

Time between Nerve block placement in the Emergency Department and Operative Fixation of Hip Fractures: A retrospective analysis

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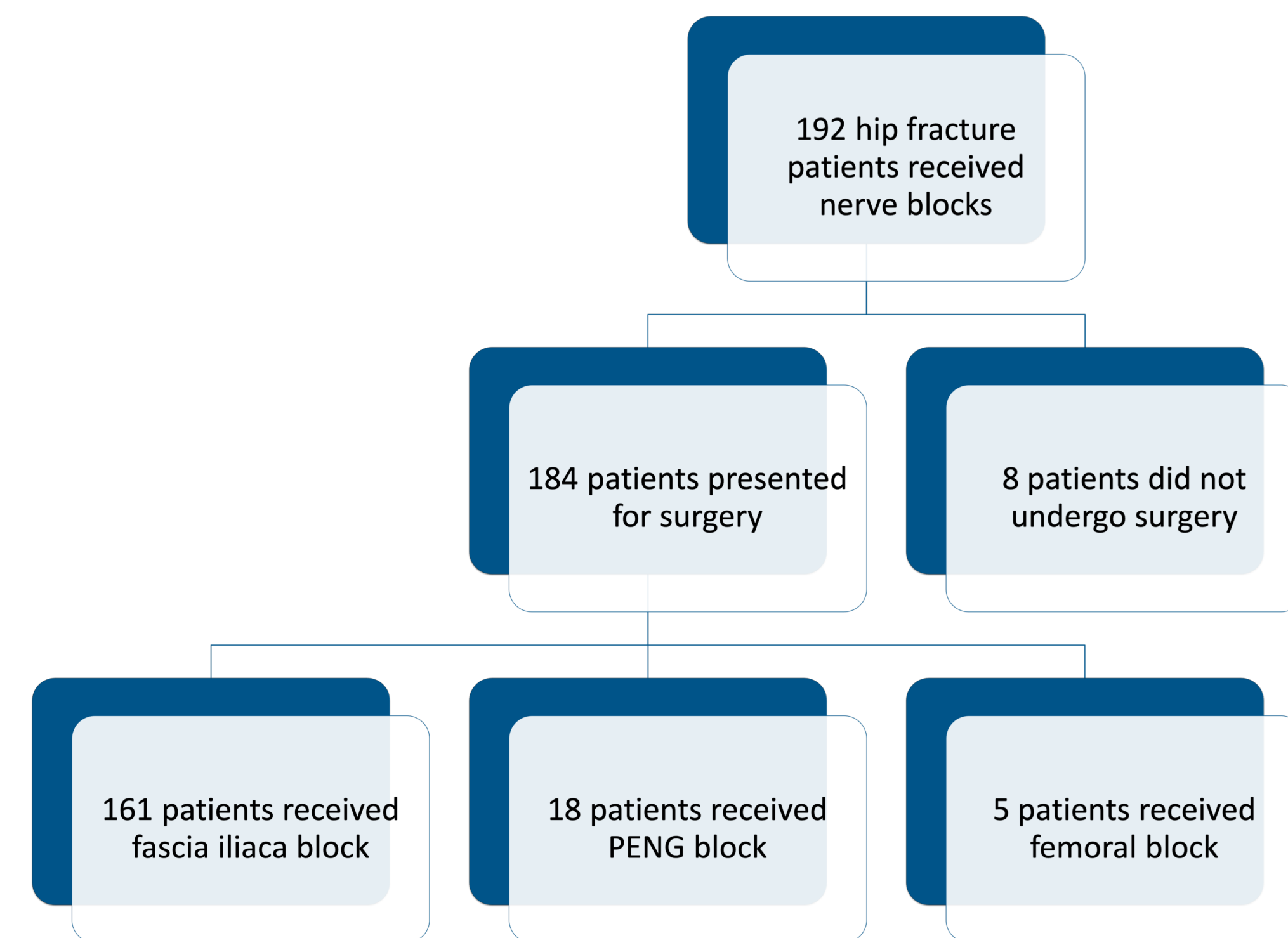
Introduction

- Patients who sustain hip fractures are often frail and are at high risk for opioid related adverse events.^{1,2}
- Those that do sustain hip fractures are often admitted for surgical repair, inability to ambulate and/or severe pain requiring intravenous pain relief.
- The use of ultrasound-guided nerve blocks (UGNB) in the emergency department (ED) has been shown to reduce opioid consumption and pain scores in these patients.³
- One critique of expanding the use of nerve blocks to emergency medicine physicians is the risk of communication failures, which might result in the unintentional repetition of nerve blocks in a short period.
- This may increase the risk of local anesthetic toxicity or nerve injury related to unrecognized direct needle-nerve contact, yet there are no data to support this.
- The primary aim of this retrospective study is to assess the time window between nerve block placement in the emergency department and operative fixation of the hip fracture.

Methods

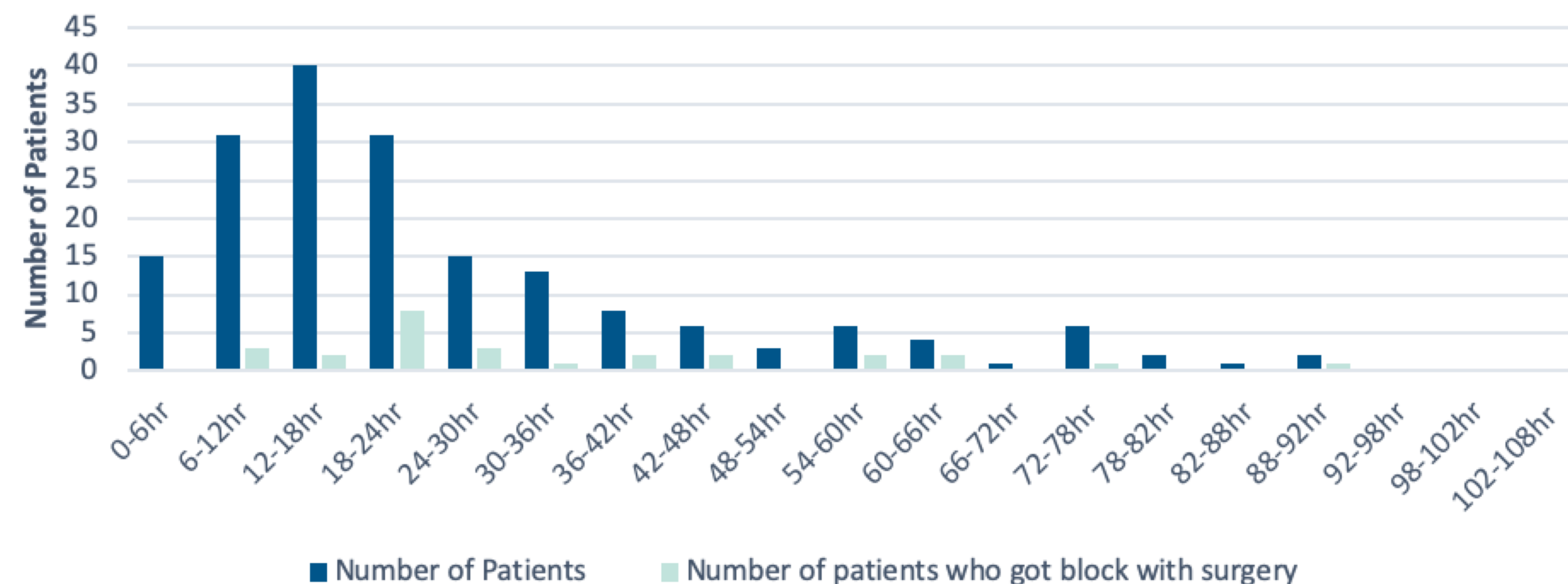
This study was approved by the Institutional Review Board and the requirement for informed consent was waived due to the study design. The study population of interest were patients who were admitted with hip fractures and received nerve blocks in the emergency department by emergency medicine providers over a 42-month period. The study locations were two academic medical centers in the Northeastern United States.

Results



- 28 patients received an additional block in the perioperative period. 27 of these patients received an additional block as part of their anesthetic on the day of surgery.
- Three patients (10.7%) received a second nerve block between 6 and 12 hours after their nerve block in the ED. The majority of patients who received additional regional anesthesia (28.6%) did so between 18 and 24 hours after UGNB in the ED.
- Evidence that the perioperative block team was aware of the preceding ED block was not always present and neither was documentation of full functional recovery.

Distribution of time between Nerve Block in ED and Surgery



Discussion

- As the use of UGNB for hip fractures becomes more commonplace among emergency medicine physicians, standardized communication to surgical, inpatient acute pain and operating room anesthesiology teams is of utmost importance.
- Nerve blocks can be repeated safely, observing dose and time limits, as well as functional recovery from the initial block.
- Although local anesthetic systemic toxicity (LAST) typically results from intravascular injection, elderly patients face age-related changes that may increase their susceptibility to LAST.
- Patients with hip fractures may experience cognitive dysfunction and face difficulty communicating symptoms of local anesthetic toxicity.⁴
- None of the patients developed LAST. It is possible that the zero incidence of LAST with repeated blocks could be due to the very small number/percent of these cases.
- Complete block resolution was poorly documented in patients who received additional regional anesthesia.
- Persistent deficits and/or the inability to test if neurologically intact are considered relative contraindications to peripheral nerve blockade.
- Further collaborative work with anesthesiology, acute pain, orthopedic surgery, and emergency medicine physicians on these subjects is imperative.

References

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