

Continuous Infraclavicular Brachial Plexus Block Versus Single Shot Nerve Block for Distal Radius Surgery: A Prospective Randomized Comparative Trial*Abhishek Ganta, MD¹; David Ding, MD¹; Nina Fisher, BS¹;**Sudheer Jain, MD²; Nirmal C. Tejwani, MD¹*¹*New York University Hospital for Joint Diseases, New York, New York, USA;*²*New York University Langone Medical Center, New York, New York, USA*

Purpose: Postoperative pain control after fracture surgery has been closely associated with improved patient outcomes. While peripheral nerve blocks provide excellent anesthesia, patients experience rebound pain as the blocks wear off around 12-24 hours postoperatively. The purpose of this study is to determine whether a continuous infusion of anesthetic with a pump compared to single shot peripheral nerve block will reduce rebound pain and decrease the intake of narcotic analgesia after operatively treated wrist fractures.

Methods: After IRB approval, 43 patients undergoing operative fixation of distal radius fractures were prospectively randomized to receive either an infraclavicular brachial plexus block as a single nerve block (n = 24) or as a continuous infusion with a pump (n = 19). Postoperative pain scores (measured using a visual analog scale) and number of pain pills were recorded at 8, 12, 24, 48, and 72 hours postoperatively. These outcomes were compared for the continuous versus single nerve block anesthetics. Patients were followed for at least 1 year postoperatively.

Results: At the 12-hour postoperative time period, the median single nerve block group pain scores were 6.0 as compared to 5.0 in the continuous infusion group (P = 0.920). However, at the 24-hour postoperative period, the single nerve block group had lower median pain scores as compared to the continuous infusion pump (4.5 vs 5.0, P = 0.814). While either did not reach statistical significance, the 24-hour postoperative pain scores deviated from what was expected. At the 12- and 24-hour postoperative periods, the median number of pain pills with the continuous infusion pump was equivalent to the single nerve block. There was no statistically significant difference median in pain scores as well as pain pills taken from the 48 to 72-hour period as well. However, it should be noted that 6 of 24 did not work as expected with 5 requiring early removal and 1 that was kinked and nonfunctional.

Conclusion: This randomized study of a single shot nerve block versus continuous infusion with the pump for postoperative analgesia in distal radius fractures showed no statistically significant differences in terms of postoperative pain requirements and pain levels at 8, 12, 24, 48, and 72 hours.