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Ultrasound-guided bilateral lumbar erector spinae plane block for postoperative analgesia after spondylolisthesis correction surgery☆

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To the Editor;

Spondylolisthesis is a miserable disease accompanied with severe pain. The surgical procedure is vertebral fusion with open technique. Although the postoperative period is excruciating for the patient, the surgeons are asking for early mobilization. Providing effective analgesia is critical for early mobilization and adherence to rehabilitation exercises after surgery.

Since Forero first described it in 2016 for the treatment of thoracic neuropathic pain, the erector spinae plane block (ESPB) was reported to be an effective postoperative analgesia technique after various surgical settings [1–4]. The ESPB is relatively new defined plane block where the local anesthetic is infiltrated between the erector spinae fascia and the underlying transverse process (Fig. 1A). We want to present our results with ultrasound-guided bilateral lumbar ESPB for providing effective postoperative analgesia in a patient scheduled for lumbar spinal fusion surgery (Fig. 1B, C).

The patient was a 55 years old female (height 153 cm, weight 83 kg) with controlled hypertension. After induction of general anesthesia and securing the airway, the patient was turned to prone. The transverse process of L1 vertebra was navigated in the paramedian sagittal plane with the 2–5 MHz convex probe (Esaote MyLab30, Florence, Italy) 3–4 cm lateral to median plane just before the start of the surgery under sterile conditions. Following the contact of the needle (BBraun, Sonoplex, Melsungen, Germany) with the transverse process using the in-plane technique in cranio-caudal direction, hydro-dissection was achieved with 2 ml saline. The ESP was performed on both sides with 10 ml bupivacaine 0.25% and 10 ml prilocaine 1%.

The surgery and recovery from anesthesia were uneventful. The pain was evaluated with NRS (1 = no pain, 10 = worst pain imaginable) with two hours period until the postoperative first day. Paracetamol 1 g was prescribed as rescue analgesic on demand. The NRS scores were < 2 until she was discharged. When she was mobilized at the sixth postoperative hour, the blocked dermatome level was between T6-S1 with pinprick test, and she did not complain of any pain. The patient did not ask for additional analgesic medication and was discharged on the postoperative second day.

In the recent reports, ESP was reported to provide adequate postoperative analgesia after various surgical settings [2–4]. Besides its affectivity in postoperative analgesia, the ESP block is also reported to have an opioid-sparing effect [5].

In the present report, we did not use any opioids either during the induction of anesthesia or the perioperative period. The NRS scores recorded at every two hours postoperatively for the first 24 h were < 2, and the patient did not ask for rescue analgesic in the postoperative period and during mobilization. The distribution of blocked segments with pinprick at postoperative 6th hour covered T6-S1 dermatomes. Moreover, we achieved a clear surgical field with mild hypotensive anesthesia provided by ESPB. Besides blocking the ventral and dorsal rami of spinal nerves, the rami communicantes is also blocked with the ESP block [2] providing an effective sympathetic block resulting in venous dilatation and a clear surgical field.

We suggest that ESPB performed bilaterally at L1 vertebra level provides effective analgesia after lumbar spinal fusion surgery. The ESPB performed before the start of surgery plays a critical role in patients' early recovery, early mobilization, and adherence to rehabilitation programs. Moreover, ESPB provides a clear surgical field with the sympathetic block and long-lasting postoperative analgesia with its opioid-sparing effect.

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Conflicts of interest

None.

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Fig. 1. ESPB for postoperative analgesia after spinal fusion.
A: Erector spinae plane block, B: Spondylolisthesis at lumbar level in magnetic resonance image, C: X-ray control demonstrating spinal fusion after surgery.

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