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USG guided spinal anaesthesia in kyphoscoliotic patient – A case report

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Introduction

Kyphoscoliosis is a spinal deformity charecterised by anterior flexion(kyphosis) and lateral curvature(scoliosis)of the vertebral column. It has prevalence of 0.3-15% in general population with female predominance of 3:1. Patient with spine abnormalities presents unique challenge to anaesthesia. We report a successful case of spinal anaesthesia under USG guidance in a severe kyphoscoliosis patient.

CASE REPORT: A 79yr old male of height 158cm, weight 70kg diagnosed with left Intertrochanteric fracture posted for open reduction and internal fixation (ORIF). On pre-op evaluation, patient was kyphoscoliotic since birth. No other positive history present. Airway assessment showed Mallampati grade 2, adequate mouth opening and normal range of neck movements. vitals were stable. Auscultation revealed normal heart and breath sounds. Spine examination revealed lateral curvature along with thoracolumbar kyphosis. His blood investigations were within normal limits. Pulmonary function test (PFT)showed restrictive pattern. The surgery was planned under Spinal anaesthesia. Patient was kept nil per oral for 2hrs for water and 6hrs for solid food. Inside the operating room, monitors attached and vitals were recorded. Patient was placed in sitting position. Transverse process of lumbar vertebra and dura were tried to detect using a convex vertical probe. For spinal access, L4-L5 intervertebral space through which dura was observed was selected. Lumbar puncture was performed using 25G quinke's spinal needle. Clear CSF flow seen 2ml of 0.5% hyperbaric bupivacaine with 25µg fentanyl administered. Sensory block confirmed to pin prick till T10 dermatome. Patient was comfortable during the procedure and haemodynamically stable. Post op patient was monitored for 24hrs.

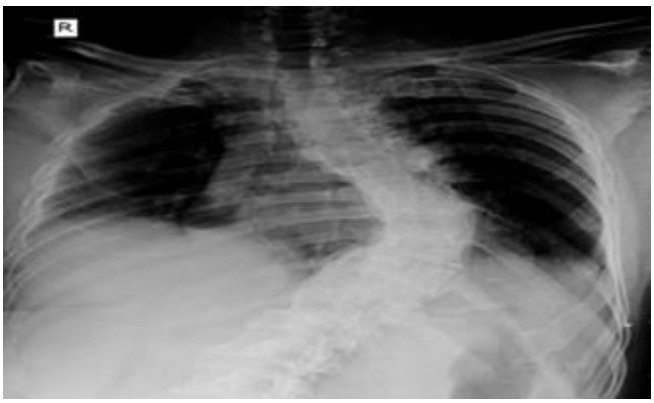

Fig. 1: Chest X-Ray

Fig. 2: Patient with severe congenital kyphoscoliosis

Fig 3: Subaracnoid space entered using ultrasound

Discussion

In Scoliotic patient, vertebral bodies are rotated axially, with their spinous processes facing into the concavity of the curve. The degree of spinal rotation is difficult to estimate clinically and by Xray. Ultrasound can help to estimate the depth and location of the epidural space. One study has previously measured vertebral rotation in scoliotic patient using ultrasound imaging and reported values that correlated well with radiologically derived calculations. In our case, patient had restrictive pattern on PFT. This in view of requirement of post op ventilatory support under general anaesthesia and being lower limb surgery we opted for regional anaesthesia as first choice.

Conclusion

Neuraxial technique can be successfully used in kyphoscoliotic cases without further respiratory embarrassment. Ultrasound guided subaracnoid block helps in achieving successful blockade with less number of attempts and gives comfort to patient and doctor.

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