

Ambulatory Regional Anesthesia Excellence: A Year of Postoperative Peripheral Nerve Block Outcomes

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Introduction

The shift toward ambulatory care in orthopedic surgery is driven by advancements in surgical techniques, anesthesia, and postoperative pain management, while minimizing hospital stays and reducing healthcare costs (1). One national review found a peripheral nerve block rate of up to 15% for orthopedic ambulatory procedures (2). However, same day discharge limits the assessment of the nerve block experience, and published data is lacking for postoperative follow-up (2,3).

Methods

The Bellevue Ambulatory Surgery Center performed over 1300 multispecialty procedures in 2024. The standard workflow includes a phone call completed 24-36 hours following surgery by recovery nurses, with assessment for uncontrolled pain, pain medication use, and specific nerve block experiences. We completed a review of these phone calls for all 2024 orthopedic and podiatry cases for quality improvement purposes, examining the experiences of patients who did not receive a nerve block, received a single-shot, or used a continuous nerve block catheter. Responses were appropriately de-identified and entries were removed from survey analysis if less than 50% complete. IRB approval was not required for this quality improvement review per our institution.

Utilization of analgesic nerve blocks guided by discussion between the patient, anesthesiologist, and surgeon. Commonly at our institution, minor orthopedic procedures would not receive a nerve block (i.e., knee arthroscopy or cheilectomy), while moderate procedures may receive a single shot (i.e., substantial meniscus repair or ankle tendon repair), and extensive procedures would receive a continuous nerve block catheter lasting three days (i.e., total knee arthroplasty or ankle ORIF).

	No block, n (%)	Single shot, n (%)	Catheter, n (%)
Able to perform self-care	194 (98%)	36 (97%)	133 (97%)
Uncontrolled pain	12 (6%)	5 (14%)	19 (14%)
Taking opioids	66 (34%)	23 (64%)	75 (54%)
Taking non-opioids	153 (80%)	30 (83%)	117 (84%)
Experienced nausea	11 (6%)	3 (8%)	14 (11%)
Taking anti-emetics	5 (3%)	2 (6%)	10 (8%)

Table1. Outcome data from postoperative questionnaire stratified by patients not receiving a nerve block, receiving a single injection, and receiving a continuous catheter, including number of patients (n) and percentage of responses(%).

Single Shot Nerve Block Responses, n (%)		Continuous Nerve Catheter Responses, n (%)	
Transition from nerve block was difficult	7 (19%)	Catheter is effective	130 (95%)
Would choose a nerve block in the future	34 (94%)	Reported problems with pump	14 (10%)
Would prefer a longer-lasting nerve block	16 (43%)	Would choose a catheter in the future	133 (98%)
		Problems (n): leaking(3), condensation(1), site pain(1), more education(1), effectiveness(1), not described(7)	

Table2. Outcome data for experiences specific to single shot nerve blocks and continuous nerve block catheters, including number of patients (n) and percentage of responses (%), as well as further clarification notes.

REFERENCES

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Results

A total of 520 cases of podiatric and orthopedic surgery were completed between January 1, 2023 and December 31, 2024. 120 patients were unable to be reached to complete the questionnaire, giving a 77% response rate. 21 responses were eliminated for <50% survey completion. Of the 379 responses included, 203 did not receive a nerve block, 37 received a single shot nerve block, and 139 received a continuous nerve block catheter. Overall, 46.4% of orthopedic and podiatry patients received a nerve block. Percentages for all responses are shown (Table 1, 2).

Discussion

These results include responses from a variety of surgeries, each with varying expectations for postoperative pain. Presuming that patients undergoing minor surgeries receive no regional intervention, while patients undergoing more complex surgeries are more likely to receive a regional block or catheter, our data demonstrates similar reported postoperative outcomes between minor and major surgeries. Specifically, the high rate of satisfaction is telling as 94% and 98% of single shots and catheters respectively would choose that analgesic modality again. Optimal patient selection is important when choosing between single shot and catheter blocks. This data reveals only 19% of single shot patients had difficulty with rebound pain although 43% would prefer a longer block. Although catheters were used 3.75 times more than single shots, this data may support even more catheter usage. Overall, our data provides guidance for future advancement in regional techniques for ambulatory surgery.