
Erector spinae plane block combined with low-dose intrathecal morphine allows opioid sparing after open radical cystectomy

Sir,

We used a novel regional technique, erector spinae plane (ESP) block, along with low-dose intra-thecal morphine (ITM) to provide post-operative analgesia for a 72-year-old patient, American Society of Anesthesiologists (ASA)_physical status 3, undergoing open radical cystectomy (ORC) for an enhanced recovery program.

ESP block consists of injecting a local anaesthetic (LA) in the plane between the erector spinae muscle and the vertebral transverse process.^[1] Although ESP is considered to give a potential spread to paravertebral space, covering both somatic and visceral pain, other studies have raised significant concerns about this occurrence, showing an unpredictable spread of LA.^[2] Recently, several reports described ESP as an effective and promising analgesic technique for different surgeries, including abdominal surgery.^[1]

Open radical cystectomy (ORC) is the current treatment of choice for bladder cancer. This surgery has been related to significant visceral and somatic pain, as many sensory dermatomes are involved (T6 to S3), in addition to a high morbidity rate and prolonged recovery.^[3]

ITM administration has been successfully described for abdominal surgery, as the hydrophilic properties of morphine make it capable to flow in the cerebrospinal fluid, reaching a wide range of μ -opioid receptors along the spinal cord, including sacral dermatomes, which may not be covered by ESP block.^[4] Therefore, we decided to execute ITM to enhance the effect of ESP block on post-operative analgesia after ORC.

A bilateral ESP block was performed on the above-mentioned patient 45 min prior to the induction of general anaesthesia (GA). The patient's medical history included: type II diabetes, previous coronary artery bypass grafting and a recent pneumonia. Ultrasound-guided ESP block was performed bilaterally at the T8 level, injecting 20 mL of ropivacaine 0.375% for each side [Figure 1].

ITM was performed immediately after the confirmation of the block with 100 μ g of morphine in 3 mL normal saline at the level of L2–L3 intervertebral space. GA was induced with propofol 150 mg, rocuronium 50 mg and remifentanyl target-controlled infusion (TCI) with

a target of 2 ng/mL at effector site and maintained with sevoflurane 2%, remifentanyl TCI (2–3 ng/mL at effector site) and rocuronium as required. No other analgesic was added during the surgery.

For post-operative analgesia, acetaminophen 1g IV and ketorolac 30 mg IV round-the-clock were prescribed. For breakthrough pain, morphine 2 mg IV was prescribed but was never required to use. Post-operative pain was assessed on awakening from GA and every 8 h for the next 48 h in a numeric rating scale (NRS) from 0 to 10.

After 30 min from the block execution, a bilateral loss of sensitivity of the dermatomes T7 to L1 was confirmed by ice-test and maintained during the first 12 h post-operatively.

NRS at the awakening was 0. In the first 48 h after surgery, the NRS (recorded 3 times a day) was always 0 without the need to administer any rescue opioid.

No nausea, vomiting, respiratory depression or motor weakness was observed. The patient was mobilised on the second post-operative day and was discharged from the hospital on the 7th day after the surgery.

Multimodal peri-operative management for ORC in an enhanced recovery program includes thoracic epidural analgesia (TEA) as the recommended analgesic technique.^[5]

However, TEA is an invasive technique with possible complications and side effects, which may interfere with mobilisation and prolong the hospital stay.

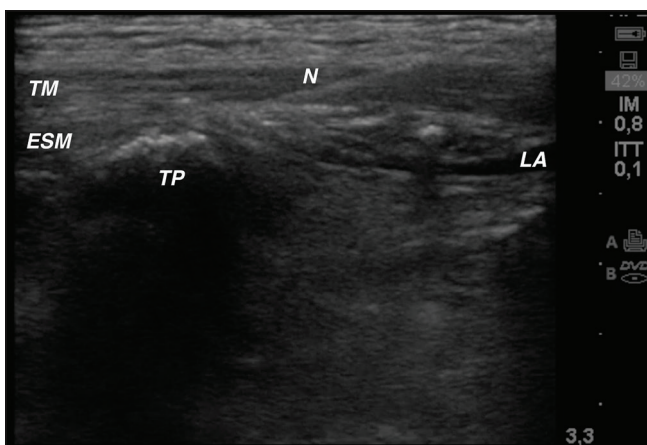


Figure 1: ESP block performed at T8 level. After visualizing hydrodissection of the interfascial plane between the ESM and the transverse process, a total of 150 mg of Ropivacaine 0.375% (20 mL for each side) was injected. TP: Transverse process; ESM: Erector spinae muscle; TM: Trapezius muscle; N: Needle; LA: Local anaesthetic

ESP block is a relatively new fascial plane block, but its spread and clinical application are quickly arising, as it is non-invasive and simple to perform.

This is the second report of the use of ESP block for major bladder surgery.^[6] However, major differences arise: in the previous experience, pre-operative spinal anaesthesia was performed with both LA and high doses of intrathecal opioids (diamorphine 900 µg). Moreover, despite the use of a continuous block, pain scores ranged from 1 to 4, and opioid rescue therapy was required during the post-operative period.^[6] In our report, ESP block combined with low-dose ITM gave opioid sparing during the whole post-operative period, ensuring an enhanced recovery after ORC.

In conclusion, single-shot ESP block in association with low-dose ITM may provide an alternative, valid and safe analgesic modality in patients undergoing ORC. However, larger studies or randomized control trials (RCTs) are required to validate this new technique as a viable and effective alternative to TEA for post-operative analgesia in enhanced recovery programs.

Declaration of patient consent

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

Financial support and sponsorship

Nil.

Conflict of interest

There are no conflicts of interest.

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Submitted: 19-Apr-2020

Revised: 22-Apr-2020

Accepted: 16-May-2020

Published: 01-Oct-2020

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Access this article online	
Quick response code	Website: www.ijaweb.org
	DOI: 10.4103/ija.IJA_411_20

How to cite this article: Schiavoni L, Sebastiani C, Pascarella G, Agrò FE. Erector spinae plane block combined with low-dose intrathecal morphine allows opioid sparing after open radical cystectomy. *Indian J Anaesth* 2020;64:917-9.

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