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Original Research Article

To Evaluate Analgesic Efficacy of PECS II Block and SAP Block for Post-Operative Pain Relief in Patients Undergoing Breast Surgeries.

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Abstract

Background & Methods: The aim of the study is to evaluate analgesic efficacy of PECS II block and SAP block for post-operative pain relief in patients undergoing breast surgeries. Patient was placed in supine position with abduction of arm. A US probe was first placed in the infraclavicular area at lateral one-third of the clavicle and moved laterally to locate the axillary artery and vein directly above 1st rib where pectoralis major and pectoralis minor muscles were identified.

Results: Total analgesic consumption in the Group dSAP was lower compared to that of Group dPEC which was significant statistically ($p<0.05$). No significant side effects or complications occurred in patients of both the groups at any point of time.

Conclusion: This study has clarified that employing an ultrasound-guided SAP block, combined with dexmedetomidine as an adjuvant alongside 0.25% levobupivacaine, results in superior postoperative analgesia compared to PEC block using the same drug. The SAP block demonstrates effective postoperative pain control, as evidenced by lower Numeric Rating Scale (NRS) scores, in contrast to PEC block in patients undergoing breast surgeries. Furthermore, the addition of dexmedetomidine (30 mcg) significantly extends the duration of postoperative analgesia.

Keywords: PECS, SAP, pain, & breast.

Study Design: Comparative Study.

1. Introduction

Breast-conserving surgery are surgical methods designed to minimize intraoperative tissue injury, removing the cancer while leaving intact as much of the breast as possible. Moreover, because long-term survival rates are similar in patients undergoing BCS and radical mastectomy [1], the combination of BCS has become the standard treatment for patients with early-stage breast cancer [2].

Although BCS is minimally invasive surgery, it can lead to significant postoperative pain [3]. Because acute postoperative pain and BCS may be risk factors for persistent pain after breast cancer surgery, it is important to manage postoperative pain in patients undergoing BCS [4]. A thoracic epidural block used to be regarded as the goldstandard method for managing postoperative pain after breast surgery [5]. However, this technique is associated with serious

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complications, including intrathecal spread, nerve damage, epidural hematoma, and inadvertent intravascular injection [6]. A recently introduced pectoral nerve block type II (PECS II block) has been found to provide great pain relief and safety in patients undergoing radical mastectomy [7&8]. Therefore, we hypothesized that the PECS II block may effectively alleviate acute postoperative pain in patients undergoing BCS. +e present study evaluated the analgesic efficacy of PECS II block in patients undergoing BCS. In addition, this study assessed the efficacy of PECS II block according to breast cancer location and its comparative effects on breast and axillary pain.

2. Material and Methods

This study has clarified that employing an ultrasound-guided SAP block, combined with dexmedetomidine as an adjuvant alongside 0.25% levobupivacaine, results in superior postoperative analgesia compared to PEC block using the same drug. The SAP block demonstrates effective postoperative pain control, as evidenced by lower Numeric Rating Scale (NRS) scores, in contrast to PEC block in patients undergoing breast surgeries. Furthermore, the addition of dexmedetomidine (30 mcg) significantly extends the duration of postoperative analgesia.

Inclusion Criteria:
1. Patient undergoing Breast surgery under GA
2. Age between 18 – 60 years
3. ASA Grade I and II

Exclusion Criteria:
1. Cardiac disease, Respiratory distress, Psychiatric disorders, Uncontrolled Hypertension or diabetes mellitus.
2. Patients refusal.
3. ASA Grade III and more.
4. Hyper sensitivity with drugs.

3. Result

Table No. 1: Age distribution among study groups

	GROUP	N	MEAN AND SD
AGE	GROUP dPEC	50	51.17 ± 2.56
	GROUP dSAP	50	52.39 ±1.47

Unpaired T-Test applied. P value<0.05 was taken statistically significant.

Table No. 2: ASA Grade distribution

ASA GRADE	FREQUENCY	PERECENT
ASA GRADE I	43	43%
ASA GRADE II	57	57%

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Table No. 3: Mean time required for first rescue analgesia.

VARIABLES	PEC BLOCK (n=50)	SAP BLOCK (n=50)	P- VALUE
Time to 1st analgesia request (minute)	373.4 ± 91	527.0 ± 03	<0.05
Total analgesia consumption (Tramadol)	104 ± 27	51 ± 56	<0.05

Total analgesic consumption in the Group dSAP was lower compared to that of Group dPEC which was significant statistically ($p<0.05$). No significant side effects or complications occurred in patients of both the groups at any point of time.

4. Discussion

The superficiality of pectoral blocks and the clear visualization of the pleura using ultrasound are their main advantages [9]. Although inadvertent vascular injection may still occur, in the current study, no block-related complications were observed in association with general anesthesia. The security related to pectoral blocks is also proven in the literature [10], even when compared to infiltration techniques.

Unlike most studies in the literature, the research did not use adjuvant analgesic medication, such as NSAIDs, alpha-2 agonists, and EV analgesics. In this way, we believe that our results reveal the real analgesic value of the blocks, without another medication being able to create masking. The rescue drug was morphine, quantified in both groups, being lower in the PEC group. Therefore, we attribute this result solely to pectoral blocks. Although most studies show that pectoral blocks reduce opioid consumption [11], some studies do not show the same result.

As a limitation of the study, it is worth mentioning that the first hour of the evaluation was hampered due to the bolus administration of morphine for the comfort of patients in the immediate postoperative period. Another limitation of our study was that the assessment was carried out only in the first 24 h after surgery. The failure to compare pectoral blocks in association with chest wall blocks, such as the serratus plane block, limits the comparison of results with other studies in the literature [12]. Furthermore, we did not find statistically significant improved analgesia scores during mobilization, which might affect the overall effectiveness of the procedure. Lastly, results indicate that in clinical practice, an effective multimodal plan should be adopted beforehand anticipating the end of the PEC II block, preventing rebound pain and providing good analgesia and comfort to such patients even after the 12th postoperative hour.

5. Conclusion

This study has clarified that employing an ultrasound-guided SAP block, combined with dexmedetomidine as an adjuvant alongside 0.25% levobupivacaine, results in superior postoperative analgesia compared to PEC block using the same drug. The SAP block demonstrates effective postoperative pain control, as evidenced by lower Numeric Rating Scale (NRS) scores, in contrast to PEC block in patients undergoing breast surgeries.

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