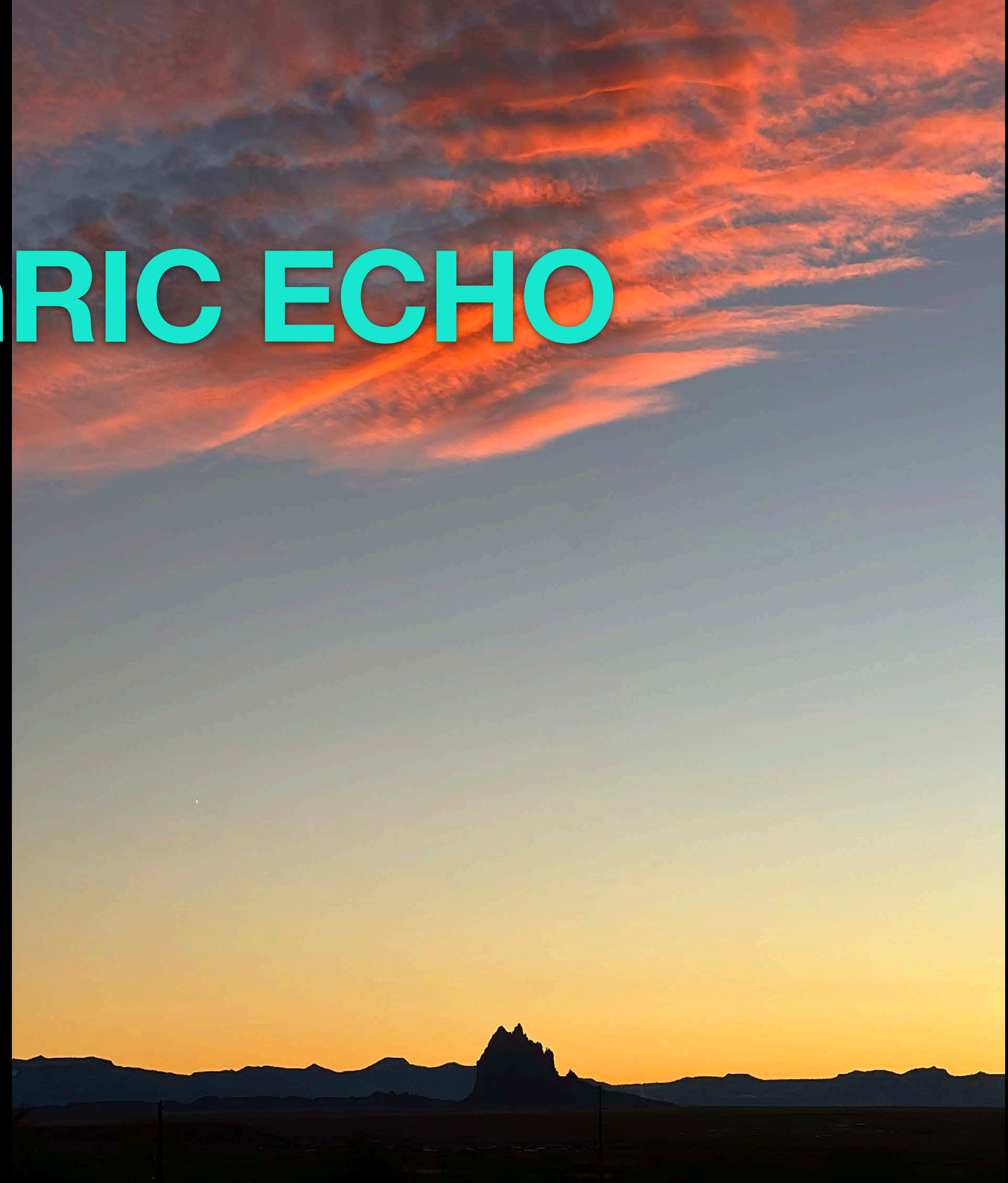


Indian Country emRIC ECHO

Hip Pain + Sono Guided Treatment



Jon Vivolo DO, 09/16/24



Disclosure...

I have **NO** financial disclosure or conflicts of interest related to the content in this presentation.



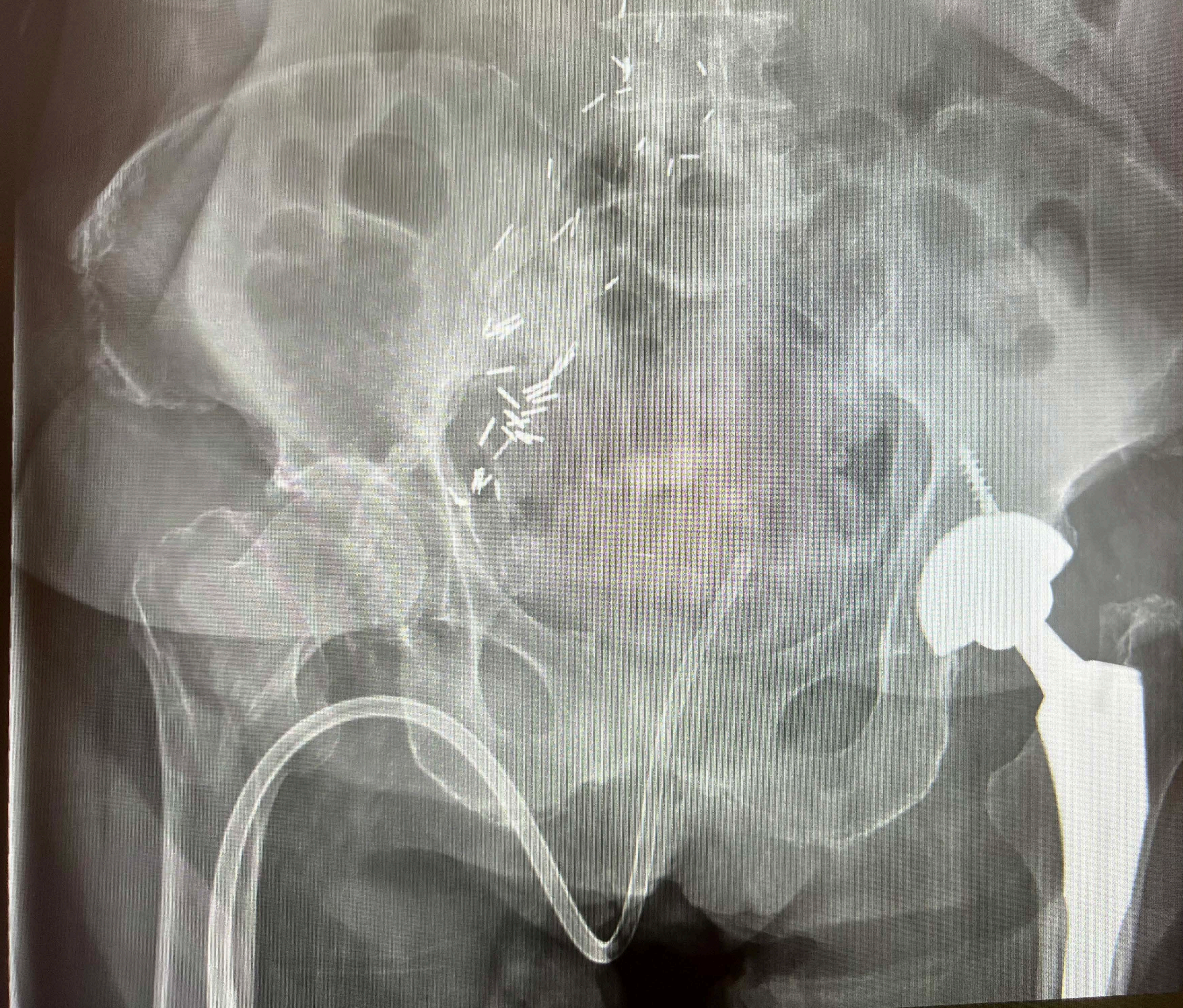
Case

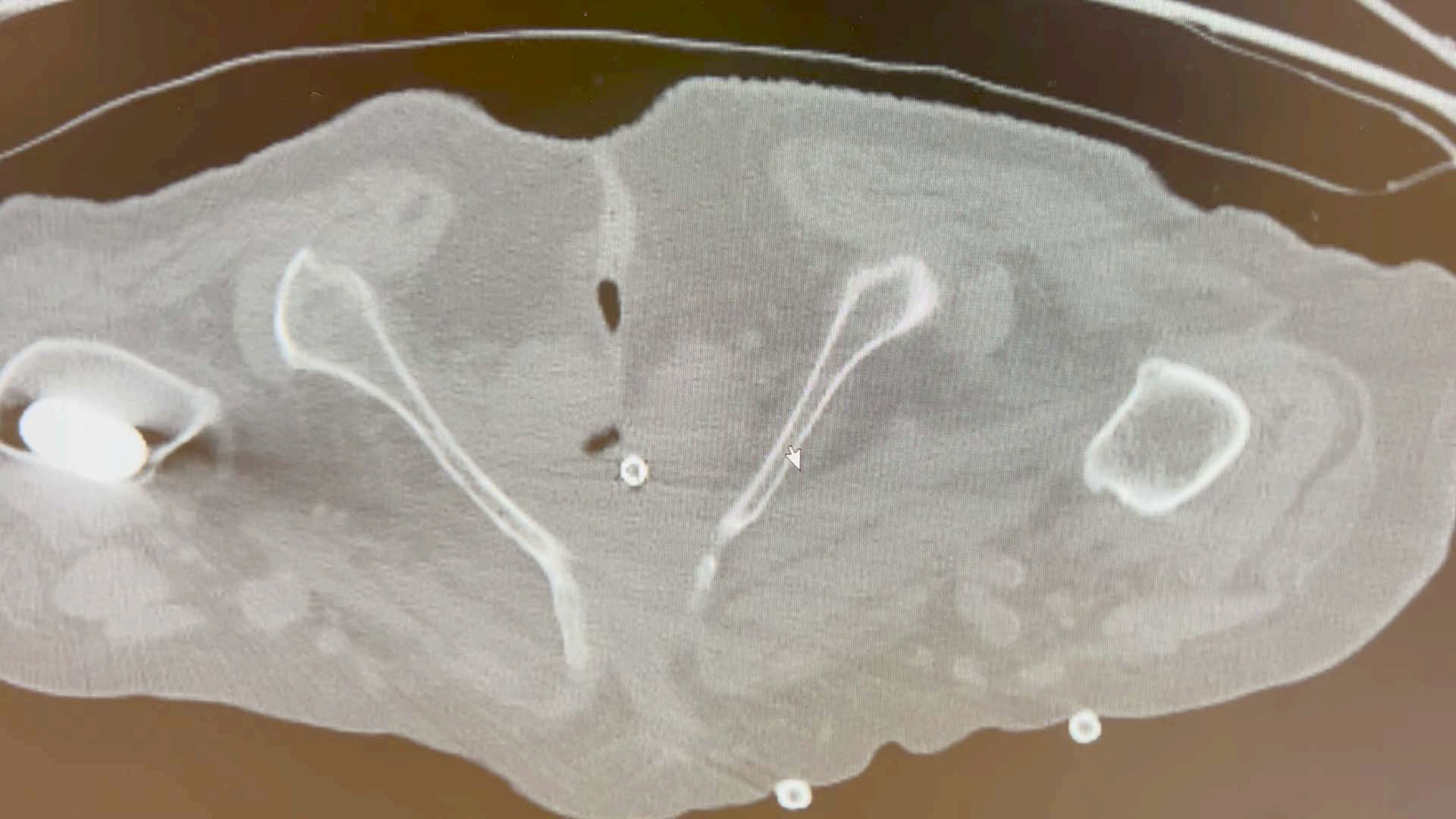
- **CC:** Fall, Rt hip pain
- **HPI:** 76 yo F, Rt hip pain s/p witnessed GLF onto Rt knee, unable to bear weight, no LOC or other trauma, 8/10 pain
- **PMHx:** Metastatic bladder CA on chemo, DM2, HTN, HLD, Osteoporosis, ILD on 2 L at baseline, s/p Lt THA
- **Meds:** Intravesical Chemo, Metformin, Glipizide, Statin, Lisinopril
- **Exam:** TTP over ant/lateral Rt hip, abrasion to Rt knee, RLE shortened and externally rotated, NV reassuring, no other external evidence of trauma

Case

- **Labs:** K 2.4 w/out ECG changes, UA c/w UTI, CN 1.8, Hgb 10.4
- **Imaging:** Rt hip/pelvis + CT pelvis — — — — —>
- **Meds:** IV Tylenol, 1 L of LR, 20 mEq K







Dispo



=



+



Dispo



+



=





Other Options?.....



REGIONAL ANAESTHESIA

Systematic review of the effects of fascia iliaca compartment block on hip fracture patients before operation

J. Steenberg* and A. M. Møller

Department of Anaesthesiology, Herlev and Gentofte Hospital, Herlev, Denmark

*Corresponding author. E-mail: Jakobsteenber@gmail.com

Abstract

Background: Fascia iliaca compartment block is used for hip fractures in order to reduce pain, the need for systemic analgesia, and prevent delirium, on this basis. This systematic review was conducted to investigate the analgesic and adverse effects of fascia iliaca block on hip fracture in adults when applied before operation.

Methods: Nine databases were searched from inception until July 2016 yielding 11 randomised and quasi-randomised controlled trials, all using loss of resistance fascia iliaca compartment block, with a total population of 1062 patients. Meta-analyses were conducted comparing the analgesic effect of fascia iliaca compartment block on nonsteroidal anti-inflammatory drugs (NSAIDs), opioids and other nerve blocks, preoperative analgesia consumption, and time to perform spinal anaesthesia compared with opioids and time for block placement.

Results: The analgesic effect of fascia iliaca compartment block was superior to that of opioids during movement, resulted in lower preoperative analgesia consumption and a longer time for first request, and reduced time to perform spinal anaesthesia. Block success rate was high and there were very few adverse effects. There is insufficient evidence to conclude anything on preoperative analgesic consumption or first request thereof compared with NSAIDs and other nerve blocks, postoperative analgesic consumption for preoperatively applied fascia iliaca compartment block compared with NSAIDs, opioids and other nerve blocks, incidence and severity of delirium, and length of stay or mortality.

Conclusions: Fascia iliaca compartment block is an effective and relatively safe supplement in the preoperative pain management of hip fracture patients.

Keywords: analgesia; fascia iliaca compartment block; hip fractures; nerve block; preoperative care

US Guided Regional Anesthesia Options



- Pericapsular Nerve Group Block (PENG)
- Supra-inguinal FICB
- Infra-Inguinal FICB
- Femoral Nerve Block

US Guided Regional Anesthesia Options

- Pericapsular Nerve Group Block (PENG)
- Supra-inguinal FICB
- ***Infra-Inguinal FICB - Safe, Effective, Simple Approach***
- Femoral Nerve Block



Infra-Inguinal FICB Overview

- Can ED physicians safely perform?
- Risks/Contraindications
- Anatomy
- Supplies + Consent
- Dosing
- POCUS anatomy
- Procedure Note



ED Safety

Western Journal of Emergency Medicine

QUICK LINKS: [SUBMIT A MANUSCRIPT](#) [SUBMISSION GUIDELINES](#) [ARTICLE PROCESSING FEE](#) [CPC-EM](#)

WestJEM Integrating Emergency Care
with Population Health

“This demonstrates that physicians in resource-poor settings can safely and quickly perform the FICB with little training, using the equipment and medications they typically have available. Using the FICB in resource-poor, often rural settings also reduces risks related to opioid use and provides an excellent method to ease the pain of patients transferring to higher levels of care.”

ABSTRACT

Introduction

Although the fascia iliaca compartment block (FICB) seems to be an ideal technique for femoral neck and shaft fractures occurring in resource-poor settings, it has been unclear how effective it is when used by emergency physicians (EP) with little training in the technique, using equipment, medications and methods that differ from those commonly available in developed countries. This series was designed to demonstrate that EPs in a resource-poor setting can provide effective analgesia for femur fractures with anatomic landmark-guided FICBs, clinician-compounded lidocaine-epinephrine (1:100,000), and a standard injection needle.

Methods

Over a three-month period, patients and a Likert visual analogue scale. lidocaine-epinephrine solution to landmarks. EPs evaluated the patients since 2016 that describe the FICB.



ment with hip or femur fractures and intramuscular needle and a injection site using only anatomic FICB. We also reviewed articles

Results

We enrolled a non-consecutive series of femoral neck (hip) fractures and five had femoral shaft fractures. All patients had a reduction in their pain levels after the FICB. On average, the block took effect about three minutes after injection. At 30 minutes all patients reported clinically meaningful pain reduction. The analgesic effect of the compounded agent lasted approximately 200 minutes. No adverse effects were reported. No published journal articles about FICB since 2016 were from resource-poor settings, and only one was from a developing country.

Conclusion

This series suggests that the FICB is effective even when performed with the minimal materials that are usually available in resource-poor settings. Methods such as this, which use simplified clinical tests and techniques applicable in resource-poor settings, can assist global emergency medicine (EM). We can assist global EM by similarly finding methods to simplify useful clinical tests and techniques that can be used in resource-poor settings.

Why?

- Decreased in-hospital mortality + complications
- Reduction of post-op complications from 33 → 20%
- Decreased

Effects of Perioperative Fascia Iliaca Compartment Block on Postoperative Pain and Hip Function in Elderly Patients With Hip Fracture

Chao Hao ¹, Chao Li ², Ruiqi Cao ¹, Yike Dai ¹, Chongyang Xu ¹, Lifeng Ma ¹, Ai Guo ¹, Haomiao Yu ¹

Affiliations + expand

PMID: 35450298 PMCID: PMC9016604 DOI: 10.1177/21514593221092883

A Comprehensive Hip Fracture Program Reduces Complication Rates and Mortality

Susanne J. Pedersen MD, Finn M. Borgbjerg MD, Birgitte Schousboe MD, Bente D. Pedersen MD, Henrik L. Jørgensen MD, PhD, Benn R. Duus MD, Jes B. Lauritzen MD, DMSc ... See all authors

REGIONAL ANAESTHESIA | VOLUME 120, ISSUE 6, P1368-1380, JUNE 01, 2018

Systematic review of the effects of fascia iliaca compartment block on hip fracture patients before operation

J. Steenberg • A.M. Møller

> J Orthop Trauma. 2022 Mar 1;36(3):142-146. doi: 10.1097/BOT.0000000000002220.

Fascia Iliaca Blocks Performed in the Emergency Department Decrease Opioid Consumption and Length of Stay in Patients with Hip Fracture

Nicholas Kolodychuk ¹, John Collin Krebs ¹, Robert Stenberg ², Lance Talmage ³, Anita Meehan ⁴, Nicholas DiNicola ¹

Affiliations + expand

PMID: 34294666 DOI: 10.1097/BOT.0000000000002220

Review

> Osteoporos Int. 2010 Dec;21(Suppl 4):S555-72. doi: 10.1007/s00198-010-1399-7

Epub 2010 Nov 6.

Neuroaxial versus general anaesthesia in geriatric patients for hip fracture surgery: does it matter?

T J Luger ¹, C Kammerlander, M Gosch, M F Luger, U Kammerlander-Knauer, T Roth, J Kreutz

Affiliations + expand

PMID: 21057995 DOI: 10.1007/s00198-010-1399-7

Complications

Randomized Controlled Trial > J Orthop Trauma. 2020 Oct;34(10):533-538.

doi: 10.1097/BOT.0000000000001795.

Impact of the Fascia Iliaca Block on Pain, Opioid Consumption, and Ambulation for Patients With Hip Fractures: A Prospective, Randomized Study

Spencer S Schulte ^{1 2}, Isaac Fernandez ^{1 2}, Richard Van Tienderen ^{1 2}, Michael S Reich ^{1 3}, Adam Adler ¹, Mai P Nguyen ^{1 3 4}

The Impact of the Fascia Iliaca Block Beyond Perioperative Pain Control in Hip Fractures: A Retrospective Review

David J Houserman ¹, Jesse A Raszewski ¹, Brandi Palmer ², Bhakti Chavan ³, Abby Sferrella ⁴, Melody Campbell ², Steven Santanello ^{2 5}

Affiliations + expand

PMID: 35794869 PMCID: PMC9251979 DOI: 10.1177/21514593221099107

Contraindications

- Overlying cellulitis at skin puncture site
- Allergy to anesthetic
- Neuro deficits at site of potential block
- Concern for compartment syndrome
- On anticoagulation



Risks

- Pain at injection site
- Infection
- Bleeding/hematoma
- Damage to surrounding structures
- Allergic reaction
- LAST

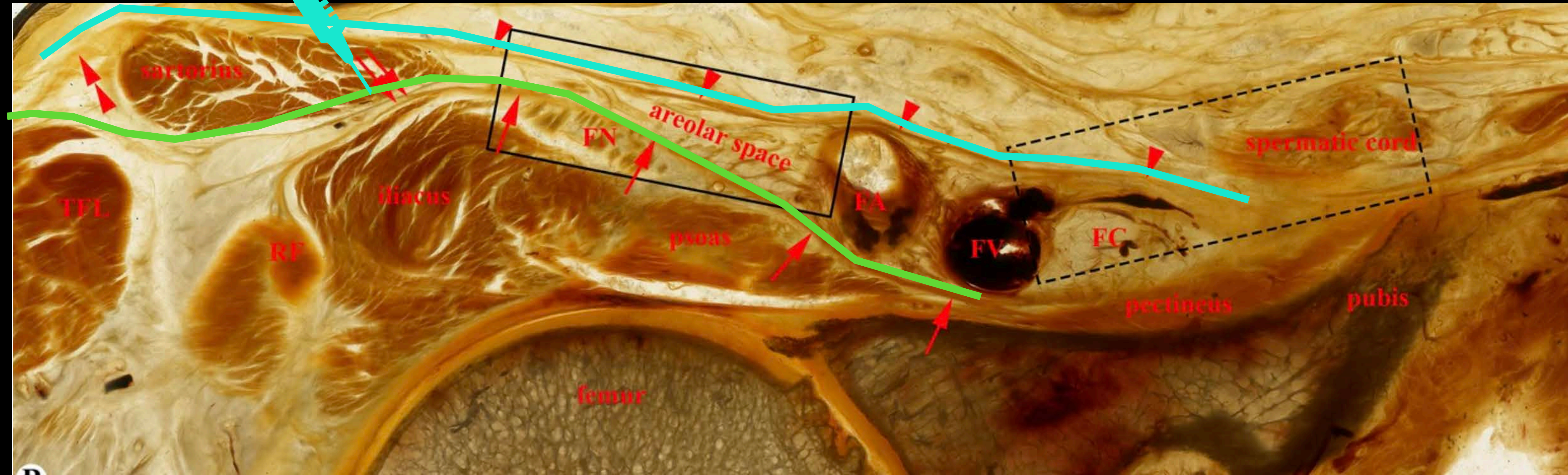
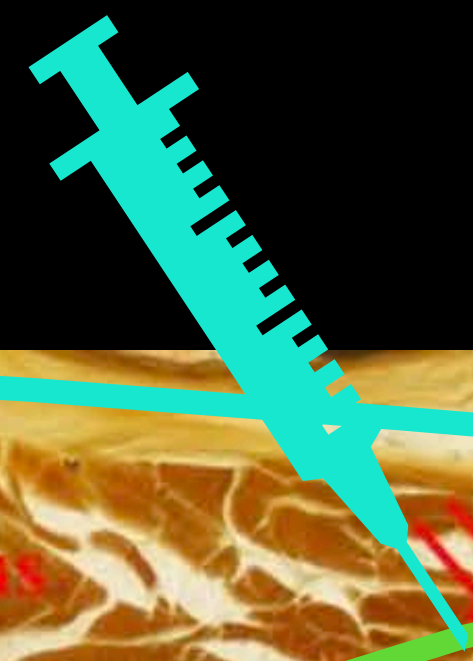


LAST Review

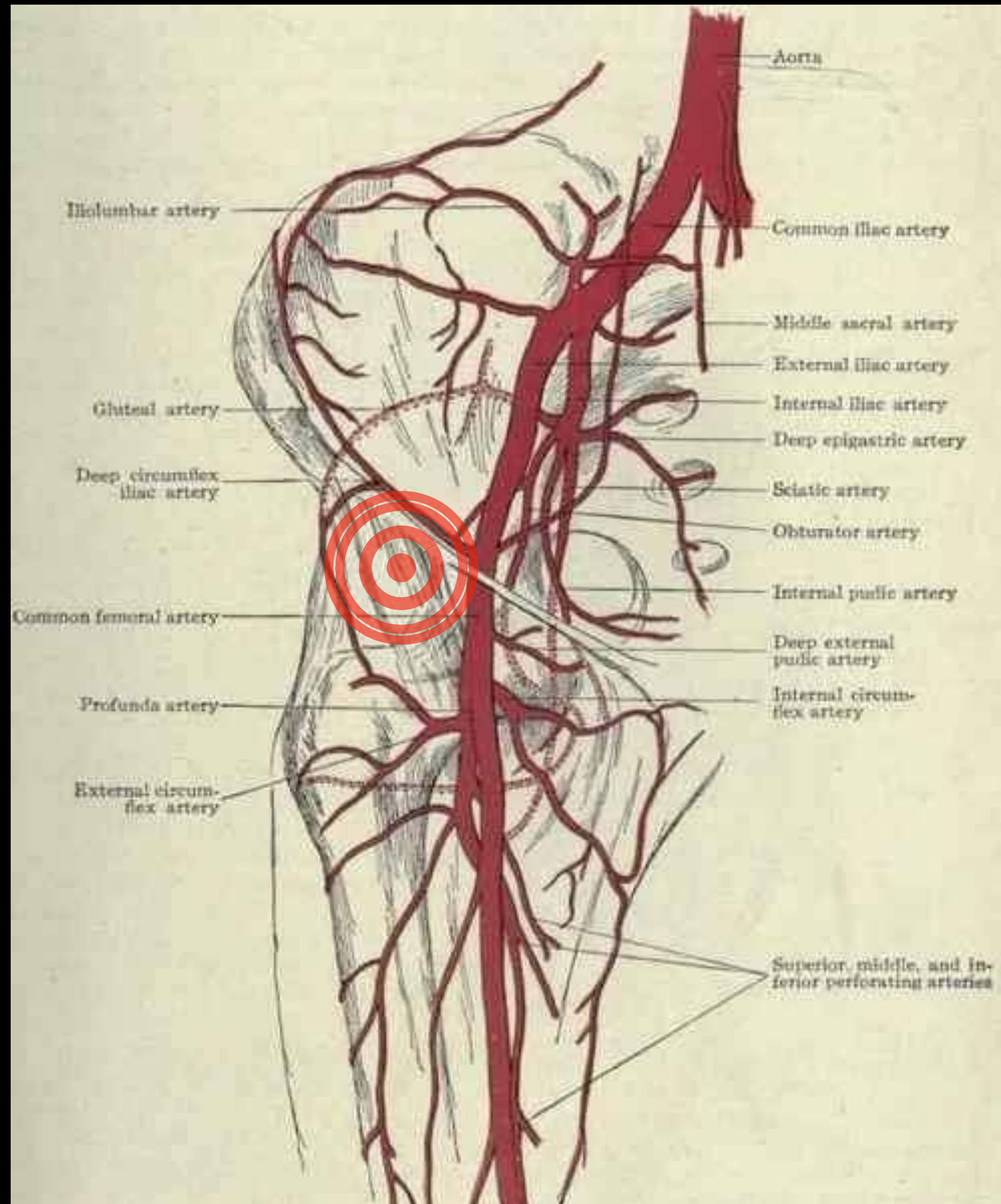


- 2/2 direct anesthetic injection into vasculature
- Confusion, anxiety, sense of impending doom, headache, drowsiness, dizzy, tremors, hemodynamic collapse, widened PR/QRS, Vtach/fib, hypotension, asystole, seizures
- Tx: 1.5cc/kg bolus IV intralipid, 20% solution, seizure = benzos

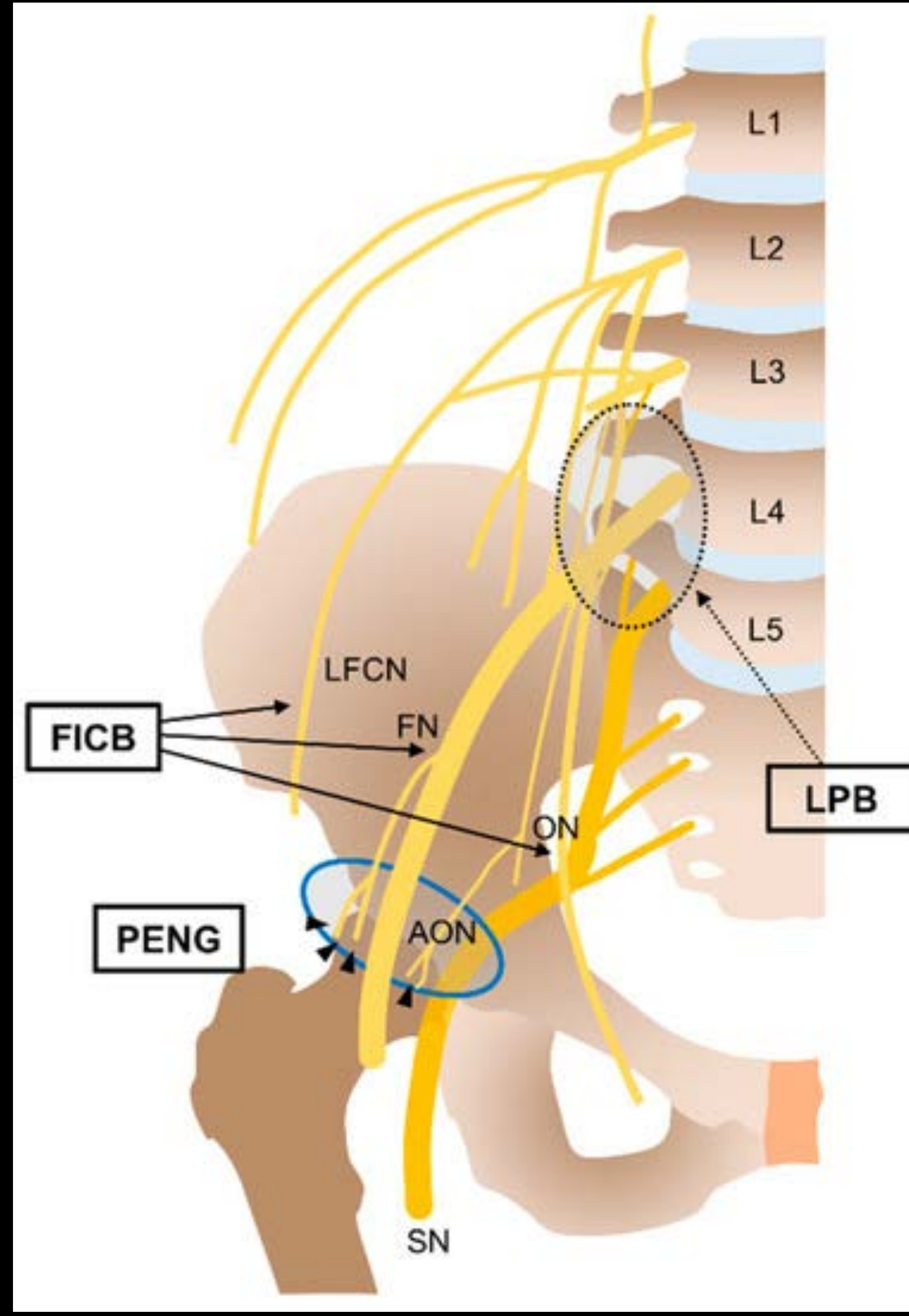
Anatomy



Anatomy



Distribution



Block Specifics - Prep

Written Consent



Document NV Exam



Dosing



Weight (Kg)	Bupivacaine 0.5% (ml)	Normal Saline (ml)
50	20 ml	10 ml
60	24ml	6 ml
70	28ml	2 ml
>=80	30ml	0 ml

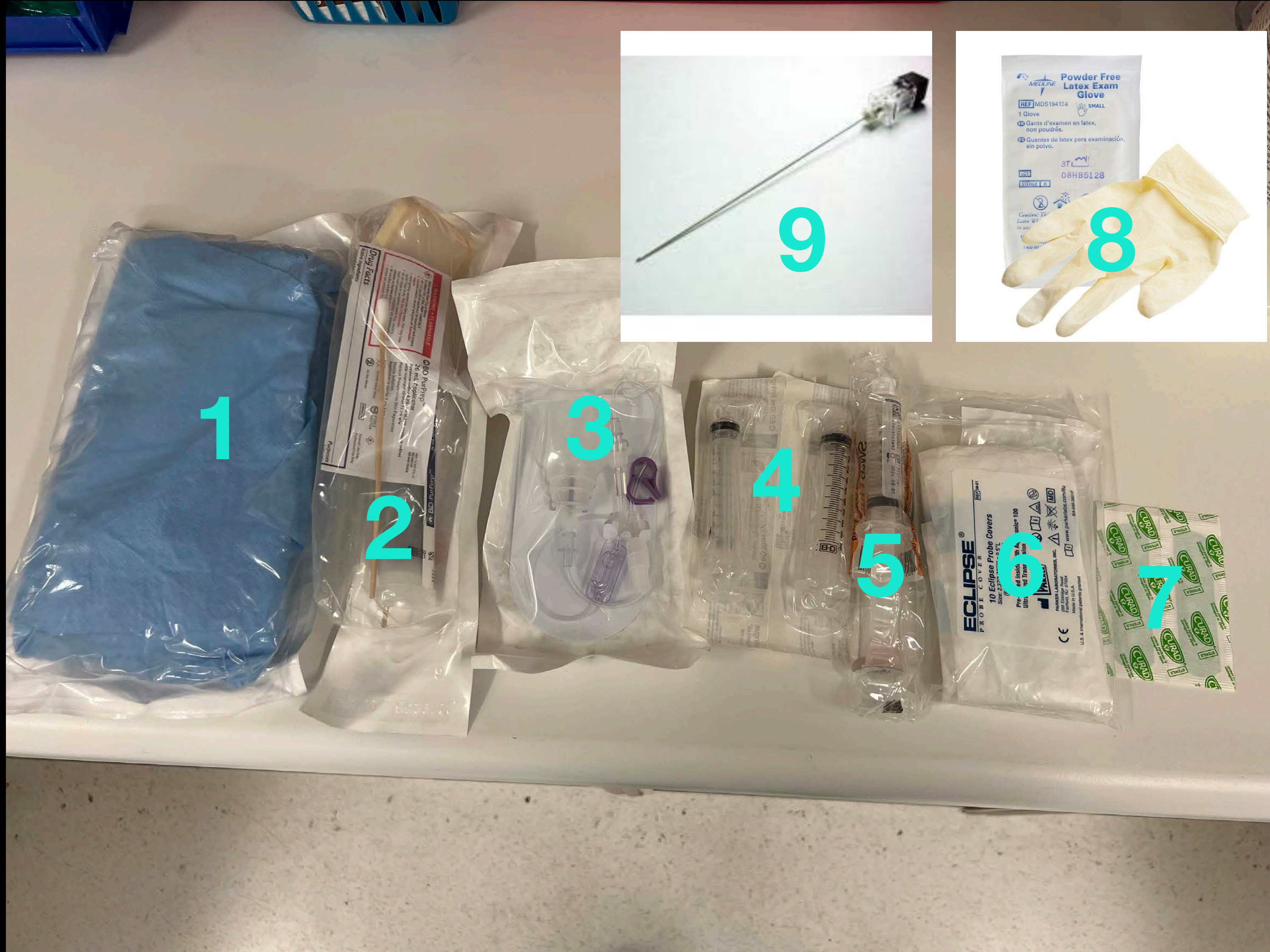


Drug	Onset	Max dose (mg/kg)	Max dose with Epi (mg/kg)
Lidocaine	Rapid	4.5	7
Mepivacaine	Medium	5	7
Bupivacaine	Slow	2.5	3
Ropivacaine	Slow	4	N/A
Tetracaine	Slow	1.5	N/A
Chlorprocaine	Rapid	10	15

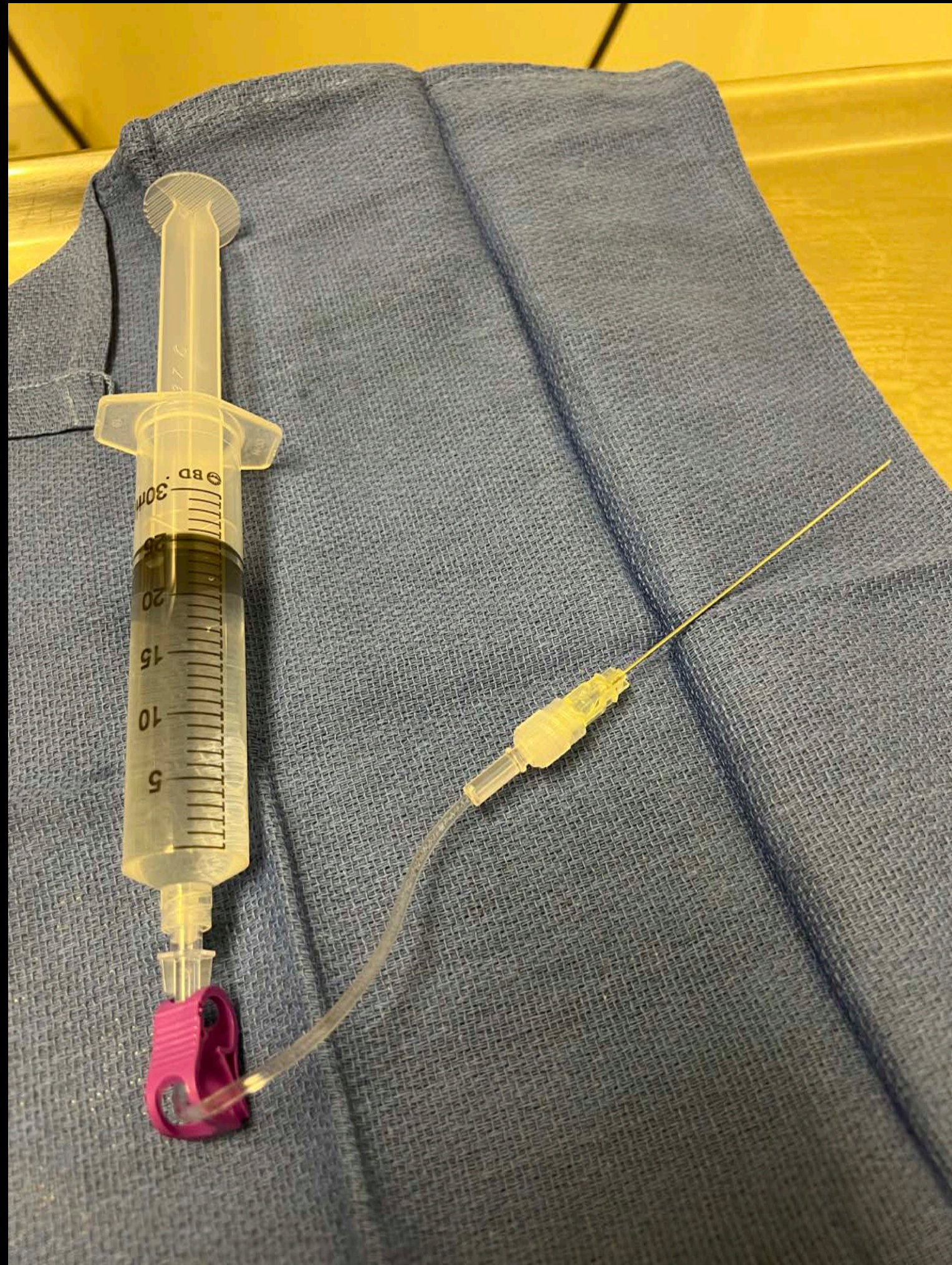
Monitor



Supplies



Set-Up

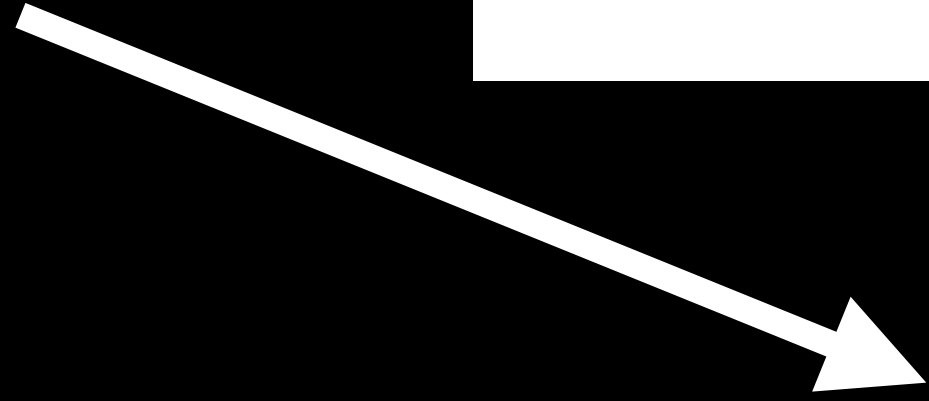
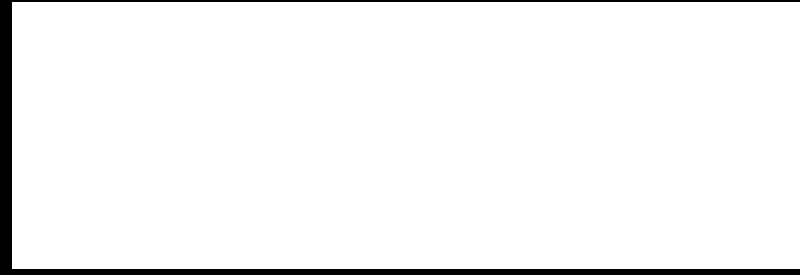


Block Specifics - Procedure

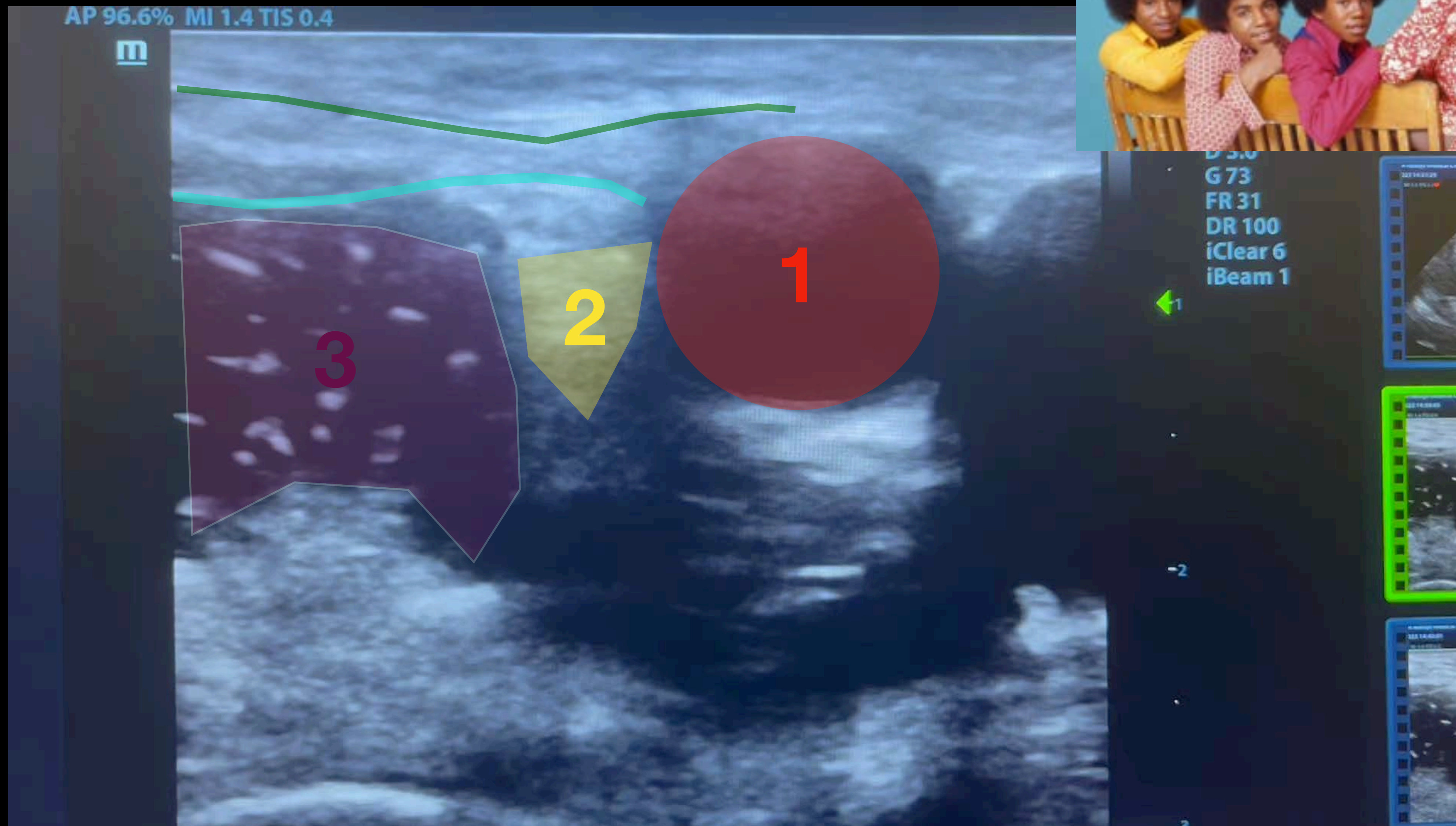
Positioning



Needle Tip



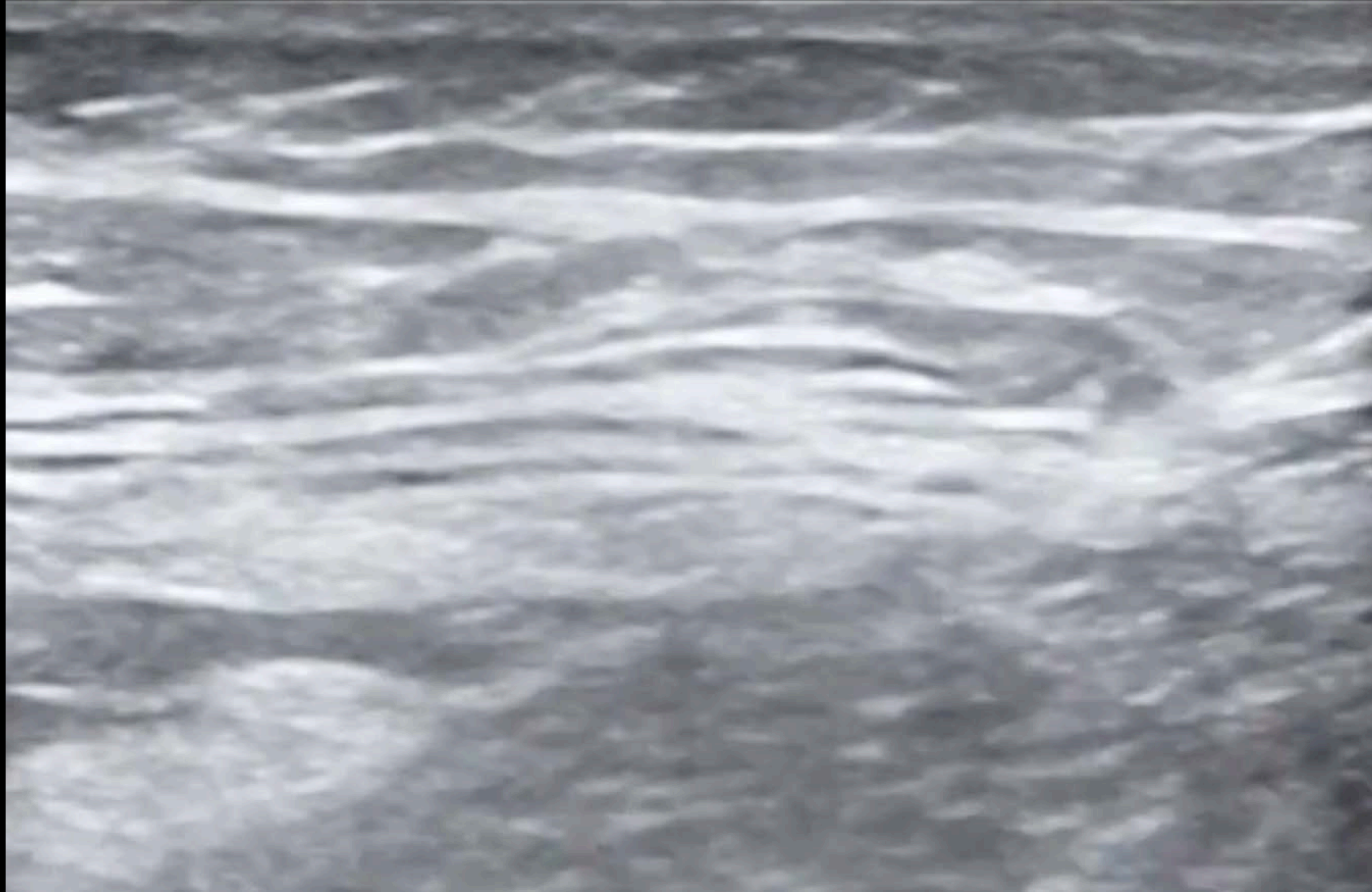
Easy as 1-2-3



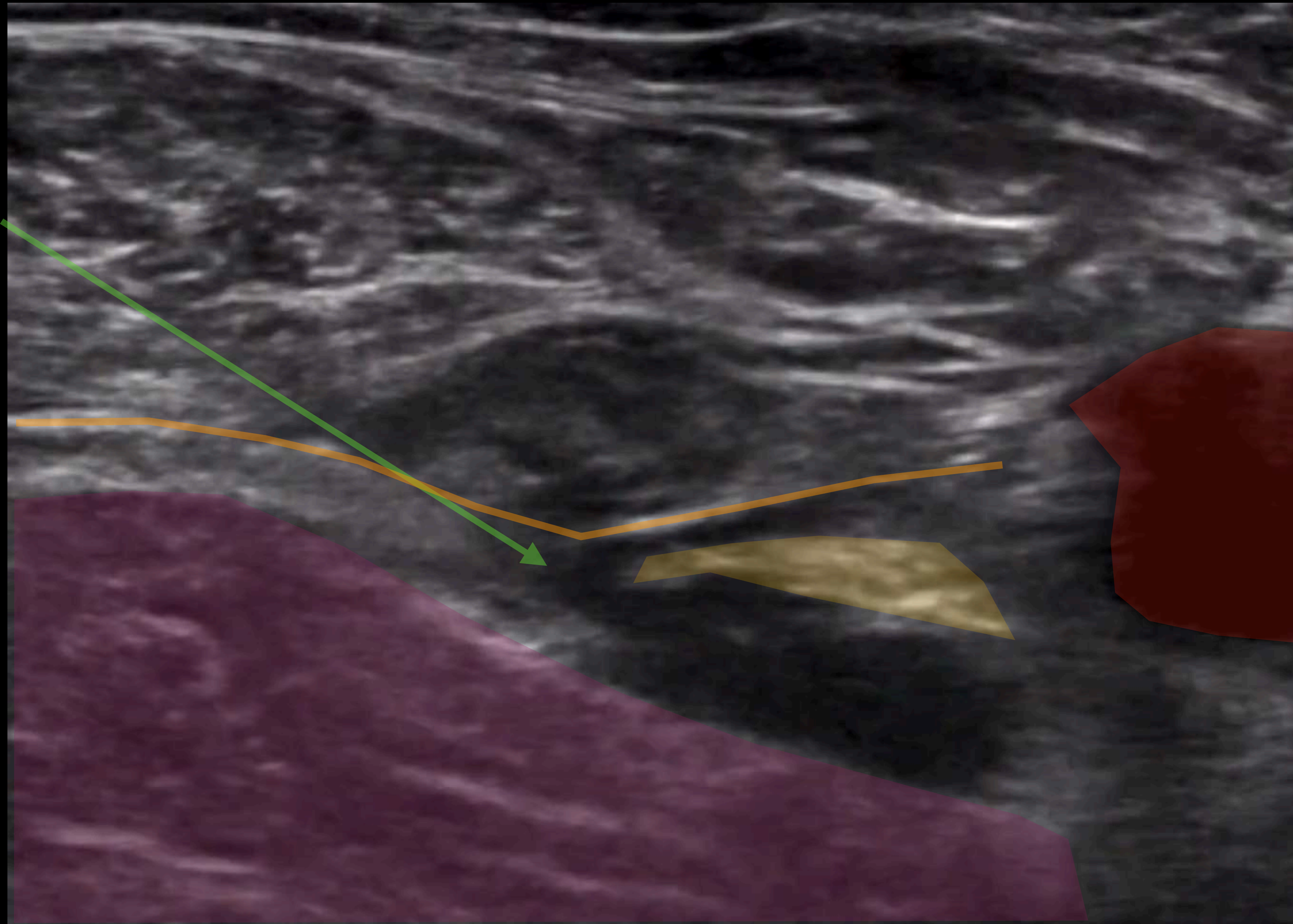
Unzip



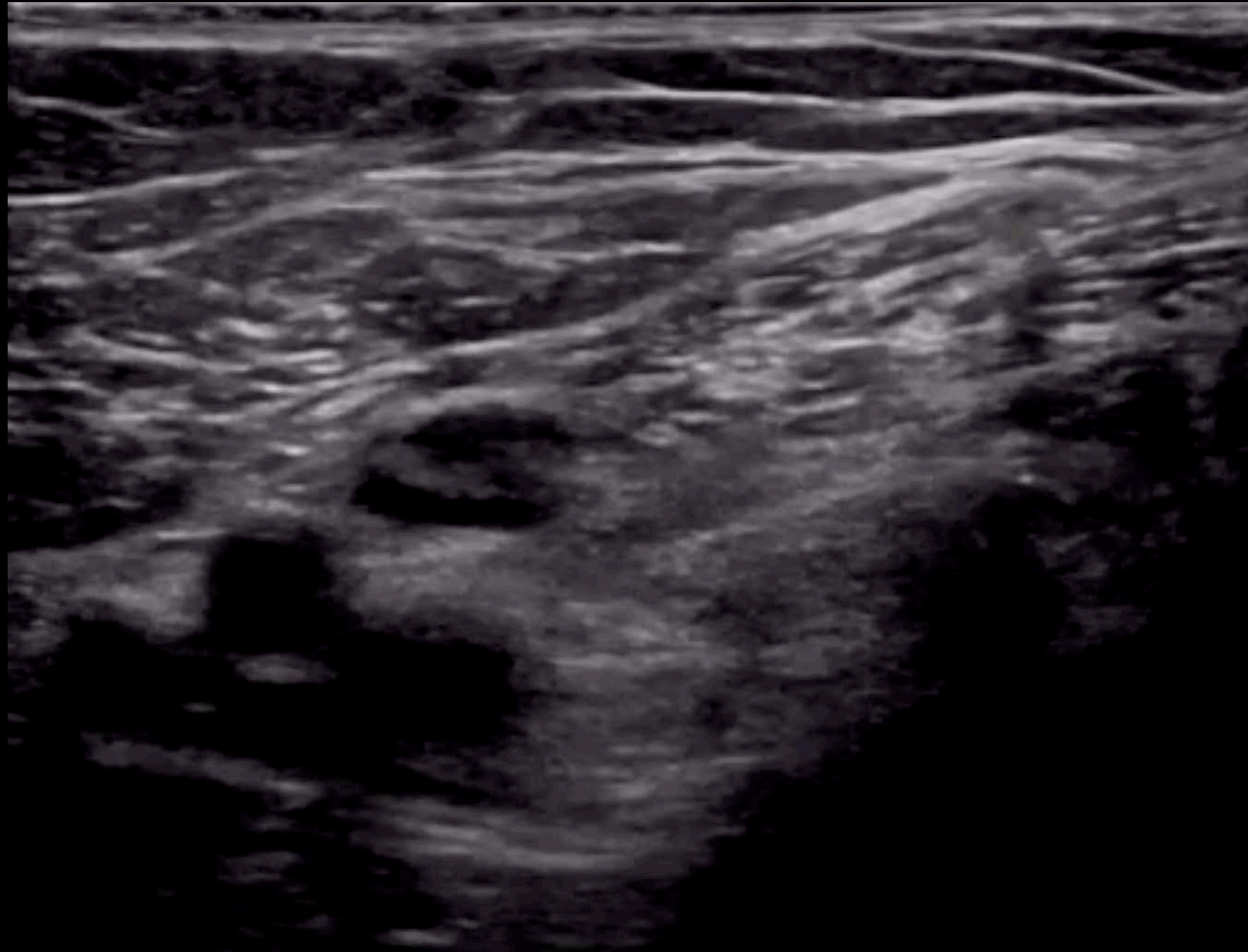
Iliaca **Not** Lata



Confirmation



One more...



Block Specifics - Post Block

Aftercare

- Time + Initials
- Maintain on monitors for at least an hour (transport)
- Procedure note

Procedure Note

Pre-procedure neurological exam findings:

A neurologic exam was conducted including motor and sensory testing of the femoral and sciatic nerve. There were no deficits. [The following deficits were found: [free text]]. Extremity compartments were [soft, tense, not assessed].

Procedure:

A right [left] infrainguinal fascia iliaca compartment nerve block was performed. The patient was maintained on continuous cardiac and pulmonary monitoring throughout the procedure.

The area of injection was prepped with chlorhexidine [betadine]. Sterile technique was observed using: [+] sterile gloves, [+] sterile ultrasound probe cover, [+] sterile drape, [+] cap, [+] face mask.

A [25, 22, 20, 18 [free text]] gauge spinal needle, [free text] mm in length, was used. Ultrasound guidance with real-time visualization of the needle tip was utilized throughout the procedure using an in-plane [out-of-plane] approach.

Approximately [30] mL of 1 [0.5] % lidocaine without epinephrine [bupivacaine] was injected near the nerve structure.

Local anesthetic was gradually injected in small aliquots of 3-5 mL following negative aspiration.

There was no [was] significant pain or paresthesias during the procedure. There were no [were] signs of local anesthetic toxicity. There were no [were] other complications. [free text]

Following the procedure, the blocked extremity was protected [positioned] to prevent injury and was marked with provider initials and time of the block.

Regional Anesthesia



- 1) Patient is identified, 2 criteria. Appropriate identifying data entered in ultrasound machine.
 - 2) Allergies and anticoagulation status are reviewed.
 - 3) Consent for block and any associated procedure is confirmed.
 - 4) Appropriate neurologic and vascular exam completed and documented.
 - 5) Block plan is confirmed*, site is marked.
 - 6) Necessary equipment is present, drugs are labeled.
- 7) Resuscitation equipment is immediately available: airway devices, suction, vasoactive drugs, lipid emulsion.**
- 8) Appropriate monitors are applied; intravenous access, sedation, and supplemental oxygen are provided, if indicated.
- 9) Aseptic technique is used: hand cleansing is performed, and sterile gloves are used.
 - 10) “Time out” is performed before needle insertion.

Thanks!