Liposomal Bupivacaine versus Continuous Popliteal Nerve Block in Total Ankle Arthroplasty
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Introduction/Purpose: The use of liposomal bupivacaine (LB) has recently gained popularity in joint arthroplasty. Despite its proven safety and efficacy, there is little reported on the use of LB in foot and ankle surgery. Catheter placement for a continuous popliteal sciatic nerve block (CPSNB) has an excellent track record for pain relief, and is commonly used by our group for major foot and ankle reconstructions. The purpose of this study was to compare the use of intraoperative LB injection to CPSNB as a regional anesthetic for total ankle arthroplasty (TAA), with attention to postoperative pain scores, narcotic use, and complications.

Methods: Retrospective review of TAA patients treated by two fellowship-trained orthopedic foot and ankle surgeons was performed. Patient demographic data, operative, and postoperative details were collected, including type of regional anesthetic used. Patients received either preoperative single-shot popliteal sciatic nerve block with 0.25% bupivacaine followed by intraoperative injection of LB, or preoperative CPSNB alone. Outcomes examined were VAS pain score at 8 hours, 24 hours, 1 week, and 3 weeks following surgery, need for opioid pain medication refill, physician office notification for pain issues or other adverse events, and complications within the first 90 days following surgery. Standard statistical analysis was performed and p < 0.05 was considered significant.

Results: 75 patients were identified who underwent TAA and met inclusion criteria. 41 received LB and 34 received CPSNB. No statistical difference was seen between groups with regard to complications, emergency department visits, readmissions, reoperations, VAS pain score at any time point, physician office contacts, and narcotic refills. Mean VAS with LB use was 1.8, 3.5, 2.6, and 2.2 at 8 hours, 24 hours, 1 week, and 3 weeks respectively, compared with mean VAS 2.1, 3.2, 2.2, and 1.9 at similar time points for CPSNB (p=0.59, 0.65, 0.27, and 0.40, respectively). 16 of 41 LB patients needed narcotic refills, versus 12 of 34 CPSNB patients (p=0.81). 3 of 41 LB patients had a complication postoperatively, versus 4 of 34 CPSNB patients.

Conclusion: This is the first study evaluating the use of LB for total ankle arthroplasty. LB was both safe and effective for postoperative pain control, with comparable results to CPSNB. As LB gains more widespread use in foot and ankle surgery, further investigation is warranted to determine potential unseen complications and cost-effectiveness.

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