

This provisional PDF corresponds to the article as it appeared upon acceptance.

A copyedited and fully formatted version will be made available soon.

The final version may contain major or minor changes.

Dexamethasone as a local anaesthetic adjuvant in bilateral ultrasound guided erector spinae plane block can provide a long lasting analgesia in laparotomic abdominal surgery.

PIERFRANCESCO FUSCO, donatella VOLPE, Valeria DE PAOLIS, francesca DE SANCTIS, PAOLO SCIMIA, Franco MARINANGELI, EMILIANO PETRUCCI

Minerva Anestesiologica 2019 May 14

DOI: 10.23736/S0375-9393.19.13798-4

Article type: Letter to the Editor (Correspondence)

© 2019 EDIZIONI MINERVA MEDICA

Article first published online: May 14, 2019

Manuscript accepted: May 10, 2019

Manuscript received: April 11, 2019

Subscription: Information about subscribing to Minerva Medica journals is online at:

<http://www.minervamedica.it/en/how-to-order-journals.php>

Reprints and permissions: For information about reprints and permissions send an email to:

journals.dept@minervamedica.it - journals2.dept@minervamedica.it - journals6.dept@minervamedica.it

Dexamethasone as a local anaesthetic adjuvant in bilateral ultrasound guided erector spinae plane block can provide a long lasting analgesia in laparotomic abdominal surgery.

Pierfrancesco FUSCO¹, Donatella VOLPE^{2*}, Valeria DE PAOLIS², Francesca DE SANCTIS², Paolo SCIMIA³, Franco MARINANGELI², Emiliano PETRUCCI¹,

¹Department of Anesthesia and Intensive Care, San Salvatore Academic Hospital, L'Aquila, Italy;

²Department of Life, Health and Environmental Sciences, University of L'Aquila, L'Aquila, Italy;

³Department of Anesthesia, Analgesia and Perioperative Medicine, Hospital of Cremona, Cremona, Italy.

***Corresponding author:** Donatella Volpe, Department of Life, Health and Environmental Sciences, University of L'Aquila, Via Vetoio, 67100, L'Aquila, Italy. Telephone number +393404666435 Fax: no one E-mail address: dvolpe.md@gmail.com

Dear editor,

ultrasound guided erector spinae plane block (US-ESPB), first described by Forero et al.¹, is a novel regional anaesthetic technique that is arising a growing interest in abdominal surgery.^{2,3}

We present two cases of bilateral single-injection US-ESPB with the addition of Dexamethasone as an adjuvant, performed in laparotomic abdominal surgery for acute bowel obstruction, in two patients with oral dual antiplatelet therapy, not stopped at the time of surgery. Written informed consent was obtained.

A 71-year-old hypertensive man and an 80-year-old man with chronic obstructive pulmonary disease, both hemodynamically stable, underwent bowel surgical resection for acute obstruction by cancer. A bilateral US-ESPB was performed with the patients in a prone position, before surgery. The T7 transverse processes (TP) were focused by using a high-frequency linear probe (12 MHz), under aseptic conditions. Via an in-plane approach, a 22-gauge 50-mm atraumatic Sprotte needle for peripheral nerve blocks (SonoPlex Stim cannula, PAJUNK® GmbH Medizintechnologie, Geisingen, Germany) was inserted in a caudal-to-cranial direction, through the erector spinae muscle (ESM), to gently contact the T7 transverse process. 3 mL of saline were injected to open the myofascial plane between ESM and the TP. Then, 20 mL of 0.5% Levobupivacaine and Dexamethasone 4 mg were injected on each side, identifying the analgesic solution craniocaudal spread deep to the ESM (Figure 1). Anaesthesia was induced with Propofol 2 mg kg⁻¹ and Fentanyl 1,5 µg kg⁻¹. Rocuronium 0,6 mg kg⁻¹ was given to facilitate intubation. Anaesthesia was maintained with sevoflurane 1.5-2% in oxygen, with positive pressure ventilation in a circle system. Basic anaesthetic monitoring was ensured during all perioperative period.

No supplemental opiates were administered and patients were hemodynamically stable during surgery.

At the end of the procedures, the patients were transferred in PACU. A good postoperative pain control at rest (NRS<2 on Numerical Rating Scale) and on movement (NRS<4) was noted in the first 24 hours after surgery.

Acetaminophen 1000 mg was systematically administered each 8 hours. No supplemental opioids or non-steroidal anti-inflammatory drugs were required, despite prescribed rescue analgesic medication with Ketorolac, if NRS<4 and Morphine, if NRS>4.

Bilateral lower thoracic US-ESPB with a combined solution of local anaesthetic (LA) and Dexamethasone could be successfully used to provide anesthesia and long lasting analgesia in abdominal surgery, when epidural and paravertebral thoracic block (PVB) are not recommended because of the anticoagulants therapy and the risk of iatrogenic complications.

Quadratus lumborum blocks (QLBs) can be considered an alternative to epidural and PVB, but it is unknown if it can provide visceral anesthesia and analgesia.⁴

The decision to perform ESP block instead of QLBS was due to the speculation that the LA could rapidly spread via the costotransverse foramen into the the paravertebral space, involving the dorsal and ventral rami, when the drugs are injected into the interfascial plane deep to ESM.^{1,2} The addition of Dexamethasone can prolong duration and improve quality of analgesia, and can be effective in reducing postoperative pain intensity and opioid consumption.⁵ Further studies are needed to validate our speculations.

References

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;41:621–27;
2. Chin KJ, Adhikary S, Sarwani N, Forero M. The analgesic efficacy of pre-operative bilateral erector spinae plane (ESP) blocks in patients having ventral hernia repair. *Anaesthesia.* 2017;72:452–60;
3. Chin KJ, Malhas L, Perlas A. The erector spinae plane block provides visceral abdominal analgesia in bariatric surgery: a report of 3 cases. *Reg Anesth Pain Med.* 2017;42:372–76;
4. Adhikary SD, El-Boghdadly K, Nasrallah Z, Sarwani N, Nixon AM, Chin KJ. A radiologic and anatomic assessment of injectate spread following transmuscular quadratus lumborum block in cadavers. *Anaesthesia.* 2017; 72: 73-9;
5. Choi S, Rodseth R, McCartney CJ. Effects of dexamethasone as a local anaesthetic adjuvant for brachial plexus block: a systematic review and meta-analysis of randomized trials. *Br J Anaesth* 2014; 112: 427-39. ^[1]_[SEP]

Conflicts of interest: The authors certify that there is no conflict of interest with any financial organization regarding the material discussed in the manuscript.

Figure 1. Execution of the block at the level of the 7th thoracic vertebrae transverse process, the blue arrows show the needle and the red arrows the spread of local anesthetic in the fascial plane. TP: transverse process; ESm: erector spinae muscle.

