

Intermittent erector spinae plane block as a part of multimodal analgesia after open nephrectomy

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To the Editor: Erector spinae plane block (ESPB) has been reported to provide effective analgesia for various indications, including thoracic and breast surgery.^[1] To the best of our knowledge, there is no case in which the ESPB provide postoperative analgesia in open nephrectomy except for one pediatric patient.^[2] We report a case in which intermittent ESPB provides effective pain control as a part of multimodal analgesia after open nephrectomy.

A 69-year-old female patient (155 cm, 54 kg) underwent a left open nephrectomy for renal cell carcinoma. A nephrectomy was performed using a 15-cm flank incision under general anesthesia. After the surgery, ESPB was performed at the level of T7. We injected 0.375% ropivacaine 20 mL, with epinephrine 1:200,000 for prevention of systemic toxicity according to the protocol of Daejeon St. Mary's Hospital, and then inserted the catheter.^[3] Postoperative pain was controlled by 80 mg oral zaltoprofen twice daily, intermittent ESPB catheter injection of 0.375% ropivacaine 20 mL with epinephrine (1:200,000) every 8 h for 2 days, and intravenous patient-controlled analgesia (fentanyl 8 µg/mL, basal rate 1 mL/h, bolus 2 mL). In the recovery room, her resting/dynamic (coughing, deep breathing) visual analogue scale score was 2/3. On the pinprick test, she had complete sensory loss in the T2–T8 dermatome area, and decreased sensation in T9–T10 dermatome compared to the contralateral side. Resting and dynamic (ambulation) visual analogue scale scores were maintained at 1 to 2 without any additional analgesics for postoperative period, and the patient was not inconvenienced during ambulation. She was very satisfied with the postoperative pain control and was discharged without any complications.

The mechanism of effective analgesia provided by ESPB in the present case are multiple dorsal and ventral ramus blockade with or without blockade of sympathetic fibers due to spreading into the thoracic paravertebral space.

First, the dermatome of sensory blockade using pinprick was T2–T10 in the patient; it showed that multimodal analgesia can provide sufficient analgesic effects including the complete blockade of the incision site's somatic pain component due to dorsal and ventral ramus blockade, even if sympathetic fiber was not blocked.^[4] Second, ESPB led to differential blockade mediated by unmyelinated C fibers and not by the larger A-delta and A-gamma fibers. Although only the T2–T10 dermatome was checked by the conventional pinprick test in this patient, it is possible that the wider range was blocked. According to Adhikary et al,^[5] differential loss to pinprick cannot be elicited despite clinically evident analgesia due to differential blockade of the small C fibers which transmit the nociception but the large A delta fibers which mediate cold and sharp pain.^[1,5,6]

It is not yet known which mechanism is correct, and there is also a possibility that the effects overlap, providing effective analgesia as a result. However, most importantly, our case demonstrated that the use of ESPB as part of a multimodal analgesia after nephrectomy effectively controlled postoperative pain. Further studies are needed.

Declaration of patient consent

The authors certify that they have obtained all appropriate patient consent forms. In the form, the patient has given her consent for her images and other clinical information to be reported in the journal. The patient understands that her name and initials will not be published and due efforts will be made to conceal her identity, but anonymity cannot be guaranteed.

Conflicts of interest

None.

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