

Ultrasound-guided continuous erector spinae plane block in radical nephrectomy

Radikal nefrektomide ultrason eşliğinde sürekli erektör spina plan bloku

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According to the Enhanced Recovery After Surgery protocol, the aim is to accelerate postoperative recovery and reduce postoperative complications in major abdominal surgeries using multimodal analgesia techniques. Among these techniques, thoracic epidural analgesia (TEA), spinal analgesia, and abdominal wall blocks (transversus abdominis plane [TAP] block, subcostal TAP block, and rectus sheath block) are recommended multimodal analgesia techniques. However, there are concerns regarding the short duration of effects of abdominal wall blocks. To prolong their effects, infusion catheters or liposomal bupivacaine are recommended.^[1,2] Although erector spinae plane blocks (ESPB) were initially described for neuropathic pain, they are also used in the treatment of acute and chronic pain. The ability to sonographically visualize the transverse process and its key role in needle advancement makes the block simple and safe, leading to its widespread use today. It has been demonstrated that a single dose of ESPB contributes to postoperative analgesia in kidney surgeries.^[3,4] Since the application of ESP catheters is not documented in the literature for open nephrectomies, we aimed to share our experience.

Our patient was a 62-year-old male with an American Society of Anesthesiologists (ASA) Physical Status Classification of III. and underwent open radical nephrectomy via a subcostal incision due

to renal cell cancer. The patient had hypertension and widespread vertebral bone metastases due to prostate cancer. Despite being a gold standard technique, TEA was avoided. The patient was planned to have an ESPB catheter for postoperative analgesia and was placed in the prone position after routine monitoring. Midazolam 2 mg and fentanyl 50 mcg were administered intravenously for sedation. The lower end of the scapula at the T7 vertebra was identified and marked. The skin was cleaned with povidone-iodine 10% antiseptic solution. The Philips Affiniti 50 ultrasound C6-2 convex probe (Philips Medical Systems, Seattle, WA, United States) was used. After the transverse process was identified, an 18-gauge Touhy needle (Combifix Standard, Combined Spinal-Epidural Anesthesia Set, 18 G, Egemen International; TMT Tibbi Medikal Malz. San. ve Tic. A. Ş. İzmir, Türkiye) was advanced from the cephalic to the caudal direction using the in-plane technique. The location was confirmed using 1-2 mL of saline after the needle contacted the posterior surface of the transverse process. After hydrodissection, a unilateral ESP block was performed with 20 mL of 0.25% bupivacaine at the ESPB thoracic 8 level, and the catheter was placed 3 cm inside by the experienced authors [O.K.] (Figure 1). General anesthesia was administered using propofol 2-3 mg/kg, rocuronium 0.6 mg/kg, and fentanyl 1 mcg/kg. Anesthesia maintenance included sevoflurane at 2-3% and remifentanyl infusion at

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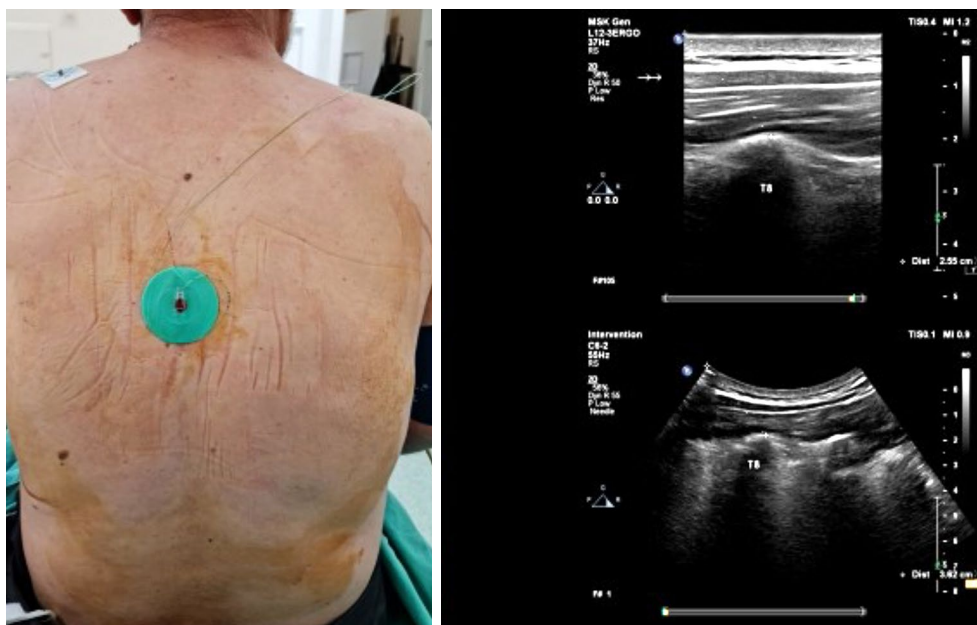


Figure 1. Continuous erector spinae plane block.

0.05-0.2 mcg/kg. The Bispectral index score was maintained between 40 and 50. The duration of surgery was 220 min, and intraoperative remifentanyl consumption was 540 mcg. At the end of the surgery, the patient was extubated and administered 1 g of paracetamol and 1 mg/kg of tramadol. A continuous infusion of 10 mL/h of 0.25% bupivacaine was maintained through the catheter intraoperatively and postoperatively for 24 h. Paracetamol 1 g was administered intravenously every 8 h. The Visual Analog Scale (VAS) score did not reach ≥ 4 during the postoperative 48-h period. Morphine consumption was 19 mg at 24 h and 37 mg at 48 h. The patient did not require rescue analgesia. The ESPB catheter was removed by the experienced authors [Ç.U.] at 24 hours postoperatively. The patient was discharged on the fifth day. A written informed consent was obtained from the patient for publication of this report.

Although TEA is considered the gold standard in major abdominal surgeries, its use is limited due to undesirable effects and contraindications. Compared to our previous randomized controlled trial, 24-h opioid consumption was similar, but VAS scores were lower.^[3] Van den Broek et al.^[5] reported that the ESP block is noninferior to TEA in video-assisted thoracoscopic surgery. The block is reported to spread local anesthetic into the epidural or paravertebral space, leading to the blockade of the dorsal and ventral branches of thoracic and abdominal nerves as well as sympathetic ganglia,

preventing somatic and visceral pain.^[3] However, due to the unilateral placement of the catheter, no perioperative complications were encountered.

In conclusion, fascial plane blocks may reduce complications compared to traditional techniques and provide effective and safe analgesia. Randomized controlled trials are needed to evaluate their role as a component of postoperative multimodal analgesia, especially in major abdominal surgeries.

Author Contributions

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The data that support the findings of this study are available from the corresponding author upon reasonable request.

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