

## Continuous ultrasound-guided-erector spinae plane block for post-operative pain management in lumbar spine surgery: A case series

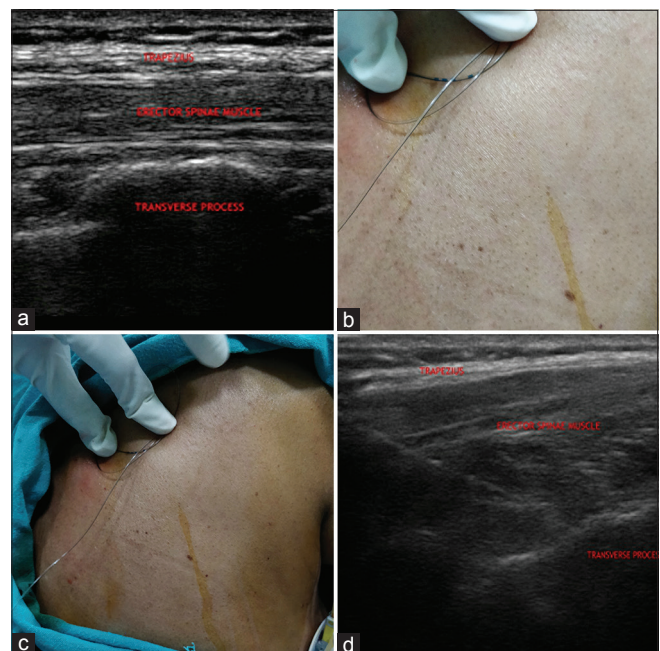
Sir,

The erector spinae plane (ESP) block is a newly described regional anaesthetic technique involving local anaesthetic injection in a paraspinal plane deep to the erector spinae muscle. It was first described for thoracic neuropathic pain when performed at the T5 transverse process.<sup>[1]</sup> Later when performed at further lower thoracic level, it was useful for abdominal surgeries.<sup>[2]</sup> In this block, dorsal and ventral rami of both thoracic and abdominal nerves are blocked.<sup>[1,2]</sup> We hypothesised that it can be useful for even lumbar spine surgery if performed bilaterally further lower at the T10 transverse process. This is possible because erector spinae muscle extends to the lumbar spine. We can extend the duration of analgesia if a catheter is inserted in this space.

Lumbar spine surgery requires extensive dissection of subcutaneous tissues, bones, and ligaments and thus results in considerable degree of postoperative pain. This pain generally lasts for 4–5 days.<sup>[3]</sup> The epidural technique involves the midline plane which is at the surgical site, and is not preferred by many surgeons.<sup>[4]</sup> In this correspondence, we report three male patients of the American Society of Anesthesiologists physical status 1 and 2, between age group of 45 and 60 years and with body weight 65–70 kg in whom a catheter was inserted

bilaterally in a plane deep to the erector spinae muscle and used for perioperative pain management during lumbar spine surgery (laminectomy/discoidectomy).

Before induction of anaesthesia, patients were placed in the left lateral position. A high-frequency linear probe was placed in longitudinal position 2–3 cm lateral to tenth thoracic vertebrae. Then, the trapezius and erector spinae muscles were identified from the surface. [Figure 1a] After identifying the structures, we gave 3 ml 2% lignocaine on the entry point on the skin for local analgesia. We used a 18G Touhy needle along the plane of the transducer and the T 10 transverse process



**Figure 1:** (a) Identification of three muscles from above trapezius, rhomboideus major and erector spinae. (b) and (c) distal tip of catheter fixed on skin surface. (d) needle tip below erector spinae muscle for drug injection for erector spinae block

**Table 1: Numerical pain score rating at different time intervals post-operatively in the patients**

Patients number	0 h	4 h	8 h	12 h	24 h	48 h	72 h	Type of surgery
1	3	2	2	2	2	2	2	Laminectomy L3-L4
2	3	2	2	2	2	2	2	Discoidectomy L4-L5
3	2	2	2	2	2	2	2	Laminectomy L4-L5

was hit. [Figure 1d] The needle was slightly withdrawn, and a 20G catheter was threaded through the needle under direct vision 2–3 cm beyond the needle tip in the ESP space. [Figure 1b and c] This was repeated on the other side also. Once we secured the catheters bilaterally, we injected 20 ml 0.25% bupivacaine through both the catheters [Figure 1]. Twenty minutes later, a sensory blockade to cold was evident between T7-T8 and L2-L3 vertebral level in anterior, lateral, and posterior part on both sides. This was not accompanied by any haemodynamic changes. General anaesthesia was given and through each catheter, 6 ml/h 0.25% bupivacaine infusion were started. In the intraoperative period, patients remained haemodynamically stable in spite of not using any additional analgesia apart from intravenous fentanyl 2 mcg/kg BW. Postoperatively, bupivacaine infusion was continued in post-operative anaesthesia care unit. Every 4 h, patient was assessed for pain on 11 point rating by numerical rating scale (NRS), patients were asked to circle the number between 0 and 10 (0 no pain, 10 worst pain) [Table 1]. No added analgesia was given if NRS remained below 3, but if the patient had higher NRS score rescue analgesia was given with intravenous 0.05 mg/kg morphine. ESP catheter was removed on the third postoperative day. There was no additional analgesia required in our three patients. The catheter was paraspinal, away from the midline thus not intruding into the surgical field. Thus, bilateral ESP blocks are a safe and effective technique for postoperative pain management after spine surgery. Prolonged analgesia can be maintained by inserting a catheter in the interfascial plane.

#### 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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Nil.

#### Conflicts of interest

There are no conflicts of interest.

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