

Interscalene Block Versus Periarticular Liposomal Bupivacaine For Pain Control Following Reverse Shoulder Arthroplasty: A Randomized Trial

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INTRODUCTION: Interscalene nerve blocks and local anesthetic infiltration are two methods commonly used in multimodal analgesia regimens for shoulder arthroplasty. Liposomal bupivacaine is a novel anesthetic that can be detected more than 24 hours following local administration. Studies comparing liposomal bupivacaine with conventional analgesic methods have found mixed results regarding pain and narcotic consumption, and there is little information available regarding patient satisfaction and the role of psychosocial variables.

METHODS: This is a randomized study of 64 adult patients undergoing reverse shoulder arthroplasty who were assigned to receive a pre-operative interscalene nerve block with ropivacaine (BLOCK=32) or an intra-operative periarticular injection of liposomal bupivacaine (LOCAL=32). The primary outcomes were narcotic consumption (MEq, morphine equivalents), visual analog scale (VAS) pain scores, and satisfaction (0-10). The secondary outcomes were the effect of patient group preference (BLOCK or LOCAL) and psychosocial variables (Pain Catastrophizing Scale, Brief Resilience Scale) on satisfaction. Additional outcomes included length of stay, pain related phone calls, pain related readmissions, and the number of narcotic refills.

RESULTS: Intraoperative and day 0 narcotic consumption was lower in the BLOCK group by 17.4 and 21.9 MEq ($p < 0.001$, $p = 0.051$) with no differences on day 1 or 2. There was no difference in VAS pain scores, length of stay, pain related phone calls, pain related readmissions, or the number of narcotic refills. Patient satisfaction was higher in the BLOCK group [8.3 vs. 6.5, $p = 0.014$]. Pain catastrophizing had a small negative relationship with satisfaction in the BLOCK group ($b = -0.12$, $p = 0.022$); otherwise, pain catastrophizing, resilience, and patient group preference did not have any significant relationship with patient satisfaction.

DISCUSSION AND CONCLUSION: Patients undergoing reverse shoulder arthroplasty have higher satisfaction with a conventional interscalene block compared to a periarticular injection of liposomal bupivacaine. There were no clinically important differences in narcotic consumption, VAS pain scores, length of stay, pain related phone calls, pain related readmissions, or the number of narcotic refills. The Pain Catastrophizing Scale, Brief Resilience Scale, and patient preferences did not have any relationship with patient satisfaction.