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## Kyphoscoliosis in pregnancy for emergency caesarean section

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### Abstract

Kyphoscoliosis is a progressive deformity of the spine consisting of lateral and posterior curvatures, in addition to the lateral curvature of the spine, the vertebrae are rotated and the rib cage may be markedly deformed. We are reporting a case of primigravida having traumatic kyphoscoliosis weighing 62 kg presenting at 38 weeks of gestation with obstructed labour scheduled for emergency Caesarean Section in our institute. Patient was examined completely and assessed for any other associated deformity. She was given spinal anesthesia with thorough monitoring. She delivered a baby with Apgar score of 8/10 in first minute and 9/10 in fifth minute. There was no hypotension intraoperatively. Patient was discharged after 7 days.

**Keywords:** Kyphoscoliosis, spine, primigravida, traumatic kyphoscoliosis, obstructed labour, spinal anesthesia, caesarean section

### Introduction

Spine normally curves posteriorly in the thoracic region and anteriorly in the lumbar region. These physiologic curves are the thoracic kyphosis and lumbar lordosis respectively [1]. Kyphoscoliosis is a progressive deformity of the spine consisting of lateral and posterior curvatures [2]. Most of the cases (80%) are idiopathic in nature. Secondary kyphoscoliosis has various etiological factors such as neuromuscular, vertebral, connective tissue disorders etc. [3] In addition to the lateral curvature of the spine, the vertebrae are rotated and the rib cage may be markedly deformed. Pregnancy involves various physiological changes including laxity of the joints and ligaments. The growing gravid uterus can exacerbate the severity of spinal curvature in women with uncorrected scoliosis. Due to increased deformity in spine neuraxial blocks in kyphoscoliosis might be challenging for the anaesthesiologist.

**Case Report:** A 28 yr old primigravida weighing 62 kg admitted in our institute at 38 weeks of gestation was diagnosed to be in obstructed labour and scheduled for emergency LSCS. Patient was assessed on OT table, she was vitally stable having BP – 112/78 mm Hg, PR - 89/min, SpO<sub>2</sub> – 99% on room air. Patient had adequate mouth opening, MPG grade 2, no loose, artificial or missing teeth. On chest examination B/L equal air entry was present with no added sounds. Patient was full stomach as she had her meal 2 hours before surgery. Peripheral venous access with 18 G cannula was secured and Injection Metoclopramide 10 mg and Ranitide 50 mg was administered 1 hour prior to surgery. Examination of spine revealed lumbar kyphoscoliosis. She confirmed that due to trauma during childhood she developed kyphoscoliosis. Her previous Chest Xrays revealed Cobb's angle of 10 degrees. Her investigations were normal with Hb-11.6 gm/dl, TLC-6000/mm<sup>3</sup>, Platelets-2.5lacs/mm<sup>3</sup>. ABG findings of the patient were pH-7.40, PaO<sub>2</sub>- 90 mmHg, PaCO<sub>2</sub> - 39mmHg, HCO<sub>3</sub><sup>-</sup> - 23.40. She was able to do her household chores normally and used to climb 2 flight of stairs daily till 7<sup>th</sup> month of her pregnancy. Patient and her attendants were explained about the procedure and associated risks in their language and consent was taken for anesthesia. It was decided to administer spinal anesthesia due to full stomach of the patient and emergency of obstructed labor. She was preloaded with Ringer's lactate @ 10 ml/kg. Continuous non-invasive blood pressure, pulseoximetry, ECG monitoring was established. The patient was then placed in lateral position and 25G Quincke's spinal needle was introduced in L3-L4 interspace until clear CSF was obtained. Spinal anesthesia was then administered after confirming free flow of CSF and negative aspiration of blood by injecting 2.0 ml of 0.5%

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bupivacaine. The patient was then placed in supine position and sensory blockade was confirmed by loss of sensation to pin prick below T7 dermatome. Oxygen was supplemented to the patient. She delivered a baby with Apgar score of 8/10 in first minute and 9/10 in fifth minute. There was no hypotension intraoperatively. After surgery, the patient was monitored closely for 24 hours in postoperative ward. Post operatively, she did not complain of headache or back pain. The patient was discharged after 7 days.

### Discussion

Our primary goal during anesthetic management of this pregnant female was to deliver safe anaesthesia to mother and child and this is even more important if patient is full stomach along with traumatic kyphoscoliosis. General Anesthesia is indicated in cases of maternal preference; maternal cardiorespiratory disease or anticipated difficult regional block [4]. The maternal mortality and morbidity correlates well with the degree of functional impairment before pregnancy. Our patient had good functional reserve as she was physically active before pregnancy. By measuring Cobb's angle, we can determine the severity of scoliosis and spinal deformity. The Cobb's angle is a radiological measurement made on an AP view x-ray of the spine to evaluate the severity of scoliosis. The Cobb's angle can be correlated with the pulmonary function tests. An angle more than 60° results in a restrictive type of pulmonary impairment with a decrease in FEV<sub>1</sub>, FVC, and chest wall compliance [5, 6]. Operative delivery is increased in scoliosis patients due to skeletal deformities and cephalopelvic disproportion as in present case. Both general anesthesia and neuraxial block can be considered for patients with kyphoscoliosis in pregnancy. Neuraxial anesthesia in kyphoscoliosis patients is technically challenging to the anaesthesiologist. Epidural anesthesia in a patient with lumbosacral kyphoscoliosis is also a challenge because of the distorted anatomy which leads to difficulty in location of epidural space. There is a greater chance of dural puncture when epidural anesthesia is attempted. Advantages of spinal anesthesia over epidural anesthesia include appearance of CSF which eliminates difficulty in identifying a distorted epidural space and complication of dural puncture. Spread of local anesthetic agent is more reliable in spinal anesthesia than epidural route. The increased intra-abdominal pressure in pregnancy and the presence of engorged veins in epidural space cause a decrease in subarachnoid space. Also there is increased sensitivity to local anesthetics in pregnancy. Hence in these cases, normal dose of local anesthetic can lead to higher levels of block leading to hypotension. Kyphoscoliosis can be associated with decrease CSF volume which further enhances level of block. So, lesser dose is required for same level of blockage in these patients.

### Conclusion

There are various etiologies of kyphoscoliosis. Severity of kyphoscoliosis varies with the etiology. We have done a thorough assessment of the patient. As our patient was hemodynamically stable, full stomach and in obstructed labour; spinal anesthesia was considered as best and safest option for this patient.

### References

1. Fun Sun Yao F, Vinod Malhotra, Jill Fong, Nikolas Skubas J, Ya. Artusio's Anesthesiology Problem

- Oriented Patient Management. 8<sup>th</sup> Edition, Wolters Kluwer, India, 2017, 1073.
2. Misra S, Shukla A, Rao KG. Subarachnoid block in kyphoscoliosis: A reliable technique? Med J DY Patil Univ. 2016; 9:761-4.
3. Kearon C, Viviani GR, Kirkley A, Killian KJ. Factors determining pulmonary function in adolescent idiopathic thoracic scoliosis. Am Rev Respir Dis. 1993; 148:288-94.
4. Veliath DG, Sharma R, Ranjan R, Kumar CR, Ramachandran T. Parturient with kyphoscoliosis (operated) for cesarean section. J Anaesthesiol Clin Pharmacol. 2012; 28(1):124-126.
5. Gupta S, Singariya G. Kyphoscoliosis and pregnancy - A case report. Indian J Anaesth. 2004; 48:215-20.
6. Kulkarni AH, Ambareesha M. Scoliosis and anesthetic considerations. Indian J Anaesth. 2007; 51:486-95.