

Rural POCUS ROUNDS

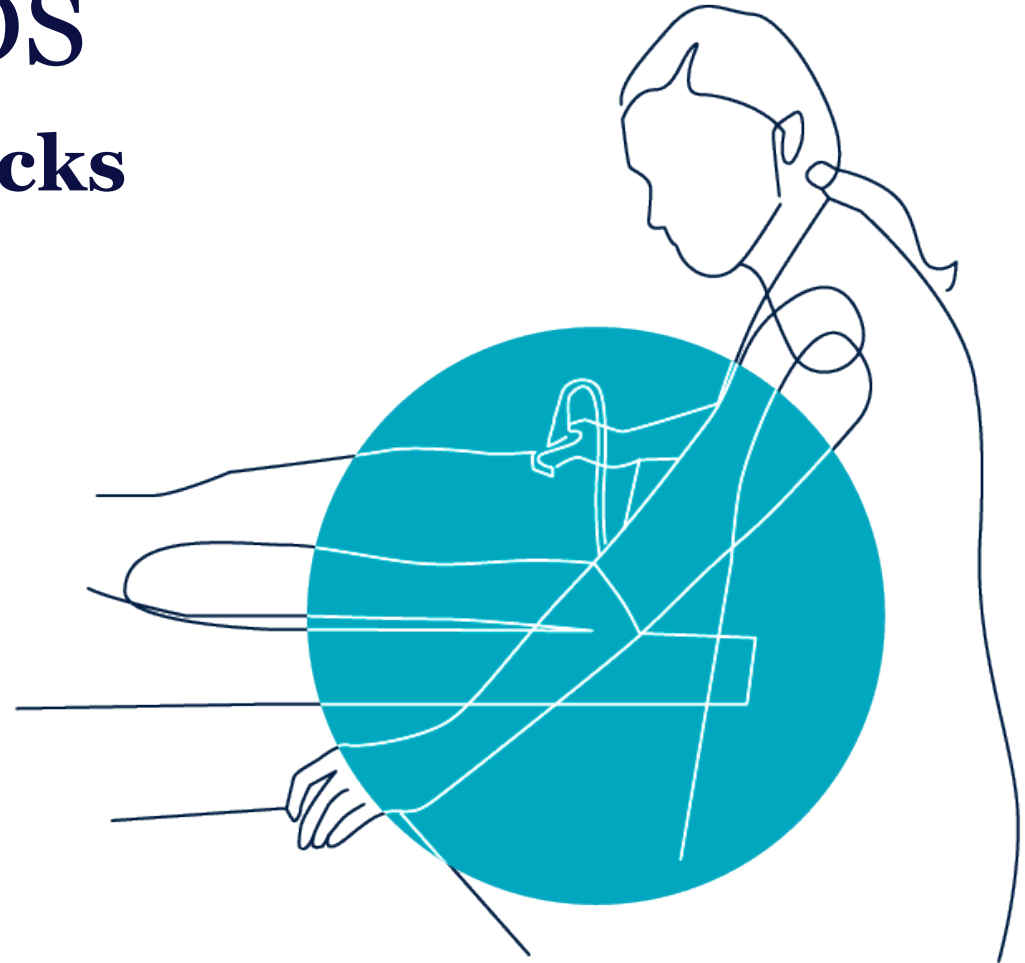
Lower Extremity Nerve Blocks

- *PoCUS for Pirates*

Kevin Fairbairn

September 18th, 2026 | 12:00

Intended for
intermediate PoCUS users



THE UNIVERSITY OF BRITISH COLUMBIA

Continuing Professional Development

Faculty of Medicine

LAND ACKNOWLEDGMENT

We acknowledge that we work on the traditional, ancestral and unceded territory of the Ktunaxa, Syilx and Sinixt Nations.



UBC CPD
Medicine
CONTINUING
PROFESSIONAL
DEVELOPMENT



PRESENTER DISCLOSURES

Relationships with commercial interests:

- Medical Lead HOUSE program UBC CPD



UBC CPD
Medicine

CONTINUING
PROFESSIONAL
DEVELOPMENT



MITIGATION OF BIAS

- All content developed as part of this program was reviewed for potential bias by the members of the program planning committee.
- Relationships do not affect my choices in developing content.
- Financial relationships are unrelated to presentation.
- Not speaking about any products or medications.



UBC CPD
Medicine
CONTINUING
PROFESSIONAL
DEVELOPMENT



RURAL POCUS ROUNDS - CASES

Bring Your Cases - Swollen Leg with Dr. Virginia Robinson

<https://ubccpd.ca/learn/learning-activities/rural-pocus-rounds-bring-your-cases-cardiac-edition>

Date: Fri, Dec 11 from 12-1pm PT

Case submission

page: https://ubc.ca1.qualtrics.com/jfe/form/SV_3KRARHRxe2Qf0Sa



UBC CPD
Medicine
CONTINUING
PROFESSIONAL
DEVELOPMENT



RURAL POCUS ROUNDS - CASES



Date: Fri, Dec 11 from 12-1pm PT

Case submission

page: https://ubc.ca1.qualtrics.com/jfe/form/SV_3KRARHRxe2Qf0Sa



UBC CPD
Medicine
CONTINUING
PROFESSIONAL
DEVELOPMENT



LEARNING OBJECTIVES

1. Develop (review) an approach to performing PoCUS guided nerve blocks
2. Describe 3 indications for a lower extremity nerve block
3. Identify 3 nerve blocks for the lower extremity

Previous RPR:

- <https://ubccpd.ca/recordings-rpr>



UBC CPD
Medicine
CONTINUING
PROFESSIONAL
DEVELOPMENT

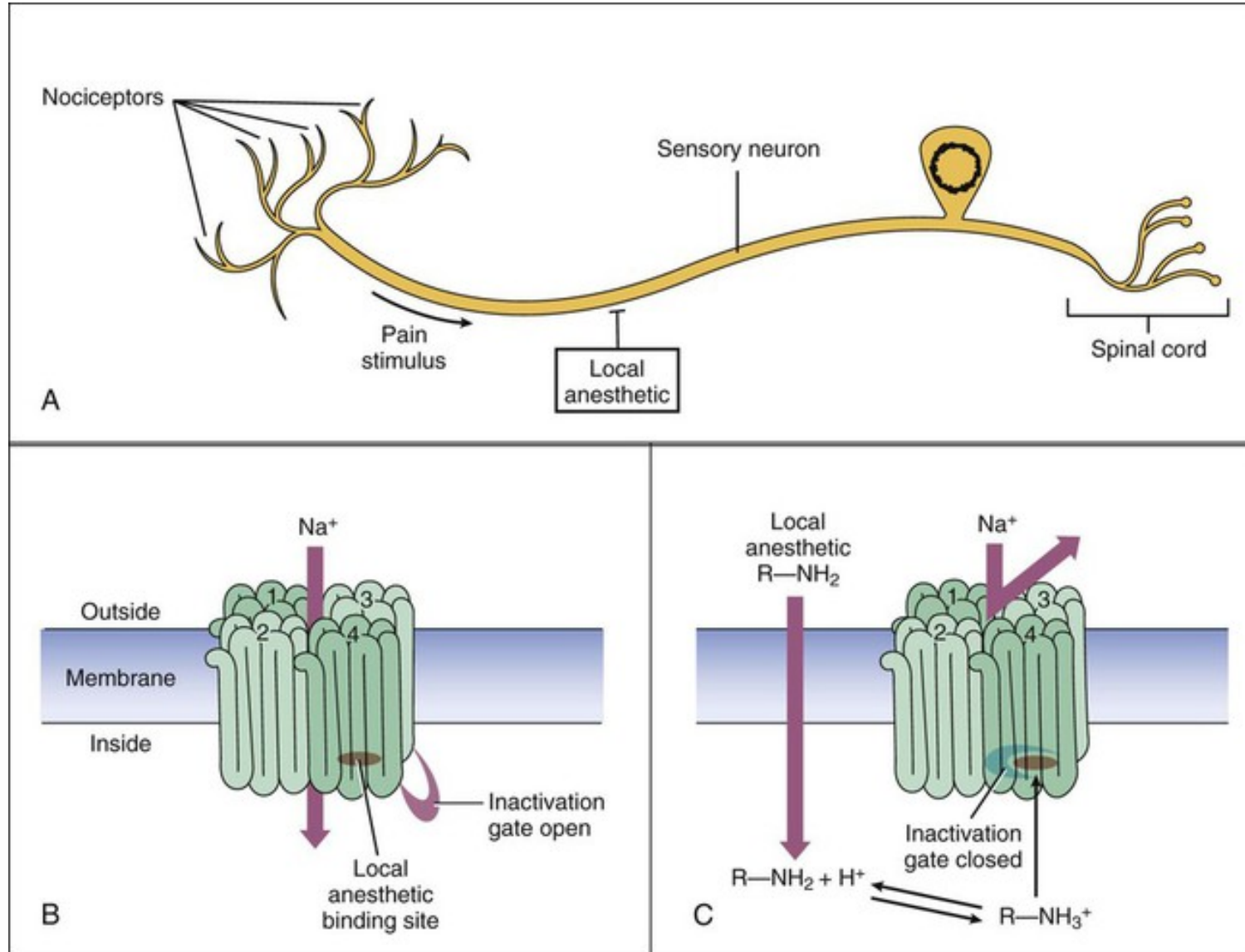




UBC CPD
Medicine
CONTINUING
PROFESSIONAL
DEVELOPMENT



AN APPROACH TO NERVE BLOCKS



UBC CPD
Medicine
CONTINUING
PROFESSIONAL
DEVELOPMENT



STEPS TO PERFORMING A BLOCK:

- Obtain consent
- Document neurovascular exam
- Review anatomy
- Review block/procedure
- Place ultrasound machine in direct sight line
- Note critical internal structures (arteries, lungs, etc.)
- Optimize your image
- Sterile prep/technique
- Visualize needle tip throughout the procedure
- Aspirate before injection
- Visualize placement of anesthetic
- Document procedure
- Reassess patient (5-45 minutes depending on block)



UBC CPD
Medicine
CONTINUING
PROFESSIONAL
DEVELOPMENT



AN APPROACH TO NERVE BLOCKS

- Injury or Indication / Contraindications
- Anatomy (Nerve location & Distribution)
- Prep & Prescan
- Supplies & Safety
- Perform Block
- Follow up & Monitor



UBC CPD
Medicine
CONTINUING
PROFESSIONAL
DEVELOPMENT



INDICATIONS

- **PAIN**
 - Trauma - Fractures & Lacerations
 - FOB
 - Abscess I&D
 - Burns



UBC CPD
Medicine
CONTINUING
PROFESSIONAL
DEVELOPMENT





UBC CPD
Medicine
CONTINUING
PROFESSIONAL
DEVELOPMENT



CONTRAINDICATIONS

Contraindications

- Localized infection
- Severe allergy to local anesthetic (ester vs amide)

Relative Contraindications

- Anticoagulation
- Risk of compartment syndrome (long blocks)
- Neurologic deficits



UBC CPD
Medicine
CONTINUING
PROFESSIONAL
DEVELOPMENT



COMPLICATIONS

- Infection
- Hemorrhagic complications (bleeding, hematoma, vascular injury)
- Neuropraxia / Nerve injury (transient most of the time, rarely permanent)
- Local Anesthetic Systemic Toxicity (LAST)
- Block failure

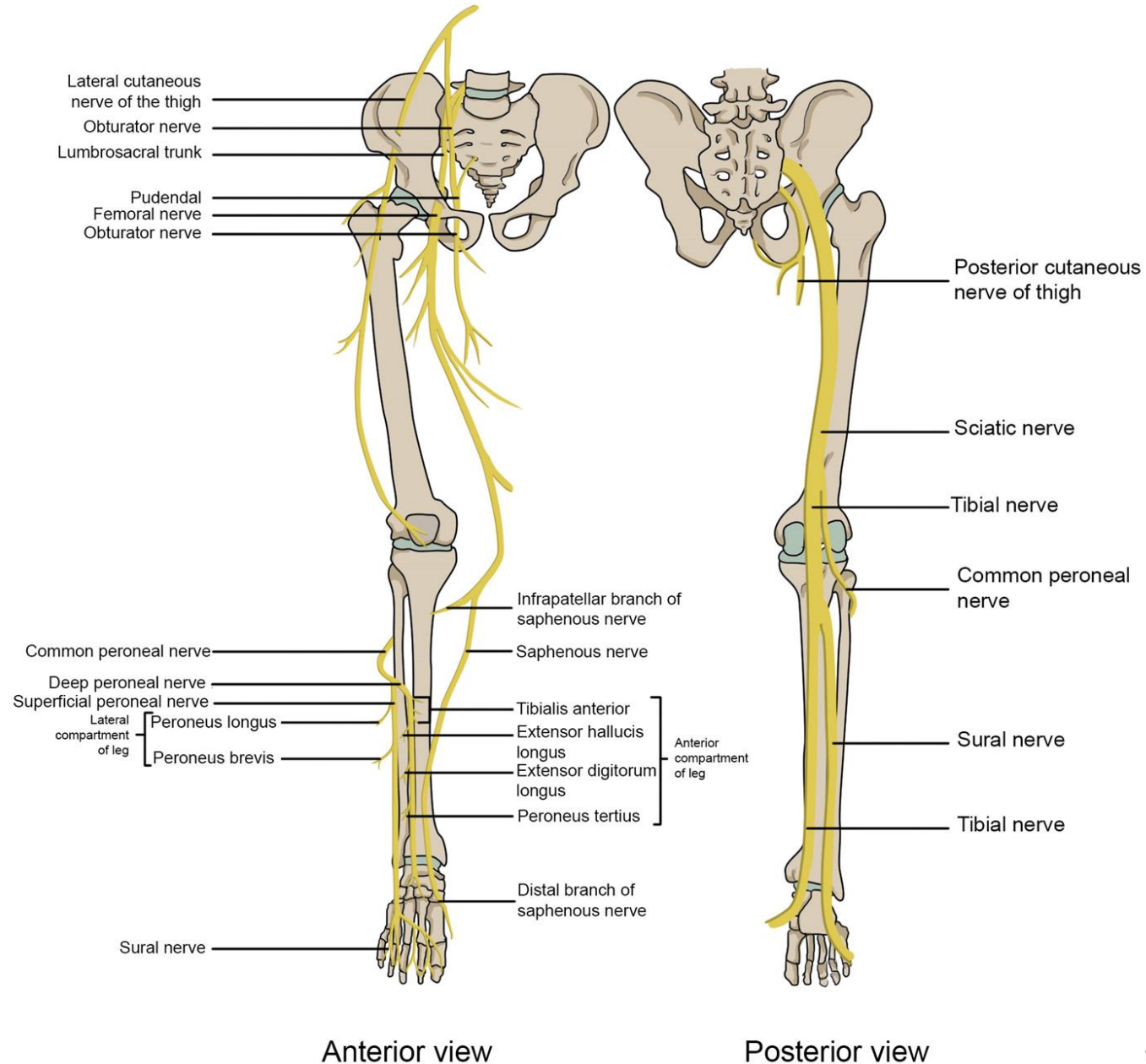


UBC CPD
Medicine
CONTINUING
PROFESSIONAL
DEVELOPMENT



ANATOMY

Nerves of the Lower Extremities



UBC CPD
Medicine
 CONTINUING
 PROFESSIONAL
 DEVELOPMENT

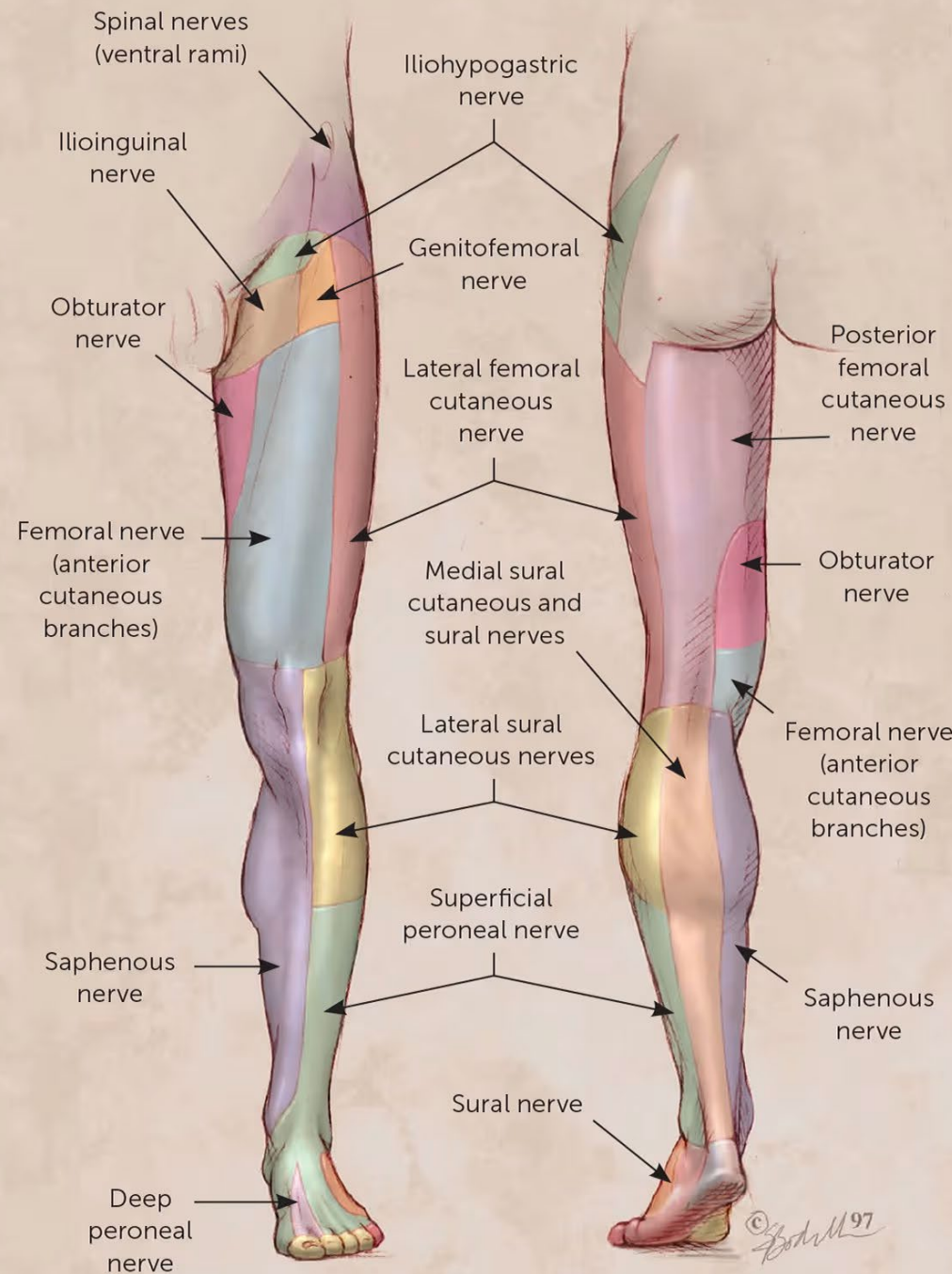
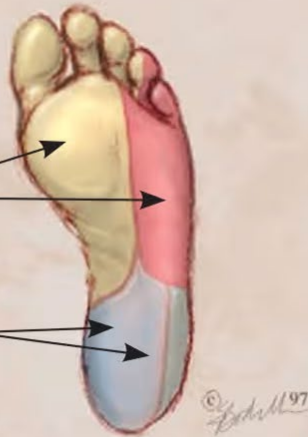


ANATOMY

From the **tibial nerve**:

Medial and lateral
plantar nerves

Medial and lateral
calcaneal branches

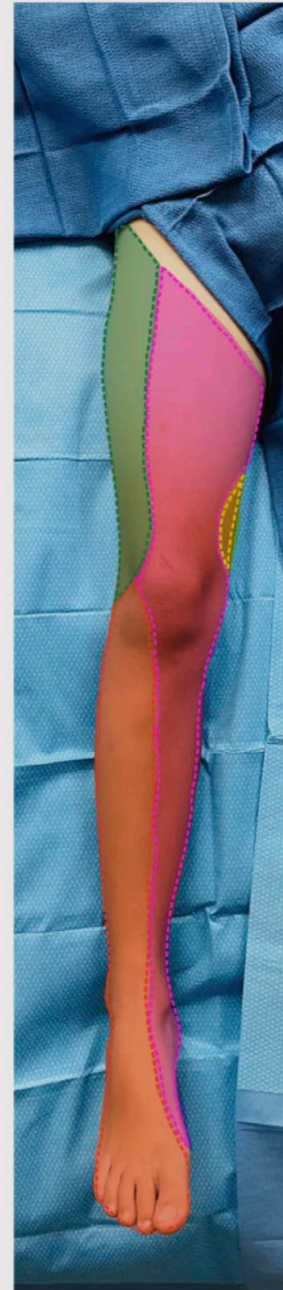
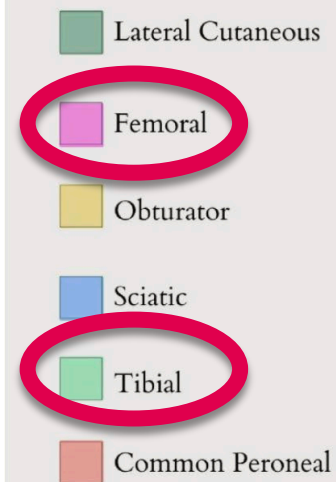


UBC CPD
Medicine
CONTINUING
PROFESSIONAL
DEVELOPMENT

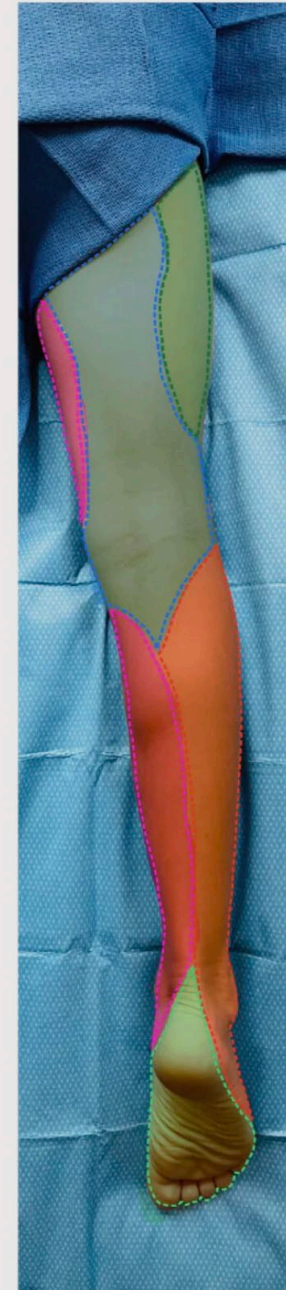
Rural Coordination
Centre of BC



ANATOMY



Anterior



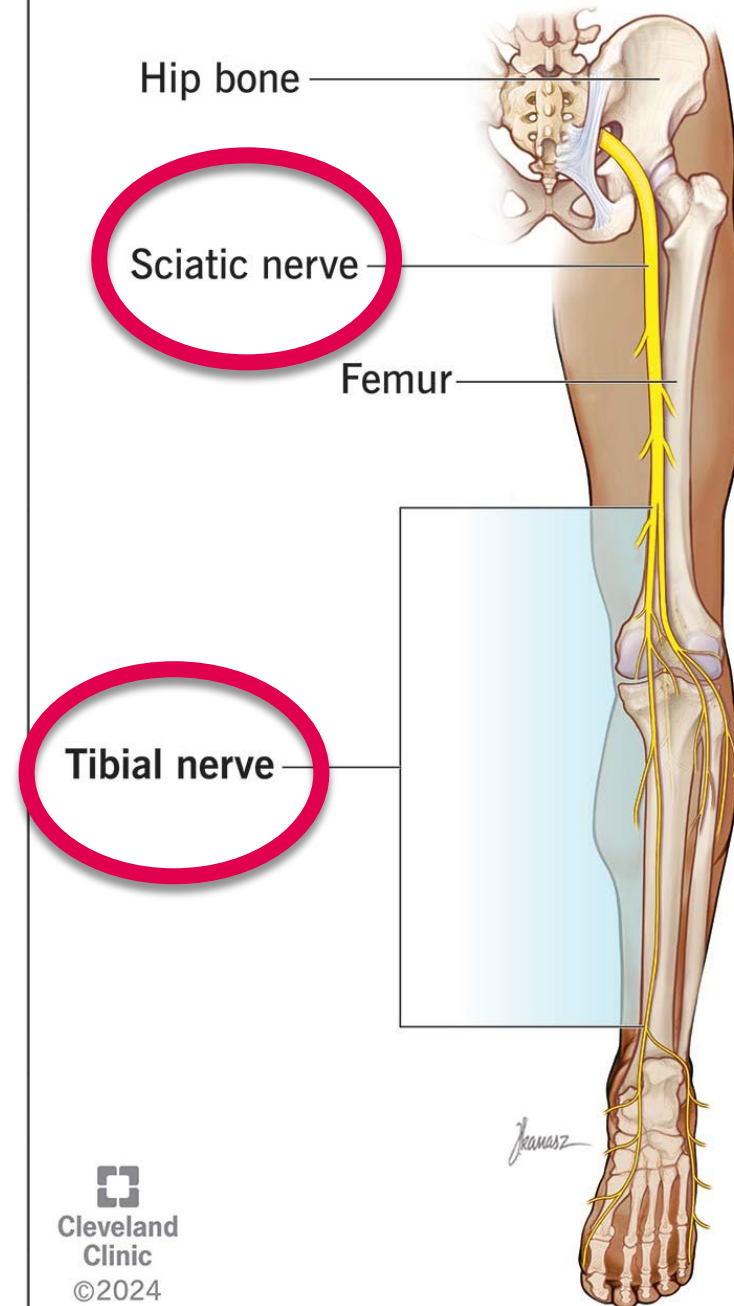
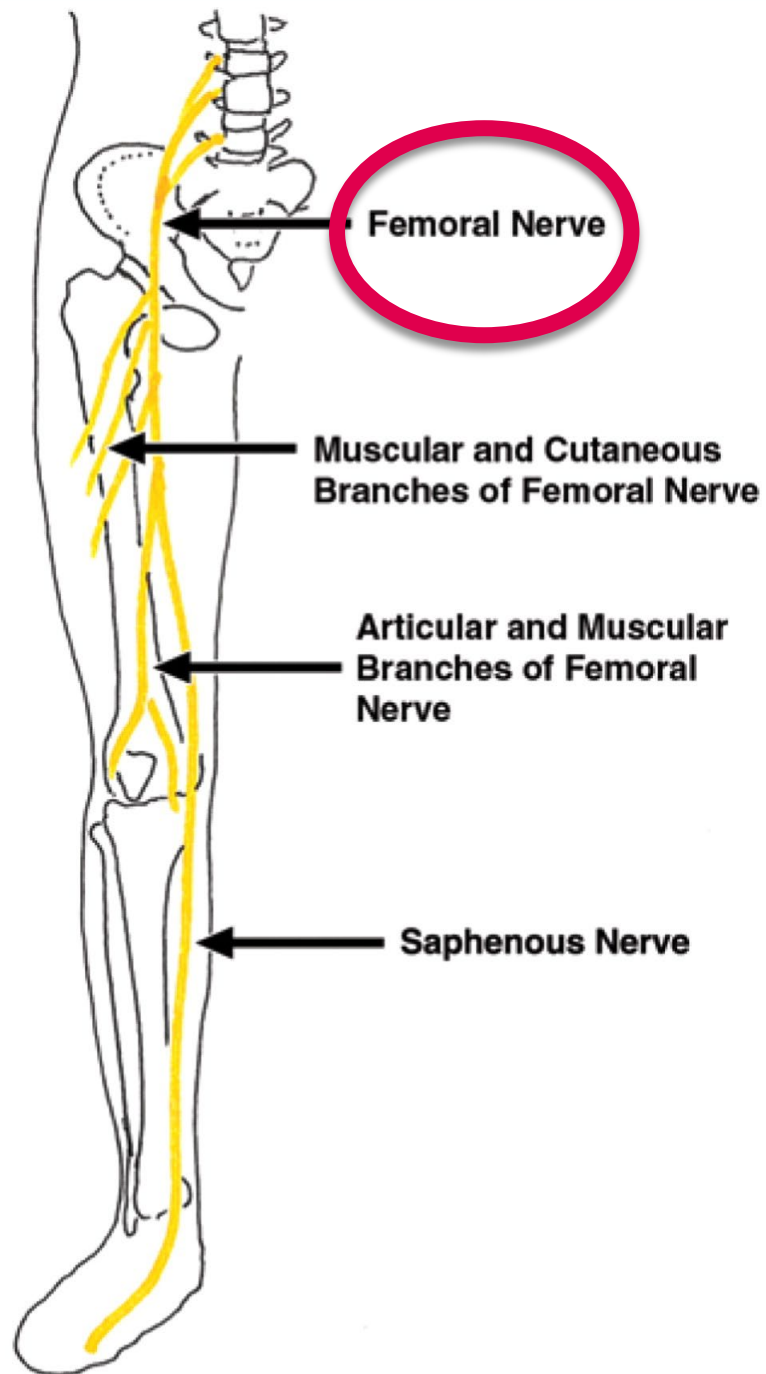
Posterior



UBC CPD
Medicine
CONTINUING
PROFESSIONAL
DEVELOPMENT



ANATOMY



PREP

- Consent
- Document Neurovascular exam
- Review with consultant
- Checklist
- Pt position
- Your position
- US position



UBC CPD
Medicine
CONTINUING
PROFESSIONAL
DEVELOPMENT



PREP

Mulroy et al

Regional Anesthesia and Pain Medicine • Volume 39, Number 3, May-June 2014

TABLE 2. Final Form of the Proposed Checklist, With Changes in Numerical Sequence and Wording Based on Expert Feedback Enumerated in Table 1

Regional Block Preprocedural Checklist

- 1) Patient is identified, 2 criteria
- 2) Allergies and anticoagulation status are reviewed.
- 3) Surgical procedure/consent is confirmed.
- 4) Block plan is confirmed, site is marked.
- 5) Necessary equipment is present, drugs/solutions are labeled.
- 6) Resuscitation equipment is immediately available: airway devices, suction, vasoactive drugs, lipid emulsion.
- 7) Appropriate ASRA monitors are applied; intravenous access, sedation, and supplemental oxygen are provided, if indicated.
- 8) Aseptic technique is used: hand cleansing is performed, mask and sterile gloves are used.
- 9) “Time out” is performed before needle insertion for each new block site if the position is changed or separated in time or performed by another team.



UBC CPD
Medicine
CONTINUING
PROFESSIONAL
DEVELOPMENT



PREP



UBC CPD
Medicine
CONTINUING
PROFESSIONAL
DEVELOPMENT



PRESCAN

- Note critical internal structures (arteries, lungs, etc.)
- Optimize your image (anatomy / colour doppler)
- Mark skin



UBC CPD
Medicine
CONTINUING
PROFESSIONAL
DEVELOPMENT



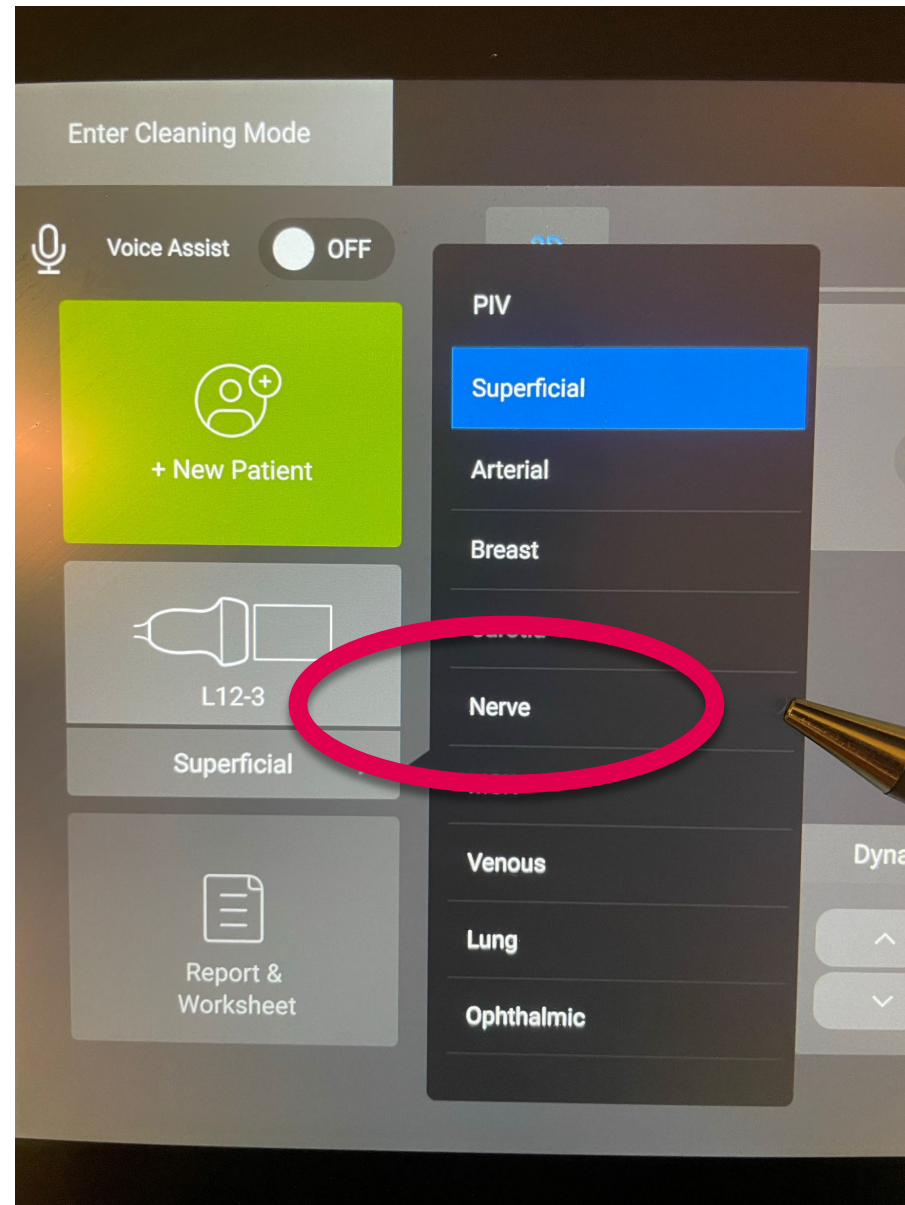
LINEAR PROBE



UBC CPD
Medicine
CONTINUING
PROFESSIONAL
DEVELOPMENT



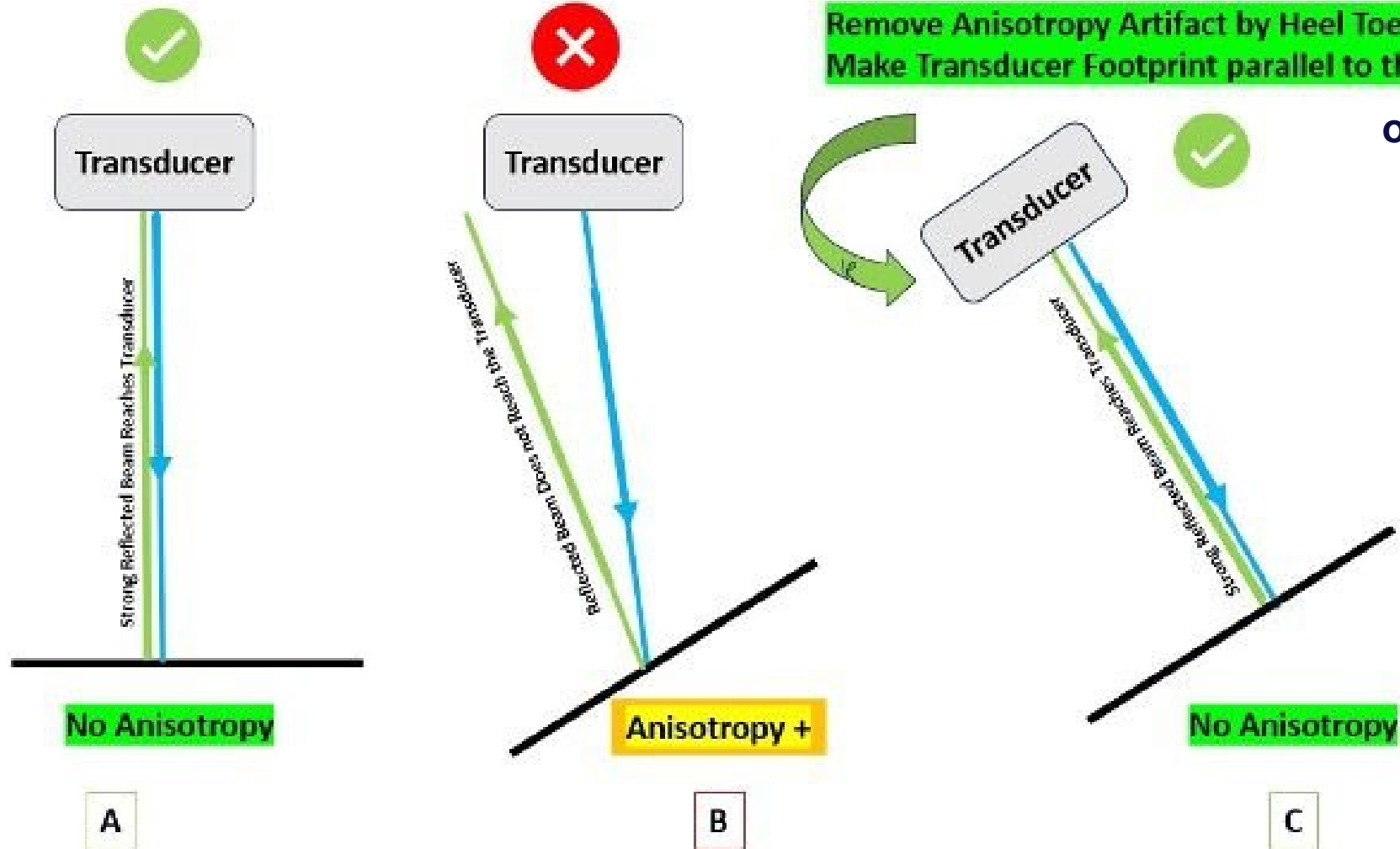
NERVE SETTING



UBC CPD
Medicine
CONTINUING
PROFESSIONAL
DEVELOPMENT



ANISOTROPY



Remove Anisotropy Artifact by Heel Toe Maneuver to Make Transducer Footprint parallel to the Tendon Fibers

or NERVE



UBC CPD
Medicine
CONTINUING
PROFESSIONAL
DEVELOPMENT

Rural Coordination
Centre of BC



POCUS

Point-of-Care Ultrasound Certification Academy™

SUPPLES

- Sterile set up
- Local anesthetic
- Needle choice
- Syringe



UBC CPD
Medicine
CONTINUING
PROFESSIONAL
DEVELOPMENT



[illegible]

STERILE TECHNIQUE

- Blocks should be performed under sterile/semi-sterile technique
- Clean probe and ultrasound machine
- Have ultrasound machine at proper depth and anatomy landmarked
- Clean/prep area with chlorhexidine/antiseptic x 3
- Use sterile gloves/gown
- Place sterile ultrasound probe cover (some practitioners use a tegaderm for sterile barrier)
- Consider local anesthetic prior to performing nerve block



UBC CPD
Medicine
CONTINUING
PROFESSIONAL
DEVELOPMENT



SAFETY

Highland Hospital				Emergency Department		
Local Anesthetic Dosing Guide For Regional Anesthesia						
Drug	Dose (mg/kg) [DO NOT EXCEED]	50 kg (ml)	70 kg (ml)	90 kg (ml)	Max Dose	Notes
Ropivacaine 0.5% (5mg/ml)	3mg/kg	150mg (30ml)	210mg (42 ml)	270mg (54ml)	300mg (60ml)	4-24 hr block. Powerful, have intralipid!
Ropivacaine 1% (10mg/ml)	3mg/kg	150mg (15ml)	210mg (21 ml)	270mg (27ml)	300mg (30ml)	Dilute 1% solution 1:1 with NS.
Bupivacaine 0.5% (5mg/ml)	2 mg/kg	100mg (20ml)	140mg (28ml)	175mg (35ml)	175 mg (35ml)	Greater risk of toxicity than lido. Contraindicated in pregnancy.
Lidocaine 1% (10mg/ml)	4.5 mg/kg	225mg (22ml)	300mg (30ml)	300 mg (30ml)	300mg (30ml)	Do not repeat within 2 hours.
Lidocaine 1% w/ epi (10mg/ml)	7 mg/kg	350mg (35ml)	490mg (49ml)	500mg (50ml)	500mg (50ml)	OK to use on face, penis, digits if no peripheral vascular disease.
Mepivacaine 1.5% (15mg/ml)	4 mg/kg	200mg (13ml)	280mg (18ml)	300 mg (20ml)	300mg (20ml)	Contraindicated in pregnancy.
Chloroprocaine 3% (30mg/ml)	11 mg/kg	500mg (16ml)	700mg (23ml)	900mg (30ml)	1000mg (33ml)	Ultra short blocks (60-90m). Pregnancy safe.
Lyons/Herring 2016						



UBC CPD
Medicine

CONTINUING
PROFESSIONAL
DEVELOPMENT

Rural Coordination
Centre of BC



SAFETY

- <https://www.mdcalc.com/calc/10205/local-anesthetic-dosing-calculator>



UBC CPD
Medicine
CONTINUING
PROFESSIONAL
DEVELOPMENT



SAFETY

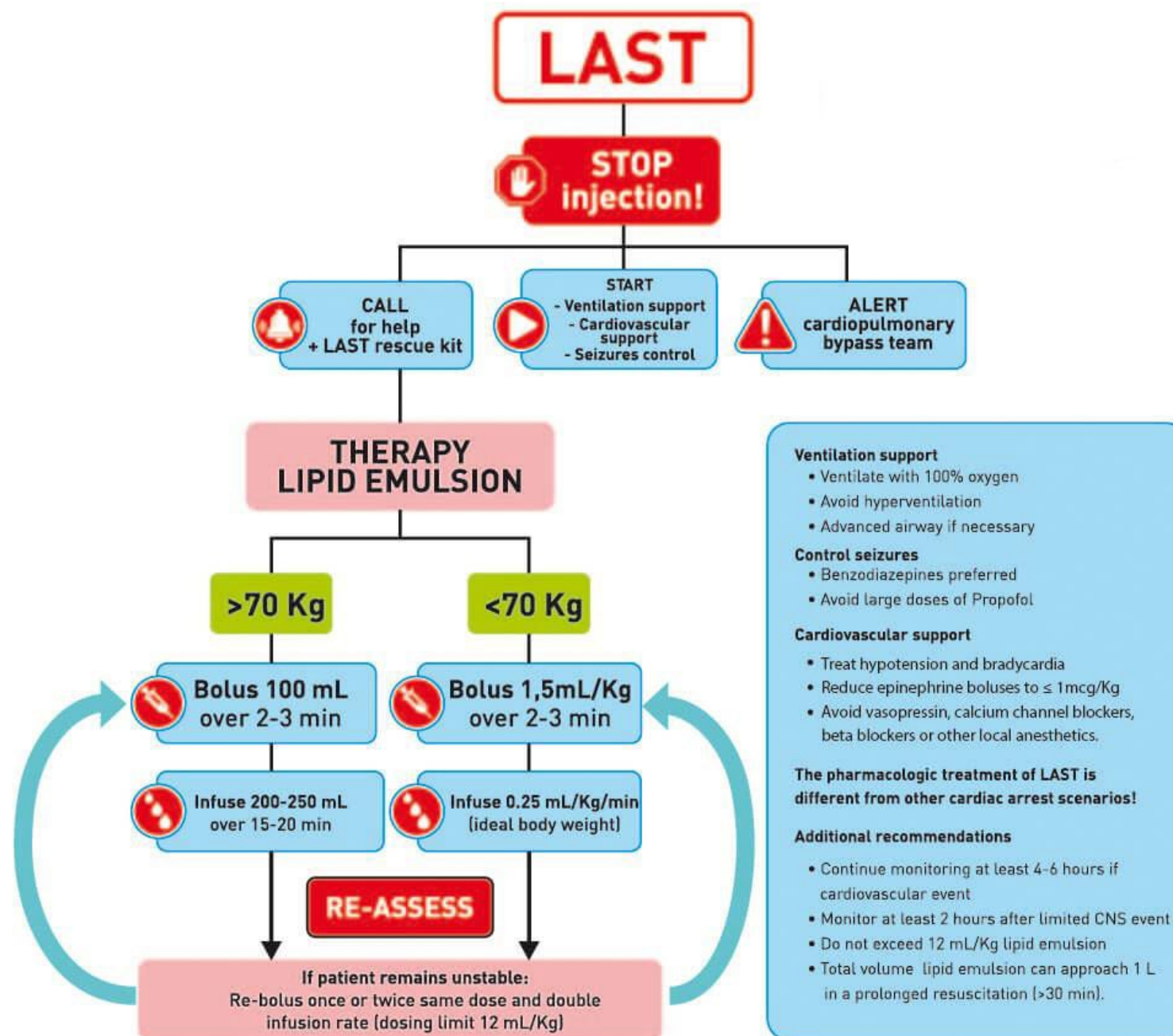
- Cardiac monitor 30-60 min
- Have IV access
- LAST
 - Intralipid protocol
- Documentation



UBC CPD
Medicine
CONTINUING
PROFESSIONAL
DEVELOPMENT



SAFETY



UBC CPD
Medicine
CONTINUING
PROFESSIONAL
DEVELOPMENT

Rural Coordination
Centre of BC



PERFORM



UBC CPD
Medicine
CONTINUING
PROFESSIONAL
DEVELOPMENT



PERFORM

- 1-2 operators
- Aspirate
- Needle tip visualization
 - Hydrodissection
 - Bounce needle



UBC CPD
Medicine
CONTINUING
PROFESSIONAL
DEVELOPMENT



FOLLOW UP & MONITORING

- Cardiac monitor 30-60 min
- Reassess patient (5-45 minutes depending on block)



UBC CPD
Medicine
CONTINUING
PROFESSIONAL
DEVELOPMENT



LOWER EXTREMITY NERVE BLOCKS

- Femoral Nerve / Fascia Iliaca
- Popliteal Sciatic
- Posterior Tibial
- PENG Block
- Transgluteal Sciatic Nerve
- Common Peroneal Nerve
- Complete Ankle Block (Saphenous, Tibial, Deep Peroneal, Superficial Peroneal, Sural)



UBC CPD
Medicine
CONTINUING
PROFESSIONAL
DEVELOPMENT



LOWER EXTREMITY NERVE BLOCKS

- **Femoral Nerve / Fascia Iliaca**
- **Popliteal Sciatic**
- **Posterior Tibial**
- PENG Block
- Transgluteal Sciatic Nerve
- Common Peroneal Nerve
- Complete Ankle Block (Saphenous, Tibial, Deep Peroneal, Superficial Peroneal, Sural)



UBC CPD
Medicine
CONTINUING
PROFESSIONAL
DEVELOPMENT



LOWER EXTREMITY NERVE BLOCKS

- **Femoral Nerve / Fascia Iliaca**
- **Popliteal Sciatic**
- **Posterior Tibial**

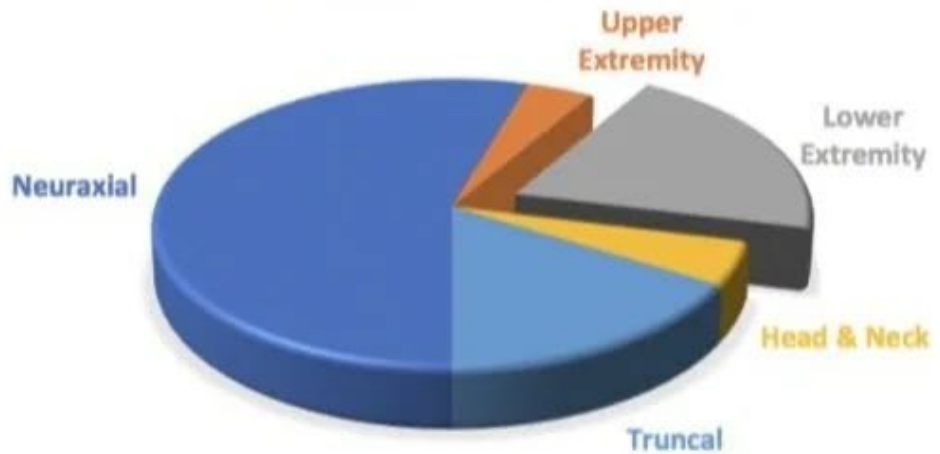


UBC CPD
Medicine
CONTINUING
PROFESSIONAL
DEVELOPMENT

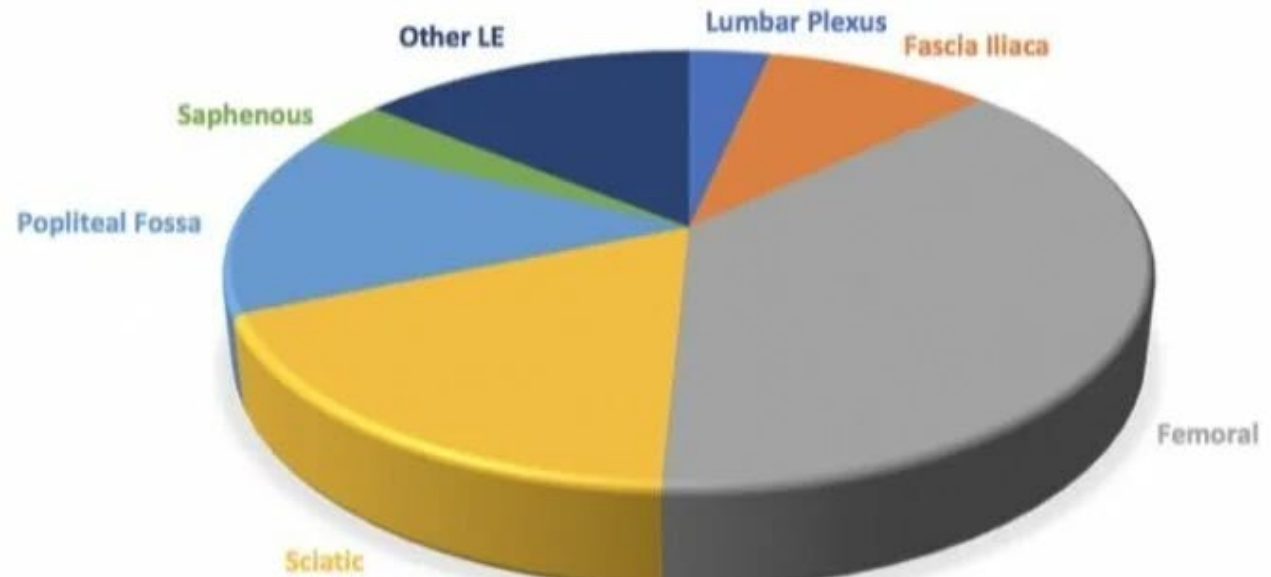


LOWER EXTREMITY NERVE BLOCKS

PEDIATRIC REGIONAL BLOCKS



LOWER EXTREMITY



UBC CPD
Medicine
CONTINUING
PROFESSIONAL
DEVELOPMENT



CASE #1

87 yo male

Hx of a fall

Presenting with Left hip pain



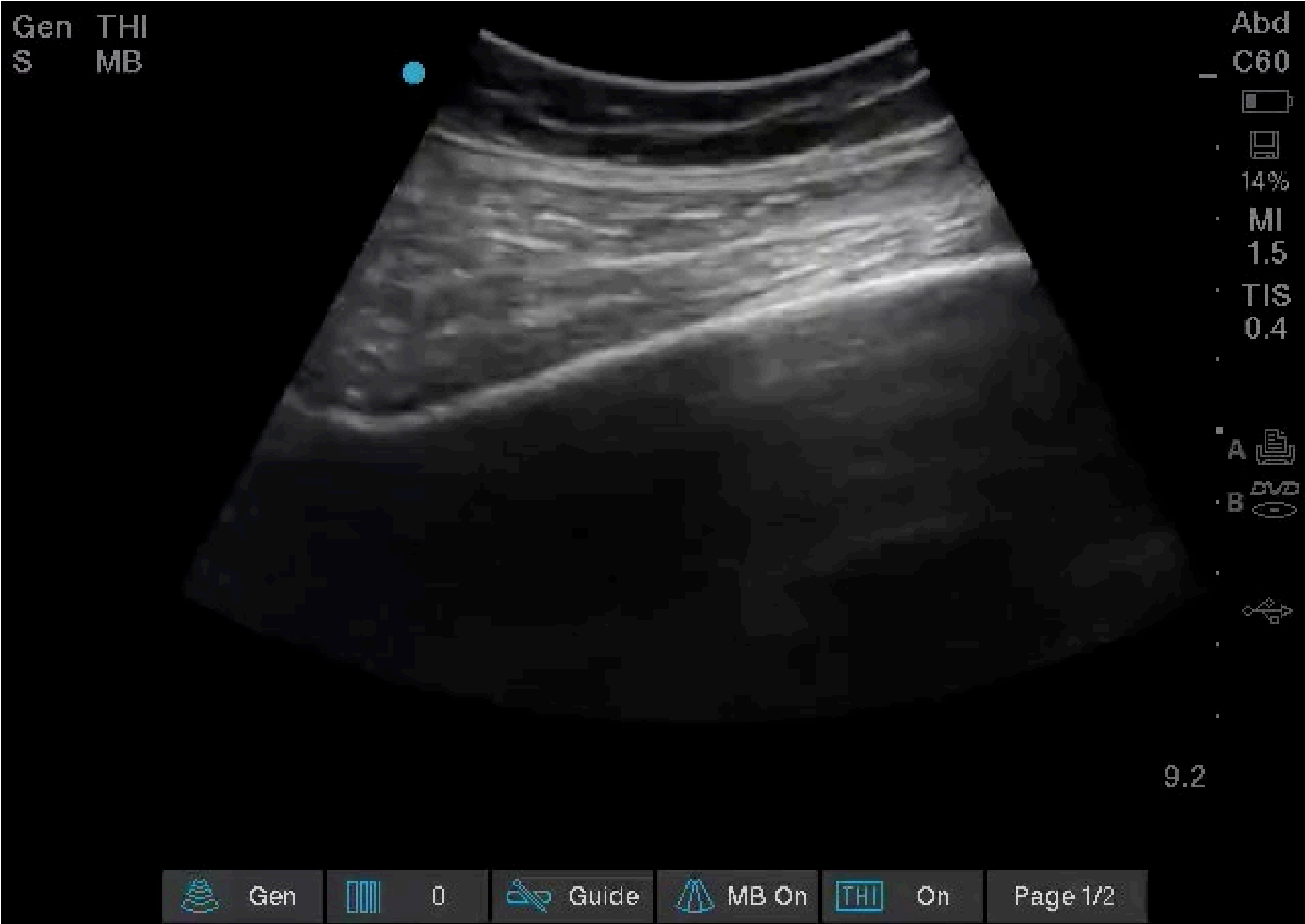
UBC CPD
Medicine

CONTINUING
PROFESSIONAL
DEVELOPMENT

Rural Coordination
Centre of BC



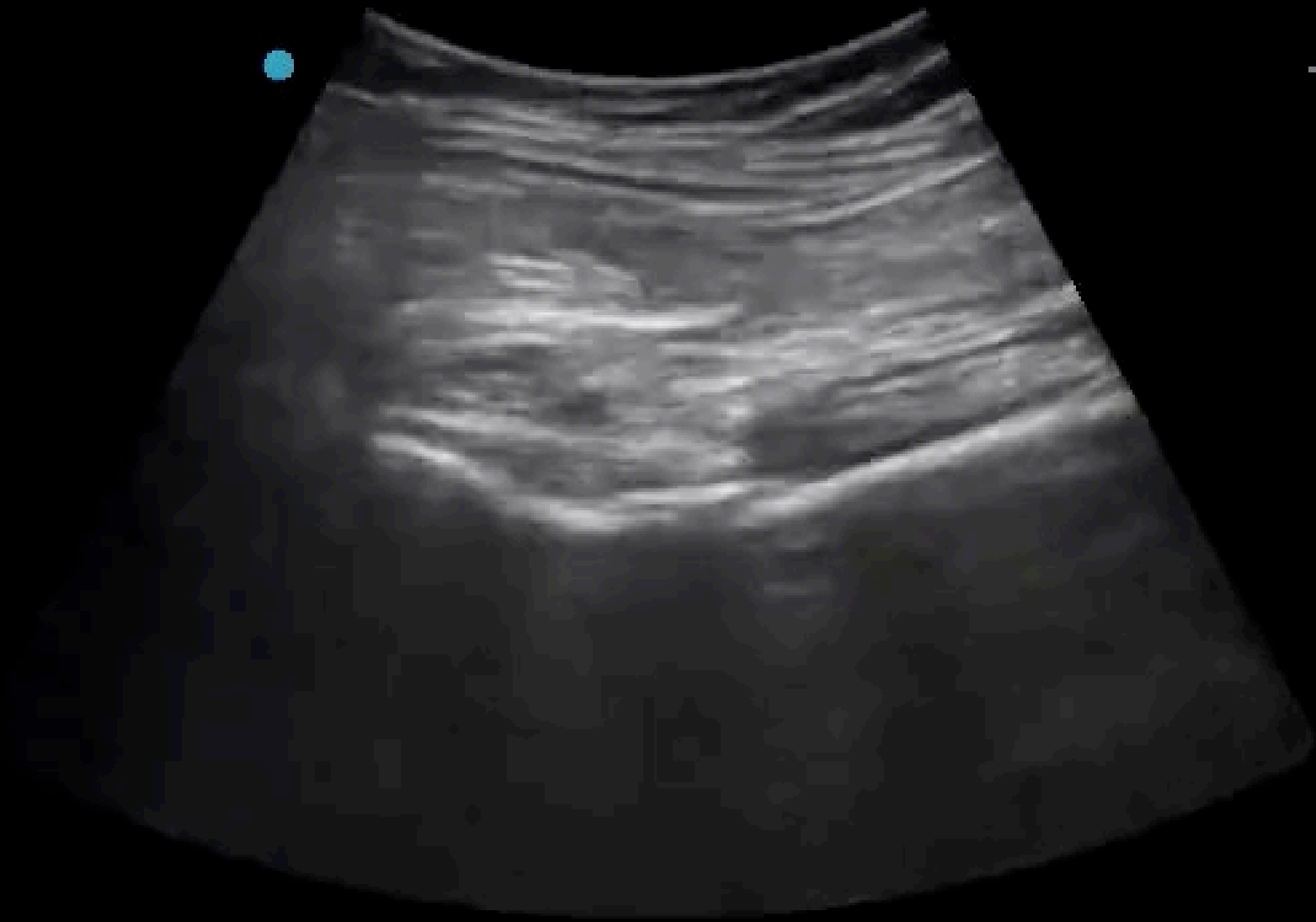
HIP FRACTURE



UBC CPD
Medicine
CONTINUING
PROFESSIONAL
DEVELOPMENT



Gen THI
S MB



Abd
C60
14%
MI
1.5
TIS
0.4

A
B

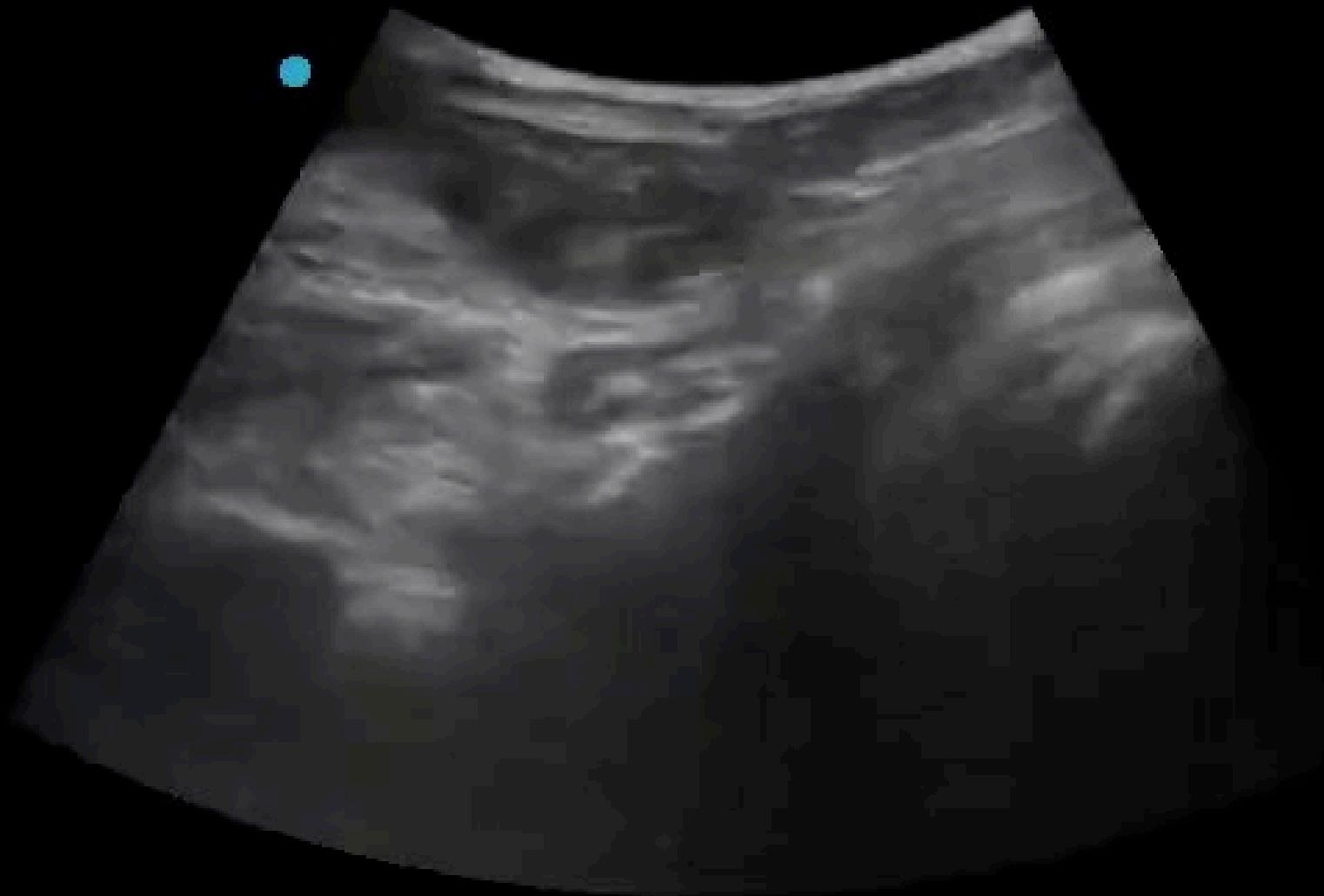
9.2



UBC CPD
Medicine
CONTINUING
PROFESSIONAL
DEVELOPMENT



Gen THI
S MB



Abd
C60
—

· 23%
MI
· 1.5
TIS
· 0.4

A

7.8



Gen



0



Guide



MB On



On

Page 1/2



UBC CPD
Medicine
CONTINUING
PROFESSIONAL
DEVELOPMENT

Rural Coordination
Centre of BC



Gen THI
S MB

Msk
C60



3%

MI
1.5

TIS
0.5



UBC CPD
Medicine
CONTINUING
PROFESSIONAL
DEVELOPMENT



Gen



0



Guide

Clips...



On

Page 1/3

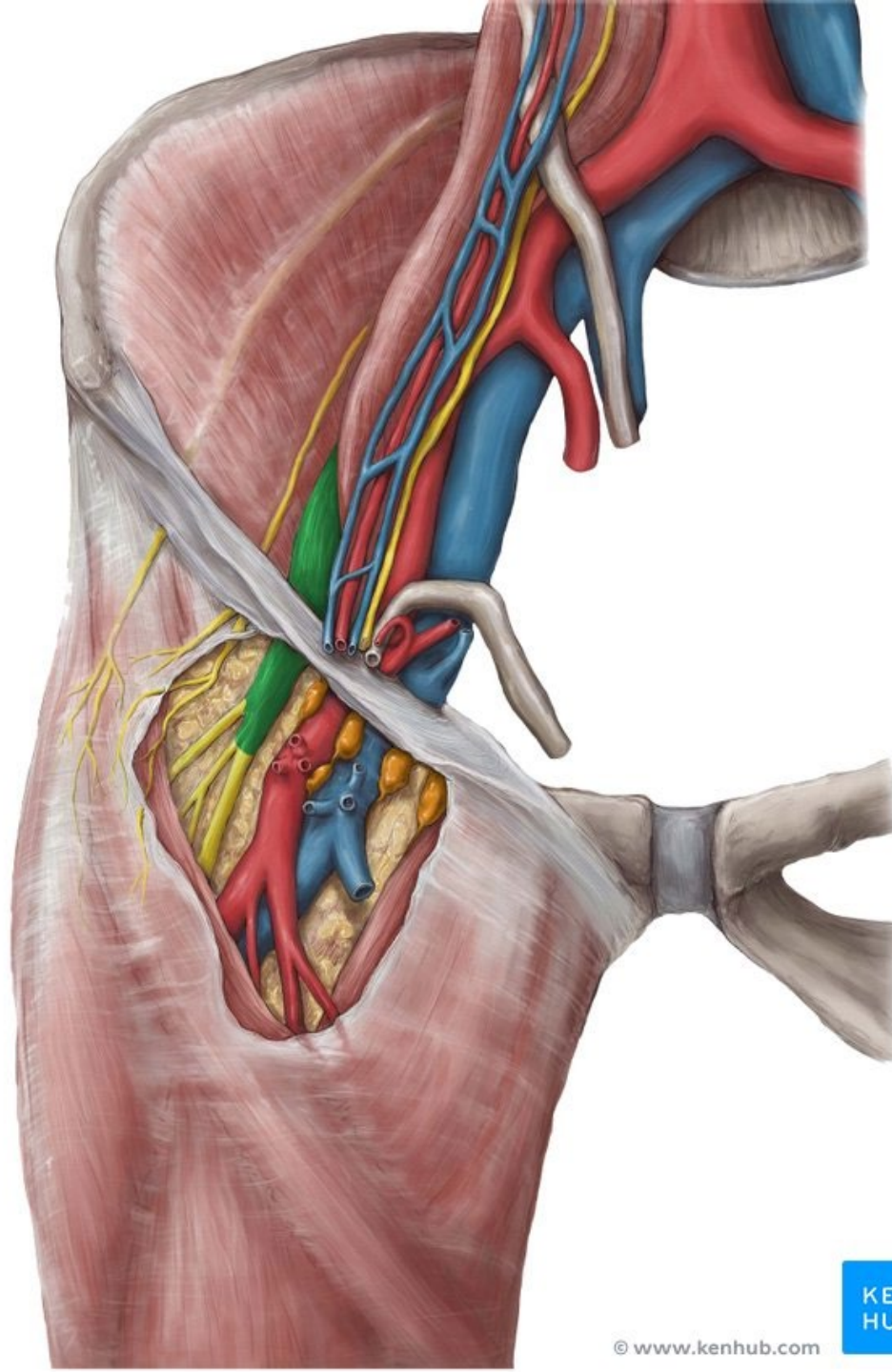
FNB



UBC CPD
Medicine
CONTINUING
PROFESSIONAL
DEVELOPMENT



FNB



UBC CPD
Medicine
CONTINUING
PROFESSIONAL
DEVELOPMENT



FNB

Res
S MB



Nrv
HFL

2%
MI
0.7
TIS
0.2

A
B

6.0

Res

0

Guide

Clips...

Dual

Page 1/2



UBC CPD
Medicine
CONTINUING
PROFESSIONAL
DEVELOPMENT



FNB

Res
S

MB



Nrv
HFL
5%
MI
1.0
TIS
0.2

A
B

4.0

 Res

 0

 Guide

Clips...

 Dual

Page 1/2



BC CPD
medicine
CONTINUING
PROFESSIONAL
DEVELOPMENT



FNB



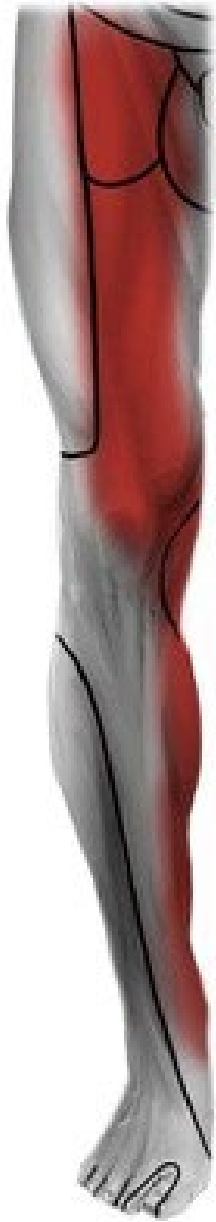
FNB



UBC CPD
Medicine
CONTINUING
PROFESSIONAL
DEVELOPMENT



FNB

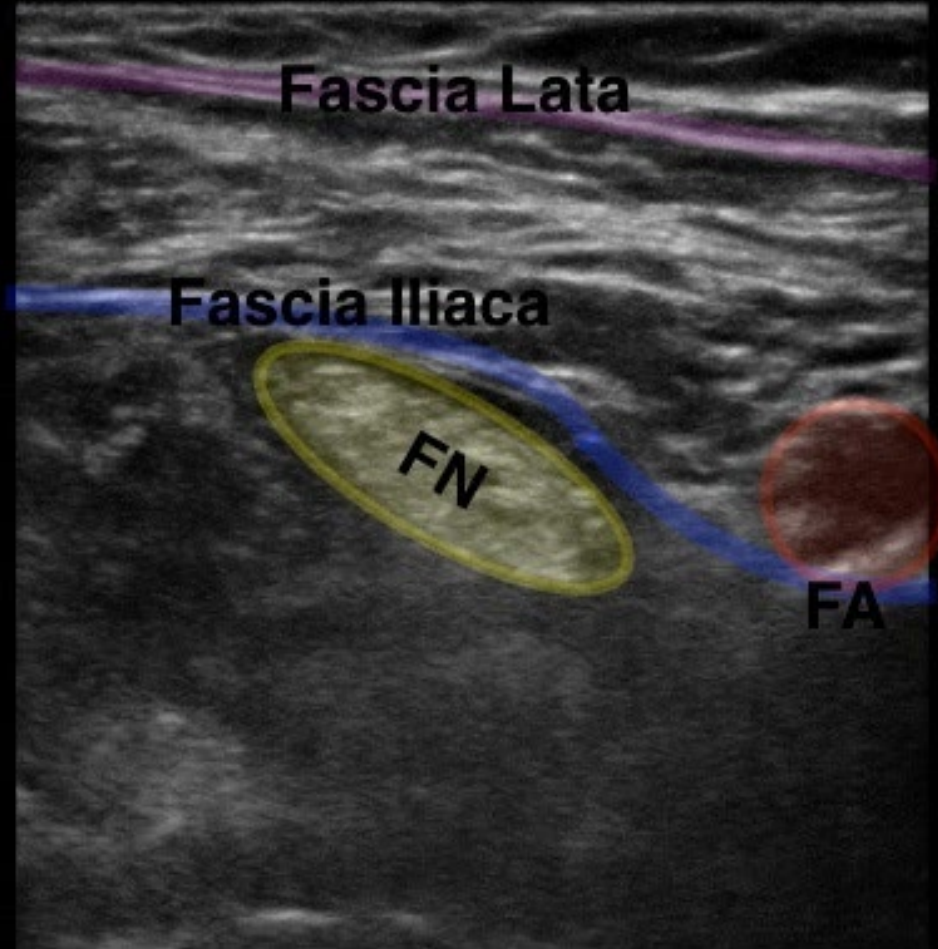
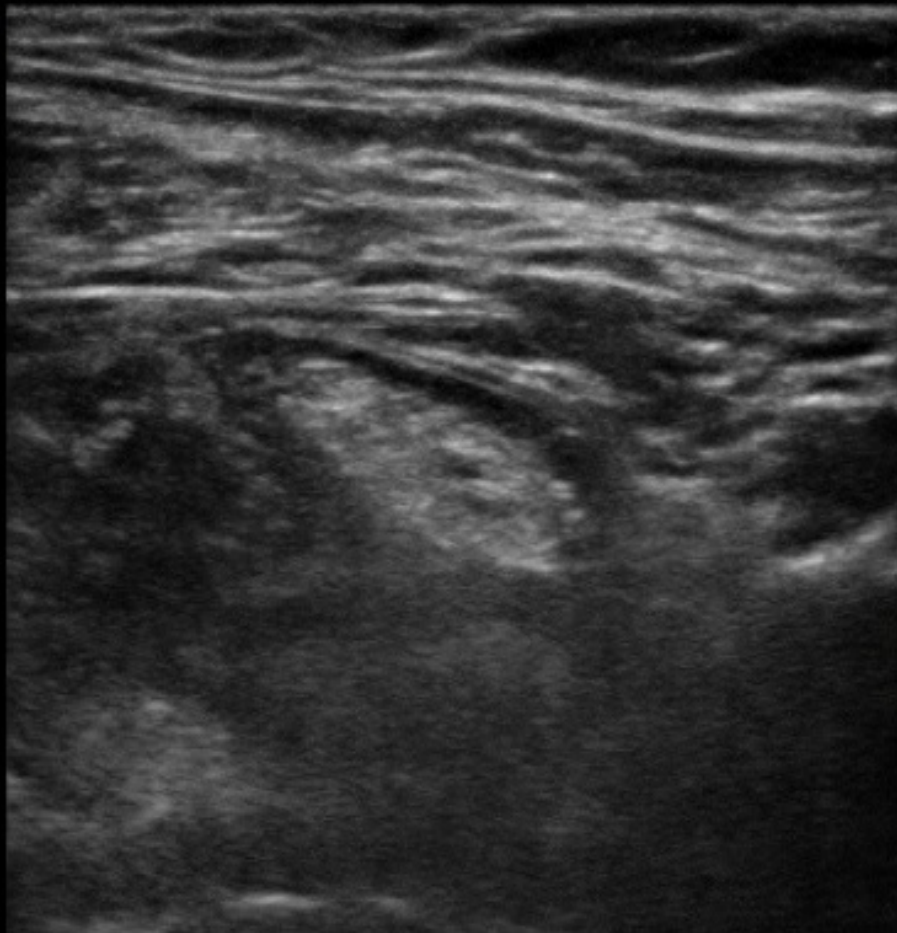


UBC CPD
Medicine
CONTINUING
PROFESSIONAL
DEVELOPMENT



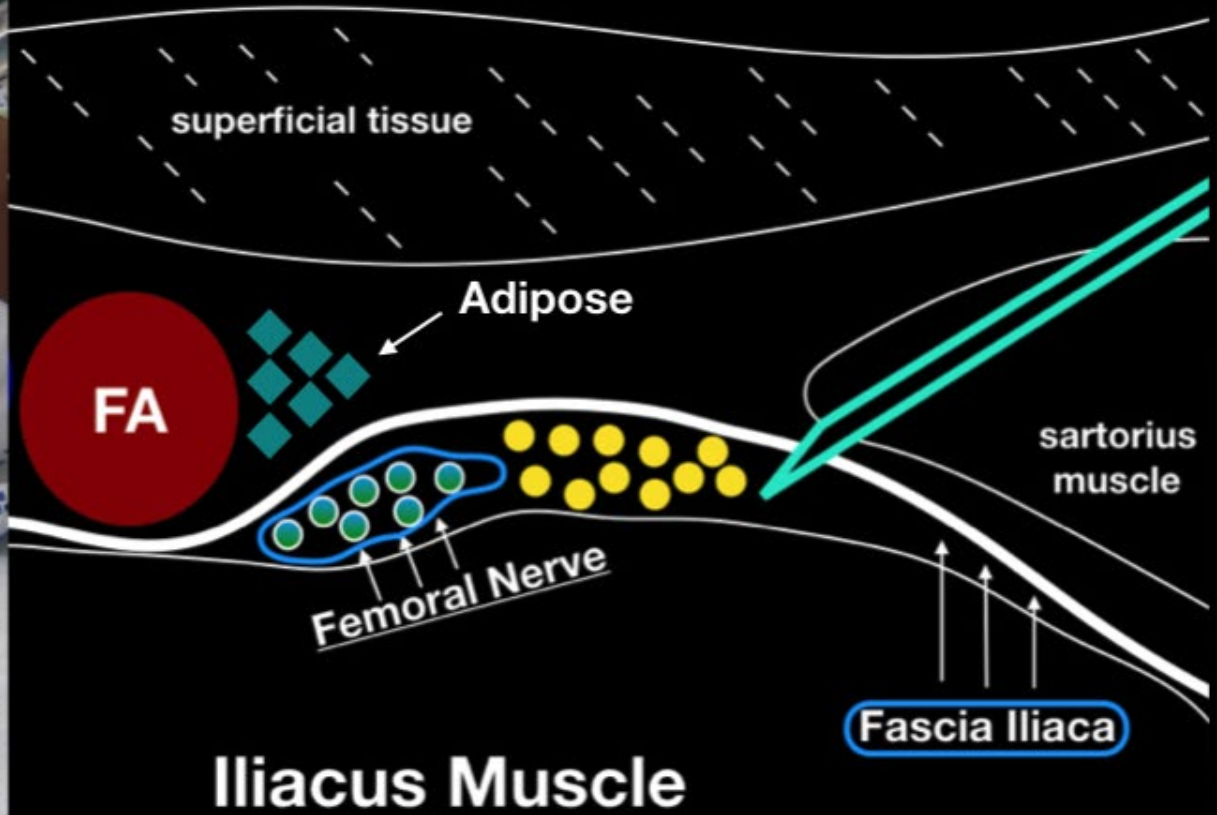
NYSORA®

FNB



UBC CPD
Medicine
CONTINUING
PROFESSIONAL
DEVELOPMENT



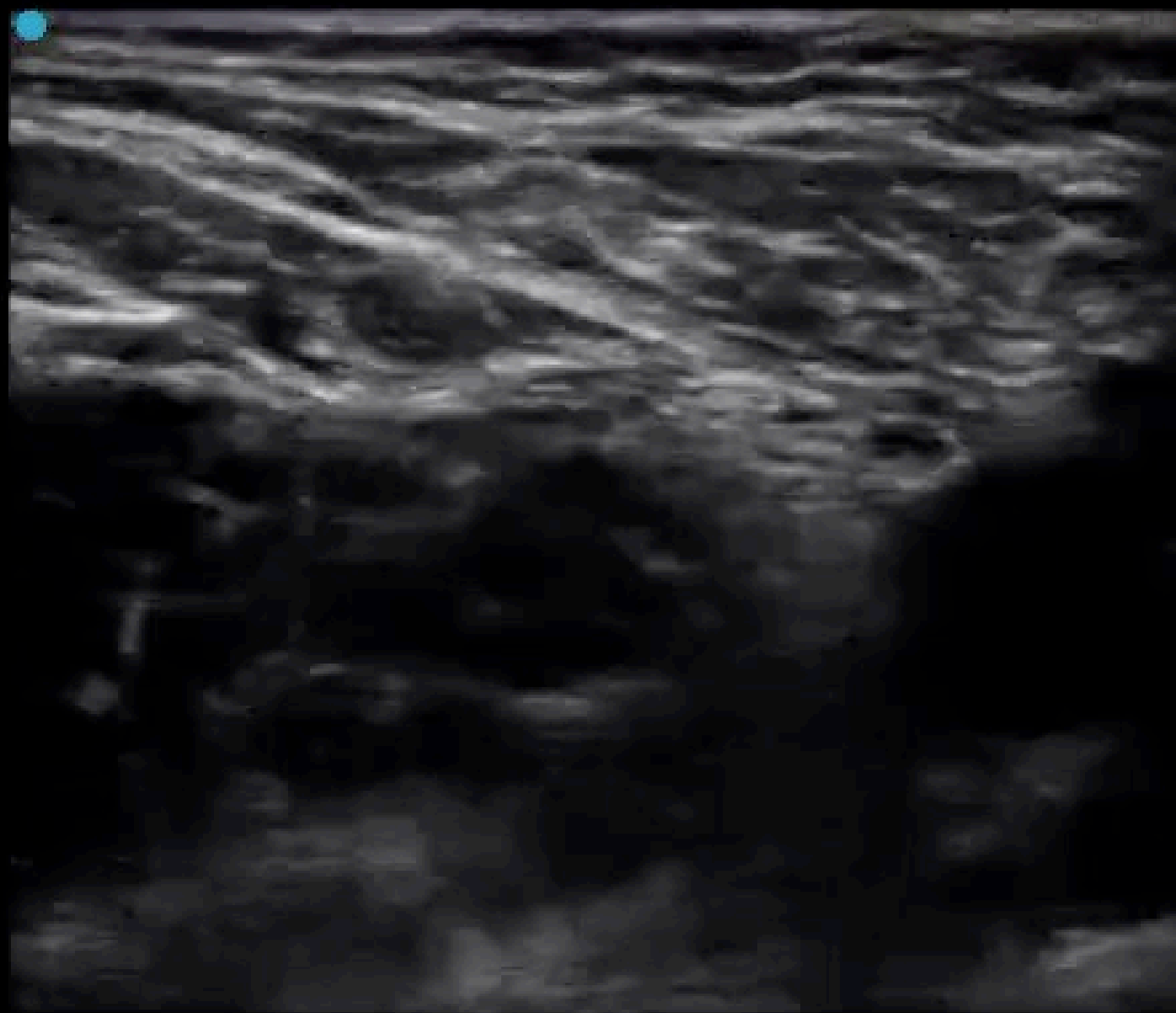


UBC CPD
Medicine
CONTINUING
PROFESSIONAL
DEVELOPMENT

Rural Coordination
Centre of BC



Res
S MB



Nrv
HFL
39%
MI
1.0
TIS
0.2

A
B

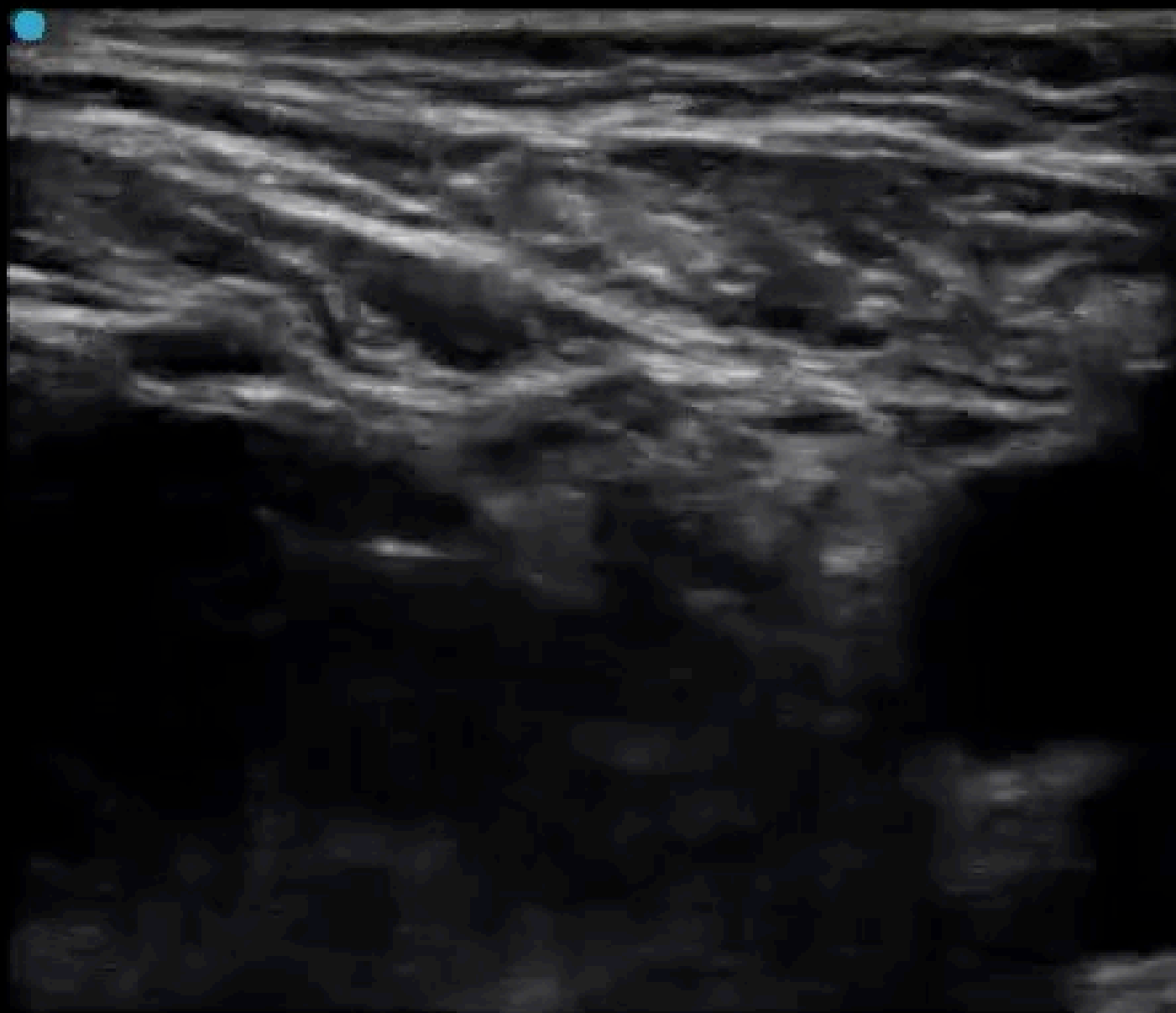
3.3



UBC CPD
Medicine
CONTINUING
PROFESSIONAL
DEVELOPMENT



Res
S MB



Nrv
HFL
39%
MI
1.0
TIS
0.2

A
B

3.3



Res



0



Guide

Clips...



Dual

Page 1/2



UBC CPD
Medicine
CONTINUING
PROFESSIONAL
DEVELOPMENT



Res
S MB



Nrv
HFL

97%
MI
0.7
TIS
0.2

A
B

4.9



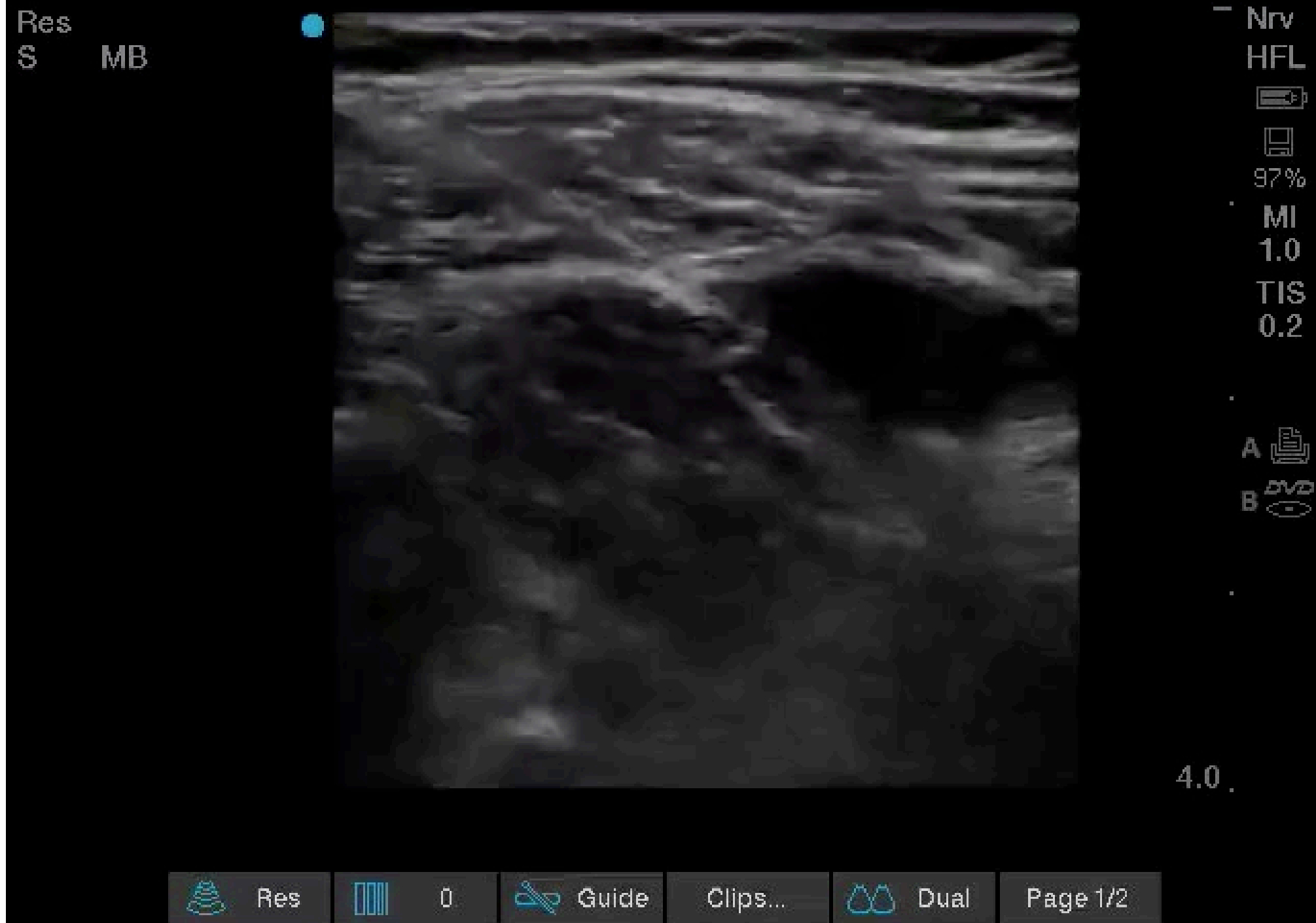
UBC CPD
Medicine
CONTINUING
PROFESSIONAL
DEVELOPMENT





UBC CPD
Medicine
CONTINUING
PROFESSIONAL
DEVELOPMENT





UBC CPD
Medicine
CONTINUING
PROFESSIONAL
DEVELOPMENT



FNB

- **Indications**

- Hip # (femoral head, neck, intertrochanteric/subtrochanteric regions, femoral shaft, patellar, and proximal tibial fractures)
 - May be less effective for **subcapital or femoral head** fractures (obturator nerve)
- Anterior thigh lacerations or abscesses



UBC CPD
Medicine
CONTINUING
PROFESSIONAL
DEVELOPMENT



FNB

- **Notes**

- The fascia iliaca block is similar to the FNB, but will usually anesthetize the **lateral femoral cutaneous nerve** in addition to the FN
- Large volume block, **calculate a max safe dose of anesthetic** (use app: [SafeLocal](#) or [MDCalc](#)). Anesthetic can be diluted 1:1 with normal saline to increase volume and avoid toxicity.
 - Bupivacaine max dose: 2-2.5mg/kg (175mg/dose)
- Use sterile/semi-sterile technique
- Monitor patient on cardiac monitor for 30-60min (re LAST)



UBC CPD
Medicine
CONTINUING
PROFESSIONAL
DEVELOPMENT



FNB

- **Notes**

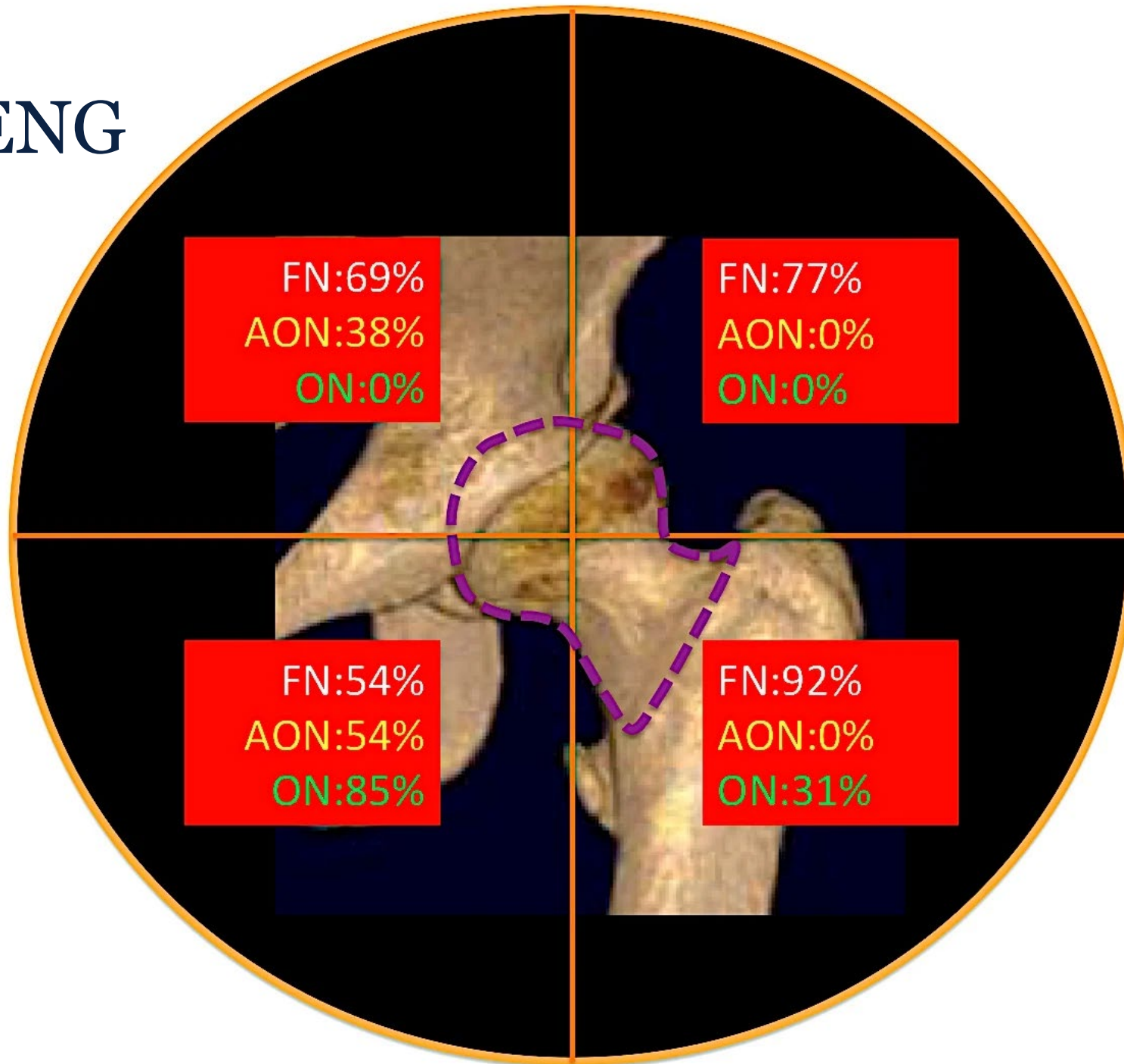
- **Transducer:** High-frequency linear probe
 - Angle (rotate) probe with inguinal crease / ligament
- **Needle:** 18-22g 3.5 in (8.9cm) spinal needle
 - Shallow angle for better needle visualization
- **Anesthetic Volume:** 20-40 mL
 - ~20cc 0.5% bupivacaine (Femoral Nerve Block)
 - ~40cc 0.25% bupivacaine (Fascia Iliaca Block)
- **Target of Anesthetic:** The space deep to the fascia iliaca and superficial to the iliacus muscle, lateral to the femoral neurovascular bundle
- Try to surround FN
- **Positioning:** supine



UBC CPD
Medicine
CONTINUING
PROFESSIONAL
DEVELOPMENT



FNB / PENG



UBC CPD
Medicine
CONTINUING
PROFESSIONAL
DEVELOPMENT



PENG BLOCK

- **Notes**

- Pericapsular nerve group (obturator and femoral)
- Motor sparing
- Curvilinear probe

- **Indications**

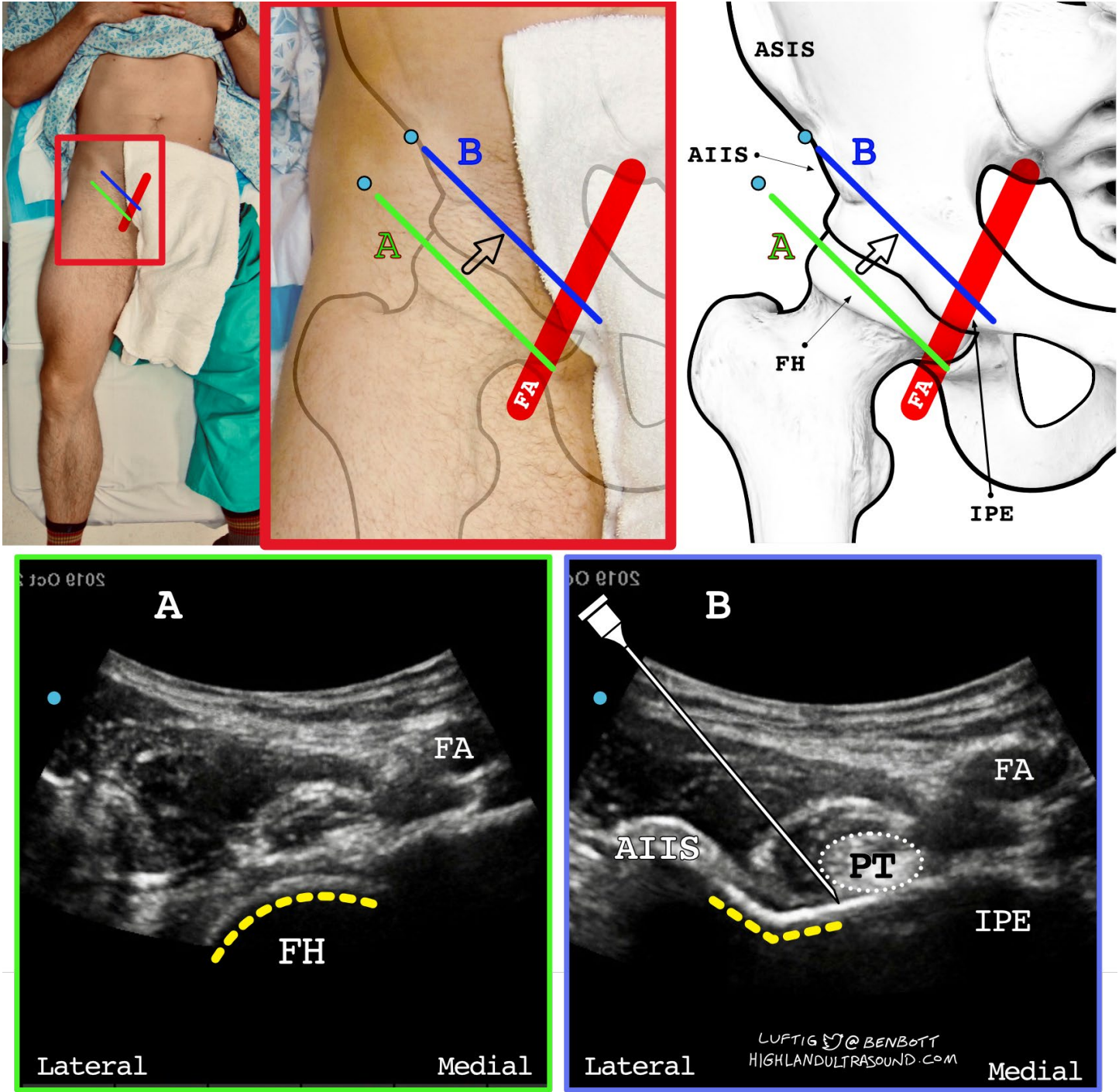
- Hip fractures,
- Fractures of the **acetabulum**, and **pubic rami**



UBC CPD
Medicine
CONTINUING
PROFESSIONAL
DEVELOPMENT



PENG



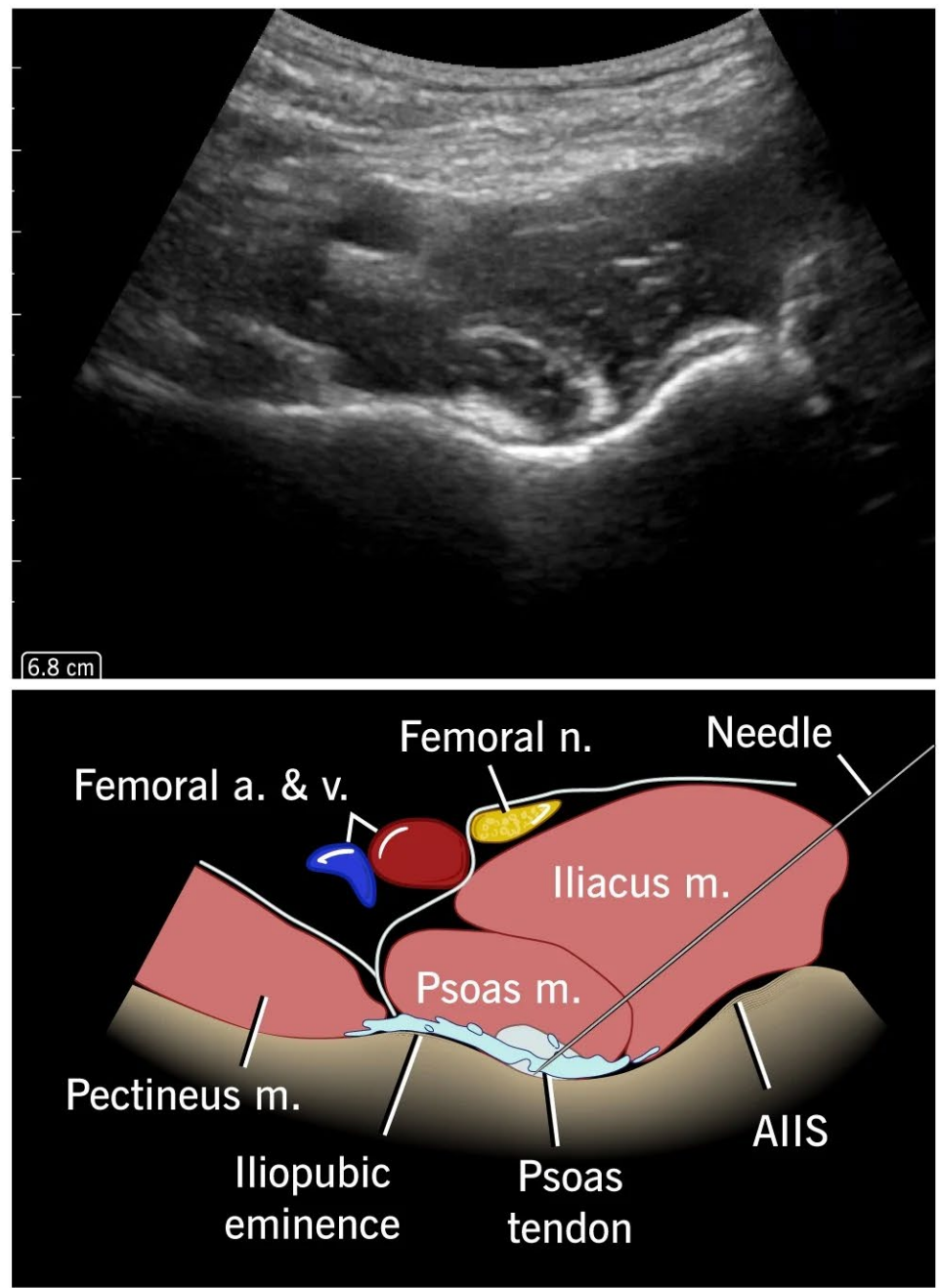
UBC CPD
Medicine
CONTINUING
PROFESSIONAL
DEVELOPMENT



PENG

Medial

Lateral





Iliopsoas
muscle

FA

Psoas
Tendon

AIIS

IPE

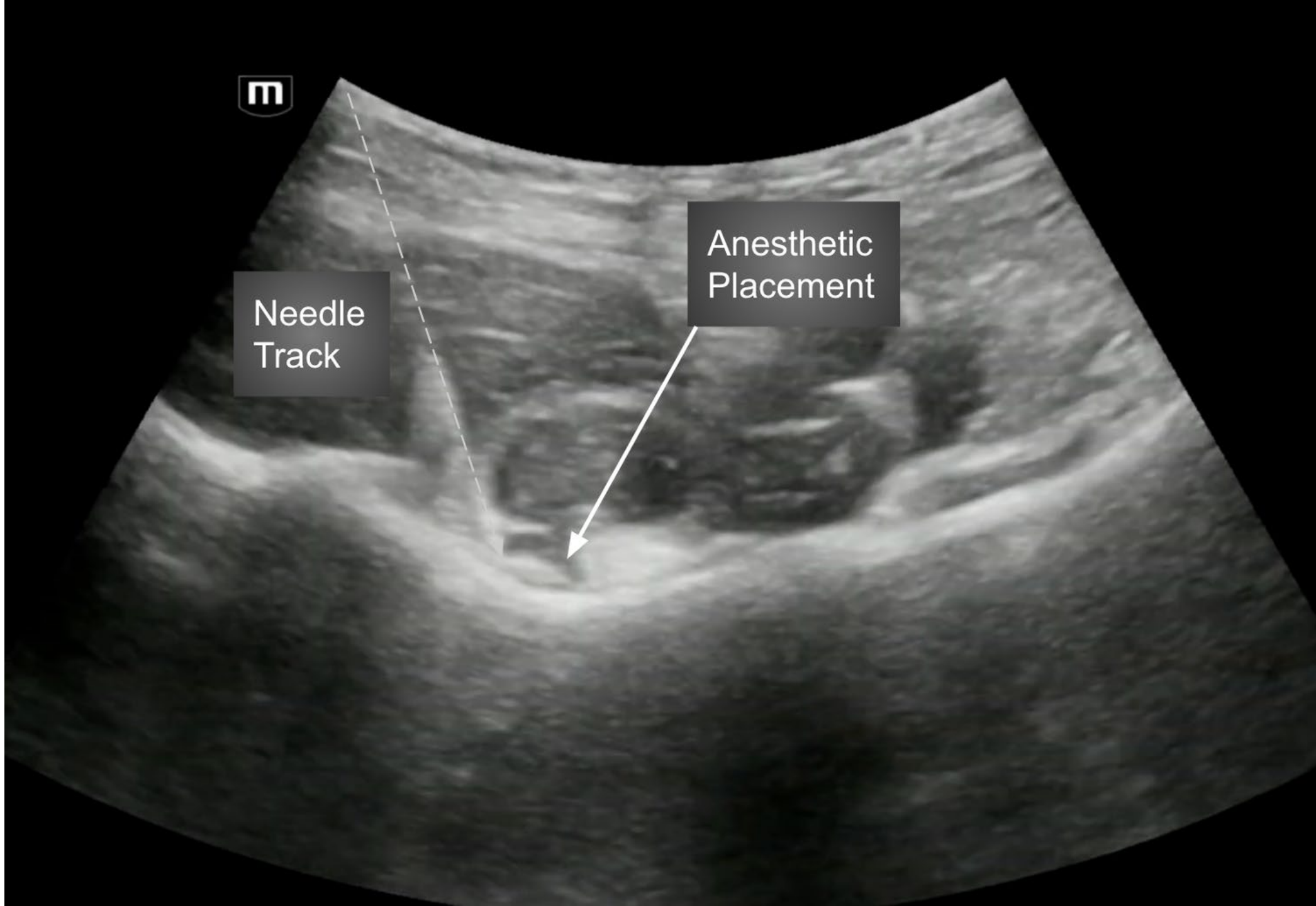
ASIS: Anterior Inferior Iliac Spine

IPE: Iliopubic Eminence



UBC CPD
Medicine
CONTINUING
PROFESSIONAL
DEVELOPMENT

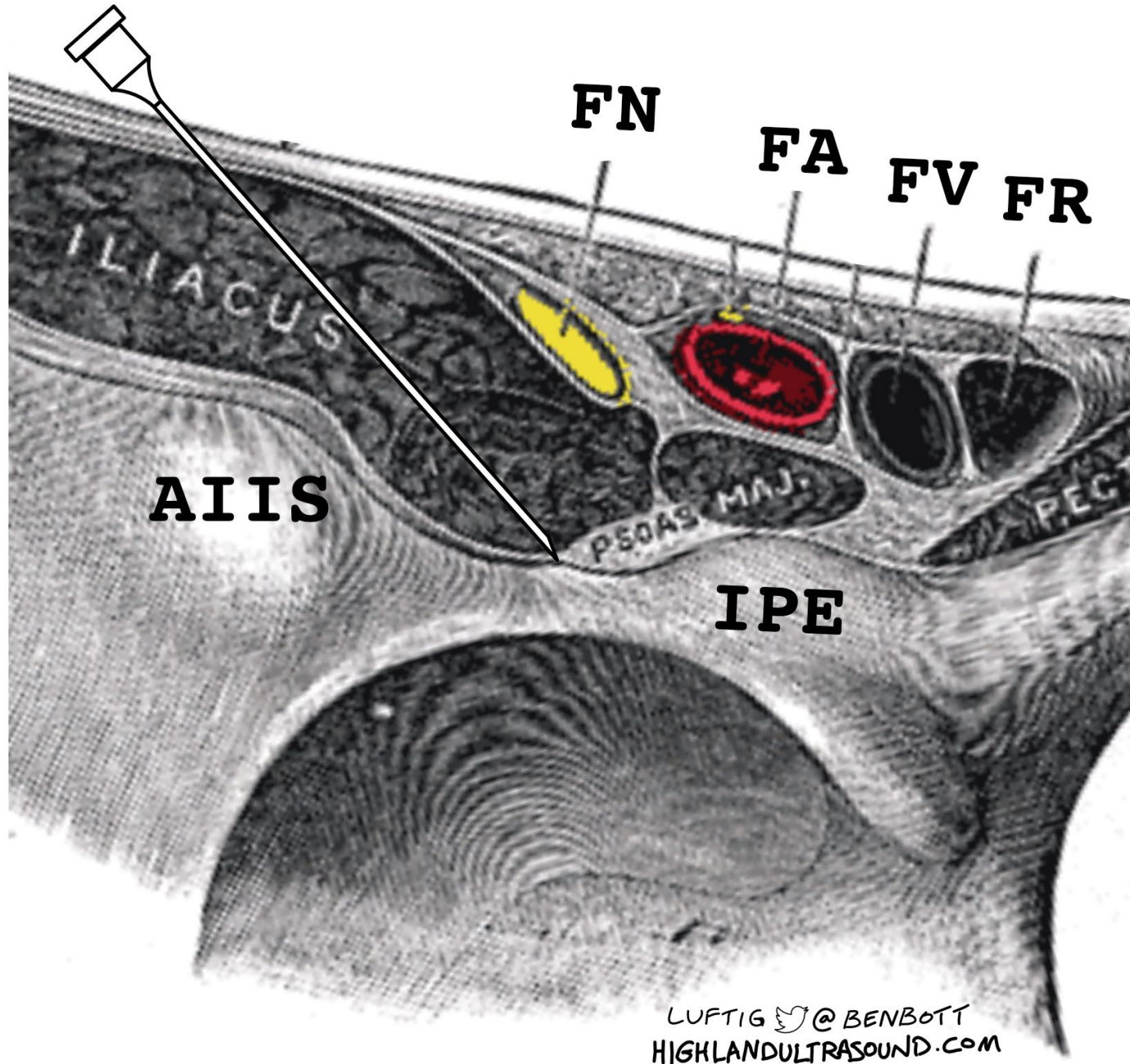




UBC CPD
Medicine
CONTINUING
PROFESSIONAL
DEVELOPMENT



PENG



UBC CPD
Medicine
CONTINUING
PROFESSIONAL
DEVELOPMENT



PENG BLOCK

- **Notes**

- Calculate a maximum safe dose of anesthetic prior to the block to avoid LAST
- **Transducer:** Low-frequency curvilinear probe **or** high-frequency linear probe
- **Needle:** 18–22 g, 3.5 in (8.9 cm) spinal needle
- Anesthetic Volume: 20 mL
- **Target of Anesthetic:** Anesthetic spread along the bony pelvis, lifting the muscle/tendon/fascial layer off the periosteum and under the psoas tendon
- **Positioning:** supine



UBC CPD
Medicine
CONTINUING
PROFESSIONAL
DEVELOPMENT



CASE #2

39 yo female

Hx of a MVA

Presenting with a Right ankle injury



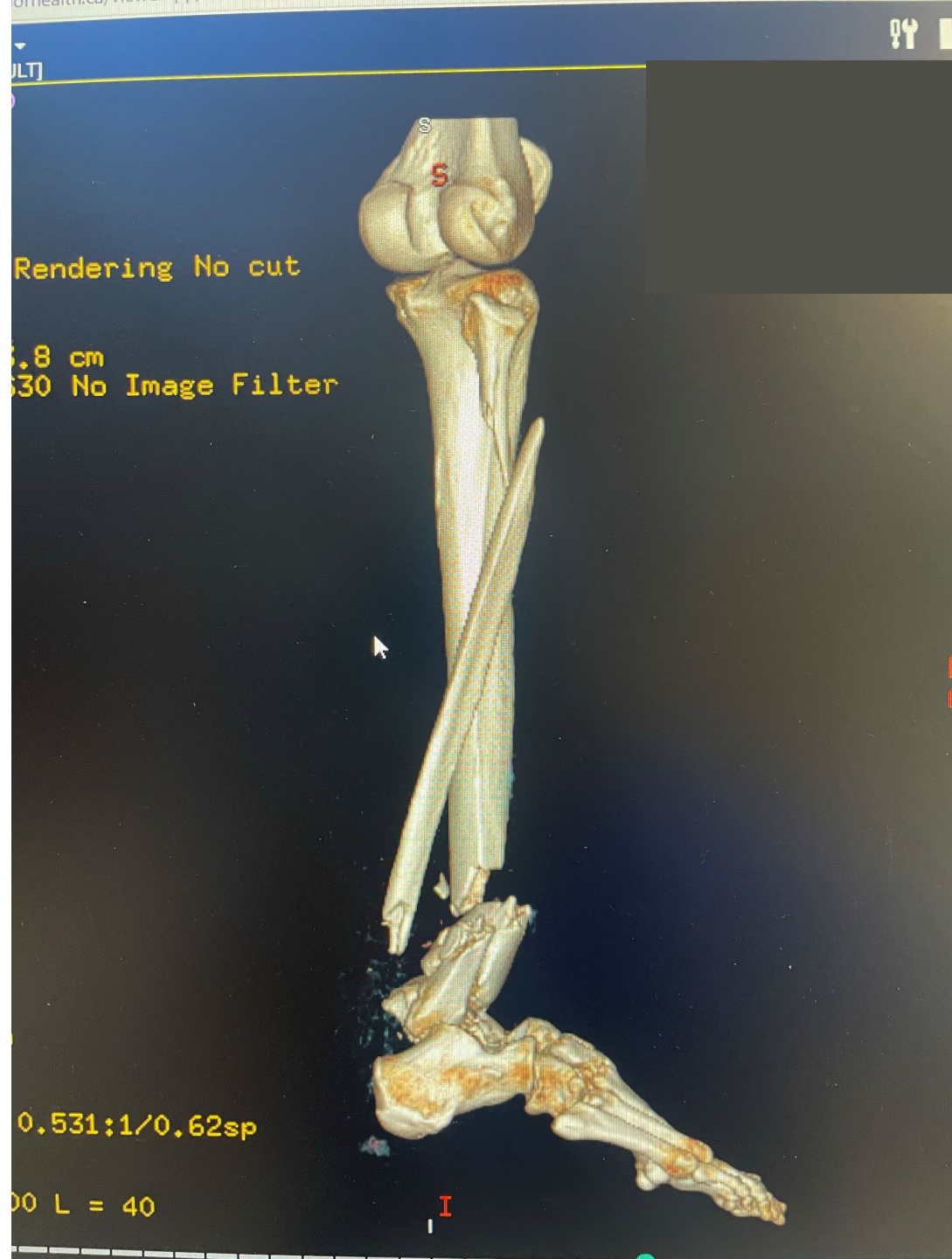
UBC CPD
Medicine

CONTINUING
PROFESSIONAL
DEVELOPMENT

Rural Coordination
Centre of BC



CASE 2



UBC CPD
Medicine
CONTINUING
PROFESSIONAL
DEVELOPMENT

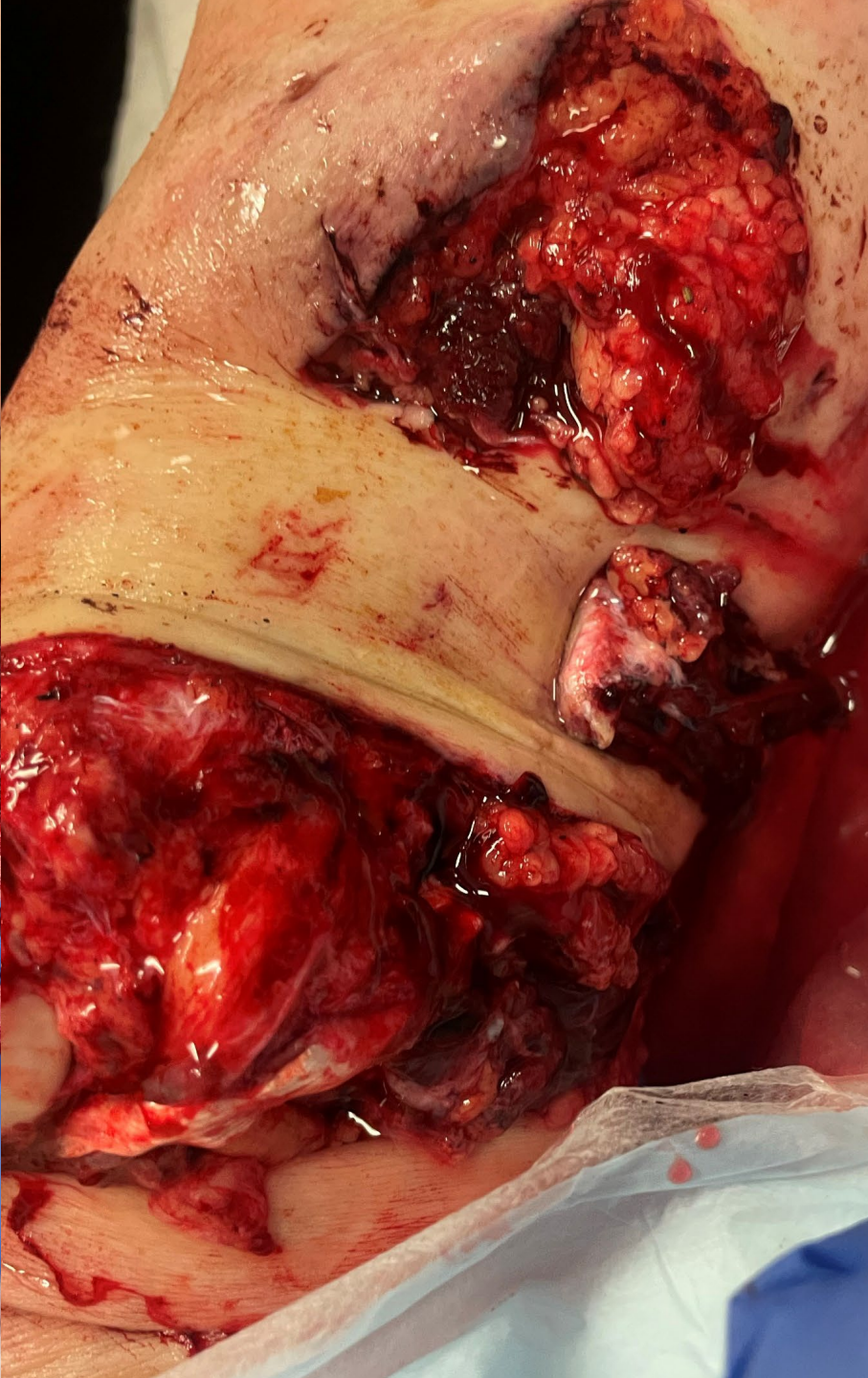


CASE 2



UBC CPD
Medicine
CONTINUING
PROFESSIONAL
DEVELOPMENT





CASE 2

- **Ankle Trauma**
 - Ketamine, Fent (Infusions) and Midaz
 - Popliteal sciatic nerve catheter
 - Adductor canal single shot



UBC CPD
Medicine
CONTINUING
PROFESSIONAL
DEVELOPMENT



CASE 2

- **Ankle Trauma**

- Ketamine, Fent (Infusions) and Midaz
- Popliteal sciatic nerve catheter (Tibial, Deep Peroneal, Superficial Peroneal, Sural nerves)
- Adductor canal (Saphenous nerve) single shot



UBC CPD
Medicine
CONTINUING
PROFESSIONAL
DEVELOPMENT



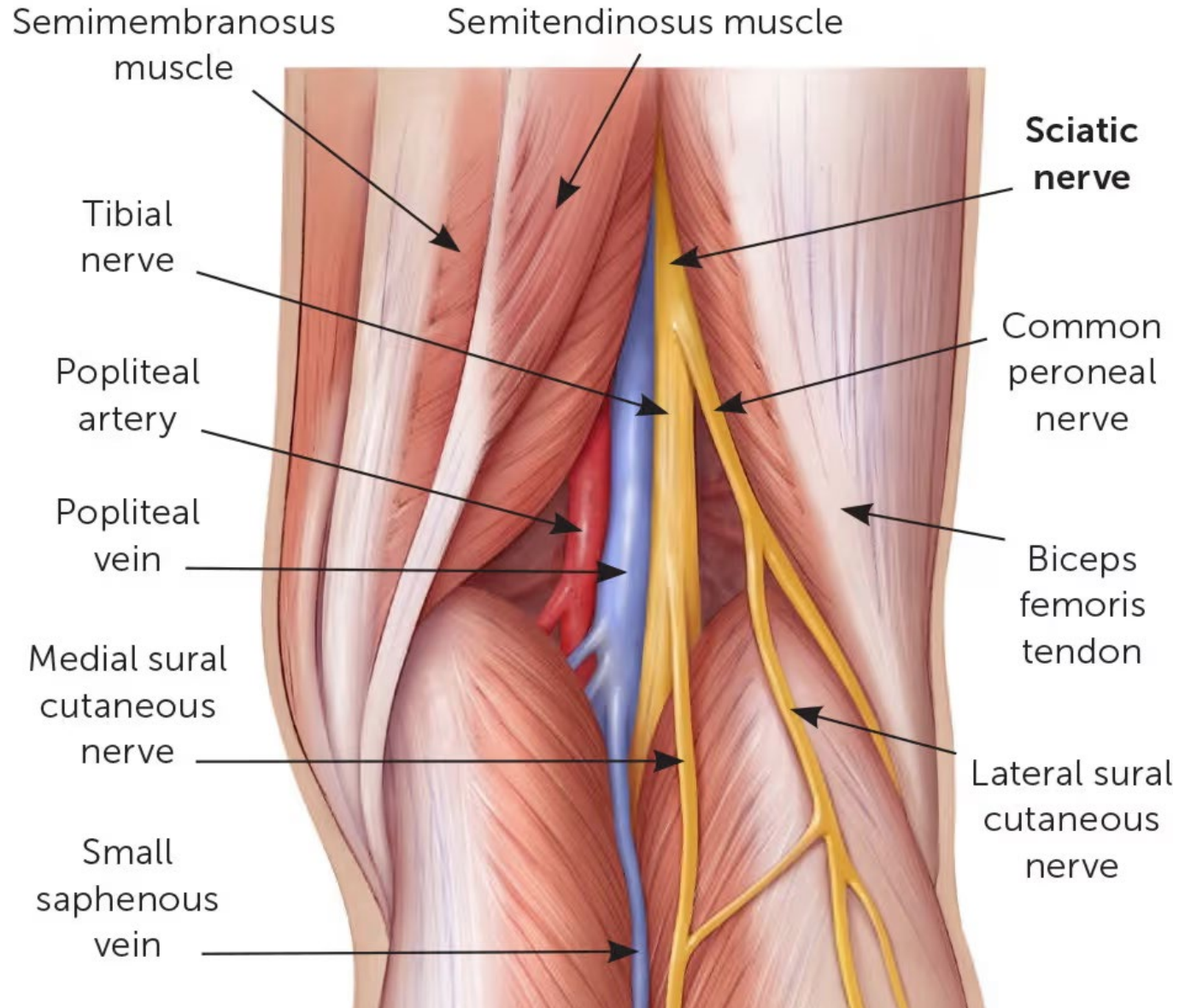
POPLITEAL SCIATIC BLOCK



UBC CPD
Medicine
CONTINUING
PROFESSIONAL
DEVELOPMENT



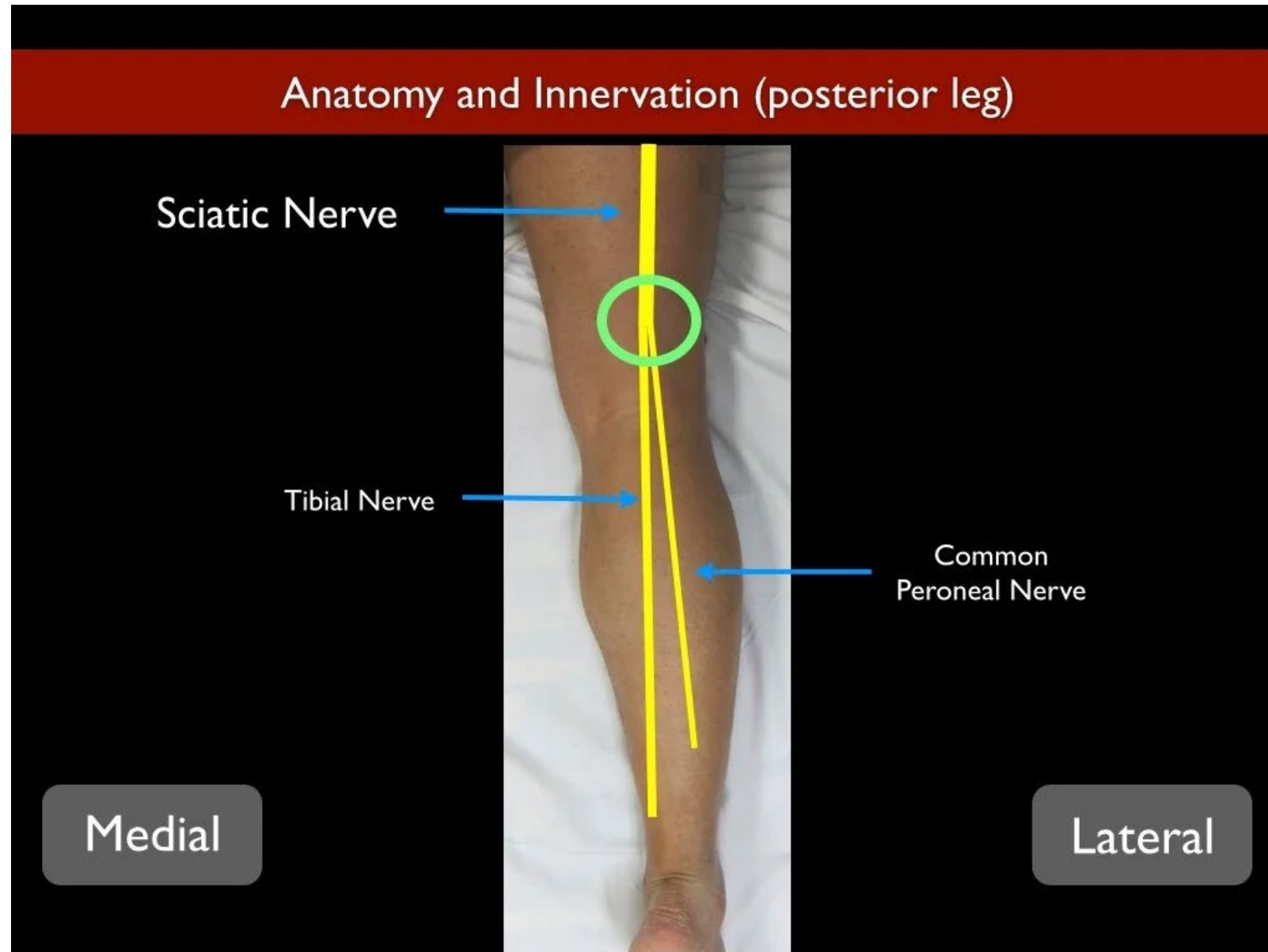
POPLITEAL SCIATIC BLOCK



UBC CPD
Medicine
CONTINUING
PROFESSIONAL
DEVELOPMENT



POPLITEAL SCIATIC BLOCK



UBC CPD
Medicine
CONTINUING
PROFESSIONAL
DEVELOPMENT





UBC CPD
Medicine
CONTINUING
PROFESSIONAL
DEVELOPMENT



POPLITEAL SCIATIC BLOCK

ANTERIOR



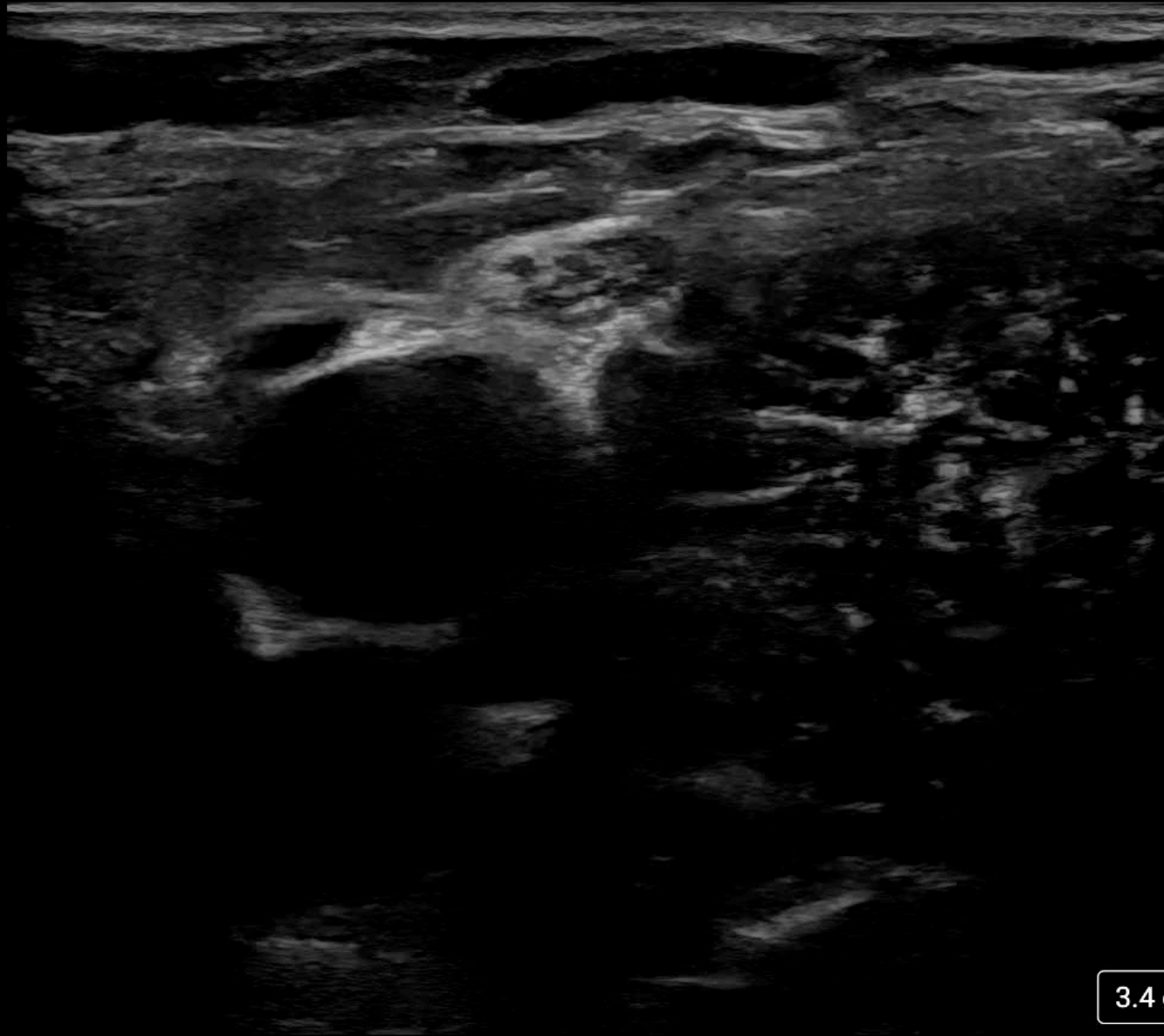
POSTERIOR



UBC CPD
Medicine
CONTINUING
PROFESSIONAL
DEVELOPMENT

Rural Coordination
Centre of BC





3.4 cm

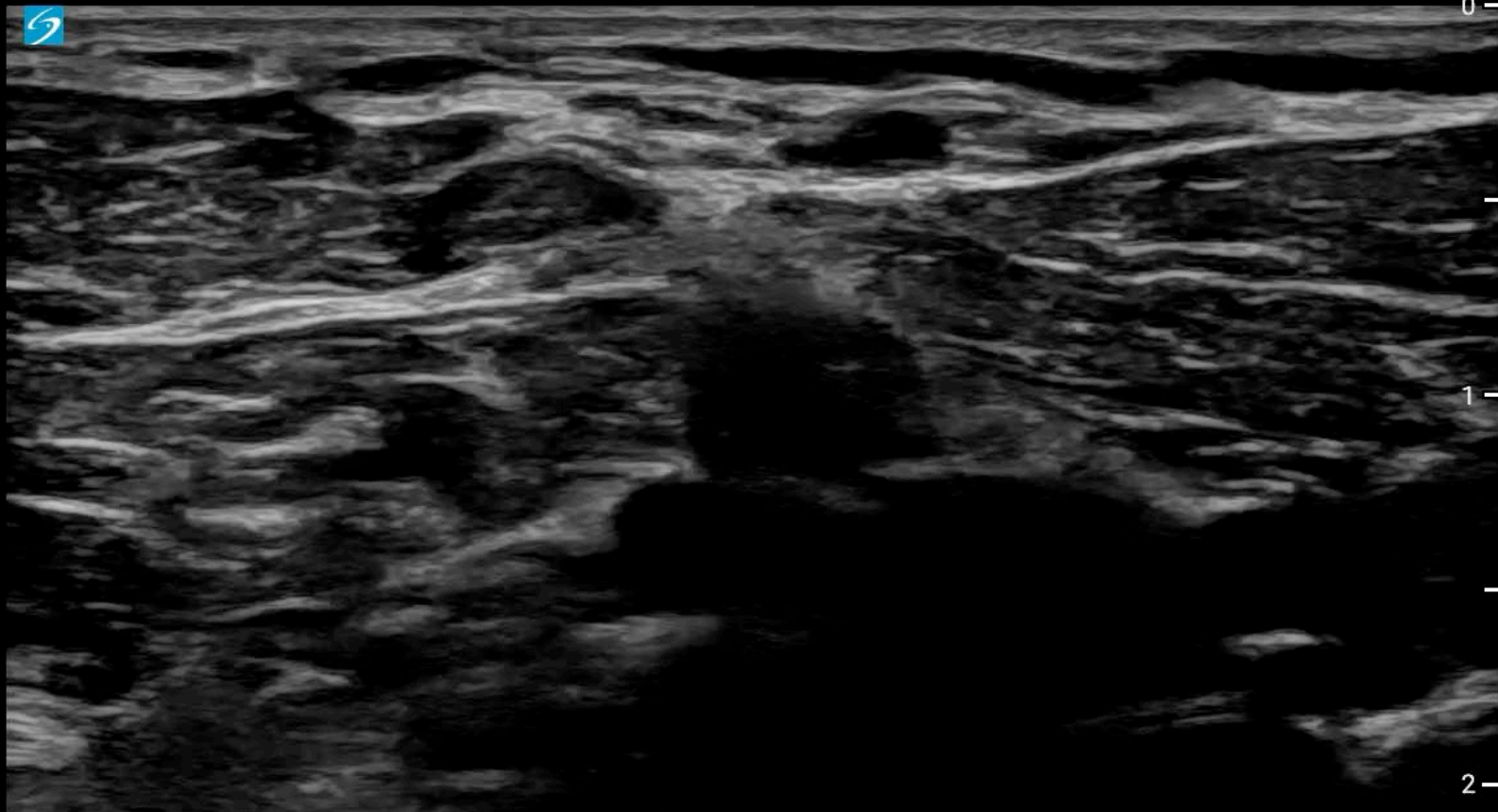
L12-3
Nerve
MI: 1.5 TIS: 0.1

2D: G: 50
Res DR: 0
MB
THI



UBC CPD
Medicine
CONTINUING
PROFESSIONAL
DEVELOPMENT





L12-3
Nerve
MI: 1.3 TIS: 0.1

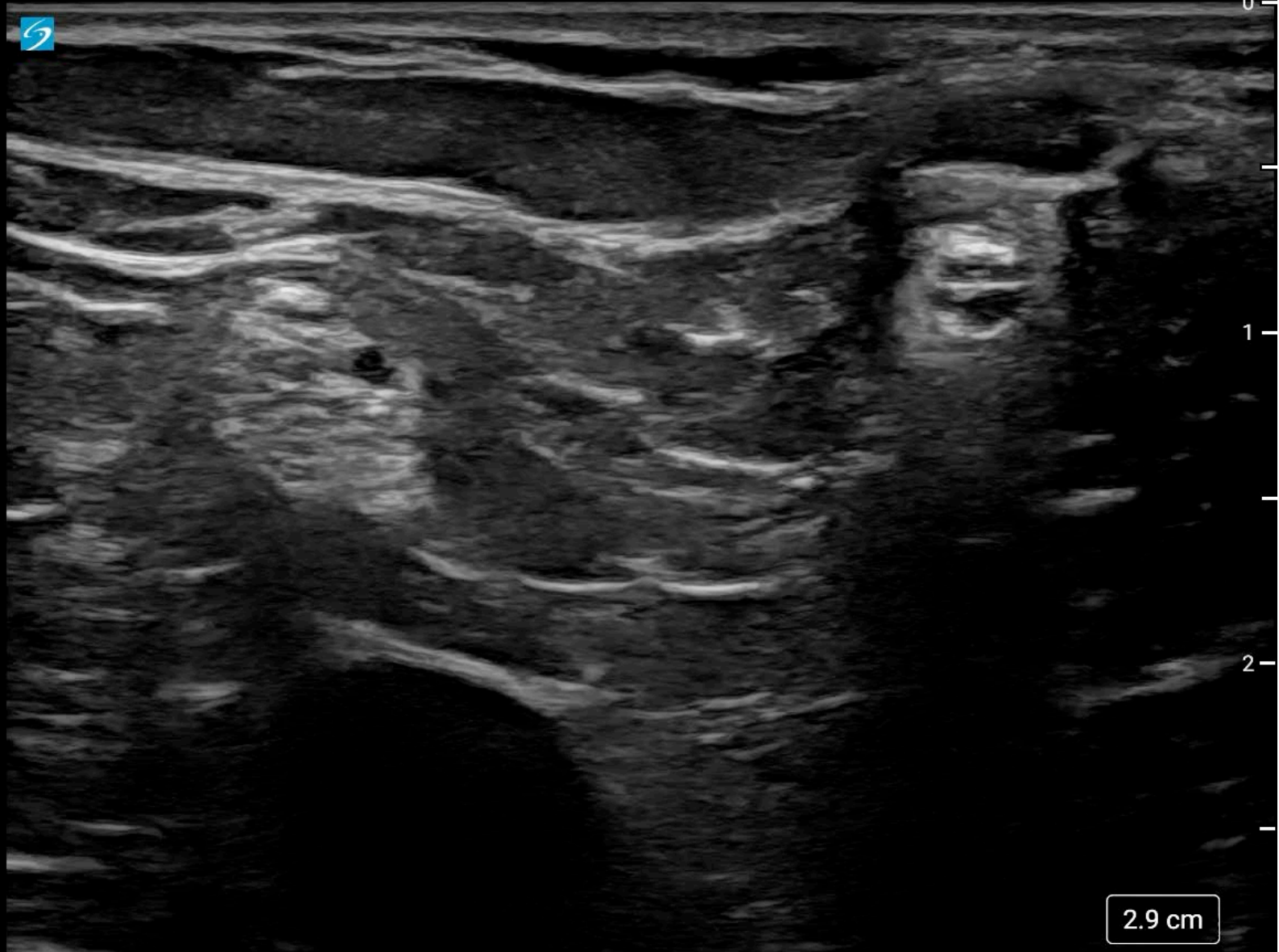
2.1 cm

2D: G: 50
Res DR: 0
MB
THI



UBC CPD
Medicine
CONTINUING
PROFESSIONAL
DEVELOPMENT





L12-3
Nerve
MI: 1.5 TIS: 0.1

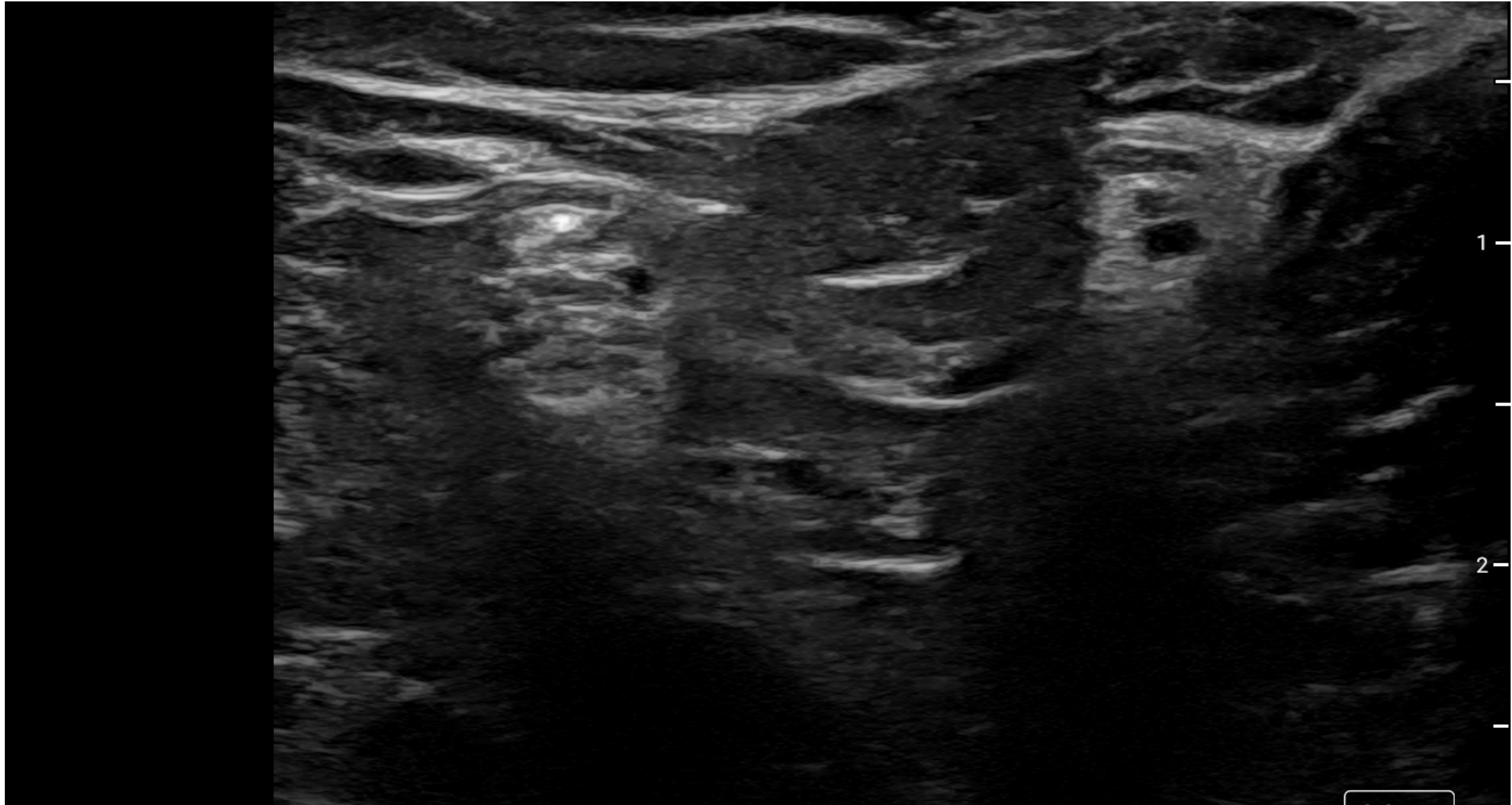
2D: G: 50
Res DR: 0
MB
THI



UBC CPD
Medicine
CONTINUING
PROFESSIONAL
DEVELOPMENT

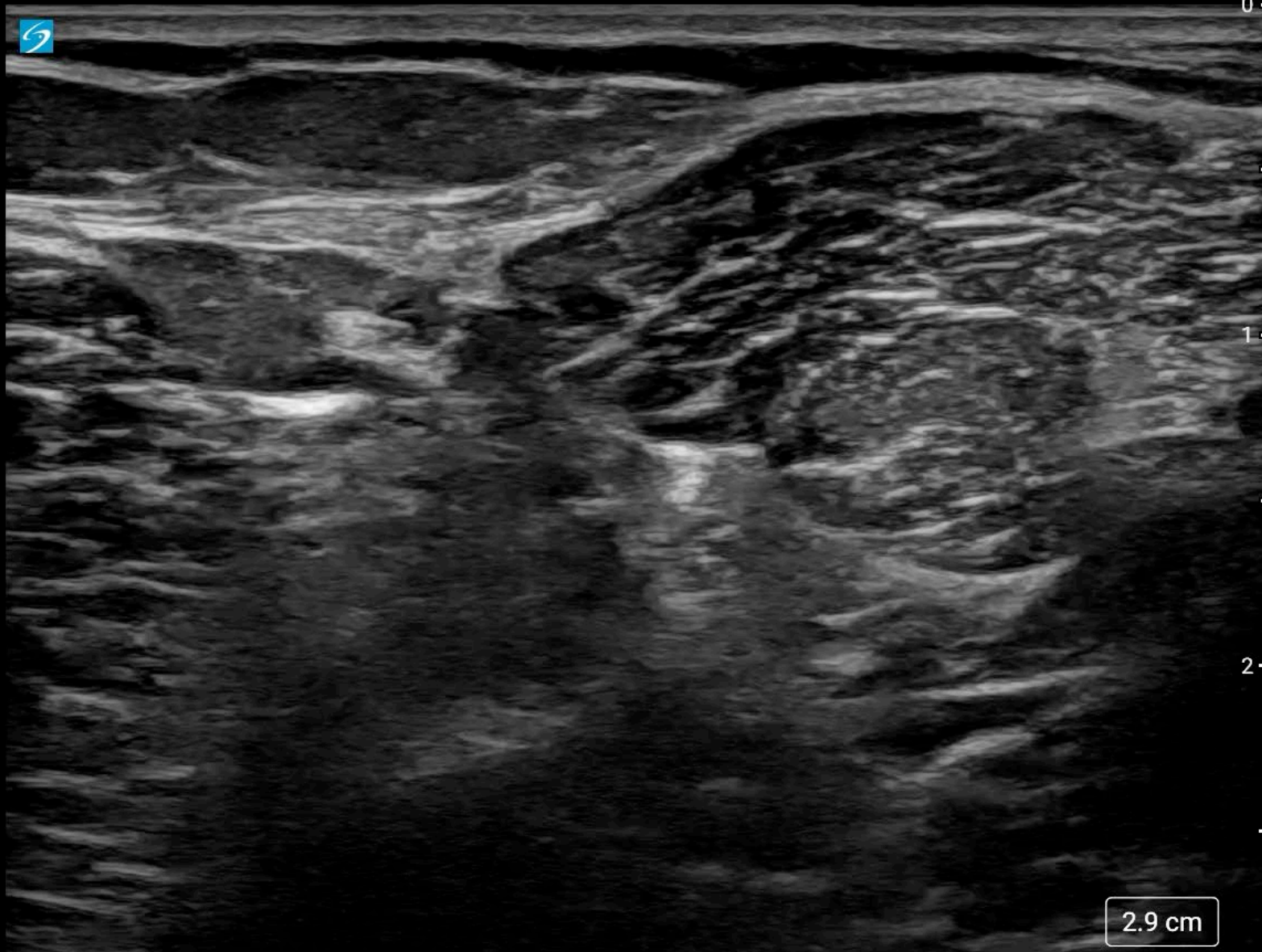


POPLITEAL SCIATIC BLOCK



UBC CPD
Medicine
CONTINUING
PROFESSIONAL
DEVELOPMENT





L12-3
Nerve
MI: 1.5 TIS: 0.1

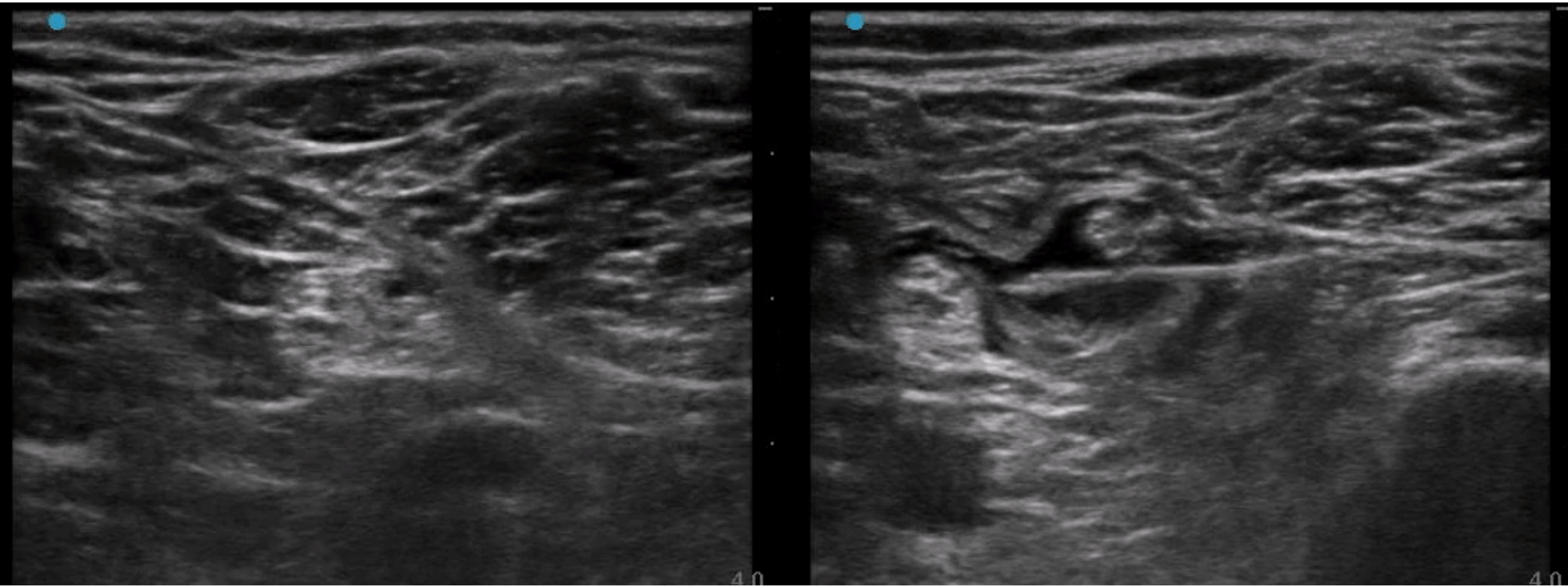
2D: G: 50
Res DR: 0
MB
THI



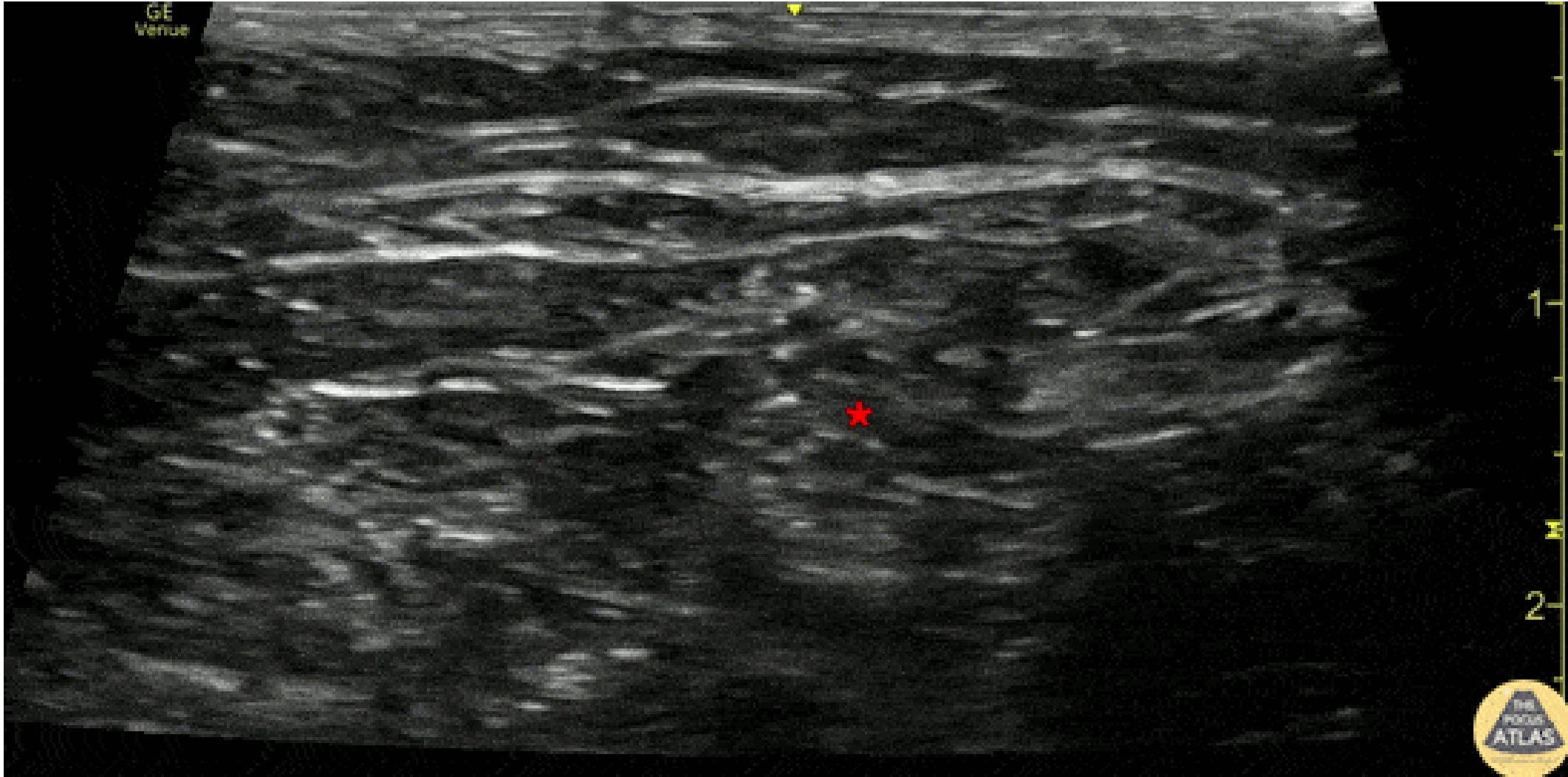
UBC CPD
Medicine
CONTINUING
PROFESSIONAL
DEVELOPMENT



POPLITEAL SCIATIC BLOCK



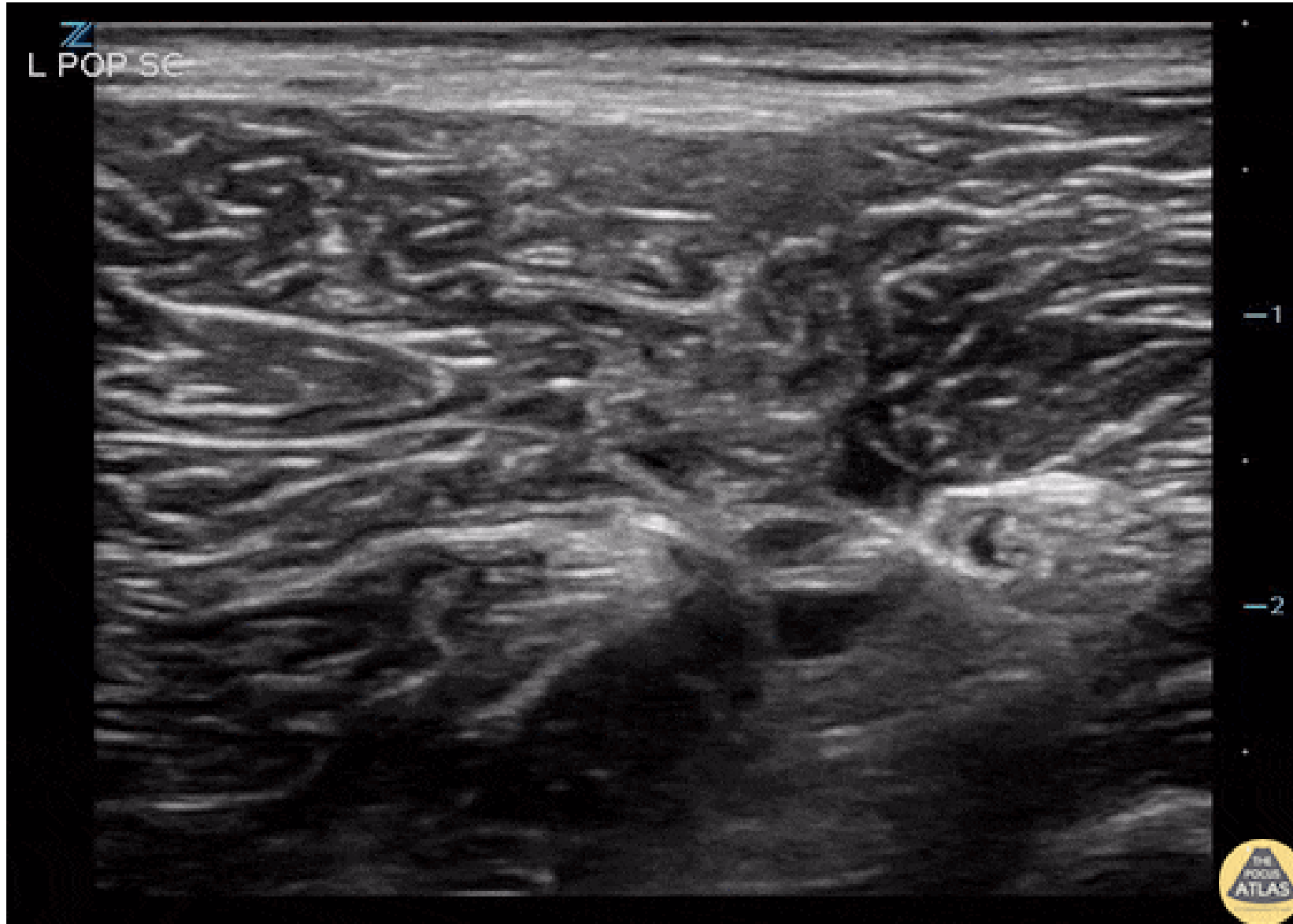
POPLITEAL SCIATIC BLOCK



UBC CPD
Medicine
CONTINUING
PROFESSIONAL
DEVELOPMENT



POPLITEAL SCIATIC BLOCK



UBC CPD
Medicine
CONTINUING
PROFESSIONAL
DEVELOPMENT



POPLITEAL SCIATIC BLOCK

- **Indications**

- Distal tibia/fibula fractures, foot fractures
- Achilles tendon rupture
- Lower extremity burns
- Lacerations and I&Ds



UBC CPD
Medicine
CONTINUING
PROFESSIONAL
DEVELOPMENT



POPLITEAL SCIATIC BLOCK

- **Notes**

- Do not perform if there is concern for compartment syndrome
- Injecting around and not **within Vloka's sheath** will not adequately anesthetize and requires needle repositioning
- Great block for bimal or trimal fractures that need reduction/pain control
- Miss saphenous (off the femoral), but often not needed



UBC CPD
Medicine
CONTINUING
PROFESSIONAL
DEVELOPMENT



POPLITEAL SCIATIC BLOCK

- **Notes**

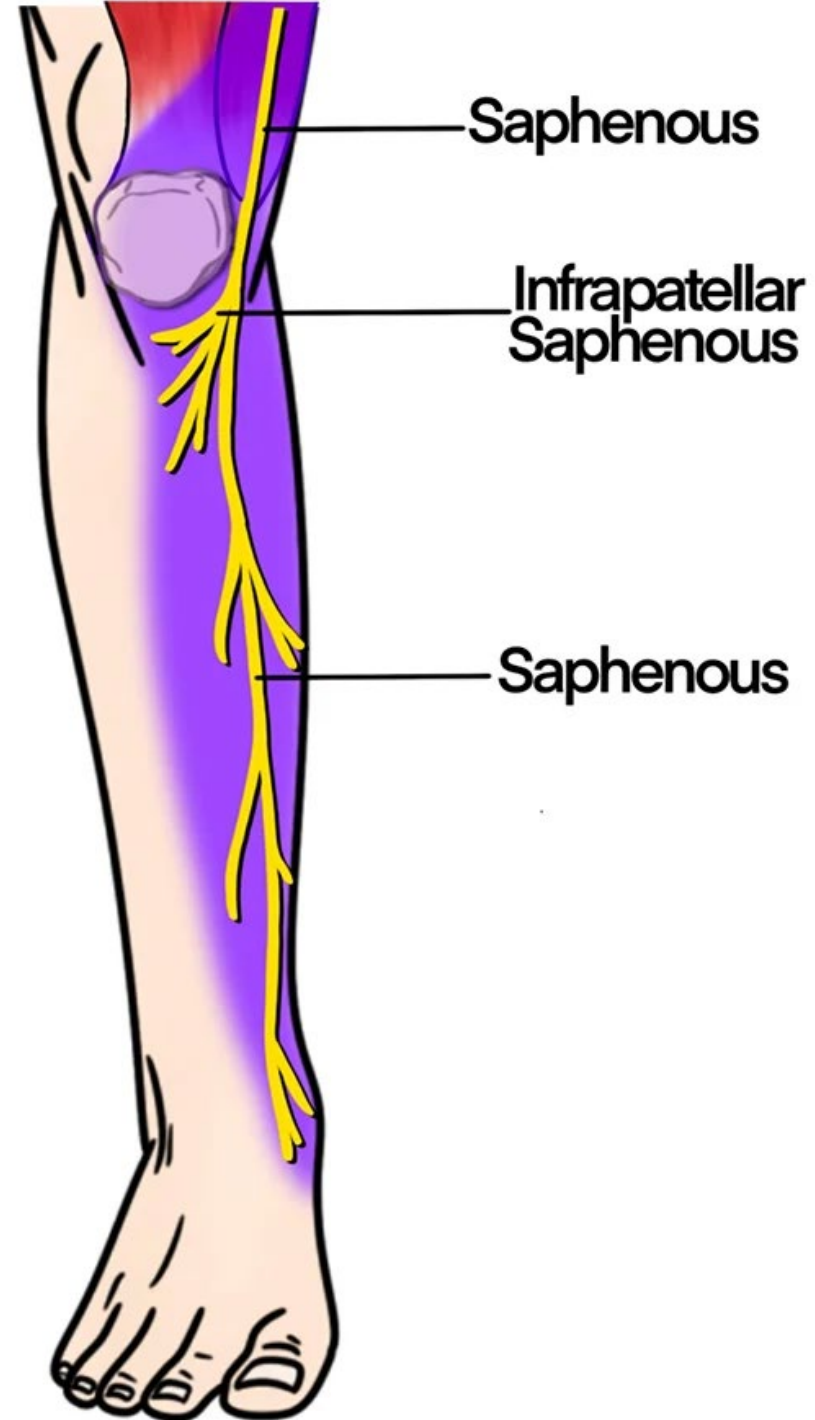
- **Transducer:** High-frequency linear probe
- **Needle:** 20-22 g 1.5-2 in (3.8-5 cm) needle (spinal)
 - Shallow angle for better needle visualization
- Anesthetic volume: 10-20 mL
- **Target of Anesthetic:** Anesthetic spread around the sciatic nerve, within the sheath encompassing the sciatic nerve (Vloka's sheath)
- Slide proximal to pop fossa for sciatic nerve
 - not to be confused with tibial nerve distal to pop fossa
- **Positioning:** prone



UBC CPD
Medicine
CONTINUING
PROFESSIONAL
DEVELOPMENT



ADDUCTOR CANAL



UBC CPD
Medicine
CONTINUING
PROFESSIONAL
DEVELOPMENT



ADDUCTOR CANAL BLOCK



UBC CPD
Medicine
CONTINUING
PROFESSIONAL
DEVELOPMENT



ADDUCTOR CANAL



UBC CPD
Medicine
CONTINUING
PROFESSIONAL
DEVELOPMENT

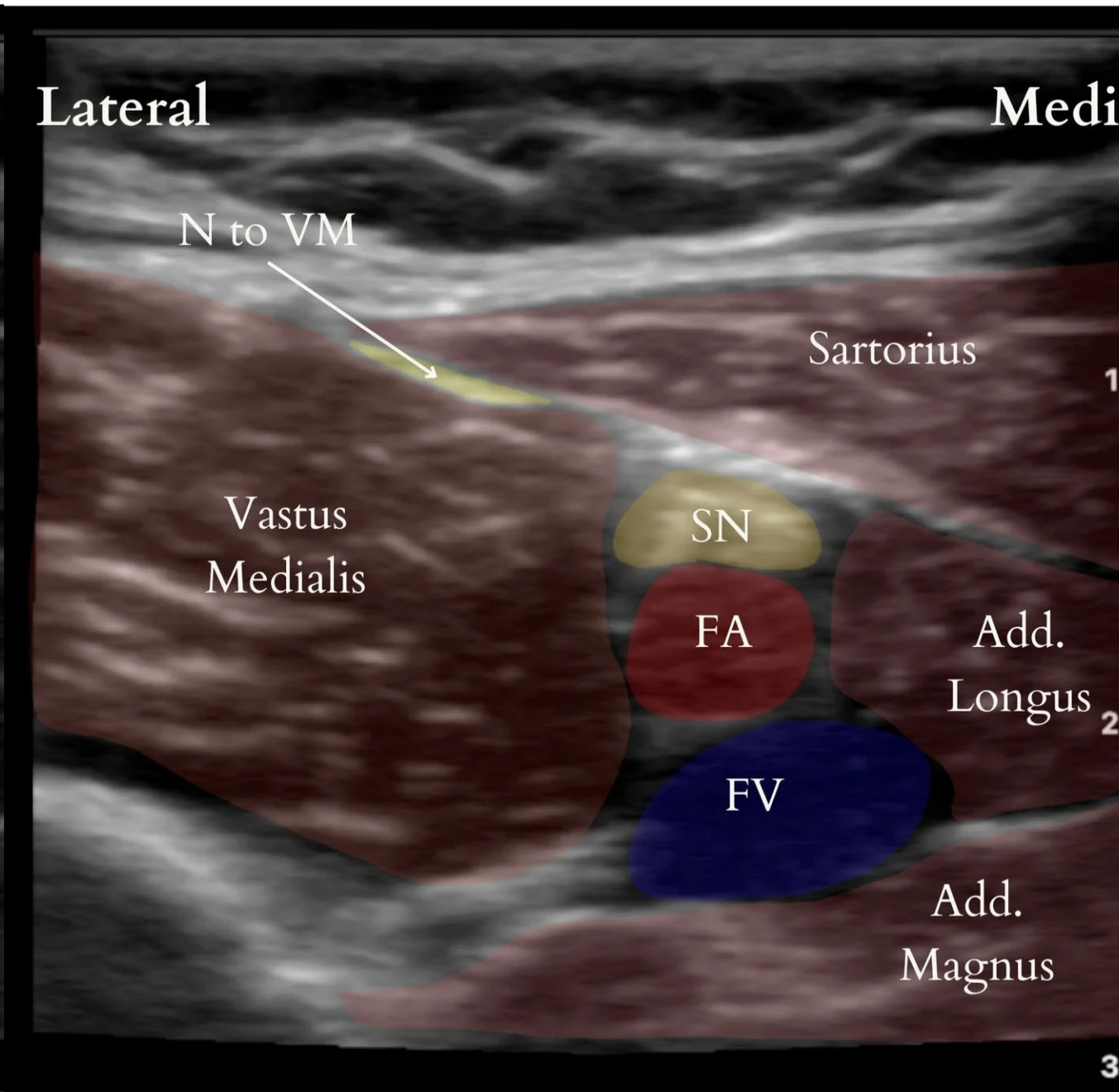
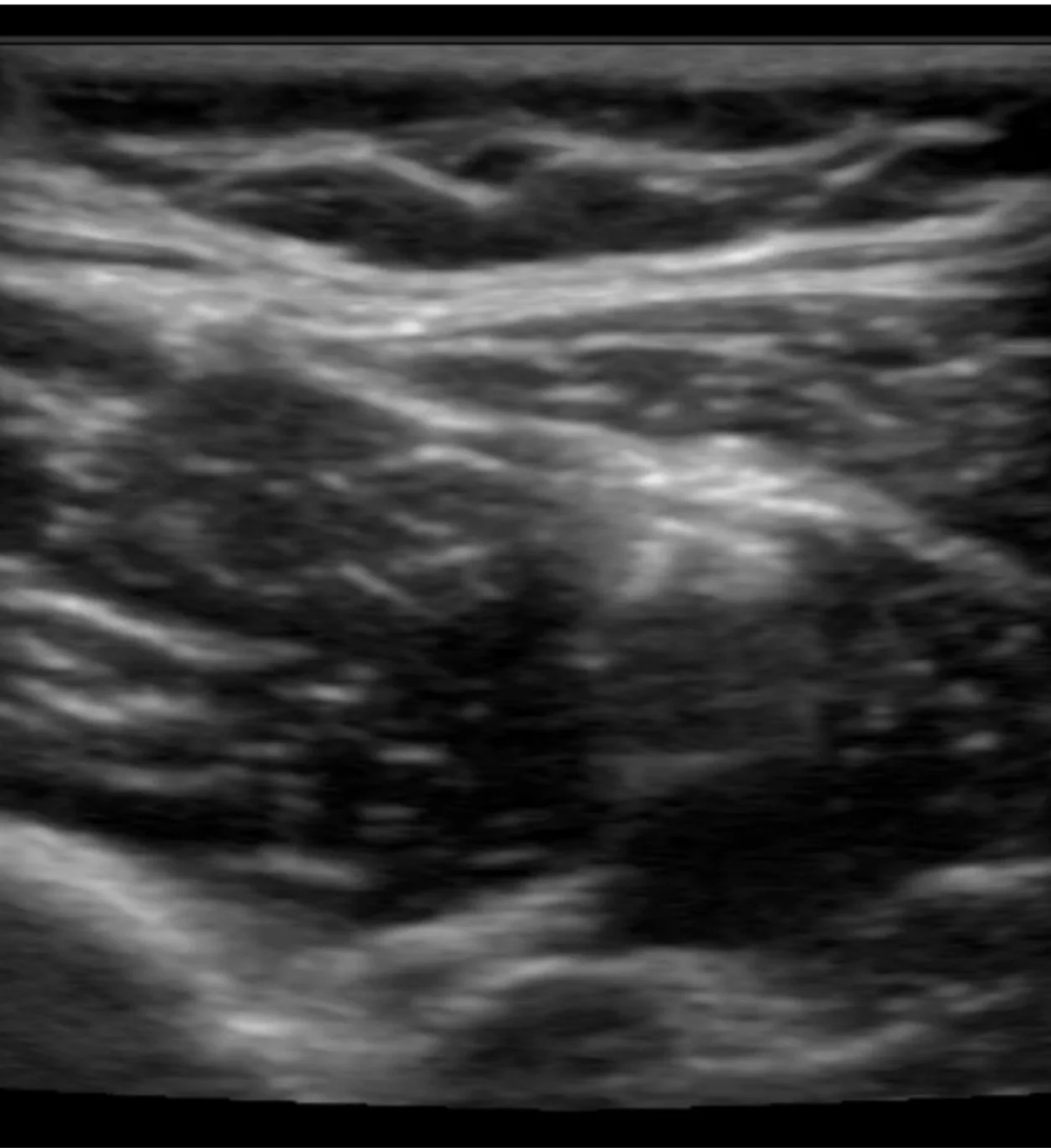


ADDUCTOR



UBC CPD
Medicine
CONTINUING
PROFESSIONAL
DEVELOPMENT



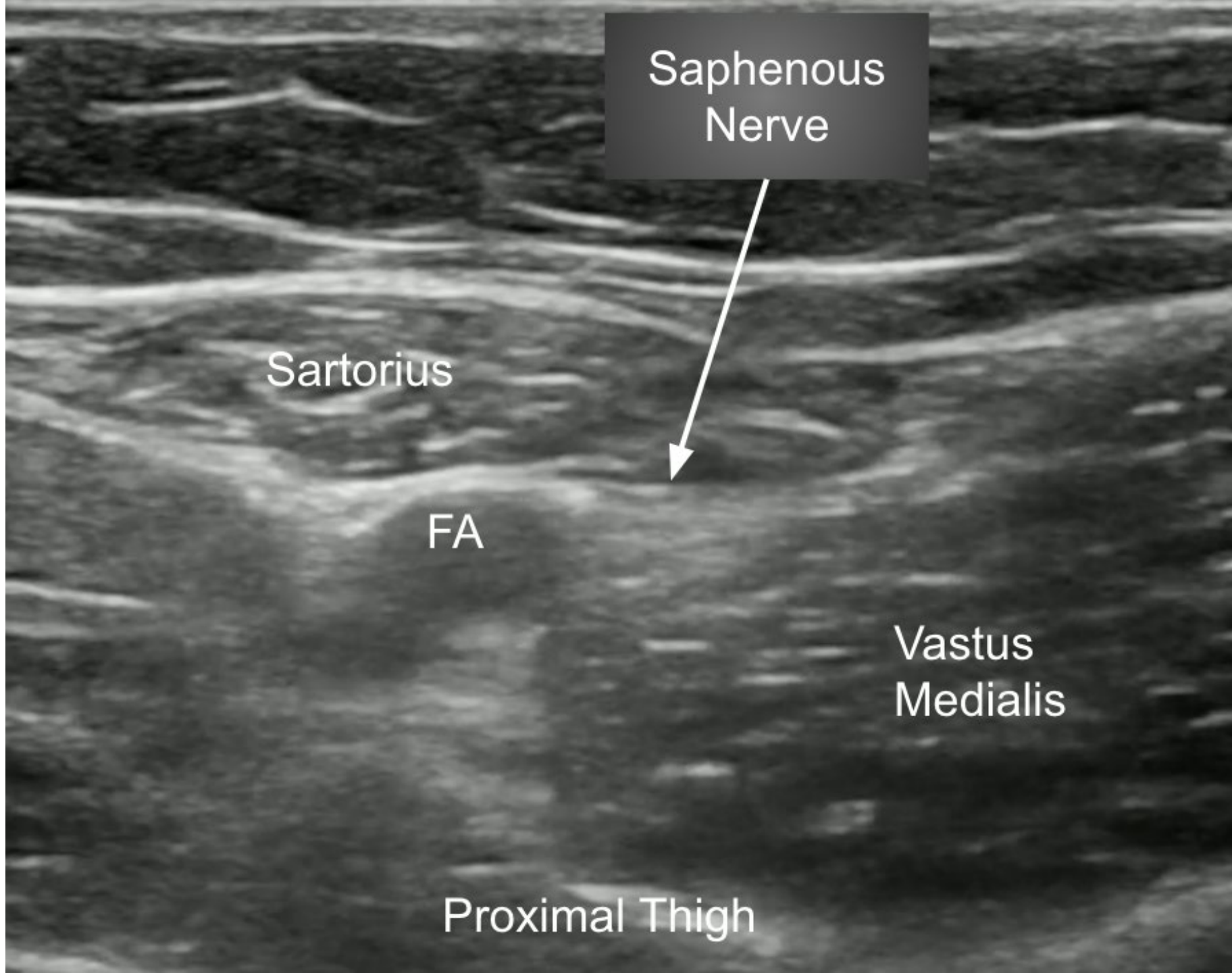


ADDUCTOR



UBC CPD
Medicine
CONTINUING
PROFESSIONAL
DEVELOPMENT





Saphenous
Nerve

Sartorius

FA

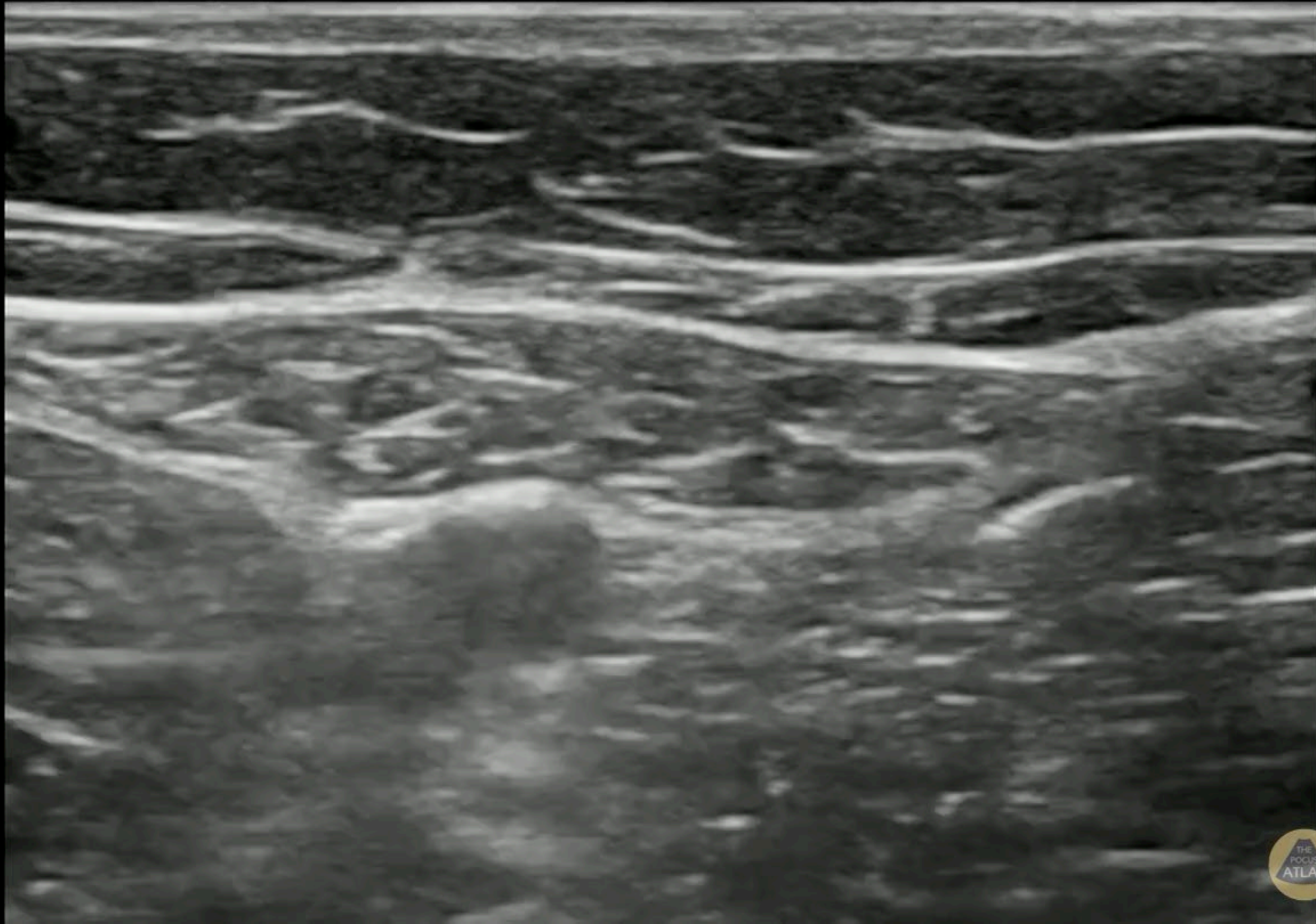
Vastus
Medialis

Proximal Thigh



UBC CPD
Medicine
CONTINUING
PROFESSIONAL
DEVELOPMENT





UBC CPD
Medicine
CONTINUING
PROFESSIONAL
DEVELOPMENT

Rural Coordination
Centre of BC





UBC CPD
Medicine
CONTINUING
PROFESSIONAL
DEVELOPMENT



ADDUCTOR CANAL BLOCK

- **Notes**

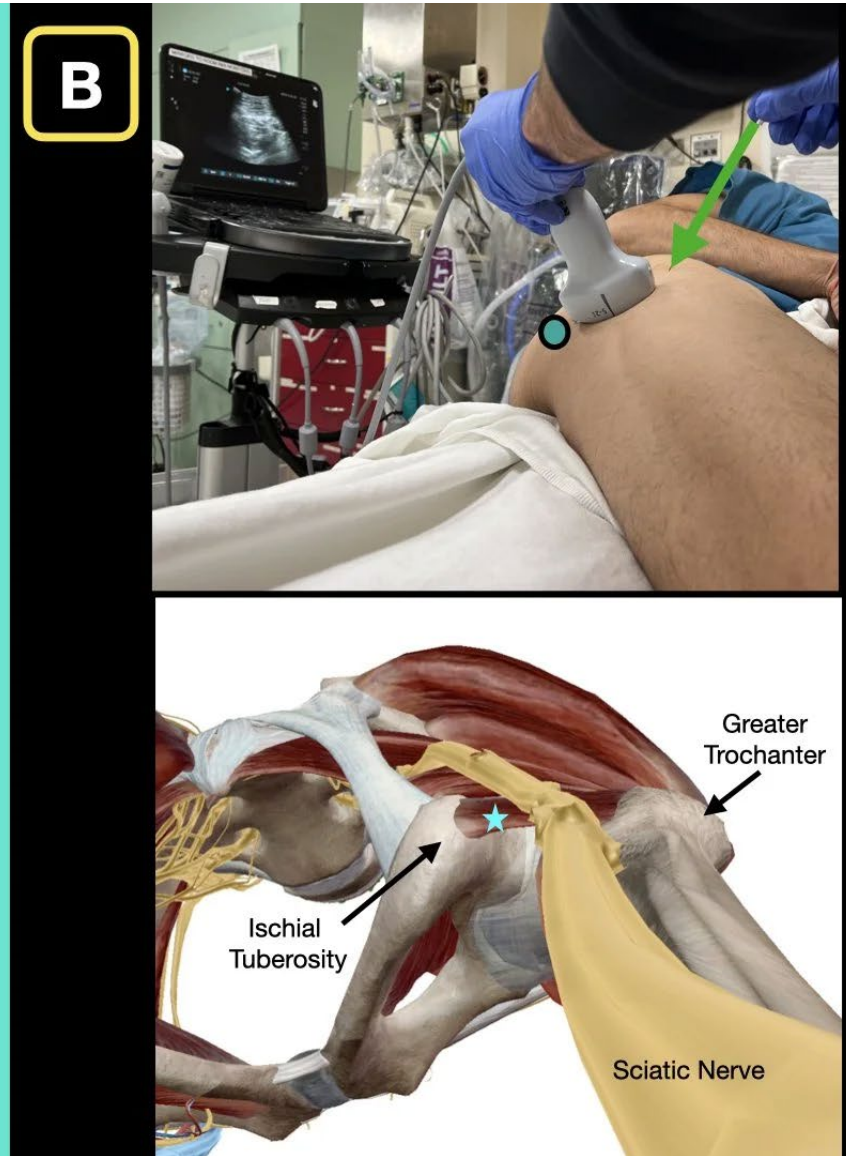
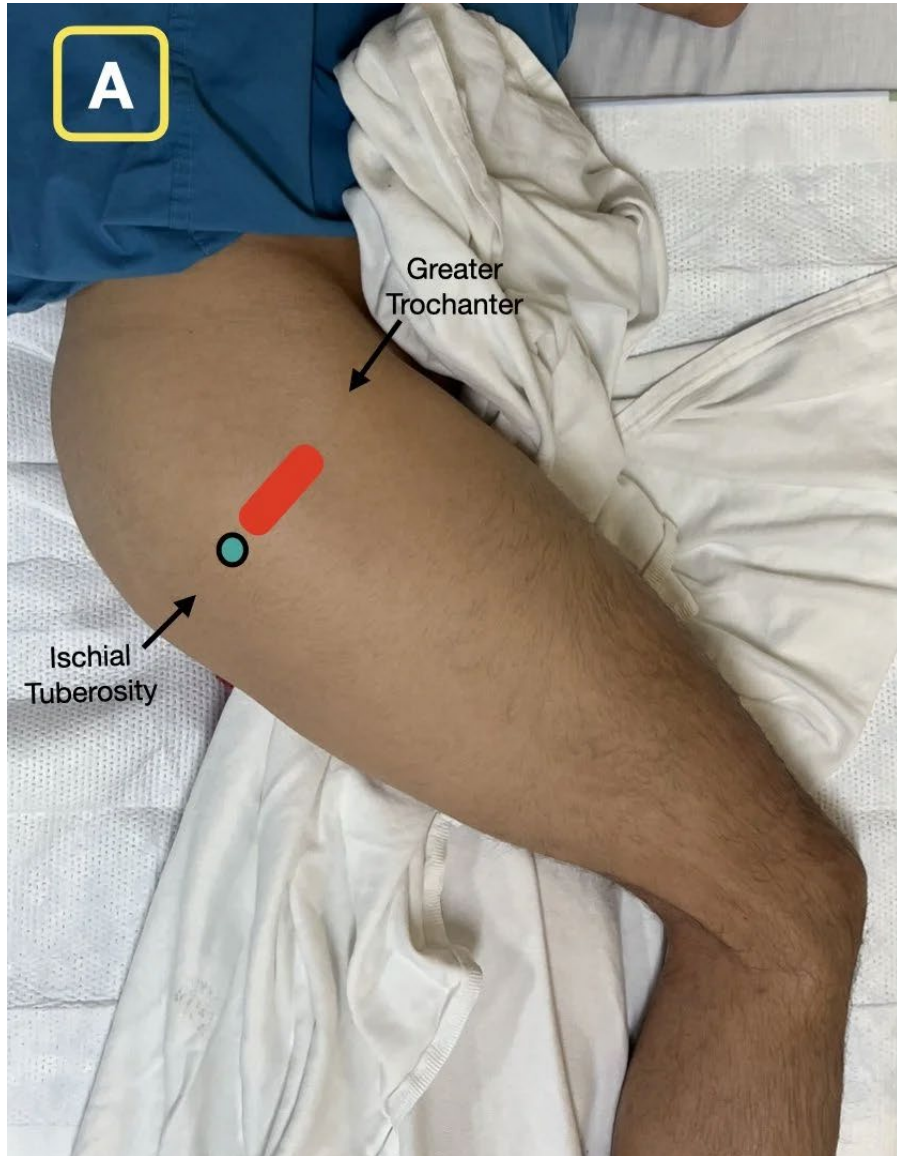
- **Transducer:** High-frequency linear probe
 - **Needle:** 20–22 g, 5–10 cm nerve block needle or short-bevel needle (spinal)
- **Anesthetic Volume:** 10 mL (mind total volume/toxic dose if combined with pop sci)
- **Target of Anesthetic:** Anesthetic spread around the saphenous nerve, 5–7 cm proximal to the popliteal crease, deep to the sartorius muscle and anterolateral to the femoral artery
- **Positioning:** hip external rotated (1/2 frog leg)



UBC CPD
Medicine
CONTINUING
PROFESSIONAL
DEVELOPMENT



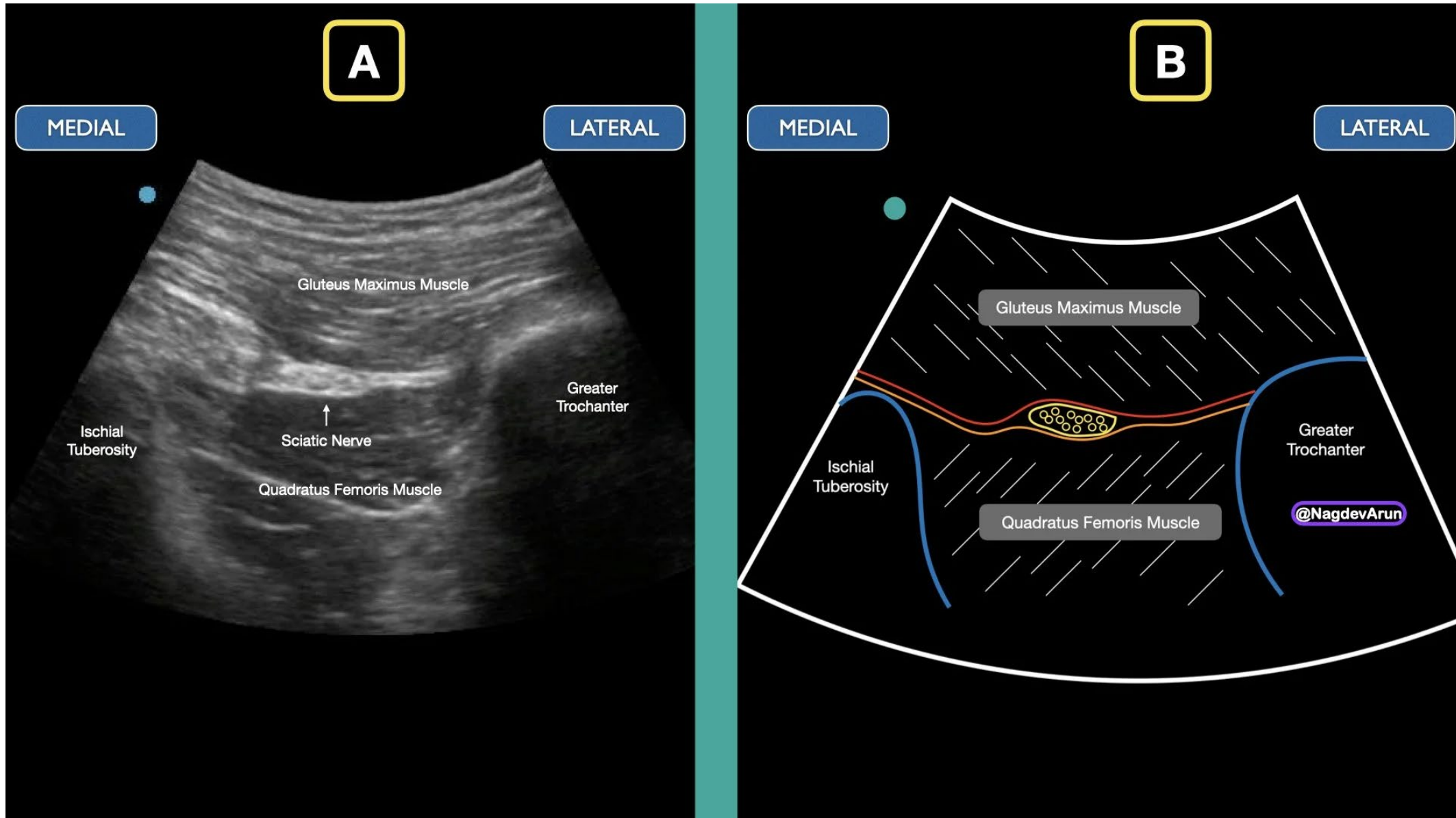
TRANSGLUTEAL SCIATIC BLOCK



UBC CPD
Medicine
CONTINUING
PROFESSIONAL
DEVELOPMENT



TRANSGLUTEAL SCIATIC BLOCK

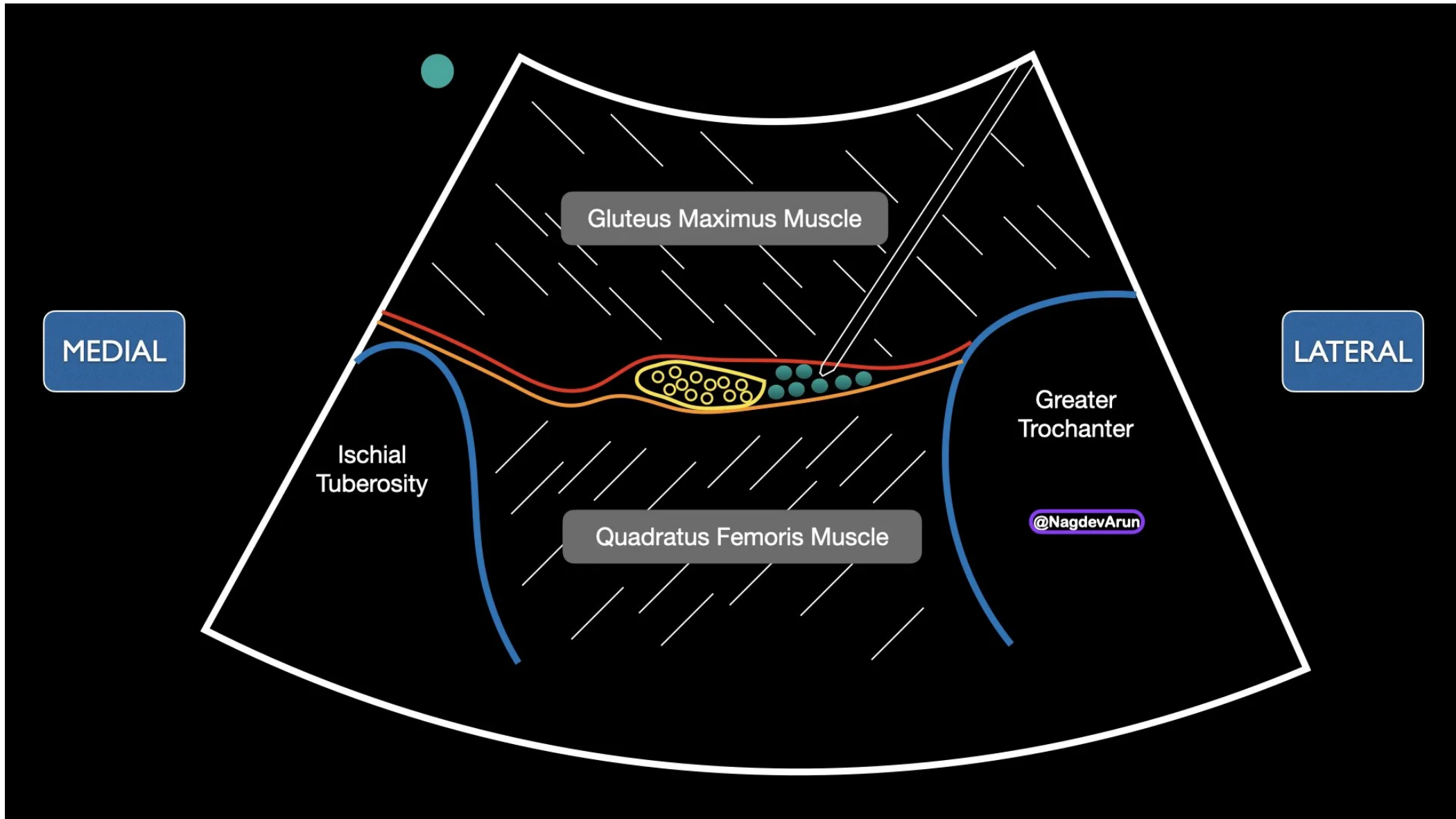


UBC CPD
Medicine
CONTINUING
PROFESSIONAL
DEVELOPMENT

Rural Coordination
Centre of BC



TRANSGLUTEAL SCIATIC BLOCK

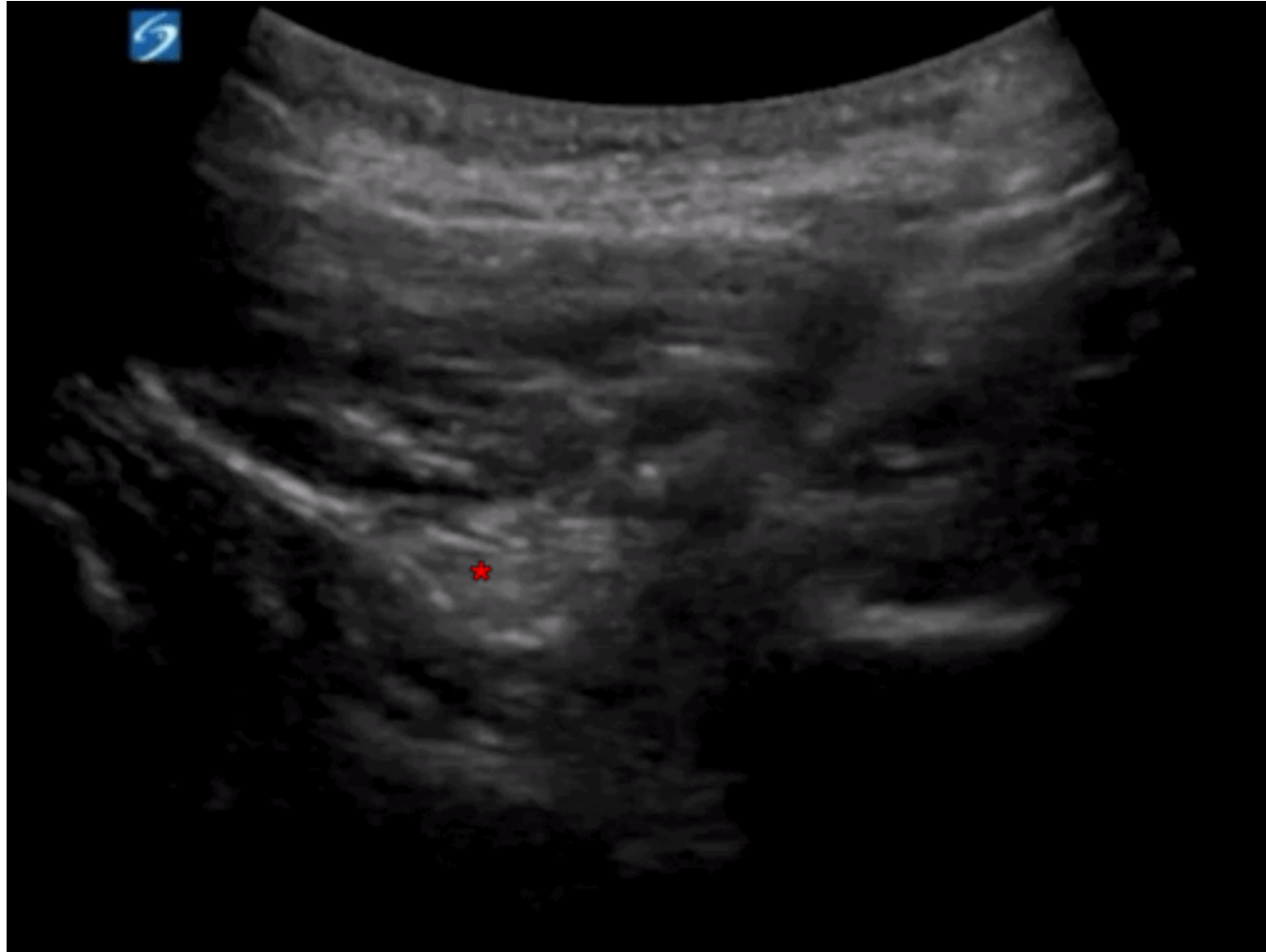


UBC CPD
Medicine
CONTINUING
PROFESSIONAL
DEVELOPMENT

Rural Coordination
Centre of BC



TRANSGLUTEAL SCIATIC BLOCK



UBC CPD
Medicine
CONTINUING
PROFESSIONAL
DEVELOPMENT



TRANSGLUTEAL SCIATIC BLOCK

- **Notes:**

- ~**6%** risk of **foot drop**, patient should be aware and encouraged not to drive for the duration of the block
- **Transducer:** Low-frequency curvilinear probe
- **Needle:** 20-22 g 8-10cm Quincke or echogenic block needle (Needle visualization for deep targets easier with an echogenic needle) (spinal)
- **Anesthetic volume:** 10-20 mL of long acting anesthetic
 - *Optional:* Can add 4-8mg of dexamethasone
- **Target of Anesthetic:** anesthetic spread around the sciatic nerve between the gluteus maximus and quadratus femoris muscle bellies
- **Positioning:** lat decub



UBC CPD
Medicine
CONTINUING
PROFESSIONAL
DEVELOPMENT



CASE #3

56 yo female

Hx of R foot pain for 2 weeks

?stepped on something 2 weeks ago at the beach



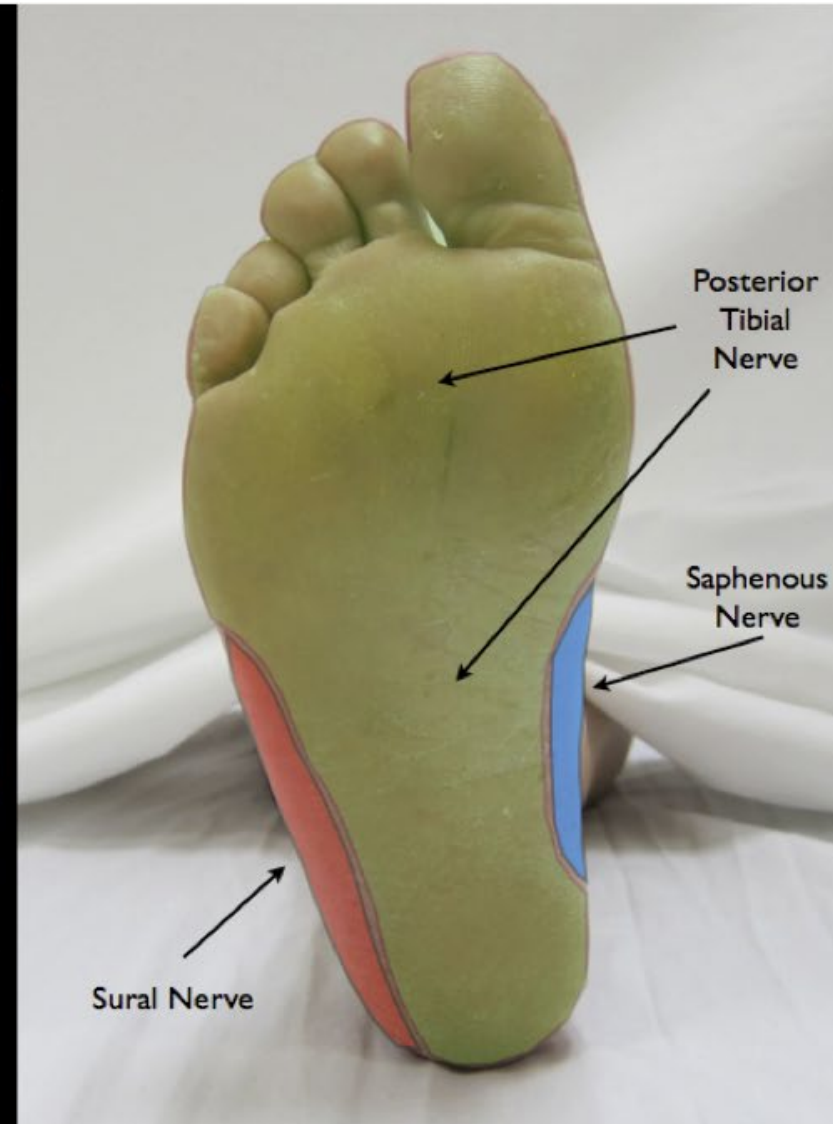
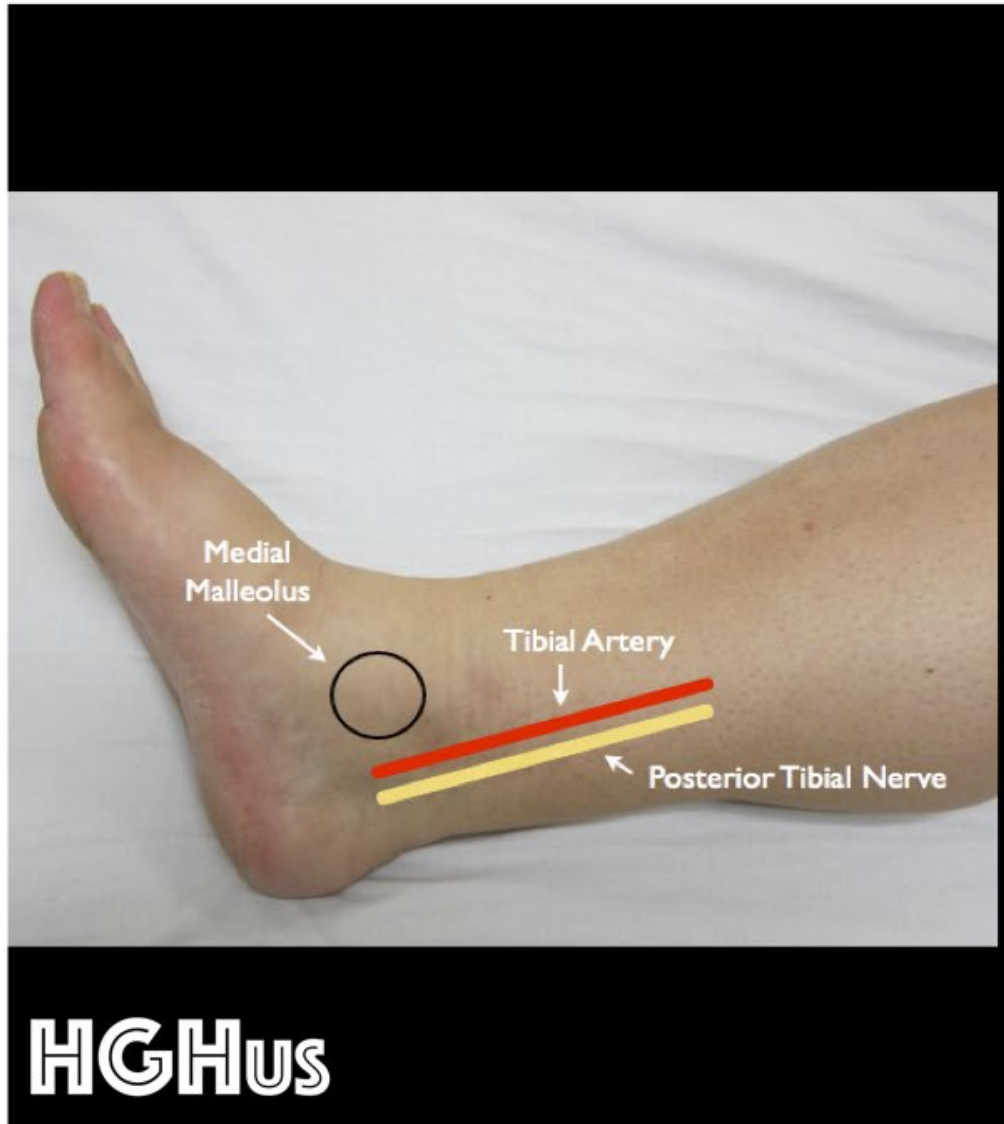
UBC CPD
Medicine

CONTINUING
PROFESSIONAL
DEVELOPMENT

Rural Coordination
Centre of BC



POSTERIOR TIBIAL BLOCK



UBC CPD
Medicine
CONTINUING
PROFESSIONAL
DEVELOPMENT



POSTERIOR TIBIAL BLOCK



UBC CPD
Medicine
CONTINUING
PROFESSIONAL
DEVELOPMENT



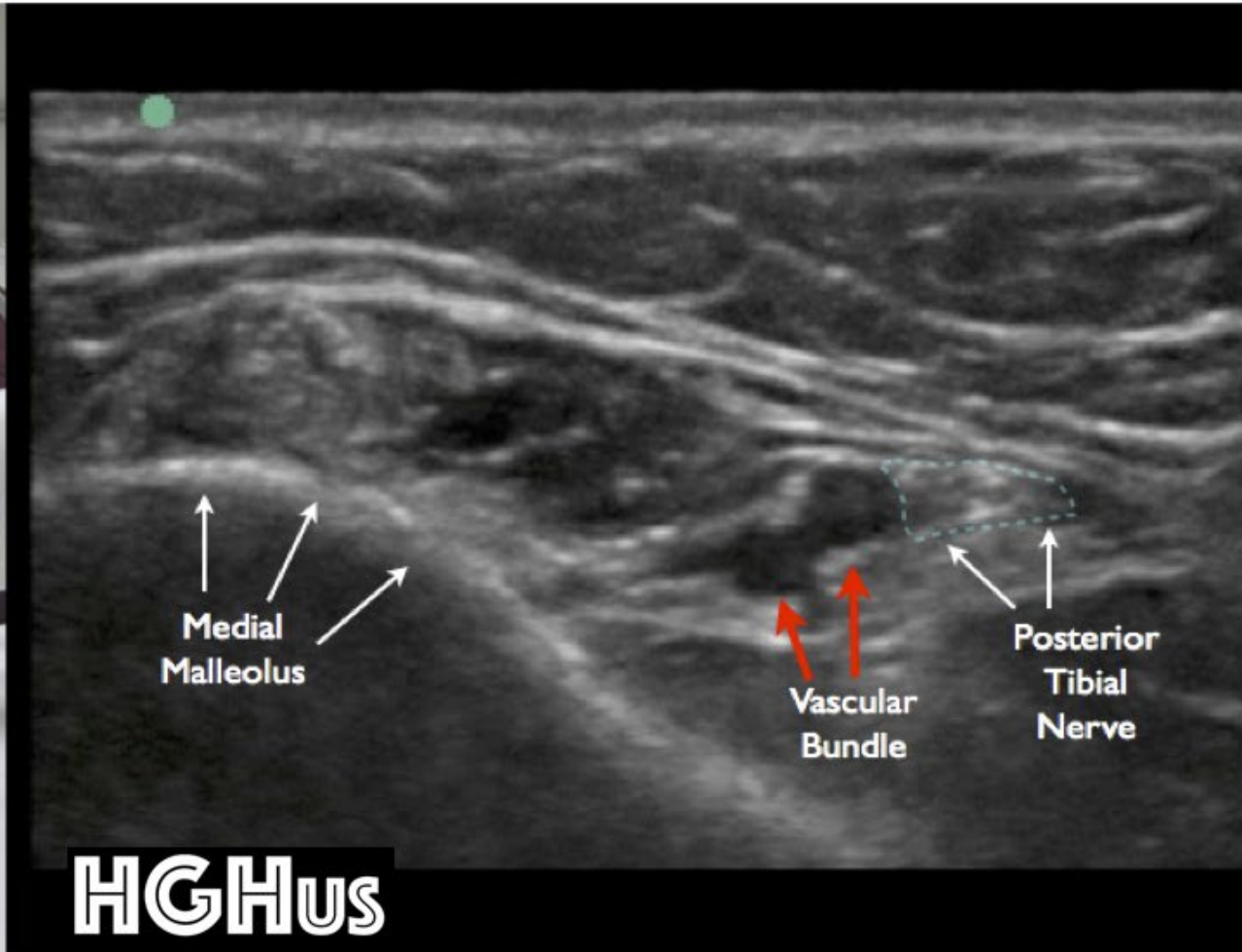
POSTERIOR TIBIAL BLOCK



UBC CPD
Medicine
CONTINUING
PROFESSIONAL
DEVELOPMENT



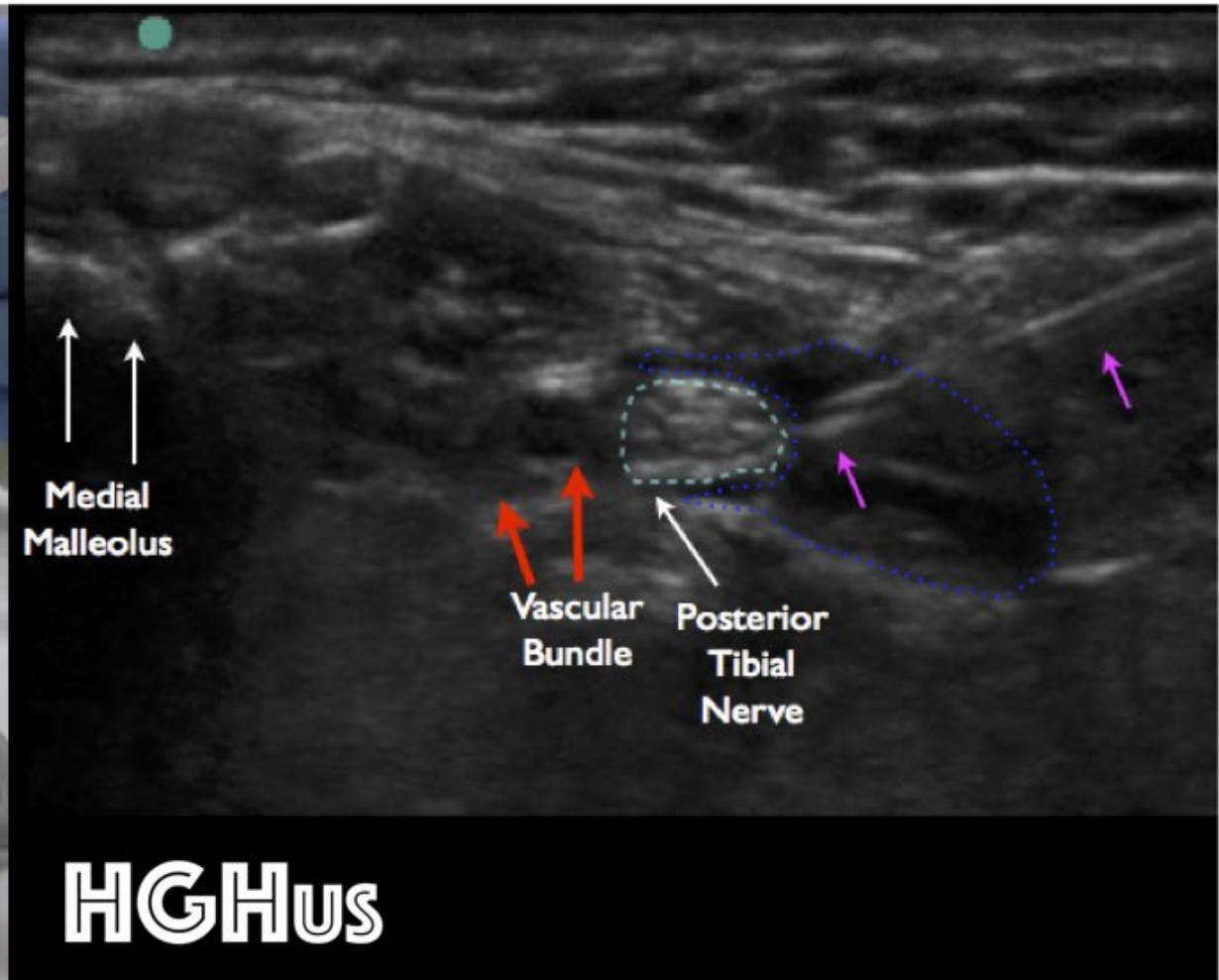
POSTERIOR TIBIAL BLOCK



UBC CPD
Medicine
CONTINUING
PROFESSIONAL
DEVELOPMENT



POSTERIOR TIBIAL BLOCK



HGHus



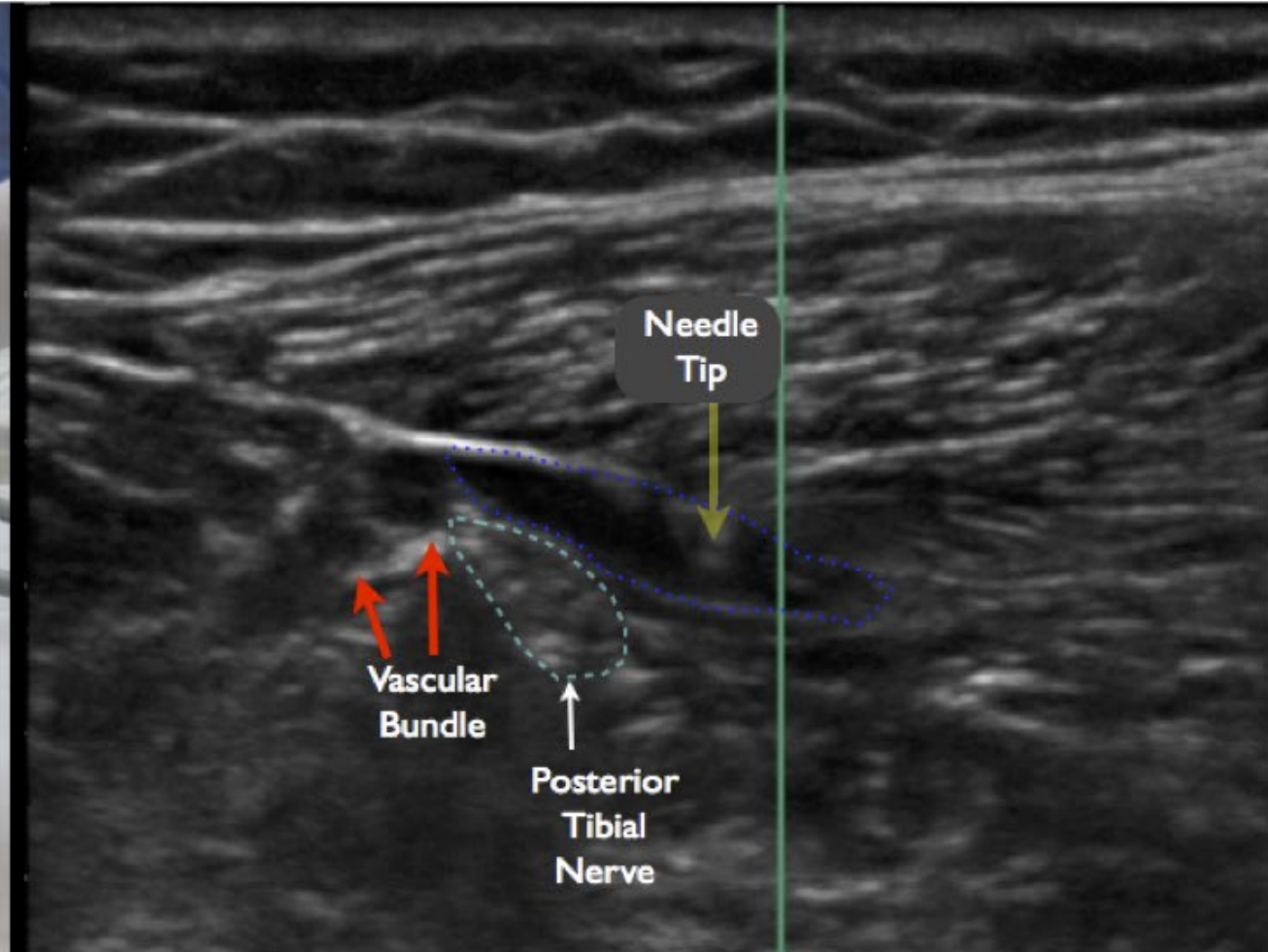
UBC CPD
Medicine
CONTINUING
PROFESSIONAL
DEVELOPMENT

Rural Coordination
Centre of BC



POSTERIOR TIBIAL BLOCK

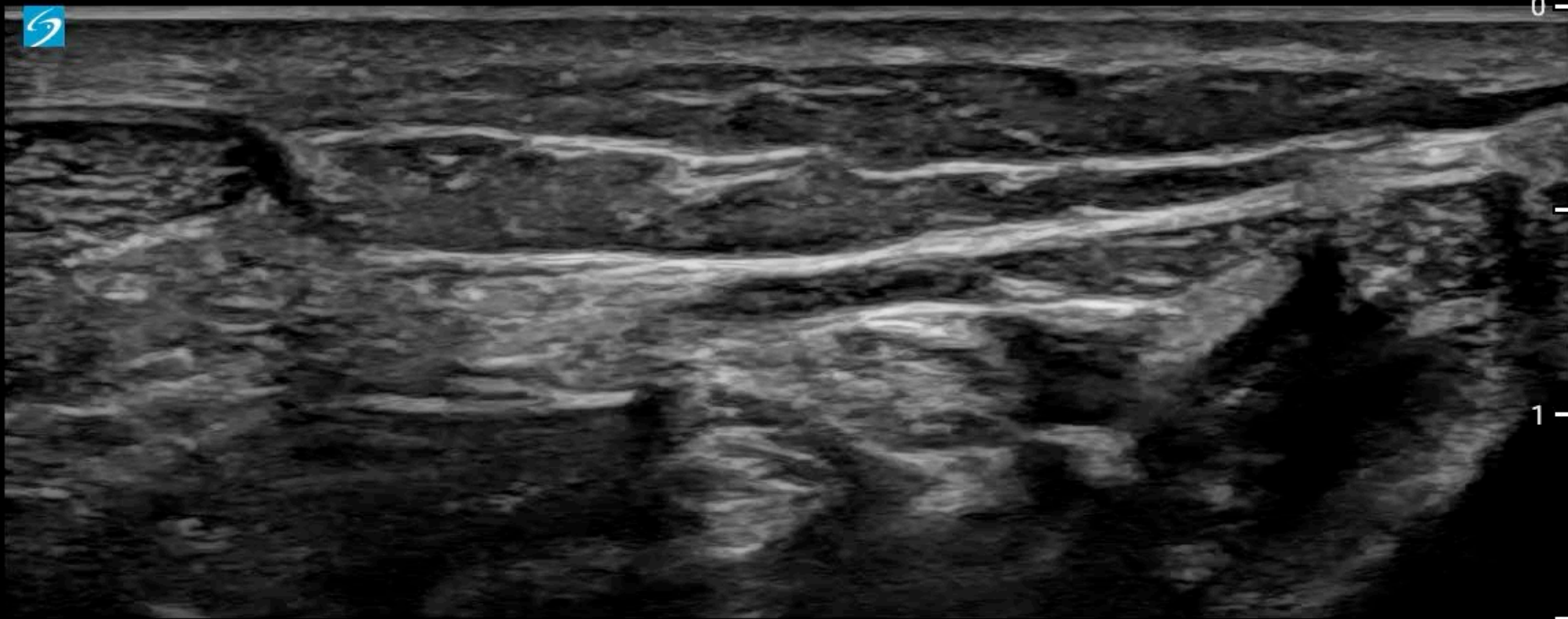
HGHus



UBC CPD
Medicine
CONTINUING
PROFESSIONAL
DEVELOPMENT



POSTERIOR TIBIAL BLOCK



1.5 cm

L12-3
Nerve
MI: 1.3 TIS: 0.2

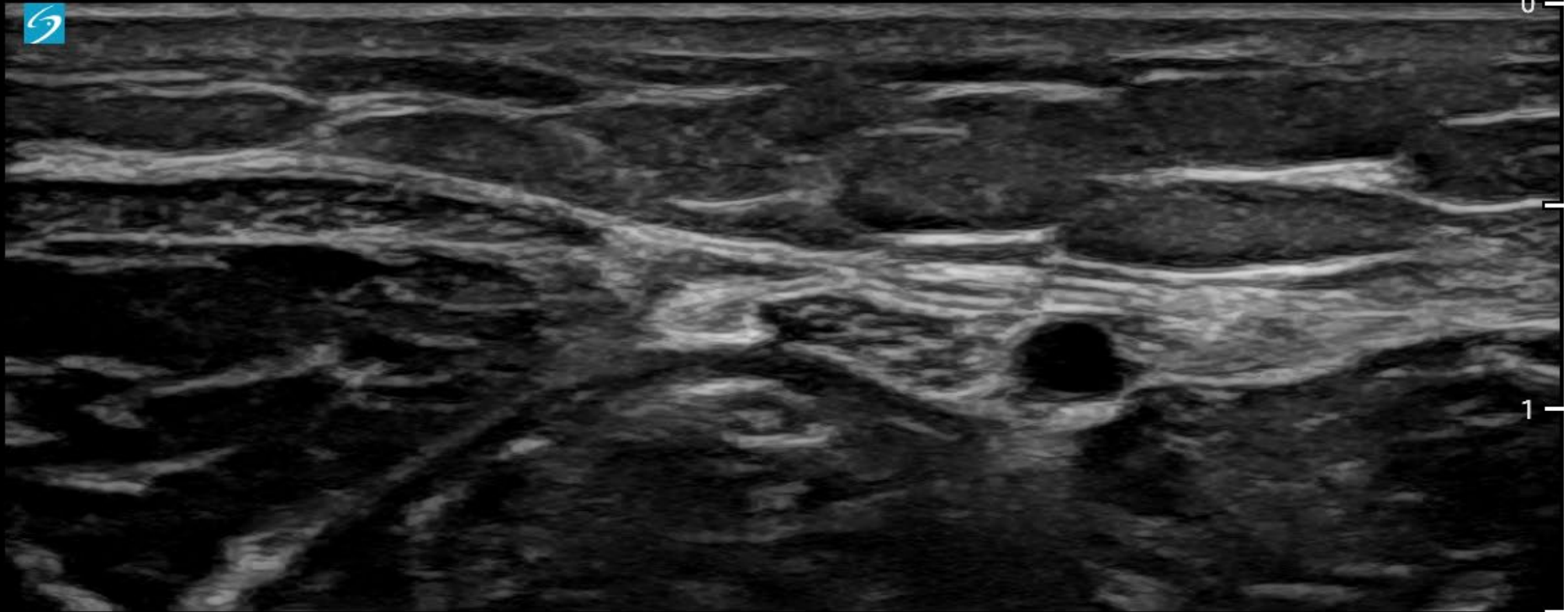
2D: G: 50
Res DR: 0
MB
THI



UBC CPD
Medicine
CONTINUING
PROFESSIONAL
DEVELOPMENT



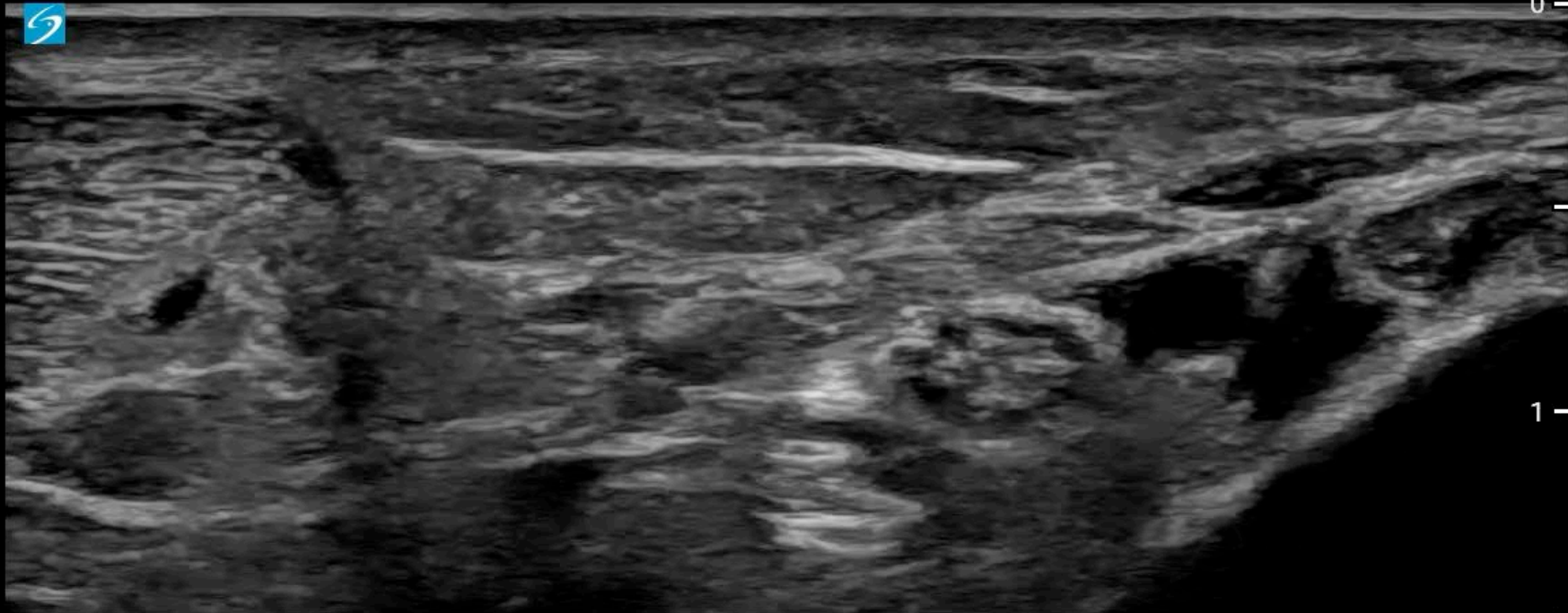
POSTERIOR TIBIAL BLOCK



UBC CPD
Medicine
CONTINUING
PROFESSIONAL
DEVELOPMENT



POSTERIOR TIBIAL BLOCK



1.5 cm

L12-3
Nerve
MI: 1.3 TIS: 0.2

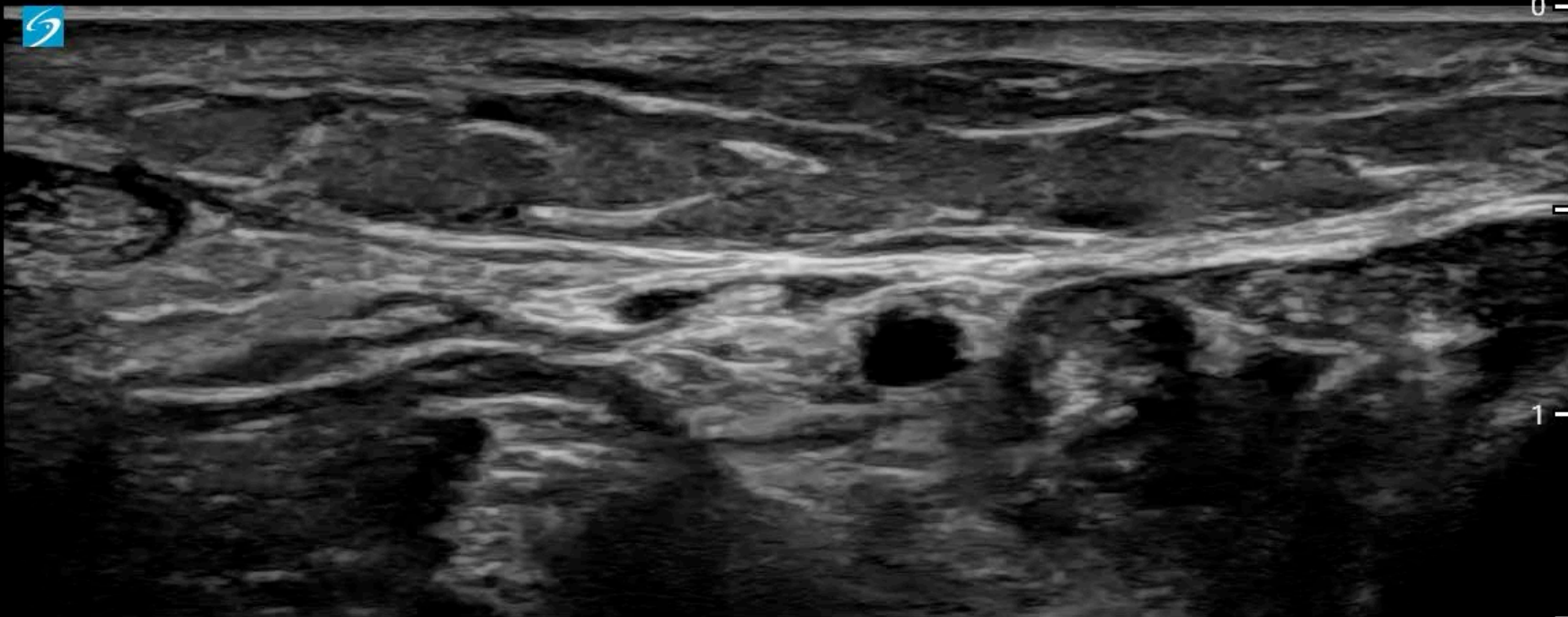
2D: G: 50
Res DR: 0
MB
THI



UBC CPD
Medicine
CONTINUING
PROFESSIONAL
DEVELOPMENT



POSTERIOR TIBIAL BLOCK



L12-3
Nerve
MI: 1.3 TIS: 0.2

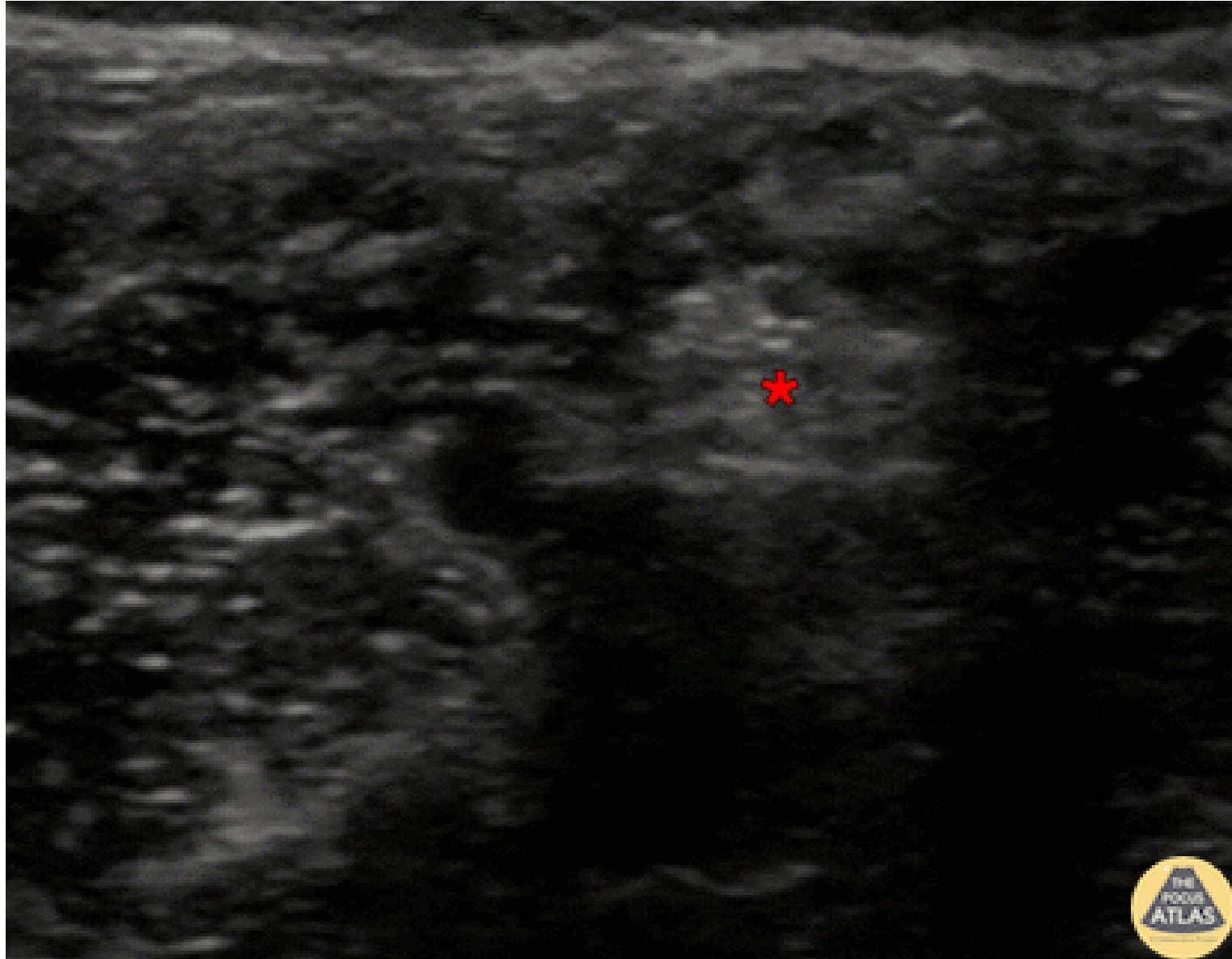
2D: G: 50
Res DR: 0
MB
THI



UBC CPD
Medicine
CONTINUING
PROFESSIONAL
DEVELOPMENT



POSTERIOR TIBIAL BLOCK



UBC CPD
Medicine
CONTINUING
PROFESSIONAL
DEVELOPMENT



POSTERIOR TIBIAL BLOCK

- **Indications**

- Wound exploration, lacerations, and/or foreign body removal on the sole of the foot
- Calcaneal fractures



UBC CPD
Medicine
CONTINUING
PROFESSIONAL
DEVELOPMENT



POSTERIOR TIBIAL BLOCK

- **Notes**

- If tibial nerve and artery are too close together, slide proximally to separate structures
- **Transducer:** High-frequency linear probe
- **Needle:** 23-27g 1-1.5 in (2.5-3.8 cm) needle
- Anesthetic volume: 4-5 mL
- **Target of Anesthetic:** Anesthetic spread around posterior tibial nerve with adjacent vascular bundle
- **Positioning:** lat decub



UBC CPD
Medicine
CONTINUING
PROFESSIONAL
DEVELOPMENT



POSTERIOR TIBIAL BLOCK

- **Notes**

- Smaller needles are more difficult to visualize
- Avoid vascular injection and injury by frequently aspirating
 - Any injected anesthetic should result in a bolus of fluid on the image
 - If no bolus is seen after injection, this may indicate intravascular injection
- Aim for local anesthetic between the artery and nerve
 - Consider out-of-plane approach
- Rolled towel or pillow underneath the calf may aid in positioning
- For patients with little subcutaneous tissue, the probe may not sit well near the medial malleolus
- May perform the procedure more proximal to avoid bony projections



UBC CPD
Medicine
CONTINUING
PROFESSIONAL
DEVELOPMENT



PRACTICE INTEGRATION

- Pick a block (FNB)
- Scan normal anatomy
- Review approach (steps, material, complications etc)
- Practice in plane needle technique
- Practice (colleague or shadow anesthesia)



UBC CPD
Medicine
CONTINUING
PROFESSIONAL
DEVELOPMENT



Upcoming Rural PoCUS Rounds - Temporal Artery:

October 30th - Dr. Irina Sainchuk

<https://ubccpd.ca/rural-pocus-rounds>



UBC CPD
Medicine
CONTINUING
PROFESSIONAL
DEVELOPMENT



RURAL POCUS ROUNDS - CASES



Date: Fri, Dec 11 from 12-1pm PT

Case submission

page: https://ubc.ca1.qualtrics.com/jfe/form/SV_3KRARHRxe2Qf0Sa



UBC CPD
Medicine
CONTINUING
PROFESSIONAL
DEVELOPMENT



QUESTIONS



UBC CPD
Medicine
CONTINUING
PROFESSIONAL
DEVELOPMENT



RESOURCES

- <https://www.bcpocus.ca/>
 - <https://www.bcpocus.ca/procedures/peripheral-nerve-blocks/>
- <https://highlandultrasound.com/>
- <https://nysora.com/>
- <https://asra.com/>
- <https://www.acep.org/sonoguide/nerve-blocks>
- <https://coreultrasound.com/5minsono-nb/>
- <https://www.ultrasoundgel.org/>
- <https://www.thepocusatlas.com/>



UBC CPD
Medicine
CONTINUING
PROFESSIONAL
DEVELOPMENT



RESOURCES MENTIONED

- <https://www.nysora.com/techniques/lower-extremity/>
- Rodziewicz TL, Patel S, Hendrix JM, et al. Lower Extremity Blocks. [Updated 2023 Oct 18]. In: StatPearls [Internet]. Treasure Island (FL): StatPearls Publishing; 2026 Jan-. Available from: <https://www.ncbi.nlm.nih.gov/books/NBK470184/>
- <https://www.aafp.org/pubs/afp/issues/2020/0601/p669.html>
- <https://www.acep.org/sonoguide/nerve-blocks/tibial-nerve-block>
- https://www.thepocusatlas.com/lower-extremity-blocks?srsId=AfmBOooDx5NCnVNUM6sAbquK0Q9dt4jZ4JjoVCLHjzr3l9bHxC_hwNlr
- <https://www.acep.org/emultrasound/newsroom/mar2019/tips-and-tricks-ultrasound-guided-regional-anesthesia-of-the-hand>
- Mulroy MF, Weller RS, Liguori GA. A checklist for performing regional nerve blocks. Reg Anesth Pain Med. 2014 May-Jun;39(3):195-9. doi: 10.1097/AAP.0000000000000075. Erratum in: Reg Anesth Pain Med. 2014 Jul-Aug;39(4):357. PMID: 24718017.



UBC CPD
Medicine
CONTINUING
PROFESSIONAL
DEVELOPMENT



RESOURCES MENTIONED

- <https://coreem.net/core/ultrasound-guided-lower-extremity-nerve-blocks/>
- Brown JR, Goldsmith AJ, Lapietra A, Zeballos JL, Vlassakov KV, Stone AB, Knight RS, Carnell J, Nagdev A. Ultrasound-Guided Nerve Blocks: Suggested Procedural Guidelines for Emergency Physicians. POCUS J. 2022 Nov 21;7(2):253-261. doi: 10.24908/pocus.v7i2.15233. PMID: 36896375; PMCID: PMC9983730.
- <https://emsj.ca/primer-on-ultrasound-guided-peripheral-nerve-blocks-in-the-ed/>
- <https://nysora.com/regional-anesthesia/topics/complications/local-anesthetic-systemic-toxicity/>
- <https://highlandultrasound.com/new-pop-block>
- <https://www.thepocusatlas.com/peng>
- [https://asra.com/news-publications/asra-newsletter/newsletter-item/asra-news/2023/08/01/how-i-do-it-pericapsular-nerve-group-\(peng\)-block](https://asra.com/news-publications/asra-newsletter/newsletter-item/asra-news/2023/08/01/how-i-do-it-pericapsular-nerve-group-(peng)-block)
- <https://www.thepocusatlas.com/adductor>
- <https://www.baby-blocks.com/block-detail/adductor-canal-block>
- <https://www.acep.org/sonoguide/nerve-blocks/saphenous-nerve-block>



UBC CPD
Medicine
CONTINUING
PROFESSIONAL
DEVELOPMENT



IMAGE RESOURCES

- <https://www.instagram.com/p/C6eE1Qgua5g/>
- [https://villains.fandom.com/wiki/Long_John_Silver_\(Treasure_Island\)](https://villains.fandom.com/wiki/Long_John_Silver_(Treasure_Island))
- <https://basicmedicalkey.com/local-and-general-anesthetics/>
- <https://nephropocus.com/mindray-l7-3s-linear-array-transducer-for-sale/>
- <https://www.pocus.org/resources/blog/anisotropy-artifact-in-musculoskeletal-ultrasound-mskus/>
- <https://www.baby-blocks.com/block-detail/lower-extremity-nerve-coverage>
- <https://www.bcpocus.ca/procedures/peripheral-nerve-blocks/>
- https://link.springer.com/chapter/10.1007/978-981-15-9202-7_3
- <https://www.thepolephysio.com/post/nerves-the-lower-limb-edition>
- <https://my.clevelandclinic.org/health/body/21962-tibial-nerve>
- <https://highlandultrasound.com/med-guide>
- <https://www.illumination.com/movie/sing/>



UBC CPD
Medicine
CONTINUING
PROFESSIONAL
DEVELOPMENT



IMAGE RESOURCES

- https://www.thepocusatlas.com/lower-extremity-blocks?srsItid=AfmBOooDx5NCnVNUM6sAbquK0Q9dt4jZ4JjoVCLHjzr3l9bHxC_hwNlr
- https://nysora.com/pain-management/ultrasound-guided-nerve-blocks-of-the-lower-limb/#toc_1--FEMORAL-NERVE-BLOCK
- <https://www.kenhub.com/en/library/anatomy/femoral-nerve>
- <https://highlandultrasound.com/new-femoral-updated>
- https://www.thepocusatlas.com/lower-extremity-blocks?srsItid=AfmBOooDx5NCnVNUM6sAbquK0Q9dt4jZ4JjoVCLHjzr3l9bHxC_hwNlr
- https://www.thepocusatlas.com/lower-extremity-blocks?srsItid=AfmBOooDx5NCnVNUM6sAbquK0Q9dt4jZ4JjoVCLHjzr3l9bHxC_hwNlr
- <https://highlandultrasound.com/new-pop-block>
- <https://highlandultrasound.com/new-page-1>
- <https://highlandultrasound.com/peng>
- <https://highlandultrasound.com/tibial-block>



UBC CPD
Medicine
CONTINUING
PROFESSIONAL
DEVELOPMENT

