

A new indication of erector spinae plane block for perioperative analgesia is total hip replacement surgery - A case report

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ABSTRACT

A new indication of ultrasound – guided Erector spinae plane block for perioperative analgesia is orthopaedic surgery. We report here the use of this paraspinal block in the case of a 68-yr-old female with multiple systemic disorder for total hip replacement surgery.

Key words: Analgesia, nerve block, total hip replacement

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INTRODUCTION

A new indication for ultrasound guided – Erector spinae plane block seems to be orthopaedic surgery. This newly described block was first used by Forero *et al.* at the thoracic level for thoracic neuropathic pain.^[1] It has subsequently been used for breast surgery,^[2-4] thoracic surgery^[5] when given at thoracic level and for abdominal surgery,^[6,7] lumbar spine surgery,^[8] and back pain when given at lumbar level. A recent role of this block has been seen in hip surgery and proximal femur surgery^[9] when given at lower lumbar level. Only one case has been previously reported using erector spinae block for total hip replacement surgery.^[9] We report here the continuous use of this paraspinal block for total hip replacement (THR) surgery by putting a catheter in the erector spinae plane at lumbar L3-level in a 68-yr-old female with multiple systemic disorder.

CASE REPORT

A 68-yr-old female patient with body weight of 45 kg, having type-2 diabetes mellitus, hypertension, post-lumbar spine fixation (L2-L4) was posted for right-sided total hip replacement. She underwent coronary artery bypass grafting 4 years ago for

ischaemic heart disease. Blood investigation showed haemoglobin 9.2 gm/dl, normal blood count, renal function and serum electrolytes. Serum calcium was 8.3 mg/dl and serum albumin was 3.2 mg/dl. Glycosylated haemoglobin was 6.0, revealing adequate blood glucose control. Electrocardiogram showed evidence of old inferior wall myocardial infarction. Echocardiography showed normal left ventricular function with mild hypertrophy. She was on tablet aspirin 75 mg once daily (OD) orally for antithrombotic prophylaxis.

In view of her cardiac history, adequate perioperative analgesia was needed along with general anaesthesia. Thus, right sided continuous erector spinae block along was planned in combination with general anaesthesia.

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Preoperative antibiotic prophylaxis was administered with injection cefuroxime 1.5 g intravenous (IV). Under ultrasound guidance, a continuous erector spinae block was performed at L3 level. After explaining the procedure, consent was taken from the patient. She was placed in left lateral position for right sided block since we found it ergonomically easy to hold the ultrasound probe (high frequency linear probe) with left hand and place it transversely. An 18-gauge tuohy needle was approached in-plane lateral to medial. When the needle initially touched the transverse process of L3 vertebrae, the needle was gently withdrawn and hydrodissection of the plane was achieved, lifting the erector spinae muscle. A 20-gauge catheter was introduced through the needle and total length inserted was 3 cm more than the tip of needle. The catheter was secured properly for perioperative use. The patient was hydrated with 10 ml/kg of ringer lactate before induction of anaesthesia. Anaesthesia was induced with injection fentanyl 75 mcg iv and injection propofol 100 mg iv and laryngeal mask airway (LMA) size 3 was inserted. Anaesthesia was maintained with FiO₂ 0.5 (nitrous oxide and oxygen mixture) and sevoflurane. A bolus dose of 20 ml of 0.25% bupivacaine was given through the catheter placed in erector spinae plane. The procedure was uneventful with no haemodynamic disturbances and minimal blood loss. After surgery, inhalational anaesthetics were stopped, and LMA was removed. Patient had an uneventful recovery. Post-operatively, the patient was comfortable with infusion of 0.25% bupivacaine at 6 ml/h as continuous erector spinae block. She did not require any rescue analgesics. She was discharged on the fifth post-operative day after removing the catheter.

DISCUSSION

In this case report we have used continuous erector spinae plane block for perioperative analgesia in THR surgery for post CABG patient. This patient also had lumbar spine fixation surgery done few years back thus placement of epidural catheter was not advisable. Since she was post CABG, haemodynamic instability accompanying epidural would have been deleterious.

Erector spinae block is a paraspinal, fascial plane block targeting the ventral, dorsal rami and rami communicantes of spinal nerves.^[1] Cadaveric study on this block showed that when injection of 20 ml of contrast material was given in cadavers at T7, extensive craniocaudal spread of dye between the levels of the C5-T2 and L2-L3 transverse

processes was seen.^[10] We performed the block at L3 level further extending the coverage to lower lumbar spinal nerves. This block can be given unilaterally and does not have deleterious side effects of epidural block. In old age, spinal deformity, and post spine surgery patients, epidural block may be difficult to give. Additionally, we may get a number of patients with contraindication for epidural block. In all these patients, this block can be good alternative providing adequate analgesia, as was observed in our patient.

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.

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Conflicts of interest

There are no conflicts of interest.

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;41:621-7.
2. Forero M, Rajarathinam M, Adhikary S, Chin KJ. Continuous erector spinae plane block for rescue analgesia in thoracotomy after epidural failure: A case report. *A Case Rep* 2017;8:254-6.
3. Finneran JJ, Gabriel RA, Khatibi B. Erector spinae plane block provide analgesia for breast and axillary surgery: A series of 3 cases. *Reg Anaesth Pain Med* 2018;43:101-2.
4. Bonivini D, Tagliapietra L, Giacomazzi A, Pizzirani E. Bilateral ultrasound – Guided erector spinae plane blocks in breast cancer and reconstruction surgery. *J Clin Anaesth* 2018;44:3-4.
5. Singh S, Chowdhary NK. Erector spinae plane block an effective block for post-operative analgesia in modified radical mastectomy. *Indian J Anaesth* 2018;62:142-50.
6. 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.
7. 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;42:372-6.
8. Melvin JP, Schrot RJ, Chu GM, Chin KJ. Low thoracic erector spinae plane block for perioperative analgesia in lumbosacral spine surgery: A case series. *Can J Anaesth* 2018;65:1057-65.
9. Tulgar S, Selvi O, Senturk O, Ermiş MN, Cubuk R, Ozer Z, *et al.* Clinical experiences of ultrasound-guided lumbar erector spinae plane block for hip joint and proximal femur surgeries. *J Clin Anesth* 2018;47:5.
10. Ivanusic J, Konishi Y, Barrington MJ. A cadaveric study investigating the mechanism of action of erector spinae blockade. *Reg Anesth Pain Med* 2018;43:567-71.