TARGETED PROCEDURAL ANALGESIA IN THE EMERGENCY DEPARTMENT

Three Applications of Regional and Local Anesthetic Techniques

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BACKGROUND & OBJECTIVE

Pain is among the most frequent reasons patients seek emergency department (ED) care and requires timely assessment and treatment. Systemic opioids remain an important component of acute analgesia, but repeated dosing may be insufficient in opioid-tolerant patients or limited by adverse effects. Local and regional anesthetic techniques offer an anatomically targeted approach that can complement multimodal analgesia and facilitate painful procedures without requiring additional systemic medication in selected patients.

OBJECTIVE: To describe three distinct ED applications of procedural analgesia: persistent pain despite opioids, intolerance of systemic narcotics, and regional anesthesia for complex wound repair.

METHODS & ETHICS

Three cases involving targeted procedural analgesia in the ED were retrospectively reviewed using Cerner chart records. Case details were de-identified using HIPAA Safe Harbor. Institutional review board approval was exempt in accordance with Merit Health Wesley institutional policy. Verbal consent for presentation and publication was obtained from all three patients by telephone and documented in the medical record. This descriptive series reports clinical presentations, techniques, and documented immediate outcomes; it does not include a comparison group.

CASE 1 | FASCIA ILIACA BLOCK

63-year-old woman • Proximal Femur Fracture

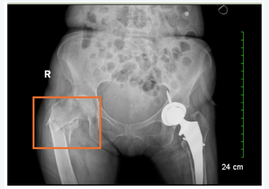


Figure 1. Right Proximal Femur Fracture

Radiograph demonstrating a markedly comminuted intertrochanteric/subtrochanteric fracture of the right proximal femur.

Image 1: Right Proximal Femur Fracture (radiograph)

PRESENTATION

A 63-year-old woman with chronic pain syndrome and long-term opioid therapy presented after a ground-level fall with severe right hip pain and visible deformity. Radiography demonstrated a markedly comminuted intertrochanteric/subtrochanteric fracture of the proximal femur. Her ongoing pain posed a challenge despite substantial prehospital and ED opioid exposure.

CHALLENGE:

Severe pain despite 18 mg IV morphine + 1 mg IV hydromorphone.

INTERVENTION

EMS administered 18 mg IV morphine and the ED administered 1 mg IV hydromorphone, but severe pain persisted. An ultrasound-guided fascia iliaca block was then performed using 20 mL of 0.5% ropivacaine. Appropriate fascial-plane separation was visualized during injection, supporting placement in the intended tissue plane.

OUTCOME

The patient reported substantial improvement within minutes after the block. No further opioid doses were required while she awaited admission. This case illustrates a targeted option when systemic opioid therapy has provided inadequate relief.

CASE 2 | HEMATOMA BLOCK

76-year-old woman • Distal Radius Fracture



Figure 2. Left Distal Radius Fracture

Radiograph demonstrating a comminuted impacted distal radius fracture with mild dorsal angulation.

Image 2: Distal Radius Fracture (radiograph)

PRESENTATION

A 76-year-old woman presented after a fall on an outstretched hand. Imaging identified a comminuted distal radius fracture with mild dorsal angulation. Her history was notable for baseline blood pressure fluctuations and marked hypotension following narcotic analgesics, complicating systemic pain-management options.

CHALLENGE:

Marked hypotension following narcotics; minimal relief with ibuprofen.

INTERVENTION

Because ibuprofen provided minimal relief and systemic narcotics were poorly tolerated, an ultrasound-guided hematoma block was selected. The block used 5 mL of 1% lidocaine combined with 5 mL of 0.25% bupivacaine to provide localized analgesia at the fracture site.

OUTCOME

The patient experienced significant relief following the block, permitting fracture immobilization and splinting without systemic opioid administration. This case highlights local analgesia when narcotic-associated hypotension is a concern.

CASE 3 | MEDIAN NERVE BLOCK

40-year-old man • Complex Thenar Laceration

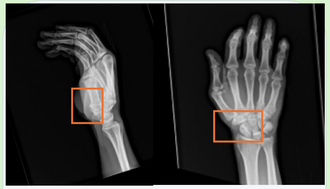


Fig 3 and 4. Foreign bodies within laceration

Radiographs demonstrating two visualizations of very subtle presentations of foreign bodies in the volar aspect of wrist.

Image 3: Hand radiograph showing foreign object via punctate hyperdensities over soft tissue (subtle)

PRESENTATION

A 40-year-old man presented with a 7-cm thenar palmar laceration sustained from shattered glass. The wound extended into subcutaneous tissue and required careful evaluation for retained foreign material. Initial neurovascular and motor examinations were intact, permitting planned exploration and repair.

CHALLENGE:

Extensive irrigation, exploration, foreign-body removal and multilayer closure.

INTERVENTION

Extensive wound irrigation, exploration, foreign-body removal, and multilayer closure were required. A median nerve block was used to provide regional anesthesia for these painful steps while preserving the ability to perform a detailed wound examination and repair.

OUTCOME

Regional anesthesia enabled exploration, irrigation, foreign-body removal, and multilayer wound closure without reported complication or opioid administration. This case demonstrates a procedural indication distinct from treatment of fracture pain.

DISCUSSION & CLINICAL IMPLICATIONS

The three cases illustrate complementary roles for procedural analgesia: rescue analgesia when opioids are inadequate, an alternative when systemic narcotics are poorly tolerated, and regional anesthesia to facilitate a painful procedure.

These approaches may reduce reliance on systemic opioids and procedural sedation while providing site-specific analgesia.

Emergency physicians are well positioned to incorporate regional and local anesthetic techniques given their procedural and point-of-care ultrasound skills.

The choice of technique can be matched to the clinical problem rather than treated as a single opioid-sparing strategy.

LIMITATIONS

- Only three patients were included, and cases were selected for educational value. There was no comparator group or standardized assessment of pain scores across cases.
- Procedural outcomes depend on operator skill, anatomy, and technique.
- Long-term follow-up was not consistently available; therefore, comparative effectiveness, safety, and generalizability cannot be established.

CONCLUSION

These cases illustrate how site-specific procedural analgesia may complement ED pain management when systemic opioids are inadequate or poorly tolerated, or when regional anesthesia facilitates a painful procedure. Prospective evaluation is needed to define effectiveness, feasibility, and patient-centered outcomes.

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