

Continuous Popliteal Sciatic Nerve Block for Ankle Fractures Reduces Postoperative Opioid Requirements and Rebound Pain: A Prospective Randomized Comparative Trial

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Purpose: Peripheral nerve blocks have been well studied in the literature with generally good results for controlling postoperative pain following orthopaedic surgery. However, patients often experience “rebound pain” occurring 12 to 24 hours postoperatively that is subjectively worse than in patients treated without regional blocks. The purpose of this study is to determine whether a continuous infusion of anesthetic will reduce rebound pain and the need for narcotic analgesia after operatively treated ankle fractures.

Methods: After IRB approval, 50 patients undergoing operative fixation of ankle fractures were randomized to receive either a popliteal sciatic nerve block as a single injection (SNB) or a continuous infusion via an On-Q pump. Pain medication (fentanyl and oxycodone/acetaminophen) and visual analog scale (1-10) pain levels were tracked in the post-anesthesia care unit (PACU). Patients were discharged with 5/325 mg oxycodone/acetaminophen for postoperative pain control. Additionally, pain scores, the number of pain medications taken, and any side effects were assessed at scheduled time points by blinded data collectors at 8, 12, 24, 48, and 72 hours postoperatively.

Results: While the On-Q group received significantly less fentanyl in the PACU than the SNB group (21 mcg vs. 71 mcg, $P = 0.006$), there was no difference in the number of oxycodone/acetaminophen pills taken in the PACU or in pain levels at discharge. For all time points after discharge, mean postoperative pain scores and pain pills taken were lower in the On-Q group versus the SNB group. Differences in pain scores were significant at the 12-hour postoperative time point ($P < 0.001$) and differences in pain pills taken were significant at the 12 to 24-hour ($P = 0.002$) and 24 to 48-hour ($P = 0.03$) postoperative intervals. By 72 hours postoperatively, the On-Q group had taken an average of 14.3 pills versus 23.8 pills in the SNB group ($P = 0.01$).

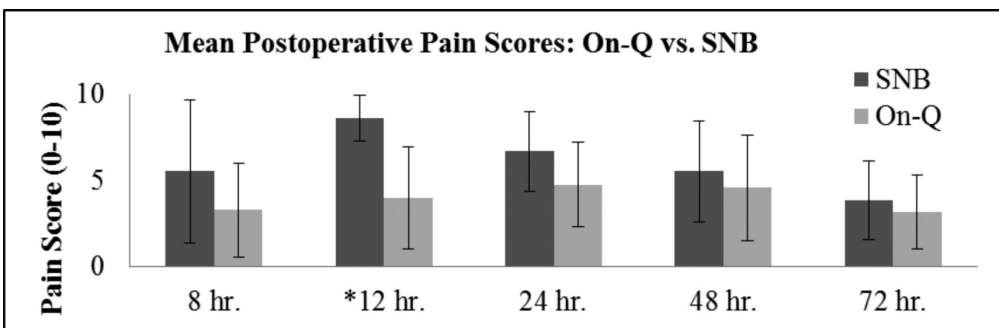


Figure 1. Average visual analog scale pain scores by hours postoperatively for SNB and On-Q groups with error bars representing ± 1 standard deviation from the mean. Statistically significant differences ($P < 0.05$) are represented by an asterisk.

- 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.

Conclusion: Use of continuously infused regional anesthetic for pain control in ankle fracture surgery significantly reduces “rebound pain” and the need for oral opioid analgesia compared to single-shot regional anesthetic after operatively treated ankle fractures over a 72-hour period.