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Impact of Erector Spinae Plane Block on Quality of Recovery and Time to Return to Daily Activities After Open Inguinal Hernia Repair: a Randomized Controlled Trial

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Abstract

Background

Erector spinae plane block (ESPB) has emerged as a component of multimodal analgesia for abdominal surgery; however, its effect on patient-centered recovery after open inguinal hernia repair remains unclear. This randomized controlled trial evaluated whether ESPB improves postoperative quality of recovery following unilateral open Lichtenstein inguinal hernia repair under spinal anesthesia.

Methods

Sixty adult patients undergoing elective unilateral Lichtenstein inguinal hernia repair under spinal anesthesia were randomized to receive ultrasound-guided ESPB (n = 30) or no regional block (control, n = 30). The primary outcome was the postoperative 24-hour Quality of Recovery-15 Turkish version (QoR-15T) score. Secondary outcomes included acute pain scores at rest and during movement, opioid consumption, and time to return to normal daily activities.

Results

Baseline QoR-15T scores were comparable between groups. At 24 hours, QoR-15T scores were higher in the ESPB group than in controls (131.9 ± 8.5 vs. 119.5 ± 11.2; mean difference − 12.43, 95% CI − 17.57 to − 7.30; $p < 0.001$). Pain scores were similar during the first 2 postoperative hours. Movement pain was lower with ESPB at 6 hours (mean difference 1.50, 95% CI 0.42–2.58) and 24 hours (mean difference 0.90, 95% CI 0.32–1.48). Resting pain was lower only at 24 hours (mean difference 0.60, 95% CI 0.002–1.20). ESPB reduced rescue tramadol requirements ($p = 0.003$) and shortened time to return to normal daily activities (6.2 ± 3.7 vs. 10.3 ± 4.6 days; $p < 0.001$).

Conclusions

In patients undergoing open Lichtenstein inguinal hernia repair under spinal anesthesia, ESPB significantly improved postoperative quality of recovery, reduced postoperative pain during the late recovery period, decreased rescue opioid requirements, and accelerated return to normal daily activities.

Trial registration

The trial was prospectively registered on ClinicalTrials.gov (NCT07509957) on March 23, 2026.

Background

Inguinal hernia repair (IHR) surgery is one of the most frequently performed procedures in general surgery practice[1]. This operation can be performed under local anesthesia, peripheral nerve blocks, neuraxial anesthesia, or general anesthesia [2]. Effective pain control is one of the key components for achieving successful postoperative recovery after IHR. Inadequate analgesia may negatively affect patient comfort and functional recovery, thereby delaying the return to normal daily activities [3].

First described in 2016, the erector spinae plane block (ESPB) has become an increasingly used component of multimodal analgesia in various surgical procedures, as it reduces postoperative pain scores and opioid consumption [4–7].

However, the available evidence regarding its effectiveness in open IHR is limited, and the results reported in existing randomized controlled trials and current systematic reviews are not entirely consistent [5–8]. In addition, most of the existing studies have focused on postoperative pain scores and opioid consumption, while patient-centered outcomes such as quality of recovery and return to daily life have not been adequately investigated.

In this study, our primary hypothesis is that the performing ESPB in patients undergoing open IHR surgery under spinal anesthesia will improve the quality of postoperative recovery. Our secondary hypotheses are that, in the group receiving ESPB, the time to return to normal daily activities after surgery will be earlier than in the control group, acute pain scores will be lower, and total opioid consumption will be reduced.

Methods

Study Population and Regulatory Aspects

This prospective, randomized controlled, multicenter, single-blind study was conducted in accordance with the Consolidated Standards of Reporting Trials (CONSORT) guidelines at Muğla Sıtkı Koçman University Faculty of Medicine and Şanlıurfa Training and Research Hospital following approval from the Harran University Scientific Research and Ethics Committee (Approval No: HRÜ/26.01.49). The trial was prospectively registered on ClinicalTrials.gov (NCT07509957) on March 23, 2026, prior to patient enrollment. The first patient was enrolled on April 4, 2026, and the study was completed on July 16, 2026. All procedures involving human participants were performed in accordance with the ethical standards of the institutional research committee and the principles of the Declaration of Helsinki (2024 revision). Written informed consent was obtained from all participants before enrollment.

Patients aged 18–65 years with American Society of Anesthesiologists (ASA) physical status I–III who were scheduled to undergo elective unilateral open Lichtenstein IHR under spinal anesthesia were eligible for inclusion. Both male and female patients were included. Patients were excluded if they had coagulation disorders, chronic opioid use, preoperative pain intensity ≥ 4 on the Numeric Rating Scale (NRS), recurrent inguinal hernia, intraoperative surgical complications requiring deviation from the

planned procedure, inability to communicate adequately, refusal to participate, or withdrawal of consent at any stage of the study.

Study Design

Patients were randomly assigned to one of two study groups in a 1:1 ratio using a web-based computer-generated randomization system. Allocation concealment was ensured using sequentially numbered, opaque, sealed envelopes prepared by an independent investigator who was not involved in patient recruitment, anesthesia management, postoperative care, outcome assessment, or statistical analysis. After completion of surgery, the envelope was opened by the attending anesthesiologist in the operating room, who subsequently performed the assigned intervention. The anesthesiologist responsible for performing the block was not involved in postoperative data collection or outcome assessment. Surgeons and postoperative outcome assessors remained blinded to group allocation throughout the study.

Anesthesia Management

In the operating room, standard monitoring including electrocardiography, non-invasive blood pressure measurement, and peripheral oxygen saturation (SpO_2) monitoring was applied. Isotonic saline was administered at a rate of 15 $mL \cdot kg^{-1} \cdot h^{-1}$. Before spinal anesthesia, all patients received intravenous (IV) midazolam (0.03 $mg \cdot kg^{-1}$) for sedation. Spinal anesthesia was performed at the L3–L4 interspace using a 25-G Quincke spinal needle with 13 mg of hyperbaric bupivacaine combined with 15 µg fentanyl. Following confirmation of adequate sensory block, surgery was initiated.

Interventions

Patients allocated to the ESPB group received an ultrasound-guided ESPB after completion of surgery by an anesthesiologist with at least five years of experience in ultrasound-guided regional anesthesia. Patients in the control group received no regional block.

Following surgery, patients in the ESPB group were placed in the lateral decubitus position with the operative side uppermost. Under sterile conditions, a 2–5 MHz convex ultrasound transducer (Fujifilm Sonosite, Bothwell, USA) was initially positioned in the midline at the T11–T12 vertebral level and then moved approximately 2–3 cm laterally to obtain an oblique view of the transverse process and the overlying erector spinae muscle. A 22-gauge, 100-mm block needle was advanced using an in-plane technique until the tip reached the fascial plane between the transverse process and the erector spinae muscle. After negative aspiration, 30 mL of 0.25% bupivacaine was injected, and correct spread beneath the erector spinae muscle was confirmed by ultrasonography.

Postoperative Pain Assessment and Outcome Measures

All patients received IV dexketoprofen (50 mg every 6 hours) as part of the standardized postoperative analgesic regimen. Rescue analgesia consisting of IV tramadol (1 mg·kg⁻¹) was administered whenever the NRS score was ≥ 4 despite routine analgesia.

Quality of recovery was assessed using the validated Turkish version of the Quality of Recovery-15 questionnaire (QoR-15T) [9]. The questionnaire was completed preoperatively on the morning of surgery and repeated at postoperative 24 hours.

Patients remained in the post-anesthesia care unit for 30 minutes before transfer to the surgical ward. Pain intensity was evaluated using the NRS at postoperative 15, 30 minutes and at 1, 2, 6, 12, and 24 hours. The total amount of rescue tramadol administered during the first 24 postoperative hours was recorded.

Motor block was evaluated using the modified Bromage score, while sensory block level and duration of spinal anesthesia were also documented. Functional recovery was assessed by telephone interview on postoperative day 15. Patients were asked to report the time required to return to their normal daily activities. Return to daily life was defined as the first postoperative day on which patients were able to perform their routine daily activities independently without significant limitation.

The primary outcome of the study was the postoperative 24-hour QoR-15T score. Secondary outcomes included postoperative acute pain scores, total 24-hour rescue opioid consumption, duration of spinal anesthesia, sensory and motor block characteristics, and time to return to normal daily activities.

Sample Size Calculation and Statistical Analysis

Sample size estimation was performed using G*Power software version 3.1 [10]. The calculation was based on a pilot study including 10 patients in each group. The mean postoperative QoR-15T score was 110 ± 15 in the ESPB group and 95 ± 15 in the control group, corresponding to an estimated Cohen's *d* effect size of approximately 0.75. Assuming a two-sided α error of 0.05, a statistical power of 90%, and a 1:1 allocation ratio, a minimum of 25 patients per group was required to detect this difference. To compensate for potential dropouts, protocol deviations, missing data, or exclusions during follow-up, the calculated sample size was increased by approximately 20%. Accordingly, the study was designed to include a total of 60 patients, with 30 participants allocated to each study group.

Continuous variables were presented as mean ± standard deviation (SD) or median (interquartile range [IQR], Q1–Q3), as appropriate, while categorical variables were summarized as frequencies and percentages. Categorical variables were compared using the chi-square test. Continuous variables were analyzed using the independent-samples *t* test or mixed-effects models, as appropriate. The mixed-effects models included fixed effects for treatment group, time, and the treatment-by-time interaction (and NRS type with its interactions for the NRS model). An unstructured covariance matrix was specified

to account for within-subject correlations among repeated measurements. The primary comparison between treatment groups at each time point was based on the estimated marginal means derived from the fitted models. Statistical analyses were performed using R version 4.6.1 (R Core Team, 2026). A two-sided *p* value < 0.05 was considered statistically significant.

Results

A total of 60 participants were included in the study, with 30 participants in the ESPB group and 30 in the control group. No participants were lost to follow-up, and outcome data were complete for all randomized patients (Fig. 1).

There was no difference between the groups in terms of age, height, weight, or BMI ($p > 0.05$). The groups were also similar with respect to ASA classification, physical activity level, operation duration, and educational status ($p > 0.05$). These findings indicate that the study groups were comparable in terms of baseline demographic and clinical characteristics (Table 1).

Table 1
Demographic and clinical characteristics of the groups *Values are presented as mean ± SD or n (%). Control group, patients without regional block; ESPB group, patients receiving erector spinae plane block. ASA: American Society of Anaesthesiologists; BMI: Body Mass Index; ESPB: Erector Spinae Plane Block*

Variable	ESPB (n = 30)	Control Group (n = 30)	p
Age	53.43 ± 11.49	48.03 ± 14.35	0.11
Height (m)	1.71 ± 0.06	1.73 ± 0.06	0.20
Weight (kg)	74.83 ± 7.93	77.43 ± 7.47	0.20
BMI (kg/m²)	25.50 ± 2.28	25.80 ± 2.64	0.64
ASA, n (%)			**0.67**
1	2 (6.67%)	4 (13.33%)	
2	28 (93.33%)	26 (86.67%)	
Activity status at work, n (%)			**0.96**
Light	8 (26.67%)	9 (30.00%)	
Moderate	12 (40.00%)	13 (43.33%)	
Heavy	8 (26.67%)	6 (20.00%)	
Very Heavy	2 (6.67%)	2 (6.67%)	
Education Level, n (%)			**0.22**
Below university level	25 (83.33%)	21 (70.00%)	
University or higher	5 (16.67%)	9 (30.00%)	
Operation duration (min)	83.67 ± 19.07	86.50 ± 20.14	0.58

Table 2: QoR-15T Scores

Variable	ESPB (n = 30)	Control (n = 30)	p
Preoperative Total Score	139.93 ± 9.56	138.73 ± 9.09	0.620
Postoperative Total Score	131.90 ± 8.50	119.47 ± 11.19	**< 0.001**

Values are presented as mean ± SD. Control group, patients without regional block; ESPB group, patients receiving erector spinae plane block. QoR-15T: Turkish version of the Quality of Recovery-15 questionnaire; ESPB: Erector Spinae Plane Block.

Preoperative QoR-15T scores did not differ between the groups (mean difference [control–ESPB], – 1.20; 95% CI – 6.02 to 3.62; p = 0.620). However, postoperative QoR-15T scores were significantly higher in the

ESPB group than in the control group (131.90 ± 8.50 vs. 119.47 ± 11.19; mean difference [control–ESPB], − 12.43; 95% CI − 17.57 to − 7.30; p < 0.001) (Table 2 and Fig. 2).

No between-group differences were observed during the first 2 postoperative hours. At 6 hours, movement-evoked pain was significantly lower in the ESPB group (mean difference, 1.50; 95% CI 0.42–2.58; p = 0.007), whereas resting pain remained comparable (mean difference, 0.93; 95% CI − 0.07 to 1.94; p = 0.068). At 12 hours, no significant differences were observed. At 24 hours, both resting pain (mean difference, 0.60; 95% CI 0.002–1.20; p = 0.049) and movement pain (mean difference, 0.90; 95% CI 0.32–1.48; p = 0.003) were significantly lower in the ESPB group (Table 3 and Fig. 3).

Table 3
Acute Pain Scores

Variable	ESPB (n = 30)	Control (n = 30)	p
NRS during resting			
NRS-R 0 h	0.23 ± 1.10	0.07 ± 0.37	0.436
NRS-R 1 h	0.23 ± 0.63	0.20 ± 0.81	0.859
NRS-R 2 h	0.80 ± 1.27	0.87 ± 1.53	0.855
NRS-R 6 h	2.03 ± 1.69	2.97 ± 2.17	0.068
NRS-R 12 h	1.50 ± 1.55	2.00 ± 1.66	0.233
NRS-R 24 h	0.83 ± 0.91	1.43 ± 1.36	**0.049**
NRS during movement			
NRS-M 0 h	0.50 ± 1.59	0.33 ± 1.18	0.647
NRS-M 1 h	0.60 ± 1.10	0.50 ± 1.50	0.770
NRS-M 2 h	1.40 ± 1.81	1.53 ± 2.22	0.800
NRS-M 6 h	3.33 ± 1.97	4.83 ± 2.21	**0.007**
NRS-M 12 h	2.53 ± 1.63	3.37 ± 1.97	0.080
NRS-M 24 h	1.60 ± 0.93	2.50 ± 1.28	**0.003**

Values are presented as mean ± SD. Control group, patients without regional block; ESPB group, patients receiving erector spinae plane block. NRS: Numeric Rating Scale; NRS-R: Numeric Rating Scale at rest; NRS-M: Numeric Rating Scale during movement; ESPB: Erector Spinae Plane Block.

There were no significant between-group differences in time to mobilization, or duration of spinal anesthesia (p > 0.05). Patients in the ESPB group returned to normal daily activities significantly earlier than those in the control group (6.23 ± 3.73 vs. 10.33 ± 4.56 days; p < 0.001). In addition, 24-h rescue tramadol consumption was significantly lower in the ESPB group (median [IQR], 0 [0–100] mg vs. 200

[0–200] mg; p = 0.003). Furthermore, the distribution of sensory block levels after motor block resolution differed significantly between the groups (p = 0.030) (Table 4).

Table 4
Perioperative and postoperative characteristics

Variable	ESPB (n = 30)	Control (n = 30)	p
Duration of spinal anesthesia, h	2.98 ± 0.91	3.30 ± 0.97	0.19
Mobilization time	4.77 ± 0.89	4.22 ± 1.32	0.064
Rescue tramadol consumption, mg, median (IQR)	0.00 (0.00–100.00)	200.00 (0.00–200.00)	**0.003**
Return to daily activity (day)	6.23 ± 3.73	10.33 ± 4.56	< 0.001
Sensory block level after motor block resolution, n (%)			**0.030**
T10	11 (36.67%)	3 (10.00%)	
T11	3 (10.00%)	4 (13.33%)	
T12	3 (10.00%)	3 (10.00%)	
L1		1 (3.33%)	4 (13.33%)
L2		5 (16.67%)	12 (40.00%)
L3		4 (13.33%)	0 (0.00%)
L4		3 (10.00%)	4 (13.33%)

Values are presented as mean ± SD, median (IQR), or n (%), as appropriate. Control group, patients without regional block; ESPB group, patients receiving erector spinae plane block. IQR: Interquartile range; ESPB: Erector Spinae Plane Block.

Discussion

In this study, it was demonstrated that ESPB enhanced the quality of postoperative recovery, reduced postoperative pain scores and opioid consumption, and shortened the time to return to normal daily activities in patients undergoing open Lichtenstein IHR under spinal anesthesia. Notably, the between-group difference in postoperative QoR-15T scores was approximately 12 points, exceeding the established minimal clinically important difference of approximately 8 points [11]. This finding suggests that the observed improvement is not only statistically significant but also large enough to be clinically meaningful and perceived by patients in daily clinical practice. Consequently, these findings suggest that ESPB may represent a valuable component of multimodal analgesia aimed not only at improving analgesia but also at enhancing patient-centered postoperative recovery after open IHR.

In recent years, perioperative research has increasingly focused on patient-centered outcomes that reflect the overall recovery experience, rather than solely relying on traditional metrics like pain scores or opioid consumption. In this context, the QoR-15T, a validated and reliable multidimensional questionnaire, enables the simultaneous assessment of recovery components such as physical comfort, emotional state, physical independence, psychological support, and pain [9]. Contemporary approaches define postoperative recovery not merely as a reduction in pain, but as the restoration of the patient's preoperative functional capacity and the resolution of postoperative symptoms [12]. Contemporary approaches define postoperative recovery not merely as pain relief but as restoration of functional capacity and overall well-being. Accordingly, QoR-15T may provides a comprehensive assessment of recovery that extends beyond analgesic efficacy.

Increasing evidence from randomized controlled trials across different surgical specialties consistently demonstrates that ESPB improves patient-reported quality of recovery in addition to reducing postoperative pain and opioid requirements. Collectively, these studies indicate that ESPB has the potential to improve overall postoperative recovery rather than merely reducing pain intensity [13–24].

The clinically meaningful improvement observed in QoR-15T in our study is likely multifactorial. A reduction in postoperative pain not only improves patient comfort but also supports early mobilization, physical independence, and overall well-being by decreasing opioid requirements and opioid-related adverse effects. However, patients perception of recovery is a complex process that cannot be explained by pain intensity alone. Altınsoy and colleagues [25] reported that ESPB not only reduced postoperative pain and opioid consumption but also significantly improved QoR-40 scores in laparoscopic inguinal hernia surgery. Similarly, Yaşar and colleagues [26] demonstrated higher QoR-15T scores in patients who received ESPB in a retrospective study of open inguinal hernia surgery. Our findings are consistent with these studies and extend the current evidence through a prospective randomized controlled design.

Our findings regarding postoperative pain and opioid consumption are consistent with the growing body of evidence supporting ESPB for open IHR. These findings are generally consistent with previous studies investigating the analgesic efficacy of ESPB in open inguinal hernia surgery. Çelik and colleagues[8] reported that ESPB and the transversalis fascia plane block provided a similar level of effective postoperative analgesia in patients undergoing open IHR under spinal anesthesia. In contrast, Sakae and colleagues[5] showed that ESPB performed at the T8 level did not confer a significant advantage in terms of postoperative pain scores or opioid requirements. This discrepancy may be attributed to differences in block level, local anesthetic protocol, and the comparison of ESPB with a potent analgesic technique such as intrathecal morphine. In a more recent retrospective study, Yaşar and colleagues[26] also reported lower pain scores and reduced rescue analgesic requirements in patients who received ESPB. Our prospective randomized findings strengthen the available evidence supporting ESPB for postoperative analgesia after open IHR. Furthermore, recent systematic reviews and meta-analyses have demonstrated that ESPB significantly reduces postoperative pain scores and opioid consumption in inguinal hernia surgery, and our study provides results consistent with this evidence [6,7,27]. One notable finding of our study was that the analgesic benefit became evident mainly after regression of spinal

anesthesia. The absence of early postoperative differences is clinically plausible because spinal anesthesia combined with intrathecal fentanyl provided profound analgesia during the immediate postoperative period, thereby masking any additional benefit of ESPB.

However, current PROSPECT/ESRA recommendations suggest paracetamol, NSAIDs, and ilioinguinal/iliohypogastric nerve block as the main analgesic approaches for open inguinal hernia surgery, based on high-level evidence, and do not provide a definitive recommendation for the routine use of ESPB because of insufficient available data [28]. Therefore, our findings provide additional prospective evidence supporting further evaluation of ESPB in future guideline updates.

Time to return to normal daily activities, one of the key indicators of functional recovery, is currently regarded as a fundamental patient-centered endpoint of postoperative recovery. Studies in inguinal hernia surgery have shown that surgical success should be evaluated not only in terms of technical outcomes but also by considering how quickly patients are able to resume their normal activities and work [29,30]. A recent study [31] demonstrated that, with appropriate patient selection and standardized postoperative follow-up, early return to normal daily or occupational activities is safe and does not increase the risk of recurrence or complications. The updated HerniaSurge guidelines also emphasize that patient-centered outcomes, early mobilization, and the earliest possible return to normal activities are among the main goals of modern inguinal hernia management [32].

In our study, the shorter time to return to normal daily activities observed in the ESPB group is consistent with these contemporary recommendations and suggests that ESPB may be not only a regional analgesic technique that improves pain control but also an effective and feasible component of multimodal analgesia that supports patient-centered postoperative recovery. However, most of the existing literature on functional recovery has focused on comparing open and laparoscopic surgical techniques.

In studies comparing open and laparoscopic repair, laparoscopic surgery has been reported to allow an earlier return to work and daily life, with one of the main reasons being lower postoperative pain [33–35]. In contrast, the number of studies evaluating the impact of perioperative analgesic strategies on time to return to normal daily activities is quite limited. In our study, the shorter time to return to normal daily activities observed in the ESPB group suggests that effective postoperative analgesia may make a meaningful contribution to functional recovery. Postoperative pain has been shown to be one of the most important determinants prolonging convalescence and delaying the return to normal activities. Whereas previous studies[34–36] largely attributed differences in patient-centered outcomes to the surgical technique, our study demonstrates that, even among patients undergoing the same open surgical technique, simply modifying the perioperative analgesic strategy can also provide a significant benefit in terms of postoperative recovery quality and time to return to daily life. In addition, it has been reported that ilioinguinal–iliohypogastric nerve block used in open inguinal hernia surgery reduces postoperative pain and facilitates early discharge [37]. Our findings are consistent with these reports and suggest that ESPB is not only an effective analgesic technique but may also be a regional anesthesia

method capable of accelerating functional recovery. Similarly, although a randomized trial comparing laparoscopic and open surgery[38] primarily attributed improvements in quality of life to the surgical technique, our study indicates that, under the same surgical technique, changing only the analgesic strategy can also significantly improve patient-reported recovery outcomes. Interestingly, the analgesic benefit of ESPB became more evident during movement than at rest. Dynamic pain is more closely associated with postoperative functional recovery than pain at rest, as activities such as walking, coughing, standing, and changing position require abdominal wall contraction. Therefore, the greater reduction in movement-evoked pain observed in our study provides a plausible explanation for both the higher QoR-15T scores and the earlier return to normal daily activities.

To our knowledge, this is among the first prospective randomized controlled trials evaluating patient-centered recovery after open Lichtenstein IHR under spinal anesthesia using QoR-15T as the primary endpoint. By combining patient-reported recovery, functional recovery, and conventional analgesic outcomes, the present study extends the current evidence beyond postoperative pain assessment alone.

This study has several limitations. First and most importantly, a sham block was not performed, and patients were therefore aware of their treatment allocation. This lack of patient blinding may have introduced performance and placebo effects, particularly for patient-reported outcomes such as the QoR-15T and pain scores, and should therefore be considered the primary limitation of the study. Second, the study was conducted with a relatively small sample size, which may limit the generalizability of the findings despite adequate statistical power for the primary outcome. Third, return to normal daily activities was assessed using patient self-report during a telephone interview rather than a validated functional recovery instrument. In addition, occupational physical activity was categorized only as light, moderate, heavy, or very heavy, which may not fully capture the variability in individual functional demands. Nevertheless, the assessment reflects patients' own perception of functional recovery, which is inherently patient-centered and clinically relevant, despite not being evaluated using a validated functional recovery instrument.

Conclusion

ESPB improved patient reported quality of recovery, reduced postoperative opioid requirements, and facilitated earlier return to normal daily activities after open IHR. These findings support ESPB as a valuable component of multimodal analgesia aimed at enhancing patient centered postoperative recovery.

Abbreviations

ASA
American Society of Anesthesiologists
BMI
Body Mass Index

CI
Confidence Interval
CONSORT
Consolidated Standarts of Reporting Trials
ESPB
Erector Spinae Plane Block
IHR
Inguinal Hernia Repair
IQR
Interquartile Range
IV
Intravenous
NRS
Numeric Rating Scale
NRS-M
Numeric Rating Scale during Movement
NRS-R
Numeric Rating Scale at Rest
PROSPECT/ESRA
Procedure-Specific Postoperative Pain Management / European Society of Regional Anaesthesia and Pain Therapy
QoR-15 / QoR-15T
Quality of Recovery-15 (Turkish version)
SD
Standard Deviation
SpO_2
Peripheral Oxygen Saturation

Declarations

Ethics approval and consent to participate:

Muğla Sıtkı Koçman University Faculty of Medicine and Şanlıurfa Training and Research Hospital following approval from the Harran University Scientific Research and Ethics Committee (Approval No: HRÜ/26.01.49).

Consent for publication:

Written informed consent was obtained from all participants before enrollment.

Competing interests:

The authors declare that they have no competing interests.

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Author Contribution

T.K.contributed to Investigation, Methodology, Project administration, Visualization, and Writing – original draft. B.A. contributed to the Data curation, Investigation, Methodology, Supervision, Validation, Writing – review & editing. K.M. contributed to Data curation and visualization. E.K.Ş contributed to Data curation. M.K.T. contributed to Supervision, Validation, Writing – review & editing. All authors read and approved the final version of the manuscript.

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During the preparation of this work, the authors used Grammarly® write to improve the English language and readability of the manuscript. After using this tool, the authors carefully reviewed and edited the content as needed and take full responsibility for the content of the publication.

Data Availability

The datasets used and/or analysed during the current study are available from the corresponding author on reasonable request.

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Figures

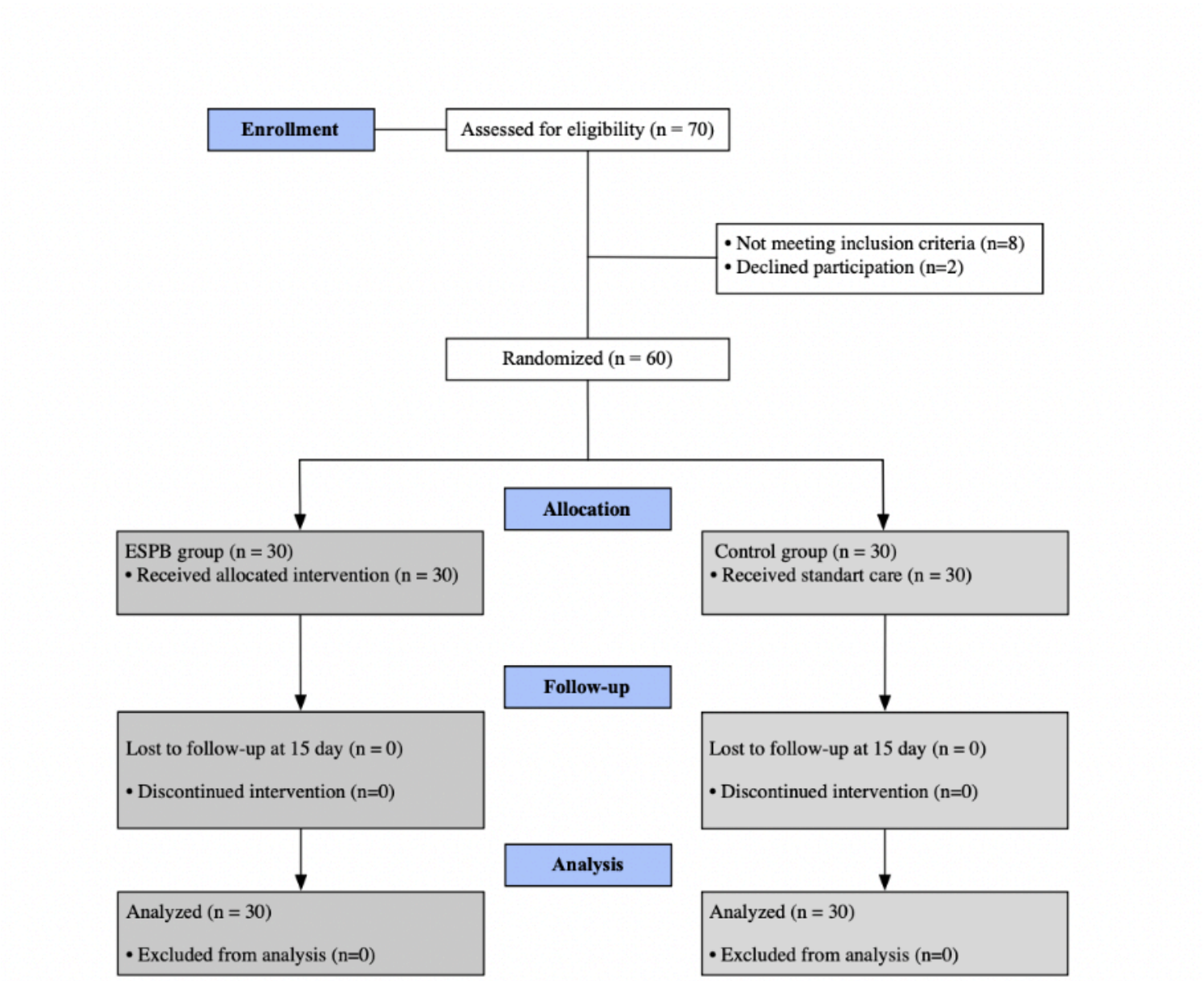


Figure 1

Flowchart, ESPB: Erector Spinae Plane Block

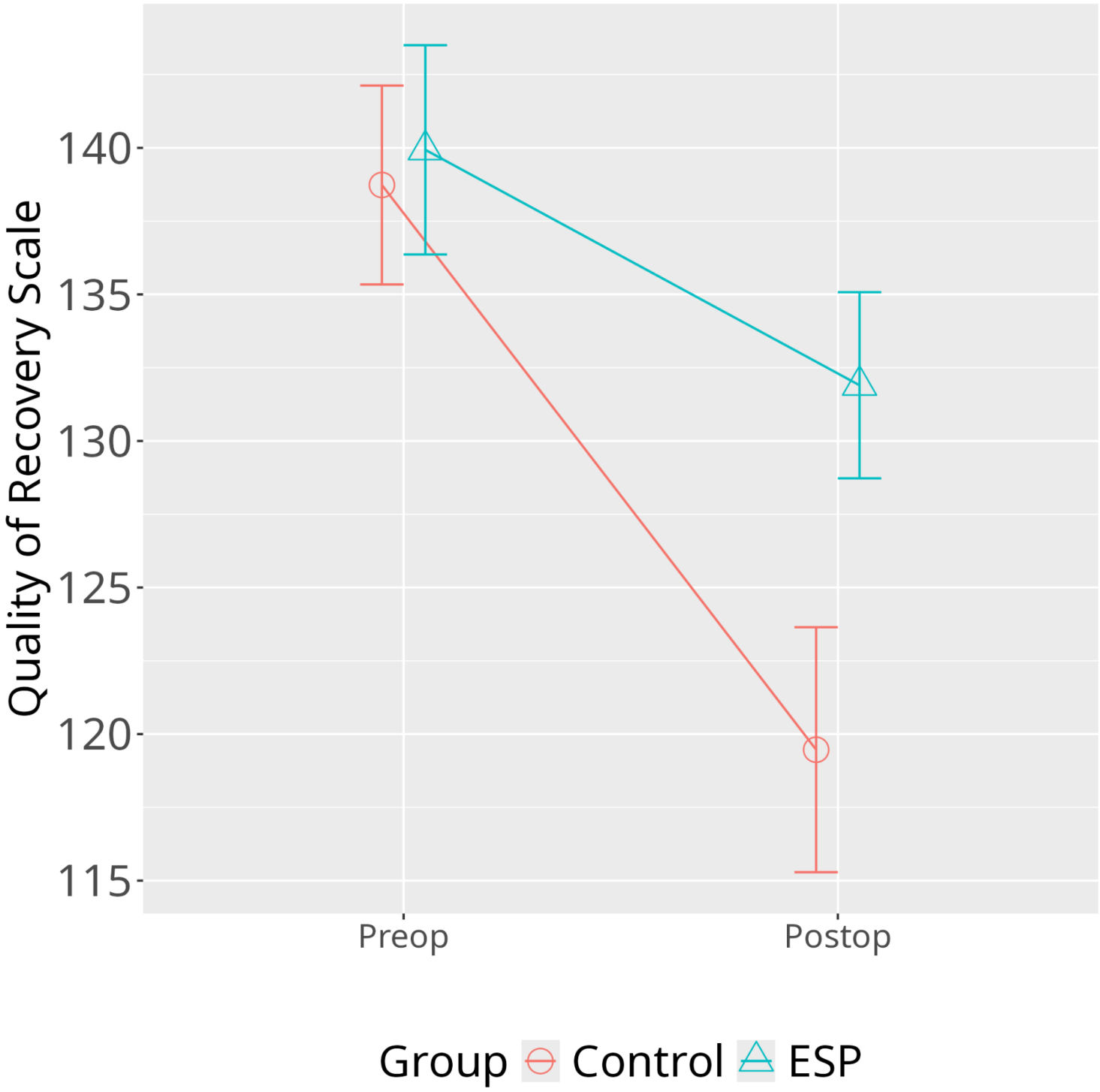


Figure 2

Quality of Recovery Scores of the Groups. Control group, patients without regional block; ESP group, patients receiving erector spinae plane block.

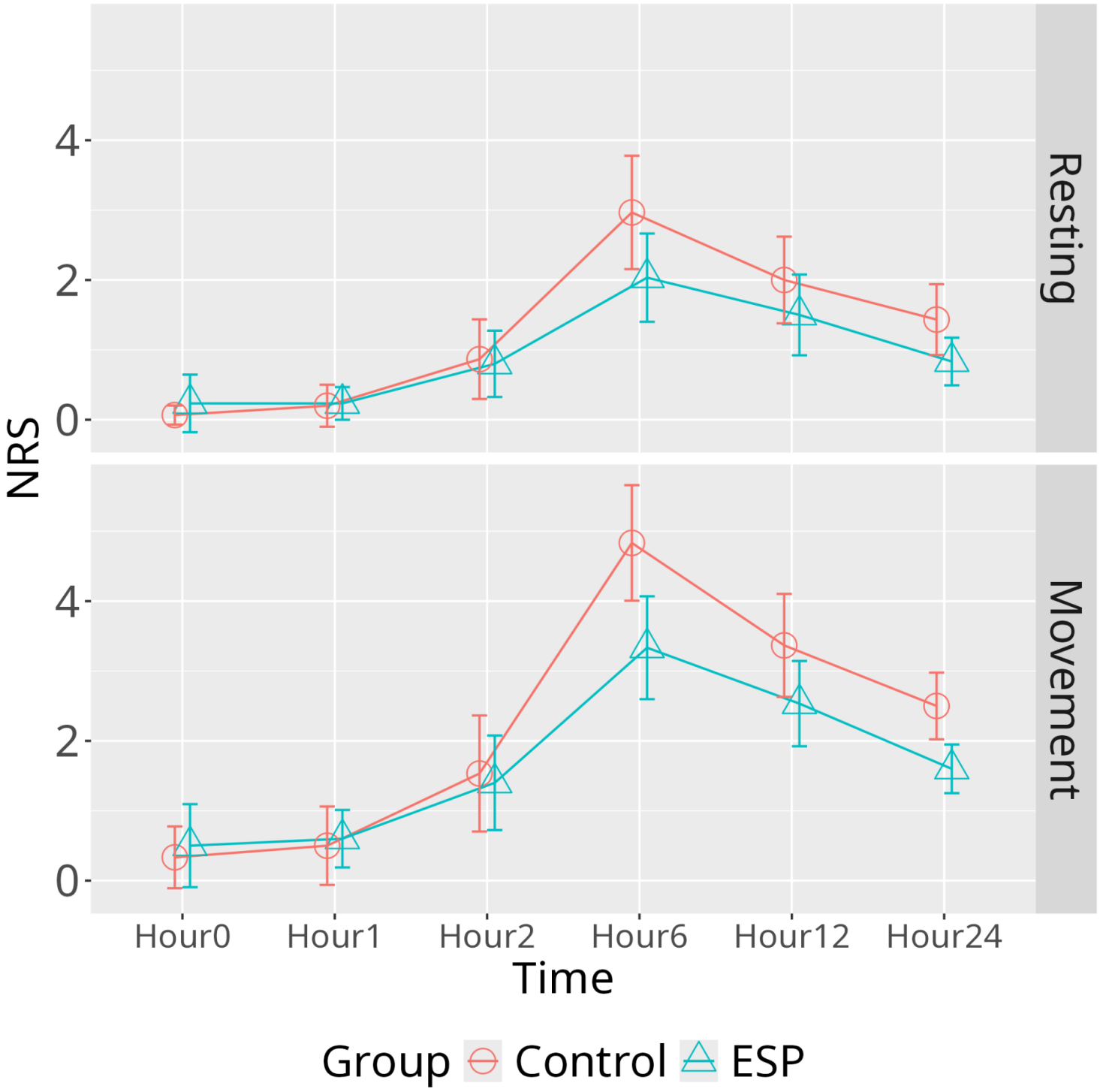


Figure 3

Acute Pain Scores of the Groups. Control group, patients without regional block; ESP group, patients receiving erector spinae plane block.