Landmark guided continuous erector spinae plane block: An adjunct for perioperative analgesia in a patient with difficult back operated for total hip arthroplasty

To the Editor,

Ultrasound-guided single-shot as well as continuous erector spinae plane blocks (ESPB) have been used to provide perioperative analgesia for total hip replacement (THR).\(^1\)\(^,\)\(^2\) ESPB can also be performed with anatomical landmark-guided technique in case of unavailability of ultrasound machine in the operation theatre.\(^3\) We report a case of successful landmark-guided continuous ESPB at the level of the L3 transverse process in a patient with ankylosing spondylitis for THR.

A 30-year-old male patient with sickle-cell trait was operated for left sided THR. He was admitted with history of pain, restriction of movements in both hip joints (left > right), and he was unable to sit for the last two years. He was diagnosed with ankylosing spondylitis with grade 4 sacroiliitis. His blood investigations were unremarkable. Airway examination was normal with adequate flexion and extension of cervical joints. The examination of the back revealed thoracic kyphosis and flattening of lumbar spine. The anaesthesia plan was to attempt a Subarachnoid block and/or epidural block first, and in case of difficulty or failure, the alternative plan was a continuous ESPB and general anesthesia with endotracheal intubation. A written informed consent was obtained for both regional and general anesthesia from the patient after explaining the procedures in detail.

The positioning of the patient for the lumbar puncture was extremely difficult as there was no flexion at spine or hip joints. The patient could not sit and could only lie straight in left lateral position without flexing the hip at all. Subarachnoid block was attempted multiple times at different spinal levels by different approaches by two experienced anesthesiologists, but they failed. It was decided to administer general anesthesia with placement of ESP catheter for perioperative and postoperative pain management. For ESP catheter placement, an 18-gauge Tuohy needle was inserted perpendicular to skin at the level of the L3 spinous process, 3 cm lateral to the midline [Figure 1a]. The tip of the needle contacted the transverse process of L3 vertebra at a depth of 3.5 cm. Then the needle was gently withdrawn by 1–2 mm and 10 ml of local anesthetic (LA, 0.25% ropivacaine) was injected to open up the plane by lifting the erector spinae muscle. A 20-gauge catheter was introduced through the needle and 3 cm length of the catheter was inserted into
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the space [Figure 1b]. The catheter was placed properly and sterile dressing was applied. A bolus dose of 20 ml of 0.25% ropivacaine was given through the catheter placed in erector spinae plane. General anesthesia was administered and his trachea was intubated with cuffed endotracheal tube. Intraoperatively, inj. paracetamol 1 gm IV, inj. diclofenac 75 mg IV, inj. dexamethasone 8 mg IV were given. The perioperative period and extubation were uneventful. Postoperatively, the patient was pain free and comfortable with infusion of 0.25% ropivacaine at 8 ml/h as continuous ESPB. Inj. paracetamol 1 g 8th hourly, inj. diclofenac 75 mg 12th hourly were given as a part of multimodal analgesia protocol. His average postoperative pain score was <3 for static and <4 for dynamic pain in numeric rating scale (NRS). He did not require any rescue analgesics and the catheter was removed on third postoperative day. He had an uneventful recovery and was discharged on the fifth postoperative day.

Neuraxial anesthesia is difficult in patients with severe form of sacroiliitis and syndesmophytes (longitudinal ligament ossifications) specifically for cases with flattening of lumbar spine and loss of flexibility in vertebral joints.[4] Spinal anesthesia via paramedian or Taylor’s approach may be preferable to other techniques. In view of providing continuous postoperative analgesia we decided to use continuous ESPB with catheter. Ipsilateral landmark-guided ESPB at the level of the L3 transverse process was performed in our patient to cover lower lumbar spinal nerves. Because of unilateral block, the deleterious side effects of epidural block could be avoided. Such Patients where there is difficulty in neuraxial anaesthesia, continuous ESPB along with multimodal analgesia can be an alternative option for perioperative pain management.

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.

Samarjit Dey, Tuhin Mistry, Jeevan Mittapalli, Praveen Kumar Neema

Department of Anaesthesiology, Critical Care and Pain & Palliative Care, All India Institute of Medical Sciences, Raipur, Chhattisgarh, India

Address for correspondence:
Dr. Tuhin Mistry, Department of Anaesthesiology, All India Institute of Medical Sciences, Raipur, Chhattisgarh, India. G-304, Jainam Planet, Tatibandh, Raipur, Chhattisgarh, India.
E-mail: dr.tuhin2014@gmail.com

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