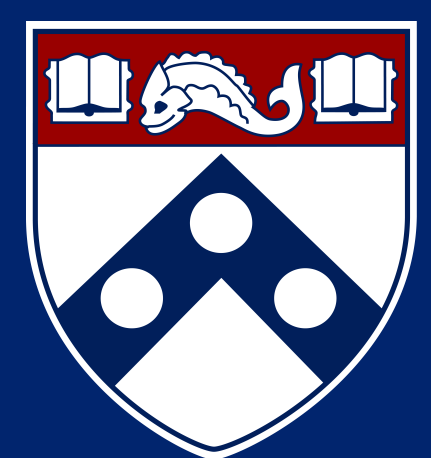




Optimizing Regional Anesthesia Utilization in Hip Fracture Strategies for Implementation

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Introduction

Over 300,000 adults are hospitalized annually in the United States due to hip fractures, and in-hospital mortality is up to 3%.¹ Multiple societal guidelines recommend multimodal analgesia, including the use of peripheral nerve blocks.² Regional analgesia is effective and associated with multiple improved outcomes compared to opiates alone, yet it remains underutilized.³ A recent study found that only 4.6% of hip fracture patients received a peripheral nerve block for pain control.⁴ There is limited literature on this discrepancy, with poorly defined interventions and varying degrees of sustained change.⁵ We implemented a program to increase utilization of peripheral nerve blocks for analgesia for acute geriatric hip fractures in an academic medical center, and to address the main barriers to offering regional analgesia.

Materials and Methods

The collaboration involved multiple specialties, including Anesthesiology, Emergency Medicine (EM), and Orthopedic Surgery. An ultrasound-guided infrainguinal fascia iliaca compartment block (FIB) program was established in a Level 1 trauma center. A literature search and an internal survey identified three key barriers: protocol awareness, procedural comfort, and time/staffing constraints.

Regional analgesia protocols for acute hip fractures were developed to cover all geriatric hip fracture patients. Order set reminders in the electronic medical record system were updated to recommend an acute pain medicine consult. The block process was streamlined with the creation of pre-made supply kits.

Training programs, designed for anesthesiology and Emergency Medicine (EM) providers, were developed to promote the utilization of infrainguinal FIB. Video tutorials for both ultrasound-guided and landmark techniques were distributed via QR codes, and step-by-step instruction sheets were placed on ultrasound machines. (Figure 1) Patients could receive FIB either upon admission by EM providers or peri-operatively by anesthesia providers.

Prior to this initiative, EM providers were not performing FIB. Surveys were developed to monitor EM training and specific safety protocols were designed so that patients would not be double-blocked or subject to excessive local anesthetic doses.

Figure 1.

Nerve Blocks for Geriatric Hip Fractures

Block Overview
Geriatric fragility hip fractures only *Excludes trauma, periprosthetic, or pathologic fractures
Fascia Iliaca Nerve Block (infrainguinal approach)
Targets femoral, obturator, and lateral femoral cutaneous nerves
Ultrasound or landmark techniques appropriate
Inject ~30 mL Ropivacaine 0.2% with 4 mg Dexamethasone PF *Max dose 2.5 mg/kg

Step 1: Obtain Consent

Most common risks: bleeding, infection, injury to nerves & surrounding structures
Contraindications: patient refusal, relevant allergies, infection at block site

Step 2: Gather Supplies

Sonosite US with block probe
Short-sleeve US probe
2-3 packs of surgilube jelly
Chloraprep stick
Sterile gloves
2" or 4" block needle
Box of sterile gauze



Step 3: Gather Medicines

2 x 20 mL syringes with local anesthetic (0.2% Ropivacaine)
1 x 3 mL syringe with 4 mg Dexamethasone PF (to mix with Ropivacaine)
*Pre-mix the Dexamethasone into your first Ropivacaine syringe
1 x 3 mL syringe with 1% Lidocaine and 25g needle (for skin wheal)

Before the Block:

- Place patient on full monitors (q5 BP) and supplemental O₂
- Standard **Block Time Out** with RN
 - Confirm surgical & anesthetic consent, site markings (Surg & ANES), allergies
- Position patient supine
- Sterilize field with Chloraprep

Ultrasound Scanning:

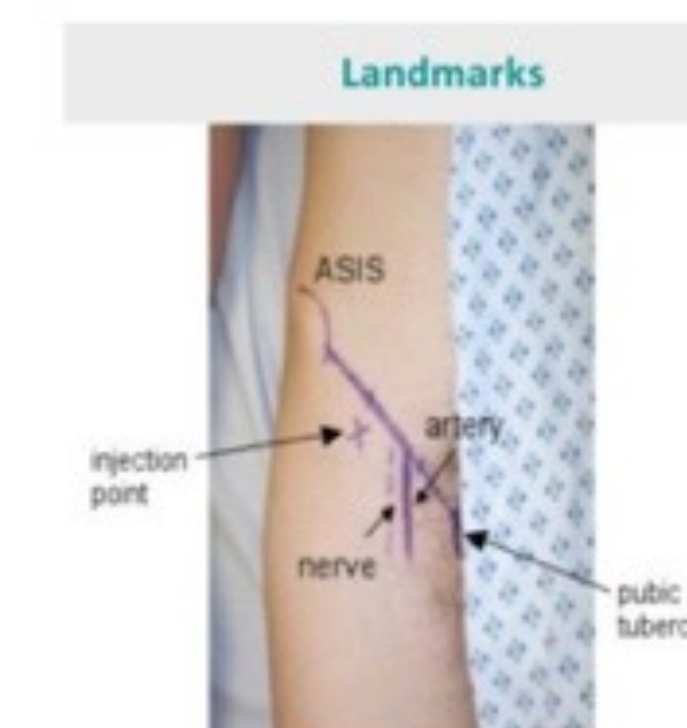
- Identify injection point
 - Draw a line from ASIS to pubic tubercle and divide into 3 parts
 - Identify junction of middle and lateral thirds; inject 1 cm caudal
- Scan US transversely along inguinal crease at proposed injection site
 - Save US photo
- Identify fascia iliaca and underlying iliopsoas muscle
 - Note the femoral nerve medially
 - Note the sartorius muscle laterally

Perform the Block:

- Apply 1% Lidocaine for skin wheal
- Insert block needle in-plane lateral-to-medial until needle pierces fascia iliaca
 - You will feel a tactile 'pop'
 - You will see the fascia 'snap' back on image
 - Injection is >2 cm lateral to femoral artery
- Aspirate and inject LA
 - Separate fascia iliaca off iliopsoas muscle
 - Serial aspirations q4 mL
 - ~30 mL Ropivacaine 0.2% with 4 mg Dexamethasone PF (max dose 2.5 mg/kg)

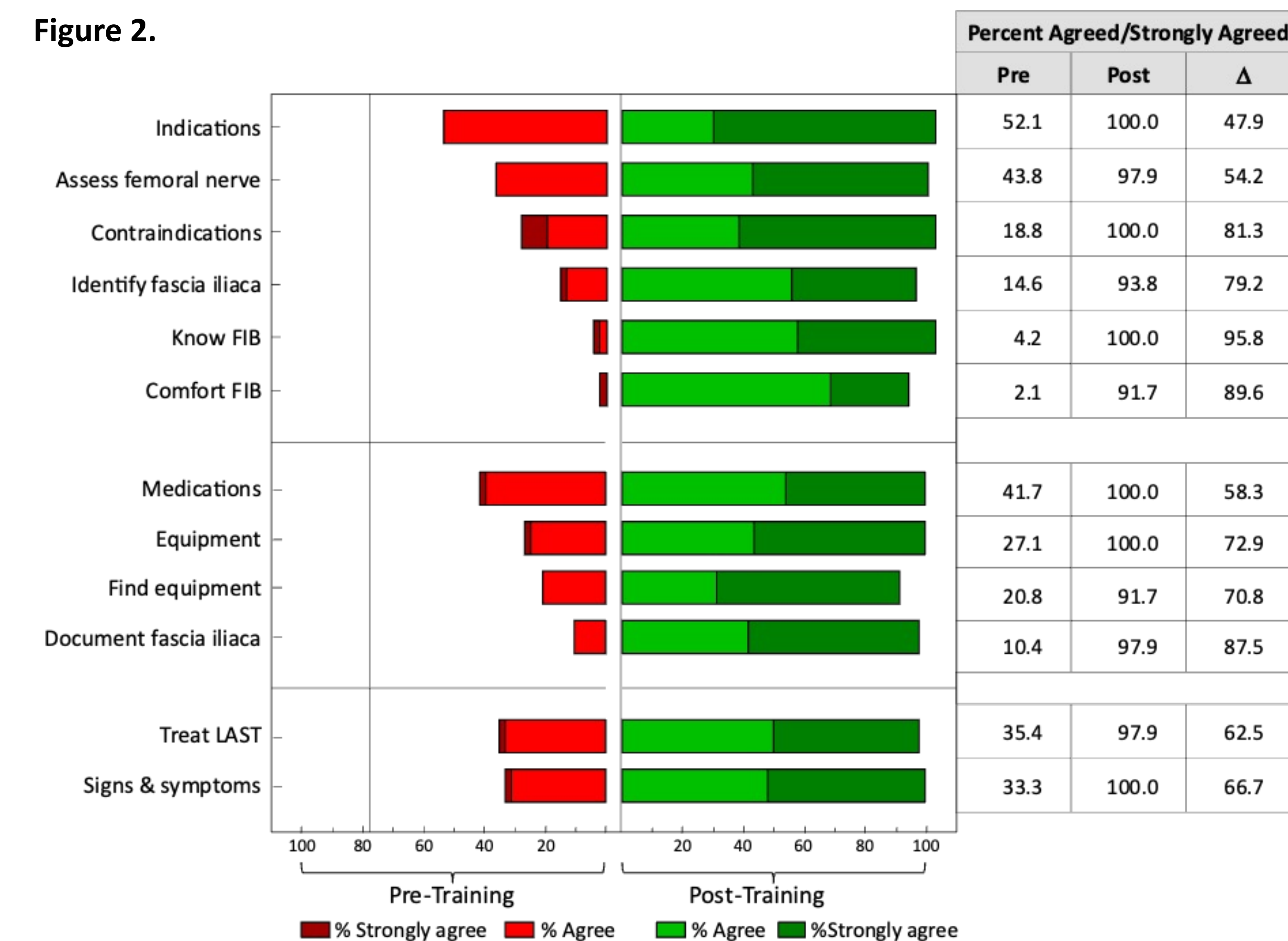
After the Block:

- Keep patient on monitors, give RN report
- Document procedure note with US photo (upload to EPIC Haiku)
- Return US machine



Scan me for a video tutorial!

Figure 2.



Discussion

Regional analgesia is an underused alternative despite multiple known benefits and societal endorsements.^{2,3} This interdisciplinary initiative between Anesthesiology, Emergency Medicine and Orthopedic Surgery successfully implemented a regional nerve block program for acute hip fractures.

We seek to highlight the feasibility and effectiveness of such programs in enhancing patient care and increasing nerve block utilization. By systematically identifying institutional barriers and targeting them with specific low-effort, high-impact solutions, we can sustainably increase our nerve block utilization rates. We share our experience in the hope of providing a framework for other institutions to develop their own patient-centric initiatives.

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