



ANAESTHETIC MANAGEMENT IN CAESAREAN SECTION IN A PARTURIENT WITH KYPHOSCOLIOSIS : A CASE REPORT

Anaesthesiology

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ABSTRACT

Alterations in maternal physiology and pathological changes in kyphoscoliosis results in anaesthetic complications for caesarean section with potential risk for both mother and fetus. Safe and skilled anaesthetic management to minimize risk to mother and fetus is required. We report a case of 25-year-old female, with G2P1L1, with 28 weeks of period of gestation, with history of previous caesarean section, with pre-eclampsia, with kyphoscoliosis in labour with contracted pelvis, managed by general anaesthesia for caesarean section.

KEYWORDS

kyphoscoliosis, caesarean section, general anaesthesia, pre-eclampsia.

INTRODUCTION:

Kyphoscoliosis involves kyphosis that means anteroposterior [AP] spinal angulations and scoliosis, which is lateral spinal curvature.^[1] It can be idiopathic or secondary kyphoscoliosis. Majority of individuals [80%] with kyphoscoliosis fall in the idiopathic group with a female predominance of 4:1. Secondary kyphoscoliosis occurs as a sequela of various neuromuscular, vertebral connective tissue disorders or therapeutic interventions such as thoracoplasty and surgery for recurrent pneumothorax.^[2] It commonly affects the dorsal and lumbar spine. It usually develops due to tuberculosis in developing countries.^[3] It is associated with restrictive lung disease and hypoxemia, which can lead to cardiovascular compromise.^[1] We here report anaesthetic management of a patient with kyphoscoliosis with pre pre-eclampsia who presented in labour with contracted pelvis.

Case Report:

A 129 cm, 50 Kg, 25-year-old patient with G2P1L1 with severe pre pre-eclampsia with kyphoscoliosis with previous history of lower segment caesarean section [LSCS] 4 years back was admitted in OBG ward of PGIMS Rohtak at 28 weeks of gestation. Patient was admitted in view of raised BP [186/130] 18 days back. Patient was on tablet labetalol 300mg QID and also received MgSO₄ prophylactically. Dexamethasone [4 doses of 6 mg in every 12 hours] was also given. Patient also had past history of fall from height 20 years back for which bilateral lower limb surgery was done under general anaesthesia 20 years back. Patient did not have any past history of raised BP. Patient was in labour and posted for emergency caesarean section in view of contracted pelvis and raised BP. On GPE, patient was conscious and oriented with HR of 88/min and BP of 170/120 mm of Hg. On airway examination she was having MPG-4. All routine monitors were attached. Two iv lines were secured with wide bore cannulas, 20 mg iv labetalol was given. Patient's pre-operative investigations were : Hb 11.7, TLC 10200, DLC 67/26/5/2, Platelets 1.8 lakh, blood urea 15, creatinine 0.4, Na 150, K 4.2, PT/INR- 14/1.04, AST 21, ALT 26, bilirubin 0.4. Systemic examination was within normal limits. Patient had bucked teeth and mallampati grade of IV with reduced neck extension. Patient's bilateral lower limbs were swollen and deviated inwards with limited extension at left knee joint. Examination of spine revealed a lateral curvature. After labetalol injection, BP was 150/100 mm Hg and decision to give spinal anaesthesia was taken. After multiple failed attempts of lumbar puncture decision to give GA was taken. Consent for both regional and general anaesthesia was taken in case of failed regional as it was anticipated difficult spinal. Patient was induced with propofol 100 mg. Check ventilation was done and inj. succinylcholine 75 mg iv was given. Patient was intubated successfully in third attempt of direct laryngoscopy with the help of stylet with 6.5mm cuffed endotracheal tube, on laryngoscopy Cormack lehane grading was 3b. Anaesthesia was maintained with sevoflurane, oxygen, nitrous oxide and intermittent boluses of atracurium were given as and when required. Inj. fentanyl 100 mg was given after delivery of baby. INJ hydrocortisone 100 mg and dexamethasone 4mg

were given intra operatively. Patient was extubated after regaining consciousness. The intraoperative and recovery period was uneventful.

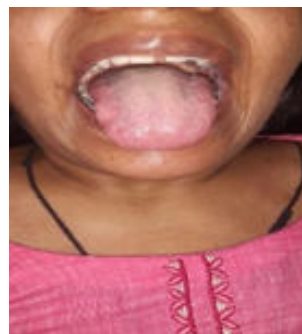


Figure showing airway



Figure showing curvature of spine in AP and lateral view.

DISCUSSION:

An important focus in obstetric surgery is the safe and skilled anaesthetic management to minimize risk to mother and fetus. The physiological changes in pregnancy can worsen the respiratory function in a scoliosis patient with restrictive lung disorder. The maternal mortality and morbidity correlates well with the degree of functional impairment before pregnancy.^[4,5] Increased mucosal vascularity of the respiratory tract during pregnancy may lead to difficulty in intubation. Edema of the airway results in increased potential for bleeding and smaller sized endotracheal tubes should be used for general anaesthesia.^[6] Patient's with scoliosis suffer from restrictive lung disease which involves decreased vital capacity, functional residual capacity, tidal volume and increased respiratory rate.^[1,2] The severity of pulmonary impairment depends on the degree of the Cobb's angle, the number of vertebrae involved, and the cephalic

location of the curvature. In severe cases, displacement with rotation of the trachea and in stem bronchi may also be noted, which could cause problems during intubation for GA.^[1] The severity of scoliosis depends primarily on the type, duration of scoliosis, as well as on the Cobb's angle of curvature.^[1,2,7] Thoracic scoliosis causes a significant reduction in the number of alveoli predisposing these patients to impairment in gas exchange and pulmonary hypertension.^[1] The Cobb's angle can be correlated with the pulmonary function tests. An angle more than 60 results in restrictive type of pulmonary impairment with a decrease in forced expiratory volume in 1 s, forced vital capacity, and chest wall compliance.^[1,2] General anaesthesia is indicated in scoliosis because of maternal cardiopulmonary disease and when there is difficulty in performing regional block. Severe scoliosis is associated with altered anatomy of the airway causing difficulty in laryngoscopy and intubation. It is also associated with pulmonary hypertension and patients run the risk of increase in pulmonary artery pressures during laryngoscopy and difficult intubation. Care should be taken to avoid hypoxia, hypercapnia, acidosis, and anaesthetic gases such as nitrous oxide as they increase the pulmonary vascular resistance.^[6] Neuraxial blockade has complications such as unpredictable block, rise of high spinal anaesthesia, and failure rates. The increased intra-abdominal pressure in pregnancy and the presence of engorged veins in the epidural space cause a decrease in subarachnoid space. Hence, usual doses may lead to higher block leading to hypotension, which is more in cases of severe scoliosis, which can be associated with decreased volume of CSF.^[8] There are reports of anaesthetic management of the kyphoscoliotic parturient using a combined spinal epidural^[4], continuous spinal anaesthesia^[9], and general anaesthesia with successful outcomes. So, depending on the facilities available for the peripartum period, any anaesthetic technique can be selected anticipating the difficulties.

CONCLUSION:

The etiology of Scoliosis may be varied. Based on the clinical assessment and pulmonary function tests, risk of high spinal anaesthesia and failure rates of regional techniques, administration of general anaesthesia was the best option for this patient.

Conflicts Of Interest: Nil

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