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*Congress Abstract*

# Application of Erector Spinae Plane Interfascial Block as a Component of the ERAS Protocol in Surgical Treatment of Breast Cancer

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**Introduction:** The implementation of Enhanced Recovery After Surgery (ERAS) protocols in breast oncology surgery requires optimization of perioperative analgesic management to minimize systemic opioid exposure and enable early mobilization.

**Objective:** To evaluate the clinical efficacy of the erector spinae plane (ESP) block as a core component of a multimodal ERAS protocol in patients undergoing surgical treatment for breast cancer.

**Materials and Methods:** This prospective study included 240 patients who underwent breast surgery. Patients were divided into two groups of 120 each:

Main group (n=120): Postoperative analgesia within the ERAS protocol incorporating ultrasound-guided ESP block.

Control group (n=120): Standard systemic postoperative analgesia.

The ESP block was performed under ultrasound guidance at the Th5–Th6 level. A mixture of 15 mL of 0.75% ropivacaine and 15 mL of 0.9% sodium chloride solution was administered (total volume – 30 mL, final ropivacaine concentration – 0.375%, total dose – 112.5 mg).

Pain intensity was assessed using the Visual Analogue Scale (VAS) at 3, 6, 12, and 24 hours. To determine the integrated pain burden, the area under the curve (AUC-VAS) was calculated. Early rehabilitation dynamics and functional activity (deep breathing activation, ability to sit up independently, and upper limb excursion) were assessed at 12 and 24 hours using a 3-point scale (0 – no limitations, 1 – moderate limitations due to discomfort, 2 – severe limitations/inability to perform).

**Statistical analysis:** Normality of distribution was tested using the Shapiro–Wilk test. VAS dynamics within groups were analyzed using the Friedman test, and intergroup differences using the Mann–Whitney U test. Data are presented as M±SD. Differences were considered statistically significant at $p < 0.05$.

**Results:** Incorporation of the ESP block into the ERAS protocol provided stable and pronounced pain control during the first 24 hours. Mean VAS scores in the main group at 3, 6, 12, and 24 hours were 3.96±0.44; 1.87±0.56; 1.15±0.44; and 0.71±0.47, respectively. In the control group, scores were 7.65±0.80; 5.80±1.21; 4.70±1.46; and 3.45±1.36, respectively ($p < 0.001$ for all time points).

At 3 hours postoperatively, severe pain (VAS ≥ 7) was observed in 95% of patients in the control group, while no such cases were recorded in the ESP block group. At 24 hours, all patients in the main group had pain levels not exceeding 2 on the VAS, whereas in the control group, 65% of patients still had clinically significant pain (VAS ≥ 4).

The total pain burden (AUC-VAS) over the 3–24 hour interval in the main group was 28.94±6.37 score·hours versus 100.58±21.47 score·hours in the control group, corresponding to a 71% reduction in integrated pain burden ($p < 0.001$).

Effective analgesia contributed to accelerated achievement of ERAS target parameters for early mobilization. At 12 hours, the mean limitation score for attempting to sit up in bed was 0.93 in the main group versus 1.65 in the control; for deep breathing – 0.14 versus 0.95; and for upper limb movement – 0.98 versus 1.75 ($p < 0.001$). By 24 hours, patients in the ESP block group had virtually no functional limitations.

**Conclusions:** The erector spinae plane interfascial block (Th5–Th6, 30 mL of 0.375% ropivacaine) provides highly effective pathogenetic protection against acute postoperative pain, reducing the total pain burden by 71% during the first 24 hours after surgical treatment for breast cancer.

Incorporation of the ESP block as a multimodal component of the ERAS protocol significantly accelerates the postoperative rehabilitation process, restoring full respiratory excursion and shoulder girdle mobility by the end of the first postoperative day, supporting the recommendation of this technique for widespread use in breast oncology surgery.

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