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COMPARISON BETWEEN ERECTOR SPINAE PLANE BLOCK AND INTERCOSTAL NERVE BLOCK IN PATIENTS UNDERGOING VIDEO-ASSISTED THORACIC SURGERY: A PILOT STUDY

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ABSTRACT

Introduction: Video-assisted thoracic surgery is a well-known and established technique for the treatment of lung diseases. It is considered less invasive than conventional open thoracotomy and, as a result, provides less pain and less impairment of lung function and the shoulder girdle. **Objective**: To evaluate the quality of post-anesthetic recovery of patients undergoing video-assisted thoracic lung resection surgery, who received analgesia through erector spinae block or intercostal nerve block, through the application of the Qor-15 questionnaire, 24 hours after anesthesia. **Method**: This is a pilot project of a randomized clinical trial developed with patients undergoing lung resection surgery at the Hospital Universitário Onofre Lopes (HUOL). In it, 18 patients were randomized into two groups: one (10 patients) received analgesia through intercostal block (INT) and the other (08 patients) underwent erector spinae plane block ESP block). As a primary outcome, we assessed the quality of post-anesthesia recovery between different blocks using the QoR-15 questionnaire, applied 24 hours after the end of anesthesia. As secondary outcomes, the consumption of morphine equivalents

in mg/kg in the first 24 hours and the intensity of pain through EVN (0 for absence of pain and 10, worst pain imaginable) at times 1, 3, 6, were recorded. 12 and 24 hours after the end of anesthesia, at rest and after deep inspiration. Results: There was no difference in the anesthetic quality assessed through the application of the QoR-15 questionnaire between the ESP and INT groups. Furthermore, there was no significant discrepancy in the intraoperative dose of fentanyl, numerical visual scale (VNS) at rest and movement and consumption of morphine equivalent in the 24 hours after the surgical procedure. **Discussion**: The results of our study suggest similar results in relation to analgesia and post-anesthesia recovery in patients undergoing video-assisted thoracic lung resection surgery, showing that the erector spinae block can provide analgesia similar to the intercostal block. The choice of anesthetic method varies according to the anesthetist's personal preference. It should also be emphasized that this is a pilot study and was not designed or developed to provide clinical inference, serving as a guide and foundation for the basis of therapeutic plans and more assertive clinical practices during future research. **Conclusion**: It's evident the importance of nerve blocks for pain management in video-assisted thoracoscopic surgery (VATS) patients. However, the study's findings must be viewed considering its limitations, which prevents definitive conclusions about the superiority or inferiority of the techniques. There is a necessity for larger, multicenter studies to accurately assess the clinical and statistical significance of these findings.

Keywords: Video-assisted thoracic surgery; Recovery quality; Spina erector plane block; Intercostal block; Pilot study.

INTRODUCTION

Video-assisted thoracic surgery (VATS) is a widely used and established method for treating lung diseases. It is considered less invasive than conventional open thoracotomy, resulting in less pain, reduced impairment of lung function, and shoulder girdle mobility[1]. Nevertheless, it remains a surgical procedure that causes moderate to severe postoperative pain, which should not be underestimated by the anesthesiologist[2]. There are several options for analgesia in thoracic surgeries, and the choice of anesthetic method varies according to the personal preference of the professional. Steinthorsdottir et al. concluded that existing studies were too heterogeneous to recommend a gold standard for analgesia in video-assisted thoracic surgeries[3].

Furthermore, lobectomies via VATS are well-established operations in the medical community, primarily because they are perceived as less invasive procedures than open thoracotomies, resulting in considerably lower levels of pain and less functional impairment of the shoulder girdle[1]. Nevertheless, like any surgical procedure, VATS can result in moderate to severe pain for the patient during postoperative recovery. Unlike conventional thoracotomies, which have paravertebral block and

thoracic epidural analgesia as the gold standard, VATS lack studies determining the most effective intraoperative analgesia method[3].

There are various anesthetic methods for thoracic surgeries, with the anesthesiologist determining the most effective option for their patient. However, due to its simplicity and safety, the erector spinae plane block (ESP block) may be useful during the intra- and postoperative pain management of patients undergoing VATS, given its easily identifiable sonoanatomy and the possibility of inserting a long-duration catheter if prolonged anesthesia is required. In this technique, the anesthetic is deposited between the erector spinae muscle and the transverse process of the vertebra, providing a block of the dorsal and ventral branches of the thoracic spinal nerve, thus providing superior analgesia4.

Moreover, Intercostal Nerve Block (INT), a well-established and old modality of analgesia, can be performed during surgery by the surgeon themselves. This block is relatively simple, as it can be performed under direct visualization, and provides relatively fewer side effects[2].

The postoperative and anesthetic recovery of the patient is a complex process that encompasses various variables, such as individual patient characteristics, type of surgery, and type of anesthesia. Currently, studies evaluating post-anesthetic recovery predominantly assess adverse effects, recovery time, and physiological indicators of the individual, neglecting the patient's perspective6. Thus, this pilot study aims to evaluate the quality of patient recovery, seeking to encompass this more subjective dimension by analyzing the quality of post-anesthetic recovery in patients undergoing video-assisted thoracic lung resection surgeries.

Among the scores used to assess the quality of anesthetic recovery, the Quality of Recovery 15 (QoR-15) score, a validated multidimensional questionnaire that evaluates pain, physical comfort, physical independence, psychological support, and emotional state on a scale from 0 (poor recovery) to 150 (excellent recovery), is utilized6. It is a multidimensional tool for assessing the patient in the postoperative period.

In this sense, due to the scarcity of studies on the subject, the aim of this pilot study is to demonstrate the feasibility, feasibility, and/or continuation of a randomized clinical trial (RCT) to evaluate the quality of post-anesthetic recovery of patients undergoing video-assisted thoracic lung resection surgeries, who received analgesia through erector spinae block or intercostal nerve block, through the application of the QoR-15 questionnaire, 24 hours after anesthesia.

METHODOLOGY

This is a pilot study of a randomized clinical trial conducted with patients undergoing lung resection surgeries at the Onofre Lopes University Hospital (HUOL). The main work was approved by the HUOL Ethics Committee (CAAE 51515321.7.0000.5292, on December 6, 2021), and patients were selected between January 2022 and December 2023.

Study Design

The project was a pilot study of a double-blind, randomized clinical trial conducted with patients undergoing lung resection surgeries. The aim of this study is to compare the quality of anesthetic recovery in two groups of patients: those who underwent anesthesia with intercostal block (INT group) and those who underwent anesthesia with erector spinae plane block (ESP group). Patients aged over 18 and under 80 years, undergoing video-assisted thoracic surgery for lung resection (VATS), operated on an outpatient basis, with ASA classification 1-3, were included. Patients with contraindications to regional blocks according to the American Society of Regional Anesthesia and Pain guideline (HORLOCKER et al., 2018), BMI > 40 kg/m2, weight < 35 kg, known chronic pain, opioid use for ≥ 3 months preoperatively, known allergy to medications used in the protocol, spinal deformity, psychiatric disorders, or cognitive deficit affecting the understanding of postoperative assessment instruments were excluded. Patients were recruited consecutively from the thoracic surgery service at the Onofre Lopes University Hospital, Natal-RN. At the pre-anesthetic evaluation, patients received oral and written information about the study and were invited to sign the informed consent form. Baseline characteristics, including sociodemographic and clinical variables such as age, sex, weight, BMI, comorbidities, type of surgery, and ASA classification, were collected.

Anonymity and impersonality were guaranteed in this research, respecting the Declaration of Helsinki and Resolution 196/1996 of the National Health Council.

Allocation and bliding

Using software for generating random numbers, a total of 20 patients were randomized into 5 blocks of four, divided into two groups, totaling two arms with 10 patients each (1:1). The coding was revealed for statistical analysis. In patients allocated to the ESP group, the block was performed by the anesthesiology team. In patients allocated to the INT group, the block was performed by the surgeon. Another professional not involved in intraoperative care performed the postoperative assessment instruments application and did not have access to information about which group the patient belonged to. Patients were unaware of the block, as it occurred after general anesthesia. Therefore, this is a double-blind study.

Intervention

Upon entering the operating room, after venous access, patients received 2mg of intravenous midazolam. General anesthesia was standardized in all patients as follows: intravenous administration of fentanyl (3-5 mcg/kg), propofol (1-2 mg/kg), and cisatracurium (0.15 mg/kg) for anesthetic induction. After induction of anesthesia, a double-lumen endobronchial tube was inserted orally or nasally, of a size deemed appropriate by the anesthesiologist, to ensure one-lung ventilation during the procedure. The position of the double-lumen tube was verified by lung auscultation and/or fiberoptic bronchoscopy. Maintenance was performed by inhalation with sevoflurane in a mixture of compressed air and oxygen, with additional boluses of 1 mcg/kg of fentanyl and 2mg of cisatracurium, if deemed necessary by the anesthesiologist. After intubation, patients received prophylactic antibiotics, as indicated by institutional protocol, dexamethasone 10mg, and tenoxicam 40 mg intravenously. Patients were positioned in the lateral decubitus position, with the operated side facing up, using cushions, and potential pressure points were checked according to the institution's routine protocol. Both groups received their respective blocks with aseptic technique.

Intercostal Nerve Block (INT group)

Patients randomized to the INT group received 4 ml aliquots of 0.5% ropivacaine in each intercostal space, under direct visualization, in 5 consecutive intercostal spaces (T4-T9). The procedure was performed by the surgeon, immediately after entering the thorax with the video device, through the auxiliary incision, which was used for the surgical procedure, using a 25G scalp needle, approximately 3 cm from the vertebral column.

Erector Spinae Plane Block (ESP group)

Patients randomized to the ESP group, immediately after positioning in the lateral decubitus position, and prior to surgical incision, received 20 ml of 0.5% ropivacaine at the level of the transverse process of T5. This procedure was performed by the anesthesiologist, guided by ultrasound, with a linear transducer from a GE - LogiQe device, with a 22G needle from BBraun, in-plane, with the direction of needle insertion from cephalic to caudal, approximately 3 cm from the midline. At the start of skin closure, patients in both groups received intravenous ondansetron 8 mg, dipyrone 2g, and tramadol 100 mg. At the end of the procedure and prior to extubation, patients had neuromuscular blockade reversed with intravenous atropine 1mg and neostigmine 2mg.

Postoperative

After extubation, patients were transferred to the post-anesthetic recovery room (PACU) or intensive care unit (ICU) at the discretion of the attending team. For postoperative pain control, in the first 24 hours, patients received intravenous dipyrone

1g every 6 hours. If at any time the patient reported pain and had a Numerical Visual Scale (NVS) greater than 4, tramadol 100 mg was administered intravenously every 6 hours, and if the pain persisted, morphine 0.05mg/kg was administered as rescue.

Outcomes

As the primary outcome, we assessed the quality of post-anesthesia recovery between different blocks using the QoR-15 questionnaire, applied 24 hours after the end of anesthesia. Secondary outcomes included the consumption of morphine equivalents in mg/kg in the first 24 hours and pain intensity measured by NVS (0 for absence of pain and 10 for worst imaginable pain) at 1, 3, 6, 12, and 24 hours after the end of anesthesia, at rest and after deep inspiration.

Statistical Analysis

Descriptive analysis was used to outline the profile of the sample used in this study. This analysis was presented through graphs and tables. The Shapiro-Wilk test was used to check the normality of quantitative data. The Student's t-test was used when normality was found in the data, and the Wilcoxon rank test was applied when normality was not found in the data. The Chi-square test and Fisher's Exact test were used.

RESULTS

Initially, a total of 26 patients were recruited, of which 02 refused to participate, 04 were excluded by exclusion criteria, and 20 were randomized into two groups (ESP Block and INT). Two patients from the ESP group were excluded from the final analysis due to protocol deviation (one patient had their surgery converted to open thoracotomy and another required postoperative immediate intubation); neither of these processes was attributed to the protocol of the study (Figure 1). Thus, the research included a total of 18 analyzed patients, of whom 08 received analgesia through erector spinae block, and 10 received analgesia through intercostal nerve block.

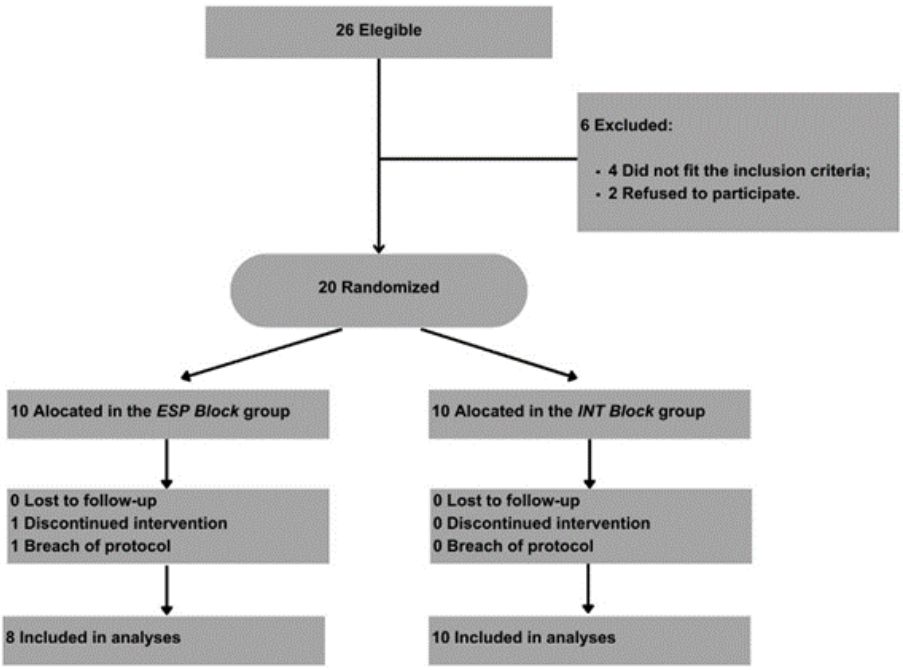

Figure 1 - Flowchart of Sample Distribution

Regarding age, weight, height, and BMI, it was observed that the groups were homogeneous, with no statistical difference found at the significance level α = 5%. As observed in Table 1 and Figure 2, the mean age was 67.5 years in the ESP Block Group and 47.7 years in the INT Group. Regarding weight, the mean was 63.6 kg in the ESP Block Group and 62.7 kg in the INT Group. The mean height was equal in both groups (1.59m), with most patients being overweight.

Table 1 – Correlation between sociodemographic variables and type of block.

Characteristics	ERECTOR SPINAE N = 8[1]	INTERCOSTAL N = 10[1]	p-value[2]
Age	67.50 (7.76)	47.70 (22.48)	0.9749
Weight	63.60 (9.83)	62.70 (7.12)	0.8315
Height	1.59 (0.06)	1.59 (0.11)	0.8022
BMI	25.44 (5.13)	25.37 (5.16)	0.9774

[1] Mean (SD), [2] Wilcoxon rank sum test; t-student test

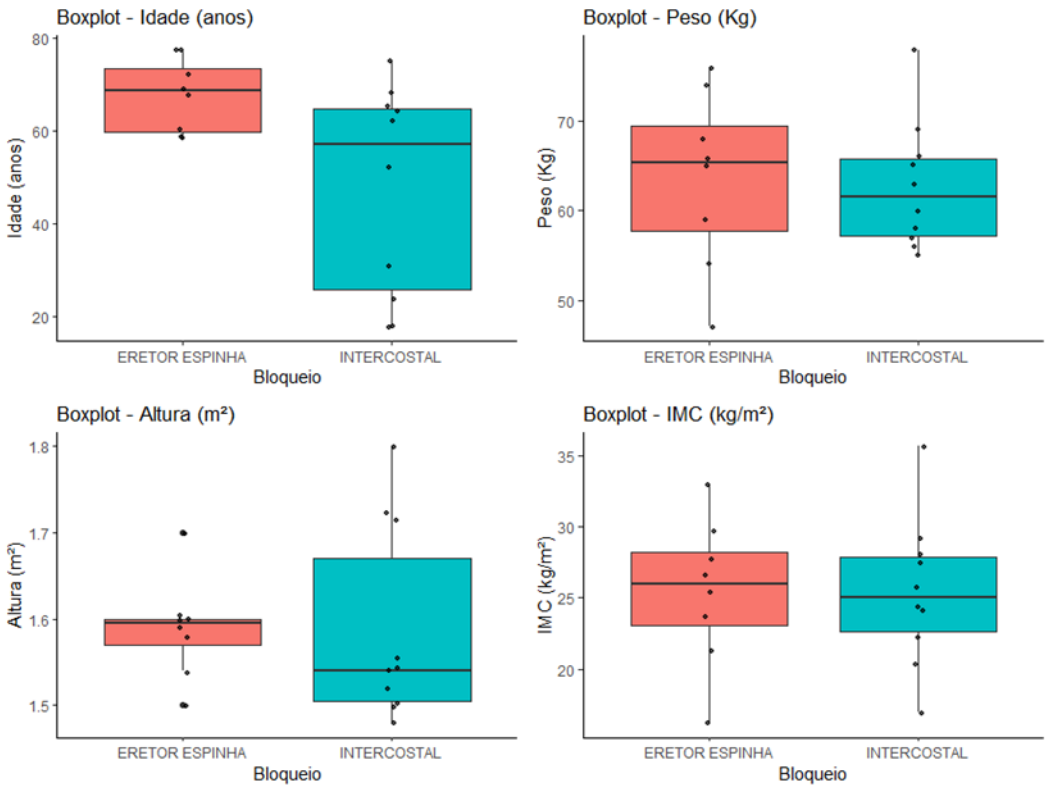

Figure 2 - Boxplot of the distribution of sociodemographic variables

For categorical sociodemographic information, the groups showed homogeneity for gender, p-value < 0.05 for a significance level of 5%. The distribution regarding gender (Table 2) revealed that the majority (67%) of the sample consisted of female individuals, while (33%) were male individuals.

Table 2 – Correlation between sociodemographic variables and type of block

Characteristics	Full sample N = 18[1]	Analgesia through block		p-value[2]
		SPINAL ERECTOR N = 8[1]	INTERCOSTAL N = 10[1]	
Gender				0.3213
FEMALE	12 (67%)	4 (50%)	8 (80%)	
MALE	6 (33%)	4 (50%)	2 (20%)	

1 n (%), 2 Fisher's exact test

Regarding comorbidities (Table 3), no statistically significant differences were found between the Erector Spinae and Intercostal groups. Systemic arterial hypertension appears to be the most prevalent among patients, present in 39% of the sample, followed by Diabetes Mellitus (33%). Obese individuals constitute 11% of the sample, and those with COPD are 5.6%. There were no reports of asthma among the evaluated patients.

Table 3 – Correlation between comorbidity and type of block

Characteristics	Full sample N = 18[1]	Analgesia through block		p-value[2]
		SPINAE ERECTOR N = 8[1]	INTERCOSTAL N = 10[1]	
Systemic Arterial Hipertension				0.145
NO	11 (61%)	3 (38%)	8 (80%)	
YES	7 (39%)	5 (63%)	2 (20%)	
Diabetes Mellitus				>0.99
NO	12 (67%)	5 (63%)	7 (70%)	
YES	6 (33%)	3 (38%)	3 (30%)	
COPD				0.444
NO	17 (94%)	7 (88%)	10 (100%)	
YES	1 (5.6%)	1 (13%)	0 (0%)	
Obesity				>0.99
NO	16 (89%)	7 (88%)	9 (90%)	
YES	2 (11%)	1 (13%)	1 (10%)	

1 n (%), 2 Fisher's exact test

To assess categorical information regarding surgery, no statistically significant values were found at a significance level of 5% between the two groups (Table 4). In terms of ASA classification (American Society of Anesthesiology), the majority (56%) of patients were classified as ASA II, 33% were classified as ASA III, and 11% as ASA I. Most patients (94%) did not undergo previous surgery, 22% of patients needed to be admitted to the ICU postoperatively. Only 01 patient had undergone previous thoracic surgery.

Table 4 – Correlation between surgery information and type of block

Characteristics	Full sample N = 18[1]	Analgesia through block		p-value[2]
		SPINAE ERECTOR N = 8[1]	INTERCOSTAL N = 10[1]	
ASA				0.635
ASA I	2 (11%)	0 (0%)	2 (20%)	
ASA II	10 (56%)	5 (63%)	5 (50%)	
ASA III	6 (33%)	3 (38%)	3 (30%)	
Previous toracic surgery				0.444
NO	17 (94%)	7 (88%)	10 (100%)	
YES	1 (5.6%)	1 (13%)	0 (0%)	
TYPE OF SURGERY				>0.999
LOBECTOMY	3 (17%)	1 (13%)	2 (20%)	
SEGMENTECTOMY	15 (83%)	7 (88%)	8 (80%)	
Postoperative destination				0.588
PACU	14 (78%)	7 (88%)	7 (70%)	
ICU	4 (22%)	1 (13%)	3 (30%)	
Diagnosis				0.152
BENIGN	6 (33%)	1 (13%)	5 (50%)	
MALIGNANT	12 (67%)	7 (88%)	5 (50%)	

1 n (%), 2 Fisher's exact test

No statistically significant differences were found for the means or medians of intercostal and erector spinae blocks regarding surgery and anesthesia variables (Table

5 and Figure 3). In fact, the intraoperative opioid (Fentanyl) dose was approximately the same in both groups, (278mcg) in the ESP Block and (273 mcg) in the INT. Regarding the equivalent morphine dose in the 24 hours post-surgery, the INT group had a higher dose (14.9 mg) compared to the ESP Block (7.75), however, without statistical significance

Table 5 – Correlation between surgery variables and type of block

Characteristics	SPINAE ERECTOR N = 8[1]	INTERCOSTAL N = 10[1]	p-value[2]
Incision size (cm)	4.98 (2.02)	4.42 (1.28)	0.7545
Surgery duration (min)	96.25 (36.33)	81.50 (29.91)	0.3713
Anestesia duration (min)	151.88 (49.64)	138.00 (41.85)	0.5382
Propofol dose (mg)	120.00 (52.92)	189.00 (138.20)	0.1767
Fentanyl dose (mcg)	278.75 (118.49)	273.0 (103.07)	1.0
Cisatracurio dose (mg)	13.44 (5.50)	11.80 (2.52)	0.4553
Morphine (mg)	7.75 (10.51)	14.9 (16.25)	0.3357

[1] Mean (SD), [2] Wilcoxon rank sum test; t-de Student test

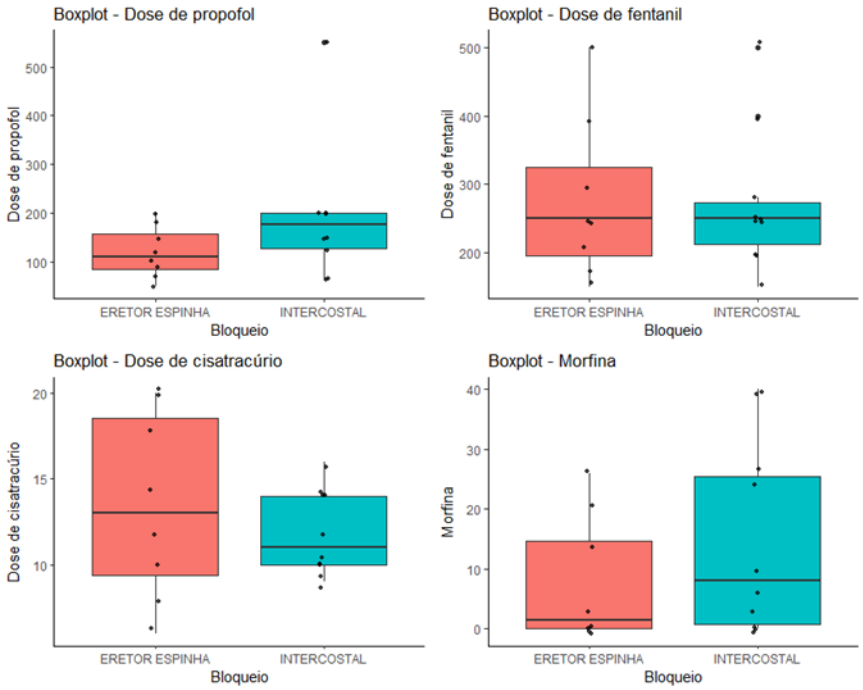

Figure 3 – Boxplot of surgery variables distribution

Concerning pain scores, according to the visual analog scale at rest and during movement (Table 6 and 7), no statistically significant differences were found between the groups, with a significance level of 5%. It is noted that concerning the VAS during movement, higher numbers were observed in the ESP Block group compared to the INT group, however, without significance. The highest levels of pain were observed twelve hours after surgery, after deep inspiration, when the mean pain scores were 7.37 in the ESP Block group and 6.40 in the INT group. The lowest pain scores were observed 24 hours after surgery, VAS at rest: 3.5 in the ESP group and 4.0 in the INT group.

Table 6 – Correlation between VNS at rest and type of block

Characteristics	SPINAE ERECTOR N = 8[1]	INTERCOSTAL N = 10[1]	p-value[2]
VNS1	4.62 (3.29)	4.20 (3.42)	0.6429
VNS 3	4.50 (3.46)	4.90 2.77)	0.4632
VNS 6	4.00 (3.20)	4.0 (2.54)	0.6252
VNS 12	3.62 (3.34)	4.30 (3.27)	0.673
VNS 24	3.50 (3.38)	4.0 (3.16)	0.7529

[1] Mean (SD), [2] Wilcoxon rank sum test; t-de Student test

Table 7 – Correlation between VNS at movement and type of block

Characteristics	SPINAE ERECTOR N = 8[1]	INTERCOSTAL N = 10[1]	p-value[2]
VNS1	6.37 (3.06)	5.30 (3.92)	0.5231
VNS 3	6.75 (2.37)	6.00 (3.49)	0.5967
VNS 6	6.62 (2.13)	5.50 (3.02)	0.3699
VNS 12	7.37 (2.38)	6.40 (2.95)	0.7065
VNS 24	6.62 (2.44)	5.80 (3.15)	0.5409

[1] Mean (SD), [2] Wilcoxon rank sum test; t-de Student test

Table 8 shows the results obtained in the analyses, where statistically significant differences were found for the questions regarding feeling rested (p-value 0.0235) and feeling sad or depressed (p-value 0.02368). Therefore, the group in which the intercostal block was performed had a lower score on the question "I felt rested" and a higher score on the question "I felt sad or depressed". Regarding the main objective of the study, the evaluation of the quality of anesthetic recovery, assessed through the final QoR-15, which has scores ranging from 0 (poor recovery) to 150 (excellent recovery), no statistically significant differences were found between the groups. The ESP Block group had a higher average score (112.12) compared to the INT group (103.70), but without statistical difference (Figure 4).

Table 8. Assesment of QoR-15 item by item and final score.

Characteristics	ERETOR ESPINHA N = 8[1]	INTERCOSTAL N = 10[1]	p-valor[2]
Able to breathe easily	6.37 (3.38)	7.30 (2.26)	0.3426
Beeing able to enjoy food	8.62 (2.26)	8.40 (1.95)	0.7637
Feeling rested	8.25 (1.75)	5.80 (2.39)	**0.0235**
Have had a good sleep	7.87 (1.46)	7.40 (1.89)	0.5566
Able to look after personal toilet and hygiene unaided	6.50 (3.78)	4.30 (4.00)	0.9122
Able to comunicate with family or friends	7.87 (3.79)	8.10 (3.78)	0.4161
Getting support from hospital doctor and nurses	9.75 (0.46)	8.70 (3.13)	0.6942
Able to return to work or domestic activities	5.75 (3.24)	3.20 (3.97)	0.9119
Feeling confortable and in control	7.37 (1.84)	5.10 (3.93)	0.1284
Having a feeling of general well beeing	8.12 (1.73)	6.70 (2.63)	0.1865
Moderate pain	4.25 (3.41)	4.10 (3.87)	0.6415
Severe pain	7.00 (3.66)	7.30 (3.56)	0.4079
Nausea and vomiting	7.75 (4.20)	9.00 (1.76)	0.4776
Feeling worried or anxious	8.25 (1.98)	8.30 (2.00)	0.5374
Feeling sad or depressed	8.37 (3.46)	10.00 (0.00)	**0.02368**
Final QoR	112.12 (19.27)	103.70 (24.22)	0.8359

[1] Mean (SD), [2] Wilcoxon rank sum test; t-de Student test

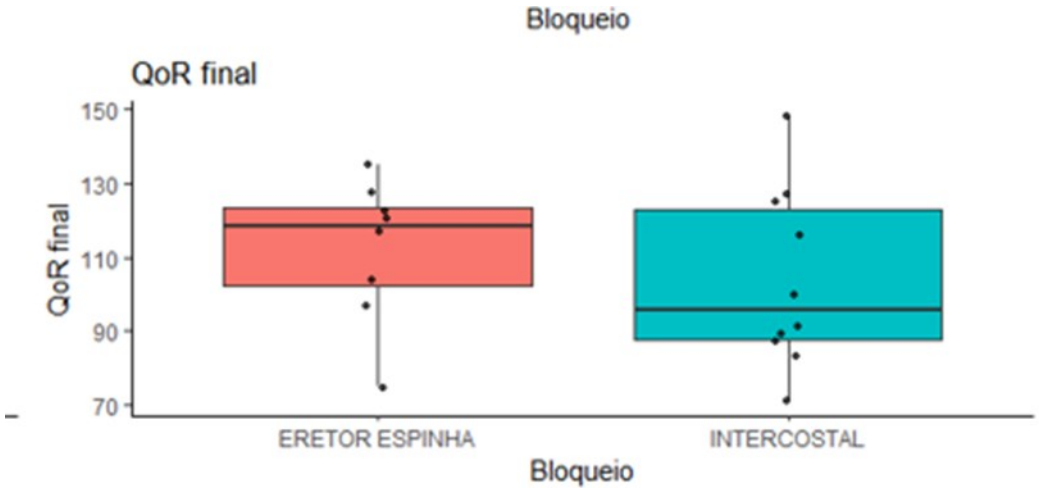

Figure 4 – Final QoR

DISCUSSION

The implementation of nerve blocks for analgesia in patients undergoing thoracic surgeries is of paramount importance for patient comfort in the perioperative period. The erector spinae plane (ESP) block, initially described by Forero et al. (2016) for pain control in patients with chronic pain, has been used in acute settings as well, as an effective and potentially safer alternative to paravertebral or epidural blocks. It is performed by depositing local anesthetic between the erector spinae muscle and the transverse process of the vertebra, lying superficial to the paravertebral space. It may provide superior analgesia, as it blocks the dorsal and ventral branches of the thoracic spinal nerves and induces some degree of sympathetic blockade. The intercostal nerve

block is one of the oldest methods for multimodal analgesia in thoracic surgery, due to its simplicity and low incidence of side effects. It can be performed under direct visualization by the surgeon in video-assisted surgical procedures, through the deposition of local anesthetic in the intercostal spaces.

The results of these studies highlight a difficulty in obtaining more cases for data collection. Initially, we anticipated recruiting 12 patients per month, which would lead to the completion of the study within 13 months. However, during this initial period, we had an average of only 1 patient per month, far below what was projected in the initial timeline. This led the authors to reconsider the feasibility of the study as initially proposed, extending the study for an additional 11 months.

This was due to various factors, including a reduced number of patients undergoing video-assisted pulmonary resection surgeries at the Onofre Lopes University Hospital, as well as restrictions on surgeries due to the COVID-19 pandemic, and shortages of supplies during the two years of sample collection. Due to this insufficient recruitment rate, we chose to report the data as a pilot study, with a sample of 18 patients, from a randomized clinical trial initially designed to include 124 patients.

Nevertheless, our initial data do not appear to show a difference in anesthetic quality assessed through the application of the QoR-15 questionnaire between the ESP and INT groups. With a higher average score (112.12) for the ESP Block compared to (103.70) for the INT. Additionally, there was no significant discrepancy in the dose of fentanyl intraoperatively, which was equivalent in both groups (278mcg in the ESP Block and 273 mcg in the INT group), indicating that both blocks are favorable for intraoperative use. Although the anesthesiologist who administered the opioid infusion during surgery was not blinded to the type of block performed.

Regarding the morphine equivalent dose in the 24 hours post-surgery, the INT group had a higher dose (14.9 mg) compared to the ESP Block (7.75 mg). It was observed that there was a slight tendency towards higher values in the ESP Block arm in all points of the Numeric Rating Scale (NRS) during movement. However, the NRS values at rest were very similar between the two groups. Chen et al. (2020) compared intercostal blocks, single-dose ESP blocks, and multiple paravertebral nerve blocks (PVB Block) for VATS. They found that PVBs provided superior analgesia with reduced visual analog scale scores and opioid consumption compared to single-dose ESP blocks and intercostal blocks. However, when single-dose ESP blocks and intercostal blocks were compared with each other, they were equally effective in reducing pain. The results of our study suggest similar outcomes to this study, showing that a single ESP block may provide analgesia similar to the INT. According to Steinthorsdottir et al. (2014), there is no gold standard for analgesia in VATS. There are several options for analgesia in thoracic surgeries, and the choice of anesthetic method varies according to the anesthesiologist's personal preference.

Be that as it may, the variation in the perception of recovery quality, as indicated by the QoR-15, suggests subjectivity. This variation may be influenced by various individual factors, such as pre-existing expectations, pain tolerance, previous experiences with the healthcare system, among others, highlighting the importance of a holistic approach in the assessment of postoperative recovery. Even though these results offer a detailed view of the postoperative scenario at the Onofre Lopes University Hospital, it is necessary to emphasize the need for further analysis with a larger sample size and correlation of these data with specific clinical outcomes.

There are some important limitations to our study. It should also be emphasized that this is a pilot study and was not designed or developed to provide clinical inference. Another limitation of this study is its single-center nature, obtaining a very small sample. Lastly, the follow-up of participants was limited to only 24 hours postoperatively, a period that was sometimes insufficient for pain resolution.

Therefore, this pilot study will serve as a guide and foundation for the development of more assertive therapeutic plans and clinical practices in future research.

CONCLUSION

The use of nerve blocks as a method of analgesia in thoracic surgeries is of fundamental importance for patient comfort in the perioperative period; however, there is no gold standard method. Both erector spinae plane block and intercostal nerve block are commonly used procedures for analgesia in patients undergoing VATS. Nevertheless, our results should be interpreted in the context of the study's limitations. Despite finding no difference in the quality of anesthetic recovery between the researched groups, superiority or inferiority analysis cannot be determined due to the limited sample size. Multicenter studies with greater surgical turnover are necessary for a more accurate analysis. Therefore, further research is needed to determine if this effect is clinically and statistically significant.

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