, if you deposit the lidocaine in this fascial plane it will spread around itself

Findings: 0

BLOCK

Lidocaine



# Case Conclusion

- Wait about 10 minutes after finishing the block for good anesthesia to be achieved and then proceed with the reduction maneuver of your choice
- This patient arrived at 5:58 and was discharged at 6:59. Breakfast burritos were enjoyed by all
- A word of caution: this block will generally paralyze the ipsilateral diaphragm for a short time. Most patients won't even notice this, but take care in those patients requiring respiratory support or with existing lung disease.

Case 2: Snakebite!

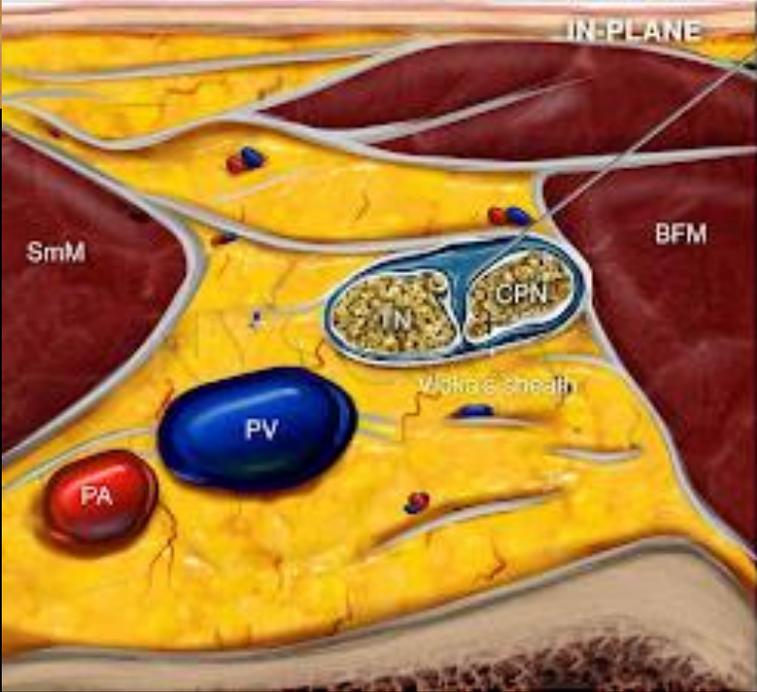
# Snakebite

This was a patient who presented to the ED after a snake bite and was cared for by the Dr. De Los Santos and Dr. Han

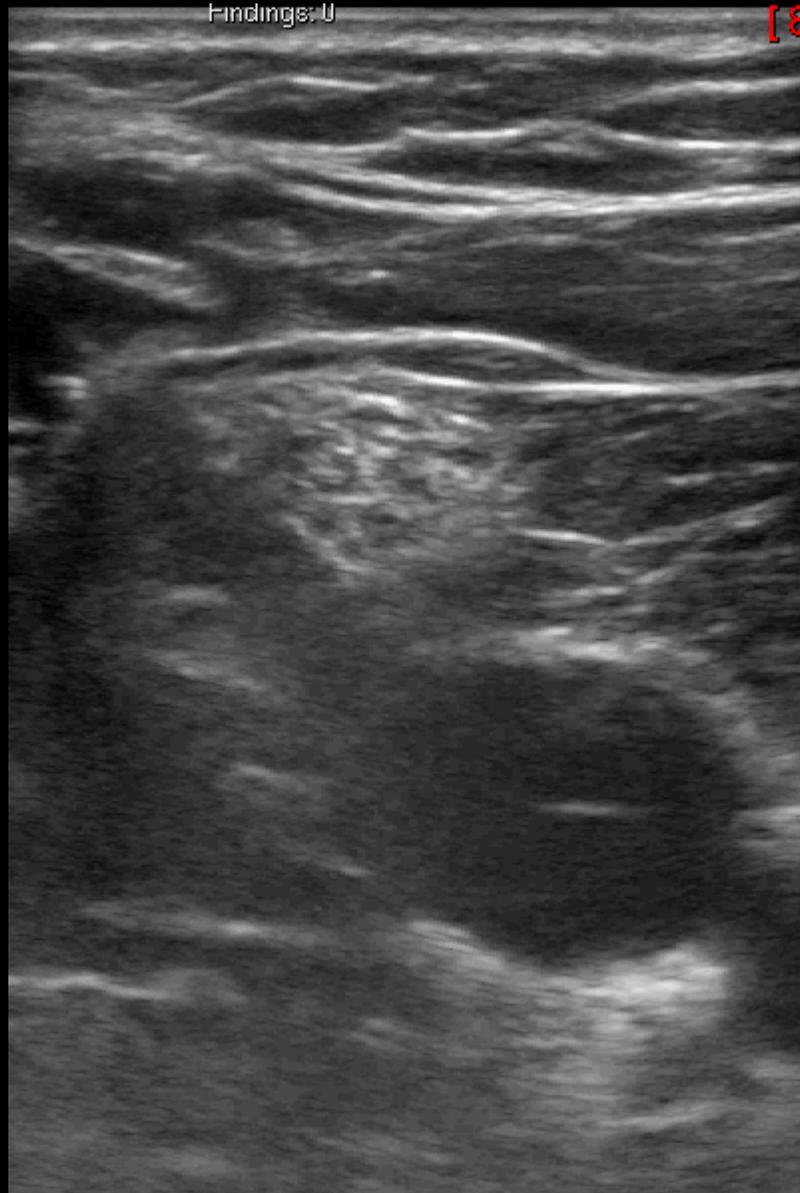
He was bit on the lower leg and was receiving Crofab, but his pain was wildly uncontrolled, even with multiple doses of IV narcotics

Time for a popliteal nerve block!

Popliteal blocks are frequently performed with the patient in the prone position. The needle is advanced lateral to medial under ultrasound guidance. 5-10cc of your favorite anesthetic is deposited around the sciatic nerve right at the point where it divides into the common peroneal nerve and tibial nerve, effectively shutting off sensation below the knee.



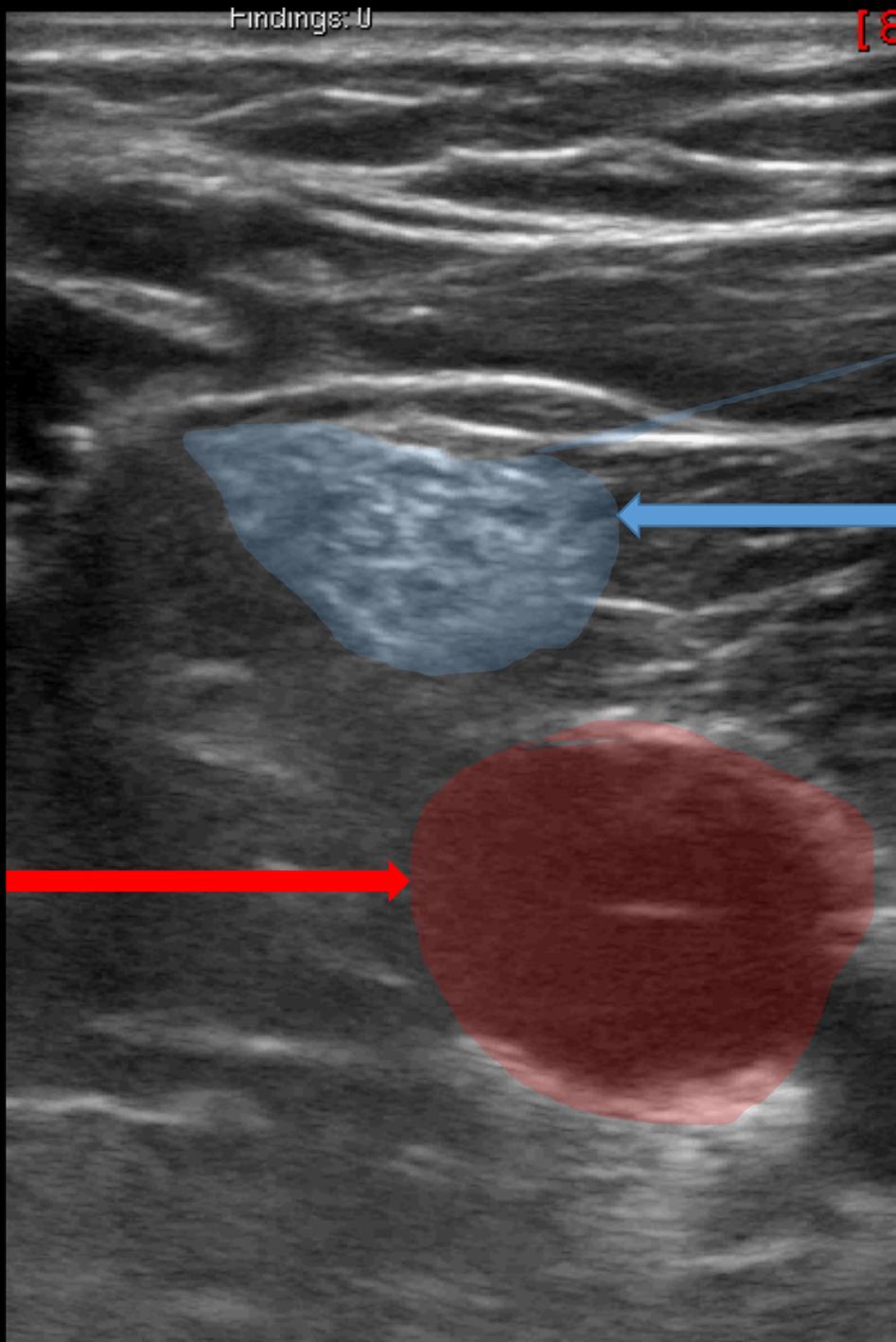
Dr. De Los Santos does his magic...



Can you label the relevant structures?

Findings: U

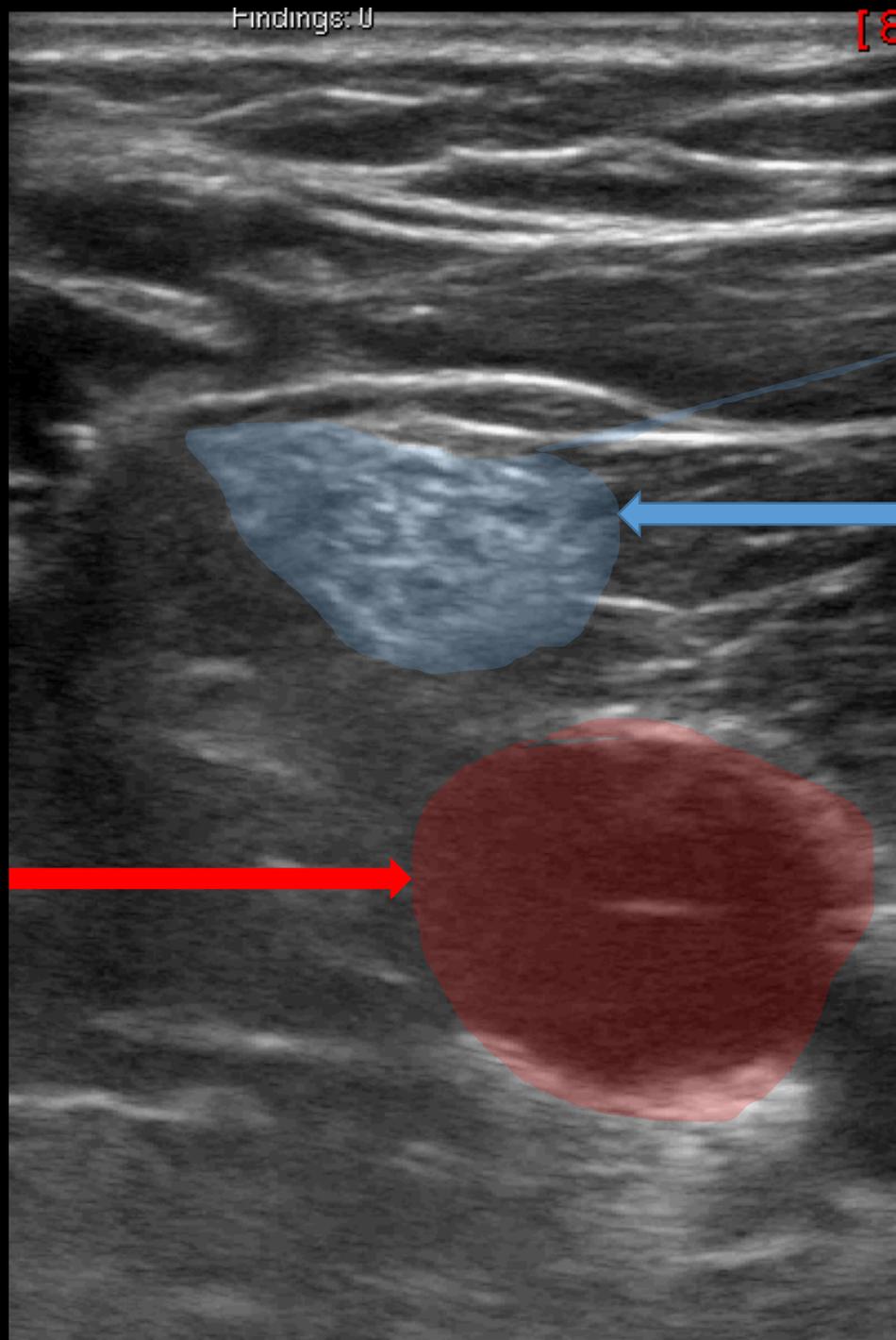
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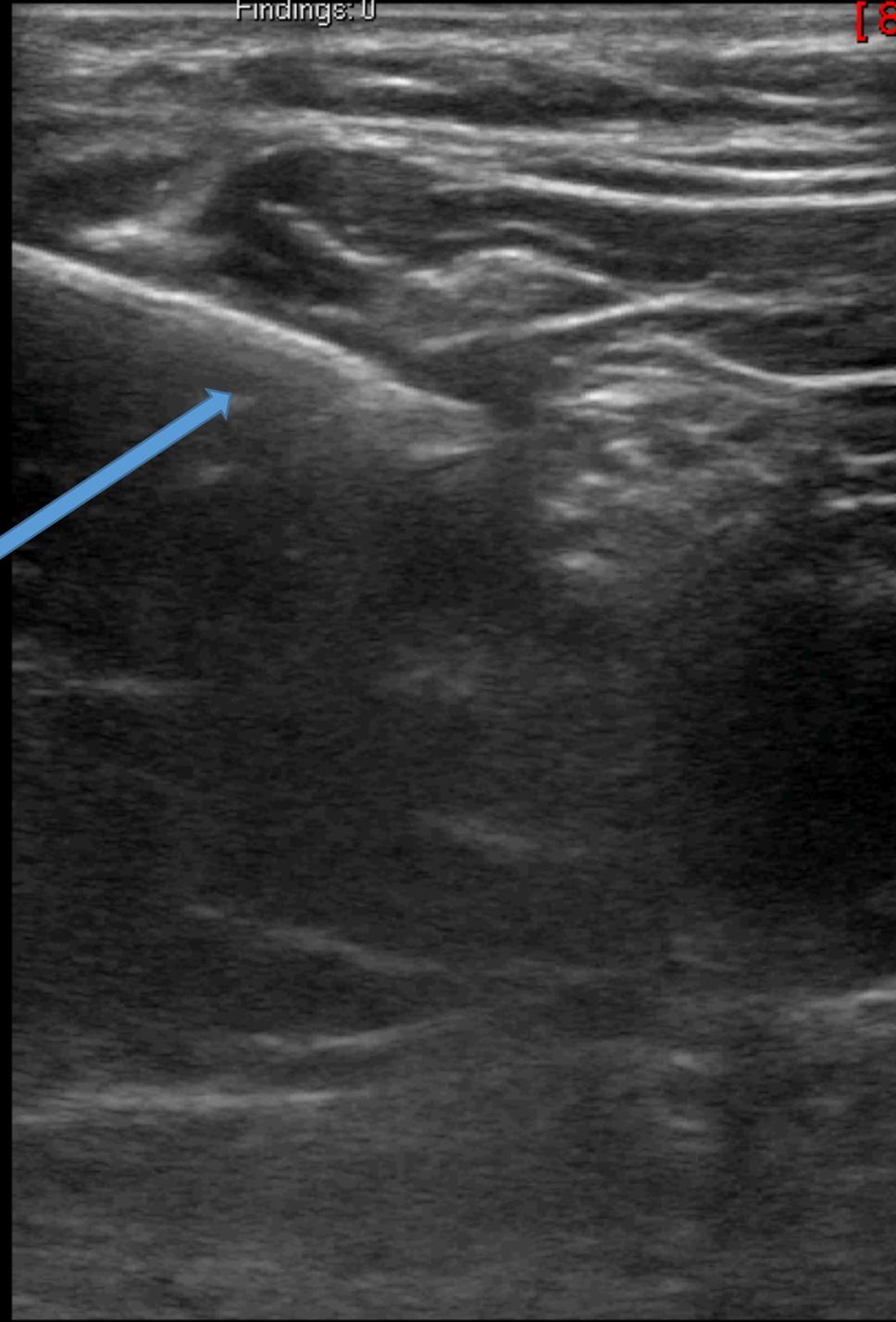


\*Always know where the nearby vascular structures are and keep your needle tip in view while advancing!

Popliteal Artery



Sciatic Nerve

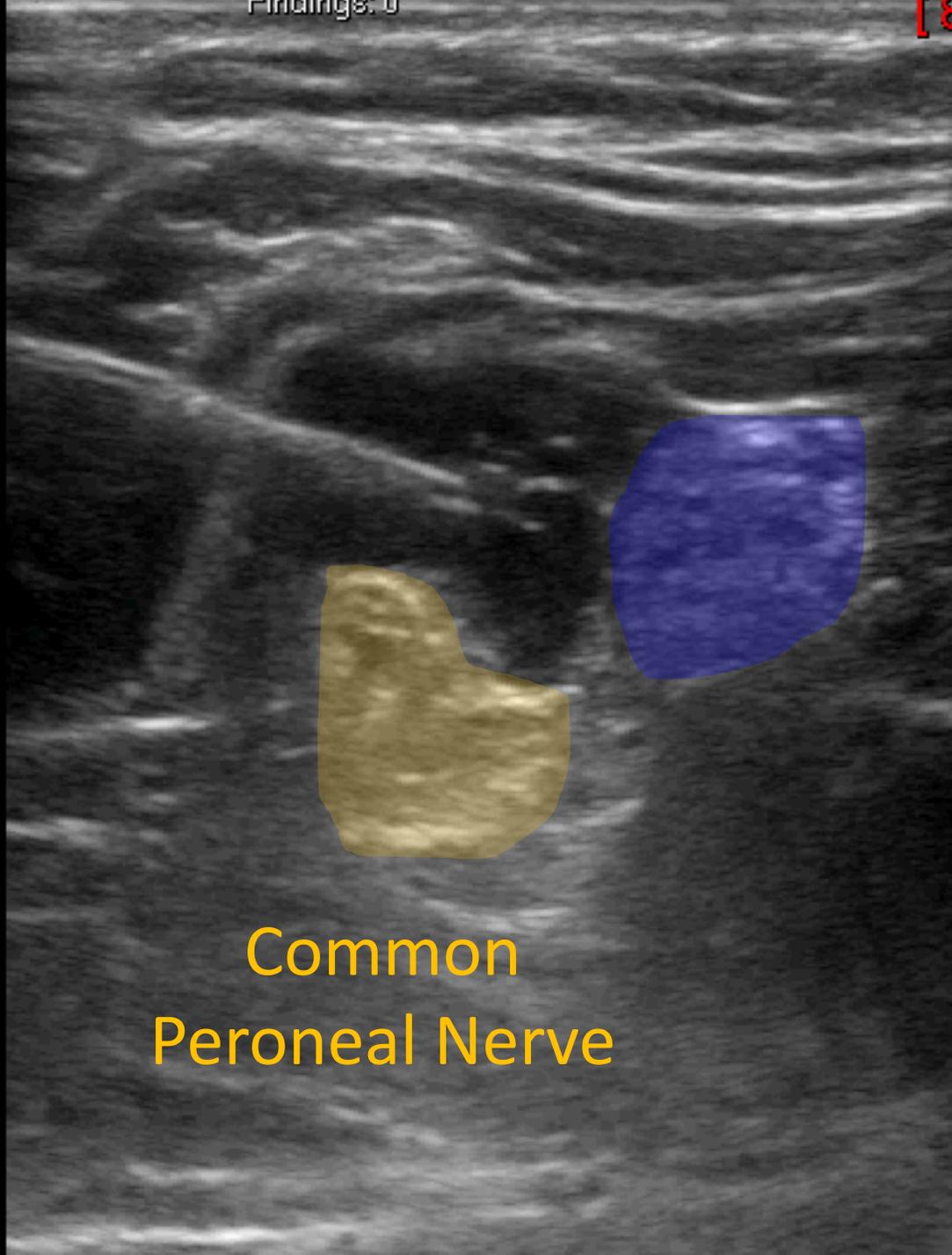


Needle advancing towards the sciatic nerve

Lidocaine surrounding the sciatic nerve just as it splits into the common peroneal and tibial nerve. Expert placement by Dr. De Los Santos



Lidocaine surrounding the sciatic nerve just as it splits into the common peroneal and tibial nerve. Expert placement by Dr. De Los Santos



Common  
Peroneal Nerve

Tibial Nerve

Lidocaine beginning to surround the nerve. Again, no need to approach the nerve from the other side to put lidocaine there as well, it will diffuse around the nerve. Not to mention you'll be closer to the popliteal artery over there

The patient reportedly exclaimed "My pain just melted away"



Concern for compartment syndrome with a snake bite:

This is probably not as big of a deal as was traditionally taught, but still a good idea to tell your toxicology consultant and admitting team you plan to do this before proceeding.

# Case 3: The Finale

Featuring Dr. Keswani

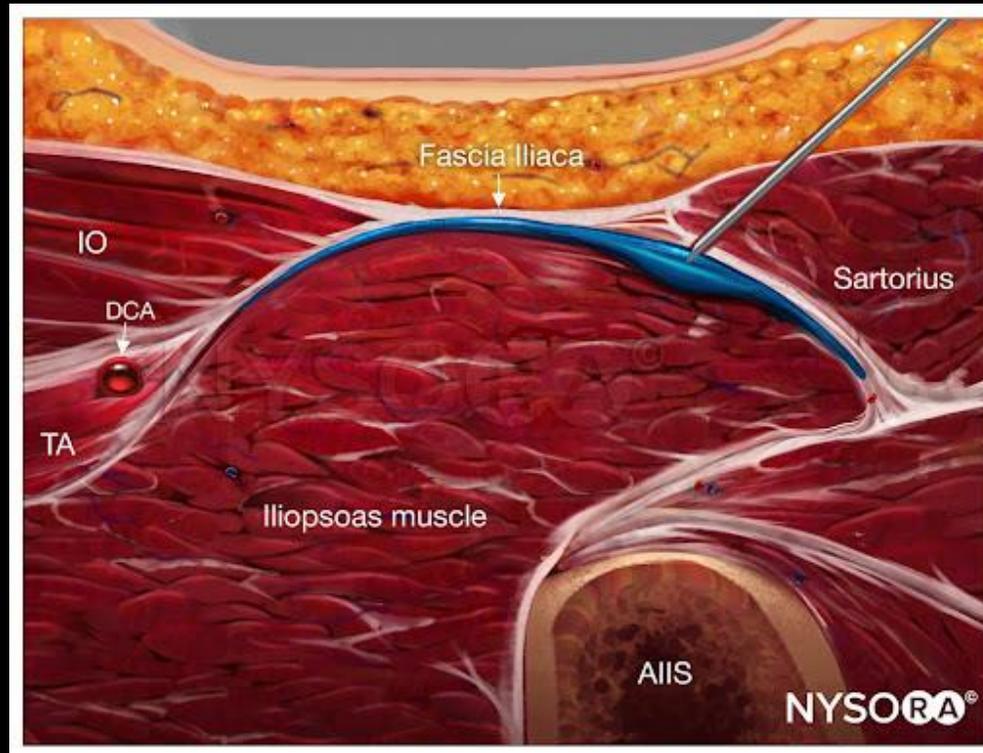
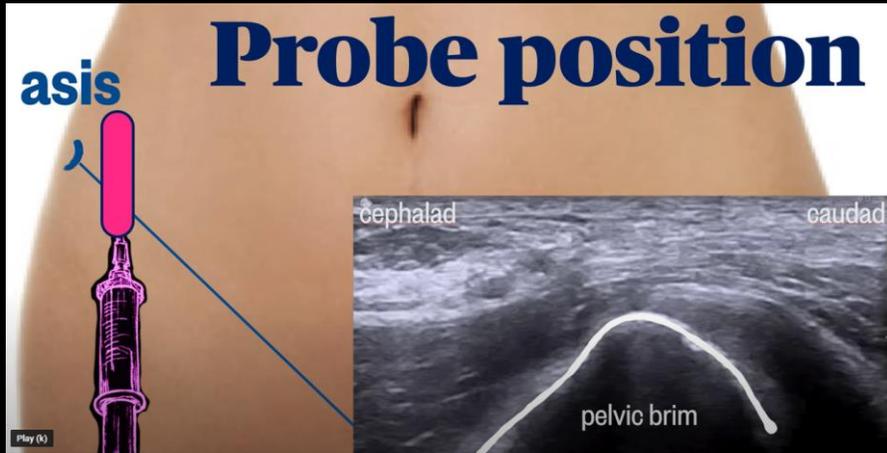
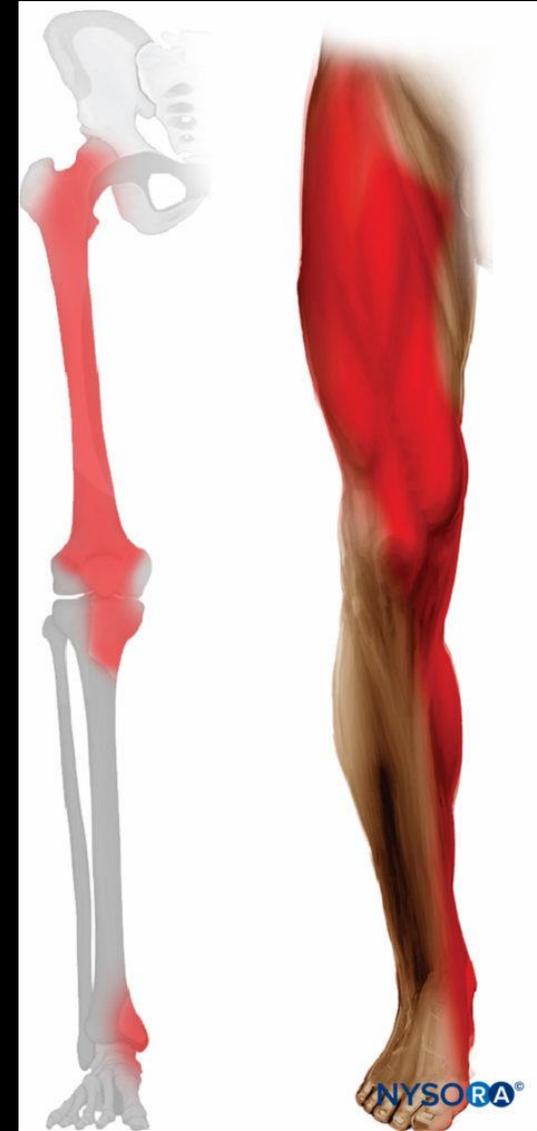


RIGHT!



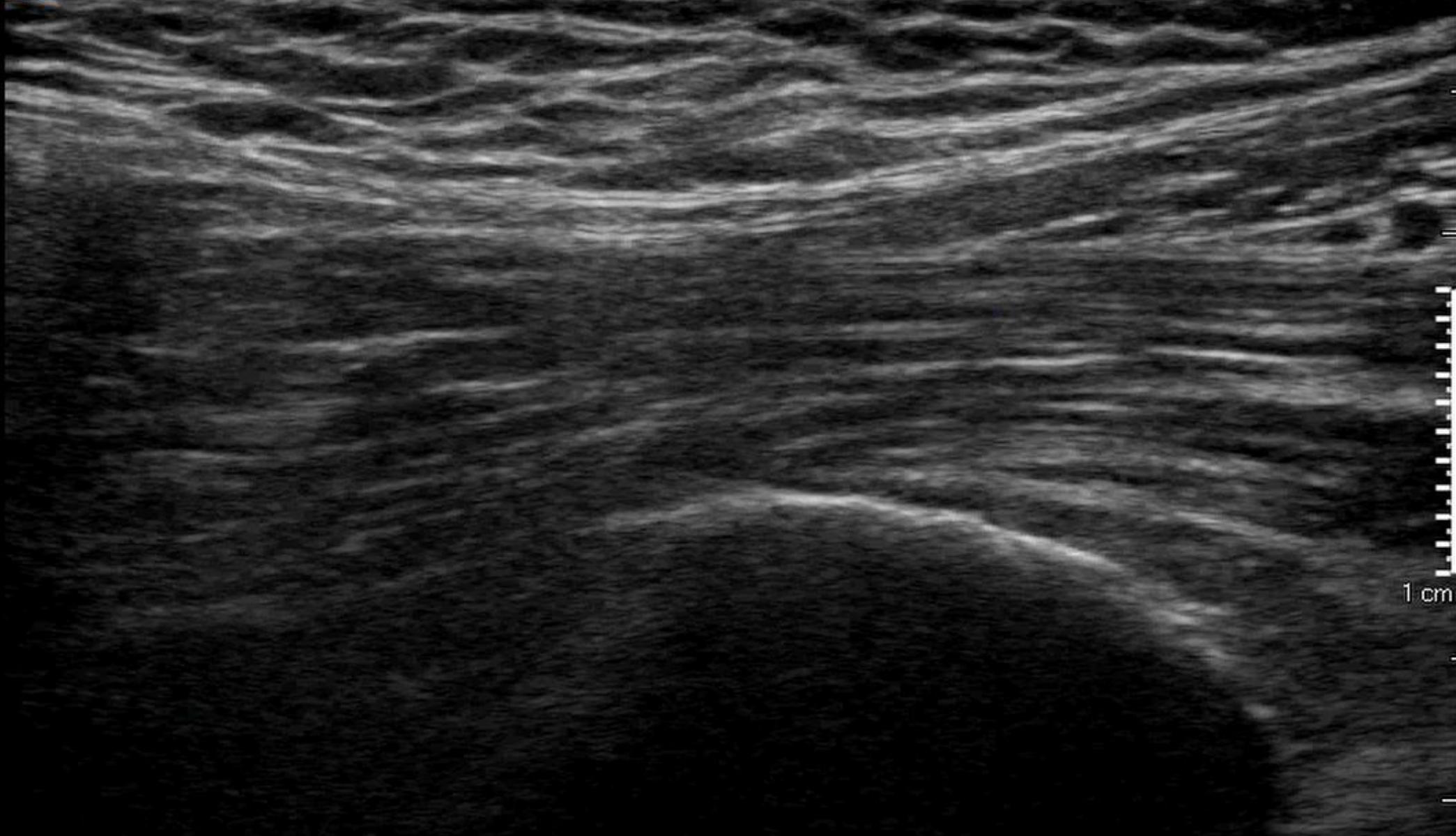
# Suprainguinal Fascia Iliaca Block

We've discussed fascia iliaca/femoral nerve blocks in detail. The suprainguinal technique is a little bit more complex because the anatomy is not as familiar to us. Here's a video to refresh your memory: [Suprainguinal Fascia Iliaca Plane Block - YouTube](#)





Original Resolution



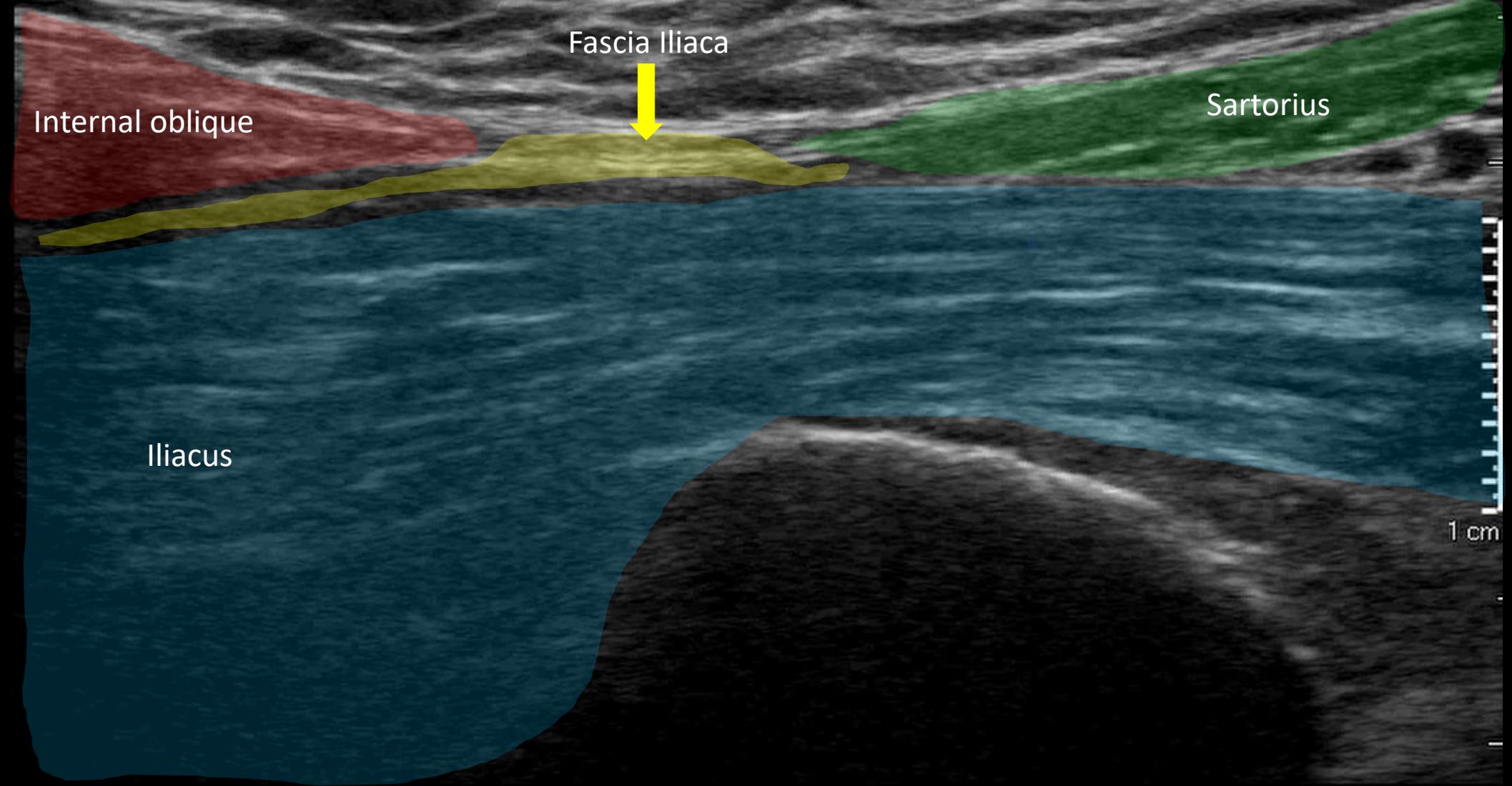
1 cm

Let's label some structures

3.1 cm



Original Resolution



Internal oblique

Fascia Iliaca

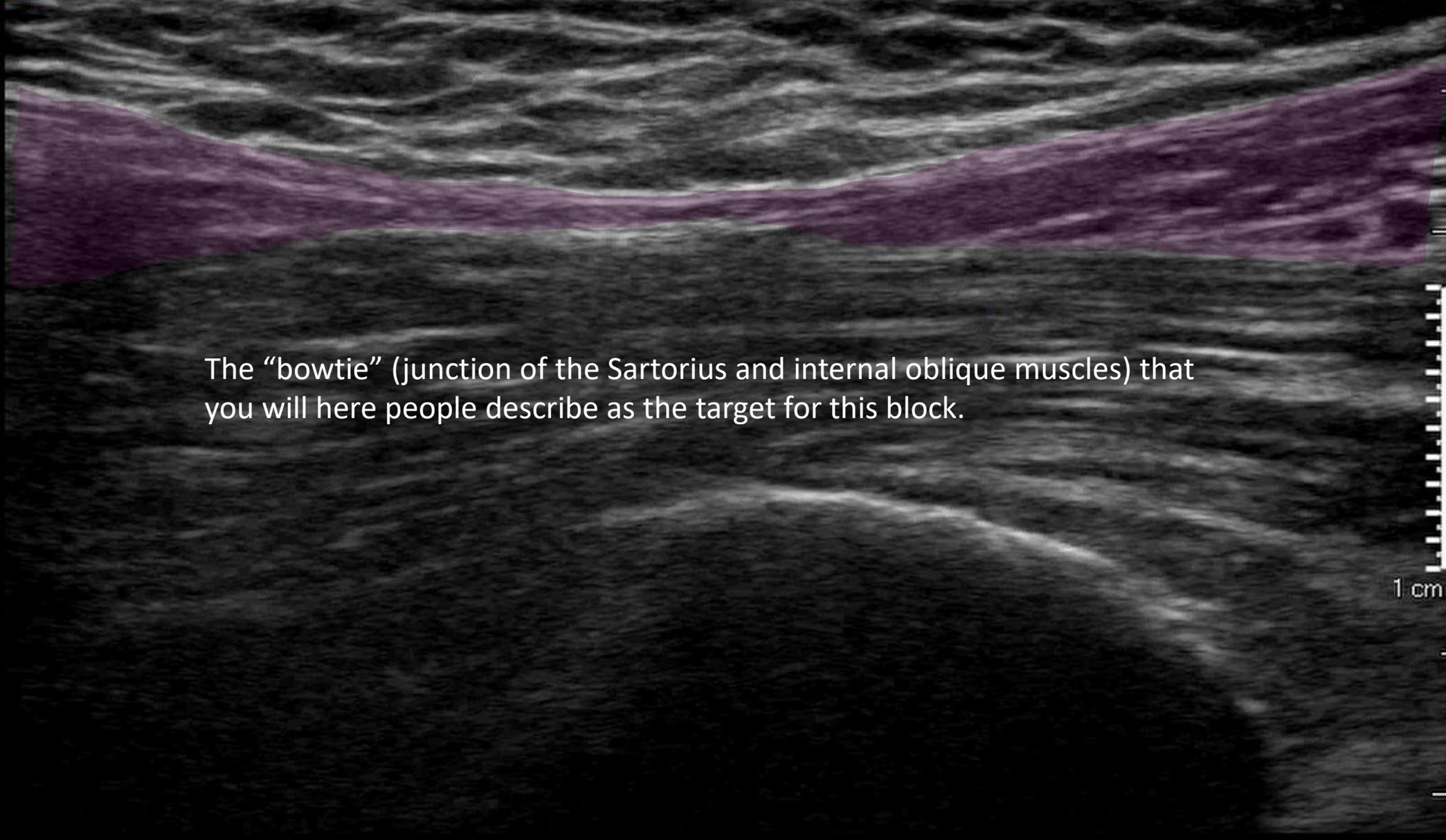
Sartorius

Iliacus

1 cm

Let's label some structures

3.1 cm



The “bowtie” (junction of the Sartorius and internal oblique muscles) that you will here people describe as the target for this block.

Let's label some structures

3.1 cm



Original Resolution

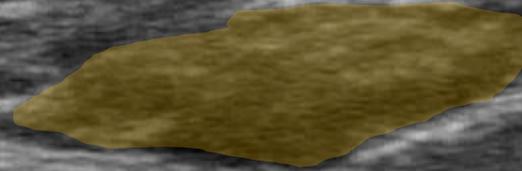


Needle advancing with an intramuscular injection of saline (hydro-dissection). If the fascial planes don't cleanly spread apart you're not in the right place. Use saline for this so you don't waste and anesthetic just getting to the right spot



Original Resolution

Intramuscular injection



1 cm

Needle advancing with an intramuscular injection of saline (hydro-dissection). If the fascial planes don't cleanly spread apart you're not in the right place. Use saline for this so you don't waste and anesthetic just getting to the right spot



Original Resolution



Properly placed local anesthetic in the fascia iliaca, unzipping of the fascial plane is a great indication that you're in the right spot



Original Resolution



End result of a perfect suprainguinal fascia iliaca block by Dr. Keswani. Fascia iliaca plane is full of local anesthetic. I will attach the full video so you can watch it in its full glory.

# Fascia Iliaca block in the ED is well studied

- Less opiate use!
- Less hospital Delirium!
- Lower patient pain scores!

If I break my femur riding my bike to work I expect someone to block me.

That's it for this month! As always please let me know what you want to see next time!