Erector spinae plane block as an alternative to epidural in kidney surgery : a case report

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The spine erector block (ESP) was first described in 2016 by Forero et al. (1). It involves the injection of local anesthetic into the interfascial plane, deep to erector spinae muscle (ESM), allowing the blockade of the dorsal and ventral rami of the thoracic spinal nerves.

The ESP block was initially proposed for analgesia of costal fractures and pulmonary lobectomy (1). In August 2016, Hironobu Ueshima et al. described its use for thoracic vertebral surgery, by doing a bilateral ESP blocks into the interfascial plane between rhomboid major and ESM, at the level of T5, providing good perioperative analgesia for thoracic vertebral surgery (2).

We report the case of a left partial nephrectomy, for renal adenocarcinoma, under vascular clamping, performed in a 61 year old man (183cm, 88kg, BMI 26.3 kg/m²). Because of the intra-parenchymal nature of the lesion, a lombotomy at the level of the 11th intercostal space (ICS) was performed. The initial anesthesia plan combined general anesthesia with an epidural catheter placed before induction. After several unsuccessful attempts to place the epidural catheter (history of ankylosing spondylitis), we performed a left ESP block after induction of the general anesthesia.

The left ESP block was realized as follows. The patient was in right lateral decubitus (surgical position). A high frequency linear ultrasound transducer (PHILIPS HD11XE) was placed in parasagittal plane 2 cm lateral to the midline, to first identifying the sacrum, and then gradually moved to the 12th rib. At this point, localization of the transverse process of T12 was done, by a medial displacement of the probe. The ESM has been identified on its surface. The needle was advanced in plane, in a cephalad-to-caudad direction, and the Injection of 20cc of the solution (levobupivacaine 0.25% with epinephrine 1/200.000 and clonidine 75 microgram) into the interfascial plane, deep to ESM.

The general anesthesia was performed with lidocaine 2%, propofol 150 mg, sufentanyl 15 µg, magnesium 3g and rocuronium 50 mg. Anesthesia was maintained with desflurane. There was no complication during surgery. Two drains were placed. The pleura was intact at the end of the surgery, and the postoperative chest x-ray did not show a pneumothorax. The patient was extubated, and remained in the recovery room before going back to the urology departement. Postoperative analgesia included: administration of paracetamol 1g each 8 hours, and PCA piritramide IV pump. Given the context of renal surgery, NSAIDs have not been used.

The postoperative period was marked by a low opioid consumption, indicating the effectiveness of the block : no consumption on recovery room, only 11 mg on the first day, and 9 mg on the second day.

Piritramide is an opioid commonly used in Belgium, with an analgesic ratio 0.7 versus morphine.

The PCA was removed at the beginning of the third day and analgesia was performed only with paracetamol and tradonal (for pain scale under 3/10).

The patient remained hospitalized for 6 days in urology, and his postoperative period was uneventful. The drains were removed on the sixth day and he was able to return home.

Althought epidural remains the first choice for the analgesia of patients undergoing lombotomy, this reported case shows the potential interest that the ESP block might have in perioperative analgesia when an epidural is difficult or impossible. ESP block is easy to learn and safe. It would be interesting to think about the insertion of a catheter which could extend the duration of the analgesia.

It could also help patient with early recovery. However, it is important to study its interests on a larger population.

Day 0	Day 1	Day 2	Days 3-5	Day 6
ESP block*				
Paracetamol 1g/8h				
No opioid consumption	11mg Piritramine	9mg Piritramine	Switch Tradonal 50mg/8h	

Figure 1 : Analgesic consumption during hospitalization

Legend : *Levobupivacaine 0,25% + épinephrine 1/200.000 + clonidine 75µg (20cc)

(1) Forero M, Adhikary SD, Lopez H, Tsui C, Chin KJ. The erector spinae plane block : a novel analgesic technique in thoracic neuropathic pain. *Reg Anesth Pain Med* 2016; 41:621-7.

(2) Hironobu Ueshima, Hiroshi Otake. Clinical experiences of ultrasound-guided erector spinae plane block for thoracic vertebra surgery. *Journal of Clinical Anesthesia* 38 2017; 137.