Effect of Regional Anesthesia on Opioid Use in Patients with Hip Fractures: A Single-Center Study in Southern Puerto Rico

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BACKGROUND & OBJECTIVE

- Over 300,000 older adults are hospitalized yearly for hip fractures in the U.S. (CDC, 2022).
- Puerto Rico's population aged 65+ is projected to exceed 25% by 2030.
- 81% of hip-fracture patients leave the hospital on opioids; 6.3% progress to prolonged use.
- Ultrasound-guided nerve blocks can control pain while avoiding systemic opioid risks.
- ED use of regional anesthesia in Puerto Rico remains understudied.

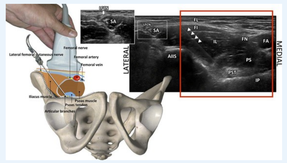


Figure 1. Extended-field-of-view ultrasound of the inguinal region for the PENG block

OBJECTIVE: Determine how often regional anesthesia is used for ED hip-fracture patients and whether it reduces opioid use.

METHODS

- Retrospective chart review: January 2022–March 2025
- Centro Médico Episcopal San Lucas, Ponce, PR (tertiary referral ED)
- Adults ≥21 years with a surgically treated hip fracture
- 281 records screened → 261 included; 20 excluded for incomplete documentation, no fracture, or another fracture type
- Data abstracted from Meditech EHR into REDCap (HIPAA-compliant; no identifiers)

STUDY COHORT

- Chart review procedures by Hospital EHR retrospective follow-up
- n = 261 patients
- Mean age: 80 years (range 28–101)
- 71% female; 29% male
- Mean BMI ≈24
- Most common comorbidities: hypertension 74%, diabetes 33%, hypothyroidism 23%

PRIMARY RESULTS

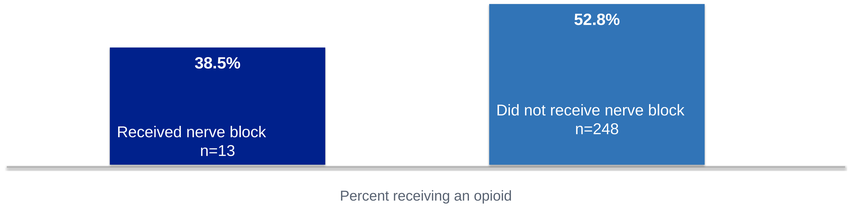
Nerve Blocks Work — But Almost Nobody Gets One

5%
received a nerve block
13 of 261

↓ 27%
relative drop in opioid use
52.8% → 38.5%

62%
needed no opioids
8 of 13 block patients

OPIOID USE BY NERVE BLOCK STATUS



TYPE OF NERVE BLOCK MEDICATION USED



Only 13 patients (5.0%) received a nerve block — cases overlapped on nerve blocks.

ADDITIONAL FINDINGS

- Only 13 patients (5.0%) received a nerve block — most often lidocaine or bupivacaine.
- 136 patients (52.1%) received an opioid; morphine was most common (50.2%).
- Among opioid-treated patients, 77% required therapy for one day, 22% for two days, and 1.5% for three days.
- 8 of 13 nerve-block patients (62%) required no opioids.

LIMITATIONS

- Small nerve-block group (n=13) limits statistical comparison.
- Single-center, retrospective design.
- Inconsistent EHR documentation of dosing, timing, and procedure confirmation.
- No recorded pain scores, preventing direct assessment of pain control.
- Combined block + opioid patients (n=5) had similar/higher MME than opioid-only patients, suggesting possible block failure.

CONCLUSION

Regional anesthesia was associated with meaningfully less opioid use, but remained rare in ED hip-fracture care.

Expanding ED physician training in ultrasound-guided nerve blocks could help close this gap.

Next: standardize regional-anesthesia protocols, add pain-score documentation, and pursue a prospective multicenter study.

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