

Efficacy of Postoperative Pain Control After Distal Radius Fracture Fixation: A Prospective Randomized Study

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Purpose: This study was undertaken to determine the efficacy of brachial plexus blockade as compared to general anesthesia for pain control in patients undergoing operative fixation of distal radius fractures.

Methods: Forty patients with acute distal radius fractures (OTA 23A-C) requiring operative fixation that met inclusion criteria were identified. Patients were assigned to one of two groups, general anesthesia (GA) or brachial plexus blockade (BPB) randomly. Post-anesthesia care unit (PACU) pain medications and data were recorded. Patients were discharged on oxycodone/acetaminophen (Percocet) 5/325 mg for pain control and visual analog scale (VAS) forms were provided. Patients were called at predetermined intervals postoperatively (2, 4, 6, 12, 24, 48, and 72 hours) to gather pain scores, using the VAS, and to document the doses of analgesics consumed. Patients followed up in the operative surgeon's office until union and then continued to be followed until maximal medical improvement. At each follow-up visit, patients were given a short questionnaire regarding satisfaction with pain control. Pain scores were again recorded using VAS at these visits.

Results: All patients, 18 males and 22 females, obtained adequate follow-up. Twenty patients were randomized to the GA group and twenty to the BPB group. Average pain was significantly greater in the GA group at 2 hours postoperatively (6.7 vs. 1.4; $P < 0.001$), while average pain was significantly greater for the BPB group at 12 hours (6.6 vs. 3.8; $P < 0.001$) and 24 hours postoperatively (5.6 vs. 3.8; $P < 0.032$). The average amount of PACU Percocet did not differ between the groups ($P = 0.5$). PACU fentanyl and morphine use was significantly higher for GAs than BPBs ($P < 0.003$). Time in PACU was significantly longer for GA than BPB (4:49 vs. 3:20; $P < 0.032$). There was no difference in average total pain medication used at home ($P = 0.777$). The overall satisfaction with pain control was not statistically different between the two group ($P = 0.279$).

Conclusion: Brachial plexus blockade provides superior pain control in the immediate postoperative period while patients who received general anesthesia have significantly lower pain scores at 12 and 24 hours postoperatively. This may be related to rebound pain after the nerve block subsides. Immediate postoperative pain can be controlled in a safe manner in the PACU, but in instances of poorly controlled pain after BPB has worn off, increasing discomfort, anxiety, and fear of unanticipated sequelae may lead to unnecessary emergency room visits and physician phone calls.

- The FDA has not cleared this drug and/or medical device for the use described in this presentation (i.e., the drug or medical device is being discussed for an "off label" use). For full information, refer to page 600.

Pain Over Time: GA Versus BPB

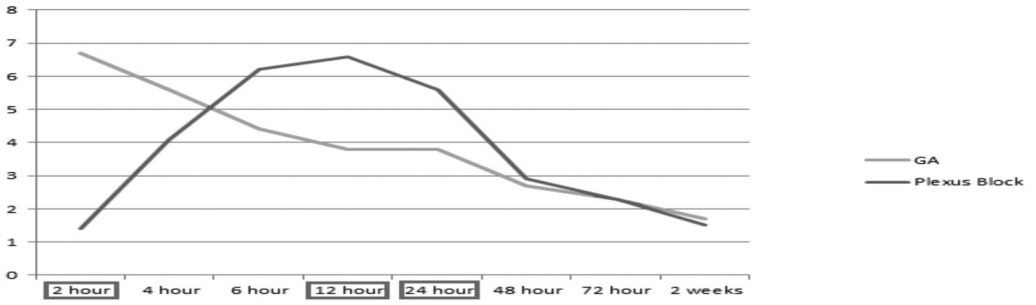


Figure 1. Average VAS scores at each follow-up time point. The GA group had significantly more pain at 2 hours (while in the PACU), while the BPB group had significantly more pain at 12 and 24 hours.