

Multi-level bilateral ultrasound-guided retrolaminar block for fast-track spinal deformity surgery

To the Editor,

Kyphoscoliosis correction surgeries is generally associated with severe postoperative pain, significant blood loss and hemodynamic instability, functional limitation, and potential postoperative complications resulting in prolonged hospital stay.^[1] In the view of above-mentioned concerns, a new concept of FAST-TRACK surgeries are being incorporated as a part of routine practice. Multimodal analgesia includes significant opioid use but is associated with adverse effects.^[2,3] Regional anesthesia technique like the retrolaminar block has

proven to be efficacious in reducing opioid consumption.^[4] Spinal deformity may cause inadequate spread of the local anesthetic. To overcome, we have given multi-level bilateral retrolaminar block in two cases of spine deformity correction. Written and informed consent for publication was taken in both cases.

Case 1: A 52-year female diagnosed with post-tubercular thoracolumbar kyphosis (at T12 and L1) underwent deformity correction with posterior decompression

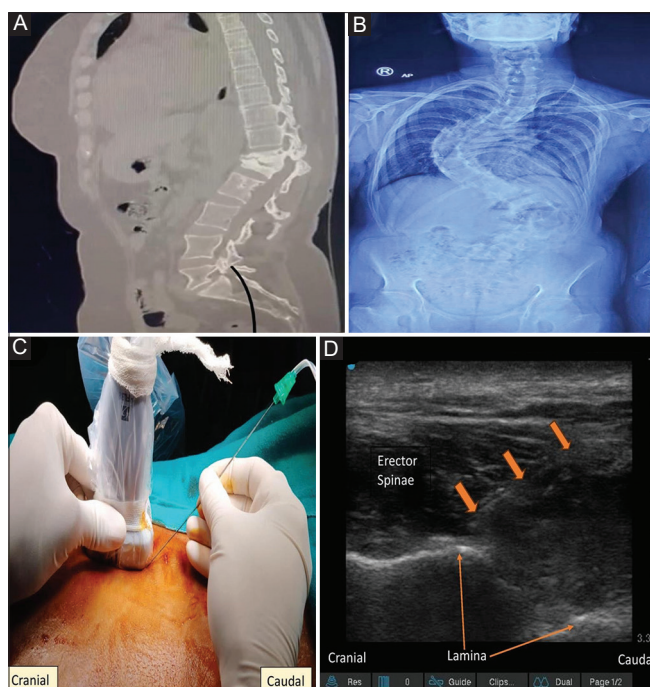


Figure 1: (A) Computed tomography of spine with kyphosis deformity at T12 and L1, (B) X-ray spine showing scoliosis deformity from T1 to L5, (C) needle and ultrasound probe position, (D) sonoanatomy of retrolaminar block

and fusion [Figure 1; panel A]. Patient anesthesia was induced in standard manner and was placed in prone position. Bilateral ultrasound (US)-guided retrolaminar block was performed at two levels, one at T12 and other at L3. An increase in the heart rate by 20% from the baseline was treated with 1 mcg/kg fentanyl. Total additional intraoperative fentanyl consumption was 100 mcg. Duration of surgery was 3.5 hours. Intravenous paracetamol 1 gm 8 hourly was given for postoperative analgesia. Postoperative pain score was assessed at various time points: immediate postoperative period and at 1 h, 3 h, 6 h, 12 h, and 24 h using a numerical rating scale (NRS). The patient reported an NRS of 3/10, 2/10, 3/10, 3/10, 3/10, and 2/10 at these respective time points.

Case 2: A 12-year-old male, diagnosed with adolescent idiopathic scoliosis was planned for deformity correction from T1-L5 under intraoperative neurophysiological monitoring [Figure 1; panel B]. Bilateral US-guided retrolaminar block was performed at three levels (T3, T8, and L1). Total additional intraoperative fentanyl consumption was 60 mcg. The duration of surgery was five hours. Intravenous paracetamol 1 gm 8 hourly was given for postoperative analgesia. The patient reported an NRS of 3/10, 2/10, 2/10, 3/10, 3/10, and 2/10 at respective time points like in Case 1.

Block procedure: A linear US probe was placed longitudinally in midline to identify spinous process of vertebra. Following

this the probe was slid laterally to identify lamina and erector spinae muscle. The needle was inserted in-plane to the probe in caudo-cranial direction toward the lamina [Figure 1; Panel C and D]. When the needle tip comes in contact with the lamina, 10 ml of 0.2% ropivacaine was injected after negative aspiration for blood or air.

We found minimal perioperative opioid consumption with lesser pain scores for up to 24 hours in both the cases. Other study described the use of bilateral bi-level erector spinae block as a method of opioid-sparing regime in corrective surgery for scoliosis.^[2,5] No such studies have been conducted for the assessment of retrolaminar block. We did not assess the dermatomal coverage in these cases; this can be considered as a limitation.

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 that 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.

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