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Correspondence

Comparison of ultrasound-guided thoracolumbar interfascial plane block versus wound infiltration for postoperative analgesia after single-level discectomy

Dear Editor,

Lumbar disc herniation is the major source of the low back pain. Patients with lomber disc hernia might be recommended for surgery following ineffective conservative treatments [1]. However, spine surgery of the lumbar region causes severe postoperative pain. Efficient pain control after spine surgery improves mobility, reduces complications such as deep venous thrombosis and improves patient satisfaction [2]. Different types of analgesia including opioids, gabapentinoids, nonsteroidal anti-inflammatory drugs, intraoperative ketamine are commonly used for postoperative pain management. Besides, regional anesthetic techniques which are spinal, epidural, paravertebral blocks and local wound infiltration has been performed for postoperative pain relief [3]. Recently, Thoracolumbar Interfascial Plane (TLIP) block has been described and performed for spinal surgery in many studies [4]. We proposed to test the hypothesis that wound infiltration might be as effective as TLIP block for postoperative pain relief after single-level discectomy.

Following institutional ethics committee approval and obtaining written informed consent, 40 patients who aged 18–85 years, ASA I-III, failure of conservative treatment and scheduled for single-level discectomy were included in the study. Patients with history of previous lumbar surgery, chronic pain, chronic opioid usage, history of psychological disorder and skin infection of lumbar region were excluded from the study. Patients were randomized using a computer program to wound infiltration group (GroupI) or TLIP group (GroupT). After standard general anesthesia for each group, wound infiltration was done at the end of the surgery before the closure of fascia and subcutaneous tissues using a total 20 ml local anesthetic mixture (10 ml bupivacaine + 10 ml lidocaine) into the paravertebral muscles and subcutaneous tissues in GroupI and TLIP block was performed before surgical incision using a total 40 ml local anesthetic mixture(20 ml for each side) in GroupT. Following surgery, intravenous patient controlled analgesia using fentanyl was started in the PACU for all patients and a total of fentanyl consumption was recorded 24 h after surgery for each patient. Patients' pain was evaluated using a numeric rating scale (0 = no pain, 10 = worst possible pain) at 1, 2, 4, 8, 12 and 24th hrs after surgery.

The Statistical Package for Social Sciences (SPSS Inc., Chicago, IL) 20.0 program was used for the statistical analysis. Distribution of the variables was evaluated by using Kolmogorov-Smirnov test. While Chi-Square Test was used to analyze the categorical variables, the normally distributed numeric data were analyzed using Student's *t*-test and abnormally distributed data were analyzed using Mann-Whitney *U* test. $P < 0.05$ was considered statistically significant. Primary outcome was total opioid consumption and secondary outcome was scores of the numeric rating scale for postoperative 24 h. Results are shown in Tables 1 and 2.

Although, several studies have discussed the efficacy of the TLIP block and the wound infiltration, there are still no randomized studies which compare the effectiveness of these two approaches [4]. On the other hand, wound infiltration is a simple method compared with TLIP block and reported as an effective technique for acute pain management after lumbar discectomy [5]. According to our results, we conclude that wound infiltration is as effective as TLIP block for postoperative pain relief after single-level discectomy. However, we still need additional randomized controlled trials to clarify.

Table 1
Demographic data.

	Group I (n = 20)	Group TLIP (n = 20)	P value
Age (years)	44,8 ± 9,7	48,5 ± 9,3	0,22[a]
Weight (kg)	76,6 ± 22,8	81,3 ± 11,9	0,41[a]
Height (cm)	168,03 ± 8,3	171,2 ± 9,5	0,26[a]
Gender (M/F)	10/10	11/9	0,75[b]
Duration of surgery(min)	87,6 ± 29,8	93,6 ± 24,7	0,49[a]

Group I: Infiltration group, Group TLIP: Thoracolumbar Interfascial Plane group.
Values are expressed in mean ± SD.
[a] P > 0.05, Student-*t*-Test.
[b] P > 0.05, Chi-Square Test.

Table 2
Numeric rating scores and opioid consumption.

	Group I (n = 20)	Group TLIP (n = 20)	P value
1 h	3,45 ± 1,3	3,20 ± 1,0	0,46[b]
2 h	2,70 ± 1,3	3,40 ± 1,3	0,10[a]
4 h	4,75 ± 1,6	3,95 ± 1,5	0,12[a]
8 h	3,85 ± 1,5	3,95 ± 1,6	0,92[b]
12 h	4,10 ± 1,2	3,85 ± 1,0	0,53[b]
24 h	2,70 ± 1,1	2,60 ± 1,1	0,79[b]
PCA Fentanyl Consumption	282.0 ± 226,63	206.0 ± 163,0	0,23[a]

Group I: Infiltration group, Group TLIP: Thoracolumbar Interfascial Plane group.
Values are expressed in mean ± SD.
[a] P > 0.05, Student-*t*-Test.
[b] P > 0.05, Mann-Whitney *U* Test.

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Declarations of interest

None.

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