

The Impact of Regional Anesthesia for Postoperative Pain Following Ankle Fracture Surgery

Tanner Womble, BS; Shea Comadoll; Syed Z. Ali, MD; Raymond Dayne Wright, MD; Paul Edward Matuszewski, MD; Daniel Davenport, PhD, MBA; Arun Aneja, MD
University of Kentucky, Lexington, KY, United States

Purpose: Trauma patients with ankle fractures often receive a nerve block to help with postoperative pain following open reduction and internal fixation (ORIF) of their fracture. However, readmissions and patient experience related to rebound pain after the nerve block wears off are a large concern. The objective of this study was to determine if complications and/or readmission rates are greater in patients who received a supplemental regional anesthesia after ORIF of their ankle fracture compared to patients who underwent general anesthesia alone (GA).

Methods: Using the National Surgical Quality Improvement Plan Participant Use Files, a comparative study was done on patients who underwent ORIF of an isolated closed ankle fracture during 2014-2016 and received GA or general anesthesia plus supplemental regional anesthesia (RA). These patients were further stratified by an inpatient or outpatient surgery setting. Demographic data, operative duration, length of hospital stay (LOS), postoperative complications, and 30-day readmissions were compared between the 2 groups.

Results: A total of 9459 patients were identified (1602 RA and 7857 GA). Patients in the RA group had significantly longer operative duration in both inpatient (79 vs 71 min; $P = 0.0024$) and outpatient setting (72 vs 66 min; $P < 0.0001$), shorter LOS overall (1.1 vs 1.7 days, $P < 0.001$), and a trend in shorter outpatient LOS (0.2 days vs 0.4 days, $P = 0.067$). There was no significant difference in overall complications. Readmission rates for pain in the outpatient setting was significantly higher in the RA group ($P = 0.004$).

Conclusion: The results emphasize that those who received supplemental regional anesthesia had significant increased operative time, decreased LOS, and higher readmission rates for pain. Patients who choose to receive a supplemental nerve block after ORIF of ankle fracture should be counseled about the phenomenon of rebound pain and higher likelihood of readmission for postoperative pain control.