

Axillary Nerve Blocks Increase Cost of Care and Do Not Decrease Opioid Prescription or ED Visits Following Distal Radius Surgery

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INTRODUCTION:

Distal radius fractures are prevalent in the United States, and approximately 16% require open reduction and internal fixation. Regional nerve blocks are increasingly used for analgesia in distal radius surgery. There is evidence that a regional nerve block decreases postoperative nausea, shortens stay in the postoperative recovery unit, and decreases perioperative opioid consumption. The effect of axillary nerve block on postoperative emergency department (ED) visits has not been studied in a nationally-representative population.

Our hypothesis was that a perioperative axillary nerve block will decrease opioid prescriptions and postoperative ED visits following operative fixation of distal radius fractures.

METHODS:

Using a nationwide database containing 165 million patients, patients with distal radius fractures treated with ORIF and patients who received a perioperative axillary nerve block were identified using Current Procedural Terminology codes. These patients were matched 1 : 1 on the basis of age, gender, and Elixhauser Comorbidity Index. These groups were followed postoperatively, and the incidence of ED visits and postoperative opioid prescriptions (measured as milligram morphine equivalent – MME) was recorded. Statistics included Welch's T-test, Fisher's Exact test, and Mann-Whitney U test for analysis of non-parametric data, where appropriate.

RESULTS: 244,811 patients who underwent open reduction internal fixation of a distal radius fracture between 2010 and 2022 were matched as described, yielding two cohorts of 11,975 patients (78.8% female, age = 58.1 ± 14.3 years). When comparing patients who received an axillary nerve block to those who did not, there was no difference in ED visits in the seven days following surgery 299 (2.50%) vs. 277 (2.31%); ($p = 0.3758$), or opioid prescriptions (MME per day) in the fourteen days following surgery (57.5 ± 56.6 vs. 56.3 ± 59.0); ($p = 0.3241$). There was a significantly increased cost of the episode of care in patients who received an axillary nerve block: \$2,618.00 (Q1 \$1,575.00 - Q3 \$6,074.00) vs. \$2,356.00 (Q1 \$1,126.00 - Q3 \$4,745.00); ($p < 0.0001$).

DISCUSSION AND CONCLUSION: Operative management of distal radius fractures is common in the United States, and axillary nerve blocks are increasingly utilized before surgery as part of a multimodal analgesia regimen. When comparing patients with surgically managed distal radius fractures who received an axillary nerve block to those who did not, there is a significant increase in cost of care (\$2,618.00 vs. \$2,356.00; $p < 0.0001$), with no decrease in rate of postoperative ED visits (2.50% vs. 2.31%) or postoperative opioid prescriptions.