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Original Article

The Effects of Ultrasound Guided Erector Spinae Plane Block On Postoperative Analgesia in Elective Thoracic Surgery

Onur Bukağıkıran,[1] Tamer Kuzucuoğlu,[2] Yucel Yuce,[2]
Fatih Dogu Geyik,[2] Banu Cevik[2]

[1]Department of Anesthesiology and Reanimation, Ordu University Training and Research Hospital, Ordu, Turkey
[2]Department of Anesthesiology and Reanimation, University of Health Sciences, Kartal Dr. Lutfi Kirdar City Hospital, İstanbul, Turkey

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Correspondence: Onur Bukağıkıran, Ordu Üniversitesi Eğitim ve Araştırma Hastanesi, Anesteziyoloji ve Reanimasyon Anabilim Dalı, Ordu, Turkey
E-mail: onurbukagi@gmail.com

Keywords: Nerve block; postoperative analgesia; thoracic pain; thoracotomy; video-assisted thoracoscopic surgery.

ABSTRACT

Objective: We investigated the effects of ultrasound-guided erector spinae plane block in elective thoracic surgery cases.

Methods: 40 ASA I-II-III patients, aged between 18–70 years who underwent elective thoracic surgery were included. We seperated Erector Spinae Plane Block (ESPB) and control groups, each containing 20 patients. The demographic features, Body Mass Index (BMI), comorbidities, the type and duration of surgery, pethidine requirement within the first hour, time of first analgesic requirement, the total analgesic amount within 24 hours were recorded.

Results: The first analgesic requirement time was 5.90±2.61 hours in the ESPB group and 1,80±0,95 hours in the control group. The mean paracetamol requirement was 2.00±0.56 g, dexketoprofen requirement was 15.00±28.56 mg, and tramadol requirement was 30.00±47.01 mg in the ESPB group in the postoperative 24 hours. In the control group, the mean paracetamol requirement was 2.90±0.31 g, dexketoprofen requirement was 22.50±30.24 mg, tramadol requirement was 80.00±76.78 mg. The mean static VAS in the ESPB group was 3.01±0.76, the mean in the control group was 4.03±0.51, the mean dynamic VAS in the ESPB group was 3.65±0.76, and the average in the control group was 4.70±0.54. Static VAS values were lower in the ESPB group at all follow-ups. In the ESPB group, the dynamic VAS values were also lower at all follow-ups.

Conclusion: ESPB was found to improve postoperative analgesia and reduce the need for analgesia in thoracic surgery.

INTRODUCTION

Relieving pain with adequate analgesia after thoracic surgery accelerates recovery and reduces the rate of postoperative complications. Thus, early mobilization and shortening of discharge time can be achieved by preventing the adverse effects of postoperative pain.[1]

Inadequate treatment of severe pain may lead to pulmonary and thromboembolic complications, prolonged stay in the intensive care unit or hospital, return of the patients to hospital for further treatment after discharge, decreased quality of life, and chronic pain.[2] Although an ideal analgesia method for postoperative pain management has not yet been achieved, practices that reduce the dose of medication required to provide adequate analgesia (eg, multimodal analgesia, regional analgesia) are frequently used. The analgesia method should be long-lasting and easy to apply, and its side effects and complications should remain at an acceptable level.[3]

Forero first described the Ultrasonography (USG) guided erector Spina Plan Block (ESPB) in 2016 for the treatment of thoracic neuropathic pain.[4] Studies have shown that ESPB can be used for chronic pain as well as for postoperative pain control in thoracotomy and breast surgery.[4] When ESPB is applied at the 5th thoracic vertebra (T5) level, it has been reported that the local anesthetic agent has a craniocaudal spread between the 2nd thoracic vertebra and the third lumbar vertebra.[5] ESPB provides multidermatomal sensory block on the posterior, lateral, and anterior walls of the thorax.

In addition to USG-guided ESPB for postoperative analgesia in thoracic surgery, epidural analgesia, paravertebral block (PVB), intercostal block (ICB), intramuscular injection, intravenous (IV) analgesic administration and IV patient-controlled analgesias (PCA) are widely used methods.[6] It is reported that ESPB is more comfortable and safer than a thoracic epidural and paravertebral block. The effect of ESPB application on hemodynamics is less than the thoracic epidural form, and the desired area is more accessible than entering the PVB application area. It is safer to be more distant from the pleural and thoracic spinal nerves.[7]

In this study, we evaluated the effects of USG-guided T5 level ESPB on postoperative pain control in patients with elective thoracic surgery; and aimed to determine possible side effects and complications, and to compare pain level and total analgesic need.

MATERIALS AND METHODS

After Ethics Committee approval (Ethics Committee decision no: 2018/514/138/10), 40 patients with ASA risk scores I, II, and III who underwent elective thoracic surgery in our hospital were included in the study after obtaining their verbal and written consent was obtained. Posterolateral thoracotomy is the most painful thoracic procedure. The skin incision for a posterolateral thoracotomy, usually begins on the back at the level of the 2nd and 3rd thoracic dermatomes and extends forward in an arc including the 7th dermatome. The latissimus dorsi, serratus anterior, pectoralis major, and intercostal muscles are cut. The retractors used to expand the intercostal space rest on the ribs. The periosteum of the costas may be split, the ribs may be broken, and the costo-transvers ligament may be cut. During the operation, the shoulder joint may be overstretched due to the lateral ecubitic position.

VATS: To minimize surgical site infection and tumor spread, a 3 to 5 cm incision was made in the fifth intercostal space in the anterior axillary line area without rib spreading, and a plastic wound protector was utilized for the operation port incision. A 30-degree, 10-mm high-definition camera thoracoscope was then inserted into the pleural cavity and held posterior to the incision. The following were the main lobectomy procedures: first, adhesions were separated, the inferior pulmonary ligament was dissociated, and the pleura of the pulmonary hilar was opened; second, the pulmonary vein, pulmonary artery, and bronchus were ligated and cut with an endoscopic stapler; and finally, the pulmonary vein, pulmonary artery, and bronchus were ligated and cut with an endoscopic stapler.

Open thoracotomy: Before the procedure, the patient underwent double-lumen tracheal intubation, intravenous, and respiratory combination general anesthesia, single lung ventilation on the healthy side, and normal cleaning. A conventional posterolateral incision of 15 to 30 cm in lengthwas performed in the chest and the tumor size and invasion were determined. The pulmonary vein, pulmonary artery, and bronchus were ligated and cut off with an endoscopic stapler when the blood vessels were dissociated (approximately 1–2 cm), and the undeveloped pulmonary fissure was severed with a linear stapler.

Patients with hypersensitivity to drugs or substances included in the study, patients under 18 years of age, pregnant women, patients with infection in the area to be treated, those with bleeding disorder, and morbidly obese (BMI >40) patients were excluded from the study. The patients included in the study were randomized according to the sampling method and divided into two groups, each consisting of 20 patients: erector spina plan blocks (ESPB, n=20) and control group (CG, n=20). This is not a double-blind study. Antithrombotic drugs were discontinued 3–7 days before the operation.

A 20 Gauge cannula was placed in the patients who were taken to the operating room. Age, height, weight, gender, comorbidity, ASA scores were recorded. ECG, SpO_2, non-invasive blood pressure, temperature, and $EtCO_2$ monitoring were used as a standard in the operating room. Anesthesia was induced with 2 mg/kg propofol, 1 µg/kg fentanyl and 0.6 mg/kg rocuronium in both groups. Anesthesia was maintained with 50% O_2- air and 6% desflurane. No additional dose of fentanyl was administered after induction.

The ESPB group received 1 mg/kg tramadol IV 45 minutes before the end of the surgery, and 15 mg/kg paracetamol IV 15 minutes before the end of the surgery. At the end of the operation, bupivacaine 0.5% 20 ml was administered by the thoracic surgery team. ICB was performed by the researcher's anesthesia team in the lateral decubitus position, following the rules of asepsis-antisepsis, accompanied by USG (Toshiba® Aplio 50XV) (depth: 2–4 cm, frequency: 10–15 mHz adjusted). The şinear probe T5 was placed approximately 3 cm lateral to the spinous process, in the parasagittal plane. After observing the T5 transverse process with an in-plane approach, a 100 mm long block needle (Stimupleks® B. Braun R, Melsungen AG) was inserted through the skin. When the trapezius, rhomboid and erector spina muscles were crossed and the needle reached the transverse process (approximately 3 cm deep), the needle was placed between the erector spina muscle fascia and the vertebra transverse process with a test dose of 0.5–1 mL of 0.9% NaCl (observing the opening of the muscle fascia) and bupivacaine. ESPB was applied by giving 0.5% to 20 ml erector spina plane.

The control group was given 1 mg/kg tramadol IV 45 minutes before the end of the surgery and 15 mg/kg paracetamol IV 15 minutes before the end of the surgery. At the end of the surgery, bupivacaine 0.5% 20 ml was administered by the thoracic surgery team.

At the end of the surgery, the patients were extubated after being decurarized with 2 mg/kg IV sugammadex and taken to the recovery unit. In the recovery unit, pethidine was administered as an additional analgesic IV until the first hour of block efficacy in patients with pain (VAS>4), and the dose was recorded.

In the postoperative period, the patients were followed up in the recovery room in the first hour until the effect of the block began. Pethidine IV was administered according to the patient's needs. VAS scores, first analgesic administration hour, additional analgesic need, 24-hour total IV analgesic doses, presence of nausea-vomiting, presence of complications were recorded for both groups at postoperative 1st, 2nd, 3rd, 4th, 6th, 8th, 12th, and 24th hours. Patients in both groups were started on IV analgesia treatment (paracetamol 1 gr IV 3x1, dexketoprofen 50 mg IV or tramadol 100 mg IV as additional analgesics) after the first evaluation hour of VAS >4 was noted. Paracetamol dose was skipped if VAS <4 and the patient did not demand analgesics.

A 0–3 nausea-vomiting scale was used to evaluate nausea and vomiting. (0: No nausea-vomiting, 1: Mild Nausea-vomiting; not requiring treatment 2: Moderate Nausea-vomiting; requiring treatment 3: Severe Nausea-Vomiting; resistant to treatment). For nausea treatment, 0.5 mg/kg Metpamid was used. The Total Surgery time for both groups was also recorded.

Statistical analysis

Gpower 3.1 program was used for power analysis, and post hoc analysis was performed. In the calculation made on the average and standard deviations obtained in the sample size of 40 people, the alpha error was accepted as 0.05, and the effect size was calculated as 1.58. The power of the study was 0.998.

When evaluating the findings obtained in this study for statistical analysis, IBM SPSS Statistics 23 program was used. The Shapiro Wilks Test assessed the fit of the parameters to normal distribution. In addition to the descriptive statistical methods (mean, standard deviation, median, frequency), the Student t-test was used to compare the customarily distributed parameters between the two groups, and the Mann Whitney U test was used for the comparison of the non-normally distributed parameters between the two groups. Pearson correlation analysis was used to investigate the relationships between normal distribution parameters, and Spearman's rho correlation analysis was used to investigate the relationships between non-normal distribution parameters. Significance was evaluated at $p<0.05$.

RESULTS

The descriptive characteristics of the patients are given in Table 1. 72.5% of the participants in the study were men (n=29) and 27.5% were women (n=11). While 57.5% of the patients (n=23) had comorbidities, most of them were ASA 2 (52.5%, n=21). The mean age of the participants was 51.40±17.67 in the ESPD group, the youngest patient was 21 years old, the oldest patient was 70 years old, whereas the mean age was 52.30±15.94 in the control group, and the youngest 22 and the oldest patient were 70 years old. The mean BMI of the ESPB group is 26.27±5.89, and that of the control group is 26.36±4.48 ($p>0.05$) (Table 1).

The average of the first analgesic hour in all patients is 3.85±2.84 hours. The difference between the groups is statistically significant ($p<0.001$) (Table 2). The mean duration of surgery for the whole group is 199.13±106.35 minutes. The difference between the groups is not statistically significant ($p=0.948$).

Comparing the need for pethidine (0.5 mg/kg) in the recovery room in the first postoperative hour, 55% (n=11) of the patients in the ESPB group and 85% (n=17) of the control group required pethidine at different doses. The difference between the groups is not statistically significant

Table 1. Comparison of patients' demographic characteristics by groups (n=40)

Group	ESPB (n=20)			Control Group (n=20)		
	n	%		n	%	
Male	15	75.0		14	70.0	
Female	5	25.0		6	30.0	
Comorbidity						
+	11	55		12	60	
–	9	45		8	40	
ASA score						
I	4	20		3	15	
II	10	50		11	55	
III	6	30		6	30	
Total	20	100		20	100	
	Mean±SD	**Minimum**	**Maximum**	**Mean±SD**	**Minimum**	**Maximum**
Age	51.40±17.67	21	70	52.30±15.94	22	70
Body mass index	26.27±5.89	18.70	37.46	26.36±4.48	18.41	36.51

Student t-test. ESPB: Erector Spinae Plane Block; ASA: American Society of Anesthesiologists; SD: Standard deviation; Min: Minimum; Max: Maximum.

Table 2. Comparison of the groups in terms of duration of first analgesic requirement and total surgery time

	Total	ESPB (n=20)	Control Group (n=20)	p
	Mean±SD	Mean±SD	Mean±SD	
Duration of first analgesic requirement (hour)	3.85±2.84	5.90±2.61	1.80±0.95	<0.001
Total surgery time (min)	199.13±106.35	200.25±120.62	198.00±93.10	0.948

Student t-test. ESPB: Erector Spinae Plane Block; SD: Standard deviation.

(p=0.082). When postoperative nausea was questioned, mild nausea was observed in 2 patients in the ESPB group and 3 patients in the control group, but the difference was not statistically significant (p=0.922).

When the postoperative pethidine requirement was compared according to the surgical procedure performed, 54.6% of those who underwent VATS (n=22) and 88.9% of those who underwent thoracotomy (n=18) required pethidine, the difference between the groups was statistically significant (p<0.05) (Table 3).

When the IV analgesic needs of the groups were compared, the difference between the groups in terms of the postoperative 1st hour pethidine requirement was not statistically significant (p=0.078). In the postoperative 24-hour follow-up, a statistically significant difference was found between the groups in terms of paracetamol (p<0.001) and tramadol (p<0.05) needs. There is no significant difference in the need for dextketoprofen (p=0.425).

Table 3. Comparison of surgical procedure groups according to the need for pethidine in the first postoperative hour

	Post-op petidine (-)		Post-op petidine (+)		
	n	%	n	%	Total
VATS	10	45.4	12	54.6	22
Thoracotomy	2	11.1	16	88.9	18
Total	12	30.0	28	70.0	40

p=0.035; X^2=5.560. VATS: Video-Assisted Thoracic Surgery.

When the static and dynamic VAS values were compared between the groups, a statistically significant difference was found in both parameters (p<0.001). When the first analgesic requirement time was compared, the difference between the groups was statistically significant (p<0.001). In the ESPB group, it was observed that analgesics were needed at the earliest at the 3rd hour and at the latest at the 12th hour. In the control group, these values were determined as the earliest 1st hour and the latest 4th hours (Table 4).

When the IV analgesic needs of the groups in VATS applied patients (n=22) were compared, the difference between the groups in terms of the postoperative 1st hour pethidine need was statistically significant (p<0.05). There is a statistically significant difference between the groups in terms of paracetamol needs in the postoperative 24-hour follow-up (p<0.001), there is no significant difference in terms of dexketoprofen and tramadol needs (Table 5).

When static and dynamic VAS values are compared in patients who underwent VATS, there is a statistically significant difference in both parameters. When the first analgesic requirement time was compared, the difference between the groups was statistically significant (p<0.001).

When the IV analgesic needs of the groups were compared in patients who underwent thoracotomy (n=18), the difference between the groups in terms of the postoperative 1st hour pethidine need was not statistically significant (p=0.127). There is a statistically significant difference between the paracetamol need (p<0.001) and tramadol need (p<0.001) between the groups in the postoperative 24-hour follow-up. There is no significant difference in terms of dexketoprofen need (p=0.581) (Table 6).

Table 4. Comparison of postoperative IV analgesic doses, VAS values and initial analgesic requirement times of the groups

	ESPB (n=20)			Control Group (n=20)			p
	Mean±SD	Min	Max	Mean±SD	Min	Max	
Pethidine (mg)	24.00±23.70	0	60	36.50±19.80	0	70	0.078
Paracetamol (g)	2.00±0.56	1	3	2.90±0.31	2	3	<0.00
Dexketoprofen (mg)	15.00±28.56	0	100	22.50±30.24	0	100	0.425
Tramadol (mg)	30.00±47.01	0	100	80.00±76.78	0	200	0.019
Static VAS	3.01±0.76	1.75	4.63	4.03±0.51	3	5.38	<0.00
Dynamic VAS	3.65±0.76	2.38	5.13	4.70±0.54	3.25	6.00	<0.00
Initial analgesic requirement (hour)	5.90±2.61	3	12	1.80±0.95	1	4	<0.00

Student t-test. ESPB: Erector Spinae Plane Block; VAS: Visual Analog Scale; Min: Minimum; Max: Maximum.

Table 5. Comparison of postoperative IV analgesic doses, VAS values and initial analgesic requirement times in patients undergoing VATS (n=22)

	ESPB (n=20)			Control Group (n=20)			p
	Mean±SD	Min	Max	Mean±SD	Min	Max	
Petidine (mg)	7.77±15.63	0	40	28.46±18.63	0	50	0.013
Paracetamol (g)	1.67±0.50	1	2	2.85±0.37	2	3	<0.001
Dexketoprofen (mg)	5.56±16.66	0	50	26.92±33.01	0	100	0.061
Tramadol (mg)	11.11±33.33	0	100	46.15±66.02	0	200	0.119
Static VAS	2.83±0.81	1.75	3.75	3.94±0.45	3.00	4.63	0.003
Dynamic VAS	3.47±0.48	2.38	4.50	4.56±050	3.25	5.13	0.004
Initial analgesic requirement (hour)	7.11±3.01	4	12	1.46±0.77	1	3	<0.001

Mann-Whitney U test. ESPB: Erector Spinae Plane Block; VAS: Visual Analog Scale; Min: Minimum; Max: Maximum.

Table 6. Comparison of postoperative IV analgesic doses, VAS values, and first analgesic requirement hours in patients undergoing thoracotomy (n=18)

	ESPB (n=20)			Control Group (n=20)			p
	Mean±SD	Min	Max	Mean±SD	Min	Max	
Petidine (mg)	37.27±21.01	0	60	51.42±12.14	30	70	0.127
Paracetamol (g)	2.27±0.46	2	3	3±0	3	3	<0.001
Dexketoprofen (mg)	22.73±34.37	0	100	14.29±24.39	0	50	0.581
Tramadol (mg)	45.45±52.22	0	100	142.86±53.45	100	200	<0.001
Static VAS	3.17±0.71	2.13	4.63	4.21±0.58	3.50	5.38	0.005
Dynamic VAS	3.79±0.69	2.75	5.13	4.94±0.55	4.38	6	0.002
Initial analgesic requirement (hour)	4.91±1.81	3	8	2.43±0.97	1	4	0.004

Mann-Whitney U test. ESPB: Erector Spinae Plane Block; VAS: Visual Analog Scale; Min: Minimum; Max: Maximum.

When the static and dynamic VAS values of patients who underwent thoracotomy are compared, there is a statistically significant difference in both parameters. When the first analgesic requirement time was compared, there was a statistically significant difference between the groups (p<0.05).

The comparison of the static VAS value follow-up of the groups is shown in the graph. VAS values were lower in the ESPB group at all follow-ups and were statistically significant at the 1st hour (p<0.001), 2nd hour (p=0.003), 8th hour (p=0.018), and 24th hour (p=0.005) (Fig. 1).

The comparison of the dynamic VAS value follow-up of the groups is shown in the graph. VAS values were lower in the ESPB group at all follow-ups and were found at 1st hour (p<0.001), 2nd hour (p<0.001), 3rd hour (p=0.048), 8th hour (p=0.047), and 24th hour (p=0.010). It was found to be statistically significant in these hours (Fig. 2).

DISCUSSION

Effective pain management after thoracic surgery is crucial because it affects mortality and morbidity more than other major operations by reducing the stress response and severe pulmonary complications resulting from changes in lung function after thoracic surgery.[8]

Postoperative analgesia is usually based on a combination of systemic drug infusion and regional anesthesia. In

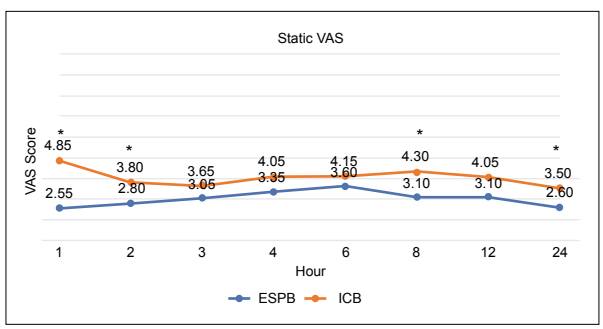

Figure 1. Comparison of static VAS values of groups.

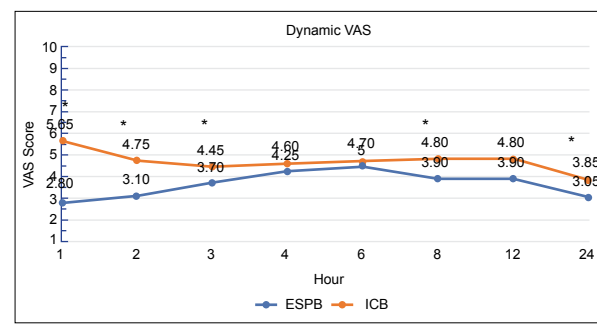

Figure 2. Comparison of dynamic VAS values of groups.

thoracic surgery, different local anesthesia techniques are used, mainly thoracic epidural analgesia, thoracic PVB, and ICB. The multimodal analgesia approach is recommended by the authors using various methods such as regional and systemic analgesia techniques in post-thoracotomy pain.[9] Tulgar et al.[10] compared single (T5) and dual (T4, T6) ESPB applications in patients who underwent thoracotomy, and found that NRS scores and tramadol use were lower in the group experiencing second level ESPB. Nagaraja et al.,[11] found that the ESP group had lower VAS scores at 24, 36, and 48 hours, and the difference between the groups was statistically significant. However, the mean VAS values in the TEA group were ≤4 both at rest and during coughing. There was no significant difference between the groups in terms of intraoperative fentanyl consumption and postoperative rescue analgesic requirement. In our study, there was a statistically significant difference between the groups in terms of paracetamol and tramadol requirements. Besides, a statistically significant difference was found in dynamic and static VAS values.

Gürkan et al.[12] reported that ESP block significantly reduced morphine consumption at 1, 6, 12, and 24 hours postoperatively. There was no statistically significant difference between the groups in NRS scores at 24-hour follow-up. Forero et al.[6] stated that ESP block has advantages over intercostal nerve block in post-thoracotomy pain. In our study, when the VAS values of the groups were compared, the VAS values were lower in the ESPB group at all follow-up hours, and a statistically significant difference was found at 1, 2, 8 and 24 hours. Evaluating the VAS values, the mean VAS values were lower in the ESPB group, and there was a statistically significant difference between the groups at 1, 2, 3, 8 and 24 hours. Besides, when the analgesic needs of the groups were compared in patients who underwent thoracotomy in our study, the difference between the groups was not statistically significant.

In several studies[5,13] the researchers confirmed that using continuous infusions and intermittent boluses with ESPB for the VATS procedure provides analgesia with less need for parenteral therapy, hospital stays, and lower opioid requirements. The observational results were obtained in a single case to confirm the applicability of suitable pediatric patients undergoing thoracoscopic surgery. Further studies are needed, and future studies should investigate whether reaching lower cervical dermatomes is free of the side effects.

In our study, the IV analgesic needs of the groups were compared in the VATS cases and the pethidine requirement difference between the groups was found to be statistically significant. Also, there was a statistically significant difference in the paracetamol requirement between the groups. Statistically, a significant difference was found in both static and dynamic VAS follow-up.

In Krishna et al.[14] the patients undergoing cardiac surgery with bilateral ESPB has significantly lower the NRS scores in the ESPB group, and also the first-hour use and the mean dose of fentanyl determined as a rescue analgesic, was significantly lower in the same group. In our study, similar to this study, the mean duration of the first analgesic requirement was longer in the ESPB group. When only thoracotomy patients were evaluated, a statistically significant difference was found between the ESPB and the control group. Besides, the first analgesic requirement time was longer in patients who had VATS alone.

In our study, pneumothorax due to ESPB application was not observed. Three patients, two in the ESPB group and one in the control group reported axillary pain in the postoperative period. The reason of this pain was thought to be insufficient dermatomal involvement and/or thoracic drain and patient position. Patients were evaluated using a nausea-vomiting scale of 0–3, and mild nausea was observed in 2 patients in the ESPB group and three patients in the control group. There was no significant difference between the groups.

CONCLUSION

We think that ESPB is a good option for pain control after thoracic surgery. ESPG with USG can be recommended for postoperative analgesia in patients undergoing thoracic surgery because of its easy technique, neuraxial structures, distance from pleural and vascular structures, and low complication rate. It is one of the advantages of covering a sizeable dermatomal area with a single injection.

However, as limitations of the study, more clinical studies should be conducted, indications and contraindications, local anesthetic concentration and volume, mechanism of action, duration of action should be revealed more clearly to make strong recommendations.

Ethics Committee Approval

This study approved by the İstanbul Kartal Dr. Lutfi Kirdar Training and Research Hospital Clinical Research Ethics Committee (Date: 27.09.2018, Decision No: 2018/514/138/10).

Informed Consent

Prospective study.

Peer-review

Internally peer-reviewed.

Authorship Contributions

Concept: O.B., T.K.; Design: O.B., T.K.; Supervision: O.B., T.K.; Fundings: O.B., T.K., Y.Y., F.D.G., B.C.; Materials: O.B., T.K.; Data: O.B., T.K.; Analysis: O.B., T.K., Y.Y., F.D.G., B.C.; Literature search: O.B., T.K., Y.Y.; Writing: O.B., T.K., Y.Y., F.D.G., B.C.; Critical revision: O.B., T.K., Y.Y., F.D.G., B.C.

Conflict of Interest

None declared.

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Elektif Göğüs Cerrahisinde Ameliyat Sonrası Analjezi Üzerine Ultrason Kılavuzlu Erektör Spina Plan Bloğunun Etkileri

Amaç: Elektif göğüs cerrahisi olgularında ultrason eşliğinde erektör omurga düzlem bloğunun etkilerini araştırdık.

Gereç ve Yöntem: Çalışmamıza 18–70 yaşları arasında elektif torasik cerrahi geçiren 40 ASA I-II-III hasta dahil edildi. Her biri 20 hastadan oluşan ESPB ve kontrol gruplarını ayırdık. Demografik özellikler, VKİ, komorbiditeler, ameliyatın tipi ve süresi, ilk saat içindeki petidin ihtiyacı, ilk analjezik ihtiyacı zamanı, 24 saat içindeki toplam analjezik miktarı kaydedildi.

Bulgular: İlk analjezik gereksinim süresi ESPB grubunda 5.90±2.61 saat, kontrol grubunda 1.80±0.95 saatti. ESPB grubunda ameliyat sonrası 24 saatte ortalama parasetamol gereksinimi 2.00±0.56 g, deksketoprofen gereksinimi 15.00±28.56 mg ve tramadol gereksinimi 30.00±47.01 mg idi. Kontrol grubunda ortalama parasetamol gereksinimi 2.90±0.31 g, deksketoprofen gereksinimi 22.50±30.24 mg, tramadol gereksinimi 80.00±76.78 mg idi. ESPB grubu 3.01±0.76, kontrol grubunda ortalama 4.03±0.51, ESPB grubunda ortalama dinamik VAS 3.65±0.76 ve kontrol grubunda ortalama 4.70±0.54 idi. Statik VAS değerleri tüm takiplerde ESPB grubunda daha düşüktü. ESPB grubunda, tüm takiplerde dinamik VAS değerleri de daha düşüktü.

Sonuç: ESPB'nin ameliyat sonrası analjeziyi iyileştirdiği ve torasik cerrahide analjezi ihtiyacını azalttığı bulunmuştur.

Anahtar Sözcükler: Amaliyat sonrası analjezi; göğüs ağrısı; sinir bloğu; torakotomi; video yardımlı torakoskopik cerrahi.