

Taylor's Approach For Combined Spinal Epidural Anaesthesia In Post-Spine Surgery: A Case Report

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Abstract

A 86 year old male patient earlier operated for lumbar discectomy received a combined spinal epidural for fracture neck of femur surgery. As the anatomical land mark for central neuroaxial blockade were ill defined because of an old operated scar in the back extending from L1-L4 vertebral levels, combined spinal epidural was achieved with a single attempt through L5-S1 interspace using Taylor's approach. The anatomical considerations and difficulties in achieving reliable epidural anesthesia in post spinal surgery patients are reviewed. Combined spinal epidural anaesthesia performed at L5-S1 interspace may provide less technical difficulties and more reliable results in such patients.

INTRODUCTION

The instance of anesthetizing elderly post spinal surgery patients undergoing other surgeries is quite common in view of surgery being one of the most definitive treatment options for various causes of backache. Regional anaesthesia is difficult in these patients with an increased incidence of complications and failure to obtain satisfactory analgesia. General anesthesia can be difficult in view of the antecedent risk factors associated with elderly.

CASE REPORT

An 86-year old retired male laborer was referred by his orthopedician to anaesthesiology assessment clinic as a case of right fracture neck of femur due to fall 12 days back. The patient had undergone lumbar discectomy 24 years back with bone grafting. He had breathlessness on exertion, cough with excessive sputum production since 15 years and a chronic smoker since 40 years.

Examination revealed a 187 cm, 86 kg male patient with a normal airway. He did not recall the extent of his spinal surgery and old x-rays were not available.

However, he had a midline scar in the back extending from L1-L4 and another scar over the right iliac crest. Patient had bronchiectatic signs on auscultation in the chest with typical cavitory lesions in the chest x-ray and an echo report with LVEF 40% with left ventricular hypertrophy. Pulmonary function testing showed moderate to severe restrictive pattern, X-ray lumbar spine showing absence of L1-L4

spines with laminectomy. So in view of a high risk for general anaesthesia and the need for postoperative ventilatory support, regional anaesthesia was decided with its added advantages of decreased intraoperative blood loss, decreased incidence of deep vein thrombus and the need for postoperative analgesia. Patient consented for regional anaesthesia after understanding its advantages and potential difficulties. Patient was preloaded with 500ml of Hetastarch 450 (6%) solution over 20 minutes through a peripheral line with continuous CVP monitoring. With the patient in left lateral decubitus position, back was prepared aseptically, 2cc of 2% lignocaine infiltrated at the puncture site for Taylor's approach and waited for 30 seconds. Through Taylor's approach epidural space was identified successfully with a single attempt through the L5-S1 space using loss of resistance to saline with 18G Tuohy epidural needle at 4.5 cm mark. Spinal anaesthesia was given with 27G Whitacre spinal needle by injecting 3cc of 0.5% bupivacaine with 25 mcg fentanyl, 18G epidural catheters was threaded with ease and fixed at 10 cm mark at the skin. A sensory level of T10 was achieved and maintained for duration of two and half hours intraoperatively with epidural boluses. Patient had good postoperative analgesia with regular epidural top ups and responded well to physiotherapy. He did not complain of backache or headache and was discharged after 7 days.

DISCUSSION

During lumbar discectomy by open technique supraspinous ligament as well as ligamentum flavum are dissected to

expose the dura and epidural fat. This makes it difficult to identify the epidural space through midline approach without the risk of dural puncture. In preparation for the bone graft spinous processes are removed and the laminae are decorticated as far as facet joints bilaterally which are also destroyed. Hence not only are the anaesthesiologist's usual tactile land marks are obliterated but attempts to penetrate to the interlaminar space may become an almost random endeavor due to healed bone graft. Reviews have shown clearly that an abnormal vertebral anatomy results in complicated epidural insertions^{2, 3, 4}. But in the majority of cases the epidural was eventually cited successfully with the aid of previous radiological images or under USG guidance⁵. Even if epidural space is found in these patients there is some concern about the ability of the local anaesthetic to spread normally within it². The scarring from the overlying bone graft may disrupt the epidural space, the reports of dural puncture within relatively small samples by two authors^{3, 4} is further suggestive of distorted epidural anatomy. Considering the above problems with lumbar epidural anesthesia in these patients we feel the choice of combined spinal epidural at L5-S1 interspace offers distinct advantages. First, by utilizing the lowest available lumbar space the chance of avoiding the trauma to spinal cord and reaching the epidural space with the first attempt is maximized. Secondly, the clear end point of CSF eliminates the equivocal identification of a possibly distorted epidural space. Finally, the L5-S1 inter laminar space is the widest⁶ and least likely to be affected by degenerative changes that may arise secondarily to the fused joints above¹. In considering the hypothetical disadvantages of performing the dural puncture in a patient for whom subsequent epidural blood patch may prove difficult, it is interesting to note

Lund's observation of decreased incidence of post spinal cephalalgia due to putative "postural dural relaxation" when L5-S1 space is used⁷. Also, recent data suggest that our use of a pencil point Whitacre needle results in a decreased incidence of post dural puncture headache at least as low as occurring with epidural anaesthesia⁸.

CONCLUSION

We conclude that combined spinal epidural via L5-S1 interspace through Taylor's approach provided a reliable and less traumatic alternative than a midline lumbar epidural in a post spinal surgery patient.

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