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Laminectomy under bilateral paravertebral block in a patient with multiple Co-Morbidities

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Abstract
We report a case of 81 yr old male patient, diagnosed with spinal canal stenosis with bilateral lower limb pain, posted for Laminectomy. Patient had multiple co-morbidities including Hypertension, Diabetes mellitus type 2, obesity, sarcoidosis and COPD. Laminectomy was performed under bilateral paravertebral block using 0.25% Bupivacaine. Regional anaesthesia techniques have played a pivotal role in decreasing morbidity and mortality in high risk cases by providing both intraoperative anaesthesia and postoperative analgesia, without any major side effects. In this case, paravertebral block was helpful, not only in conducting surgery successfully, but also helps in providing post-operative analgesia without using any sedative drugs or NSAIDS which may exacerbate symptoms related to any of above co-morbidities.

Keywords: regional anaesthesia, paravertebral block, laminectomy

Introduction
Regional anaesthesia has emerged as a very good alternative to general anaesthesia over the last decade. There are several benefits, including decreased incidence of postoperative nausea, vomiting and better postoperative pain relief which increases the potential for ambulatory discharge [1].

The paravertebral space is the site where spinal nerves emerges from intervertebral foramen. It contains dorsal and ventral rami and sympathetic chain, hence infiltration of this space results in unilateral sensory, motor and sympathetic blockage [2, 3].

Case Report
We report a case of a 81 years old male posted for D10/11, D11/12 and D12/L1 Laminectomy for spinal canal stenosis. Patient had multiple co-morbidities including hypertension, type 2 diabetis mellitus, sarcoidosis, COPD and obesity.

Anaesthetic management
A thorough preoperative evaluation of the patient was done. The patient was advised to stay fasting for 6 hours.A written informed consent was taken after informing the relatives and patient about the procedure and its complications. Ringers lactate was started through a 18G intravenous cannula at 100 ml/hr. Resuscitation drugs and equipments were kept ready. Baseline vitals like pulse rate, blood pressure, respiratory rate and peripheral oxygen saturation (SpO2) were recorded.

Patient was made to sit on the operating table with his feet resting on a stool. All aseptic precautions were taken. After painting and draping, D12/L1 spinal space identified counting downwards from an angle of scapula at level of T7. On the right side, a point 2.5 cm lateral to midline was chosen as the insertion point. 2% lignocaine was infiltrated in to the skin and subcutaneous tissue using 24G 1.5 inch needle. Paravertebral space located using loss of resistance technique described by Eason and Wyatt[4], with 18g Tuohy's needle. 5 ml saline injected into the paravertebral space after negative aspiration. Catheter was inserted through the needle. Catheter was tunneled below the skin up one Tuohy needle length away from the midline with local infiltration. Same procedure was repeated on the opposite side at same level.

20 ml of 0.25% Bupivacaine was given in each side and 8 ml of 0.25% bupivacaine was used for incision site infiltration. The effect of the block was checked by sensory loss over the operative field to pin prick before incision and response to cold. Hemodynamic stability was maintained throughout the surgery. Intraoperatively, patient had complain of pain in the left lower limb which was managed by sprinkling of local anaestheitic over the duramater.

Surgery was done in left lateral position using no sedation. Duration of surgery was one and half hours. Good post-operative analgesia was achieved by using local anaesthetic through the paravertebral catheters. The paravertebral catheters were removed on the 3rd post operative day.

Discussion
Conventionally, laminectomy is done under general anaesthesia. This secures the airway and gives excellent muscle relaxation. But in this patient, there was high predisposition to postoperative pulmonary complications owing to COPD, obesity and old age.

The paravertebral block involves selective nerve block of the nerve roots at a given level. At thoracic level it provides a band segmental blockade and doesn't cause significant sympathetic blockade. The quality of anesthesia and

analgesia is equivalent to epidural block with very less hemodynamic instability. Therefore the paravertebral block, especially thoracic is chosen over epidural block because it offers reliable anaesthesia, stable hemodynamics, rapid recovery without nausea, vomiting and preserves respiratory functions [5].

According to recent meta analysis, paravertebral block is highly safe and effective technique and provides good anesthesia and post operative analgesia. It is easy to perform and has got high success rate. The incidence of chronic postoperative pain after surgery is decreased [6, 7].

In this case patient complained of pain intraoperatively, when the surgeon touched the dura. This can be explained by the fact that paravertebral block works over nerve roots going out of intervertebral foramen, so the spinal cord is not blocked directly and when dura over spinal cord is touched, the fibers of lower extremity passing down cause pain. Xylocaine 0.5 % was sprinkled directly over dura and the pain subsided.

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Fig 1: Local anaesthetic infiltration for tunneling using Tuohys needle

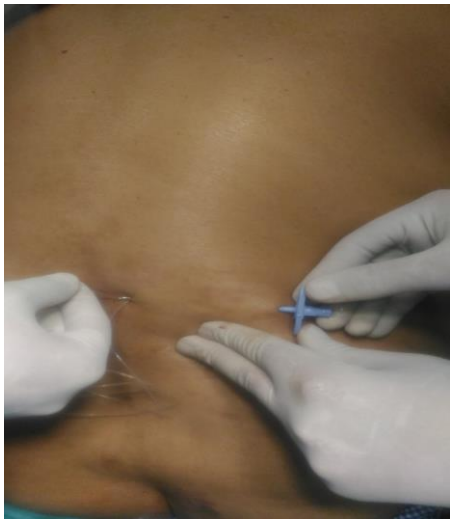

Fig 2: Catheter tunneling throught tuohys needle

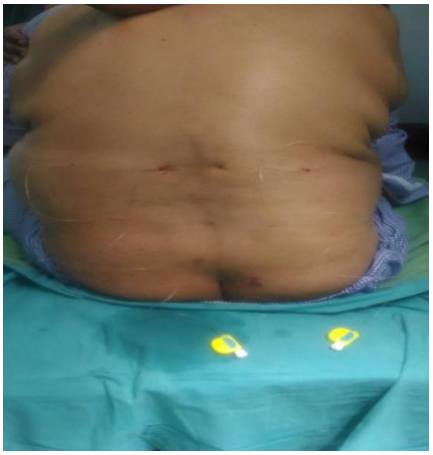

Fig 3: Bilateral catheter placement after tunneling(away from surgical field)

Conclusion

D 10/11, D 11/12 and D 12/L1 laminectomy done under bilateral paravertebral block gave excellent results. No additional sedation was required. Good quality post operative analgesia was achieved by local anaesthetic through paravertebral catheters.

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