

Fascia Iliaca Catheter for Analgesia and Preoperative Optimization of Pathologic Femur Fracture

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Introduction

Orthopedic fractures are common in elderly patients, especially those with oncologic malignancies that carry a risk of pathologic fractures. Adequate pain management in the acute setting after initial fracture and following surgical intervention can be complex.

- Geriatric patients are predisposed to delirium, postoperative cognitive dysfunction, and significant comorbidities
- Oncologic patients often present with a variety of comorbidities, which presents additional challenges in optimizing outcomes.

Methods

Suprainguinal Fascia Iliaca Block: Ultrasound probe placed in parasagittal orientation medial to anterior superior iliac spine (ASIS). Needle advanced out-of-plane and local anesthetic deposited with visible spread below the fascia iliaca plane and above the muscle layer. (Figure 1)

Infrainguinal Fascia Iliaca Block: Ultrasound probe placed along the inguinal crease, identifying the iliacus muscle lateral and deep to the femoral neurovascular bundle. Needle advanced in-plane and LA deposited deep to fascia iliaca, lateral to the femoral nerve.



Figure 1: Ultrasound image of suprainguinal fascia iliaca (SIFI) block with surrounding anatomical structures. **ASIS:** Anterior Superior Iliac Spine, **IM:** Iliacus muscle

Case Report

73 year-old male with metastatic renal cell carcinoma, pulmonary metastases complicated by recurrent pleural effusions, chronic cancer pain, and limited functional capacity presented with an acute femur fracture and newly discovered osteolytic lesion. Acute pain service recommended regional anesthesia for pain relief.

Initially, an ultrasound-guided **suprainguinal fascia iliaca (SIFI) single-shot block** was performed using total 40 mL 0.25% bupivacaine, resulting in significant pain relief (Figure 1)

The following day, the patient underwent osteolytic lesion embolization and thoracentesis (2L removed) for preoperative optimization. An **infra-inguinal fascia iliaca (FI) catheter** was placed for extended analgesia (in the setting of unknown surgical timeline) and to reduce sedation requirements for the IR procedures. Infusion of 0.2% ropivacaine at 8 ml/hr was initiated in addition to a regimen of acetaminophen and methocarbamol.

The subsequent day the patient underwent retrograde IMN of the femur fracture. He tolerated the surgery without complications and the catheter was maintained for postoperative analgesia.

On postoperative day (POD) 1, the catheter was removed with full return of motor and sensory function on POD 2. On POD3-6, the patient continued to have steady pain relief, only requiring his home doses of oxycodone PRN for breakthrough pain.

Discussion

- Elderly patients are prone to fractures due to aging, comorbidities, and physical deconditioning.
- In cancer patients, metastatic disease increases the risk of pathologic fractures.
- Bone strength is compromised by malnutrition, radiation, chemotherapy, and steroids.
- Pathologic fractures often lead to prolonged surgery waiting times and significant pain.
- Regional anesthesia techniques reduce opioid use, minimizes complications, and supports preoperative optimization
- Fascia iliaca block and catheter-based regional anesthesia are effective for acute fracture pain.
- Multidisciplinary teamwork ensured optimal perioperative care.



Figure 2: X-ray image depicting displaced fracture of the femur shaft with evidence of prior total knee arthroplasty

