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Impact of Continuous Serratus Plane Block on Quality of Recovery After VATS: A Prospective Blinded Randomized Trial

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Introduction

Video-assisted thoracoscopic surgery (VATS) offers various advantages over open surgery, but it remains associated with significant postoperative pain. Various regional anesthesia techniques have been explored, and the serratus anterior plane block (SAPB) has emerged as a promising option. Still, evidence supporting continuous SAPB infusion and its effect on patient-reported quality of recovery is limited. This study evaluated whether continuous SAPB infusion, as part of standardized multimodal analgesia, improves postoperative quality of recovery following VATS.

Materials and Methods

This prospective, randomized, blinded, placebo-controlled trial was conducted at a single tertiary academic centre, with IRB approval and patient informed consent. Adult patients undergoing elective VATS were randomized to receive either 0.2% ropivacaine or saline via an ultrasound-guided serratus anterior plane catheter. All patients received standardized intraoperative and postoperative multimodal analgesia, including surgeon-delivered local infiltration at incision and patient-controlled analgesia with hydromorphone. The primary outcome was quality of recovery measured using the Quality of Recovery-40 (QoR-40) questionnaire on postoperative day (POD) 1. Secondary outcomes included QoR-40 scores on POD 2–4, postoperative pain scores, opioid consumption, perioperative complications, hospital length of stay, and 30-day readmission. Sample size was calculated to detect a minimal clinically important difference of 6.3 points in QoR-40 with 80% power and α=0.05. Analyses were performed on an intention-to-treat basis using parametric or non-parametric tests as appropriate; two-sided p-values < 0.05 were considered statistically significant.

Results/Case Report

A total of 173 patients were included in the analysis (SAPB group n=88; control group n=85). The CONSORT flow diagram is presented in Figure 1. Baseline characteristics were similar between groups. Median QoR-40 scores on POD 1 were

numerically higher in the SAPB group than in the control group (176 [IQR 166–184] vs. 172 [159–183]; Figure 2), but this difference did not reach statistical significance (p=0.10). QoR-40 scores remained consistently higher in the SAPB group across POD 2–4 (Table 1). Patients receiving continuous SAPB infusion had significantly lower opioid consumption in the post-anesthesia care unit (8.0 ± 7.4 vs. 10.6 ± 9.3 morphine milligram equivalents [MME]; p=0.039) and on POD 1 (12.7 ± 10.8 vs. 16.5 ± 12.2 MME; p=0.035). Hospital length of stay was approximately 1 day shorter in the SAPB group, although not statistically significant (2.69 ± 1.76 vs 3.50 ± 4.01, p=0.087). Pain scores were similar between groups at all measured time points. Rates of postoperative complications and 30-day readmissions did not differ between groups. No block-related complications were observed.

Discussion

In this randomized trial, SAPB infusion improved QoR-40 scores across all postoperative days, although differences were not statistically significant. SAPB was associated with early reductions in postoperative opioid consumption. The shorter hospital stay observed in the SAPB group represents a clinically important outcome given the high cost of inpatient care. Postoperative complications and 30-day readmissions were similar between groups, with no block-related complications, supporting SAPB continuous infusion as a safe, opioid-sparing multimodal adjunct for VATS.

References

1. Sun K, Liu D, Chen J, et al. Moderate-severe postoperative pain in patients undergoing video-assisted thoracoscopic surgery: A retrospective study. Sci Rep 2020; 10: 795.
2. Chin KJ, Versyck B, Pawa A. Ultrasound-guided fascial plane blocks of the chest wall: a state-of-the-art review. Anaesthesia 2021; 76: 110–126.
3. Liu X, Song T, Xu H-Y, et al. The serratus anterior plane block for analgesia after thoracic surgery: A meta-analysis of randomized controlled trails. Medicine (Baltimore) 2020; 99: e20286.
4. Omindo WW, Ping W, Qiu R, et al. Efficacy of ultrasound-guided second serratus anterior plane block on postoperative quality of recovery and analgesia after video-assisted thoracic surgery: a randomized, triple-blind, placebo-controlled study. J Thorac Dis; 16. Epub ahead of print 30 July 2024. DOI: 10.21037/jtd-23-982.
5. Gornall BF, Myles PS, Smith CL, et al. Measurement of quality of recovery using the QoR-40: a quantitative systematic review. Br J Anaesth 2013; 111: 161–169.