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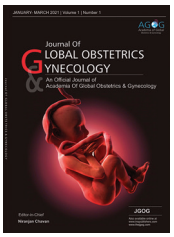
Case Report



Emergency Cesarean Section in Advanced Kyphoscoliosis: A Case Report of Successful Mother and Child Survival

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ABSTRACT

Pregnancy in women with kyphoscoliosis presents significant clinical challenges due to compromised cardiopulmonary function and spinal deformity. These cases require careful multidisciplinary management to optimize maternal and fetal outcomes. This report describes the management of a pregnant woman with severe kyphoscoliosis who successfully delivered under the supervision of obstetricians, anesthesiologists, and pulmonologists. Early identification of complications, continuous maternal-fetal monitoring, and individualized anesthetic planning were crucial for a favorable outcome. The case emphasizes the importance of preconception counseling and a coordinated approach to managing high-risk pregnancies complicated by musculoskeletal deformities.

Key words: Kyphoscoliosis, Severe spinal deformit, Retrictive lung disease, Pulmonary function impairment, Cardiopulmonary compromise, Pregnancy complications, High-risk obstetrics, Maternal morbidity, Fetal outcomes, Cesarean section.

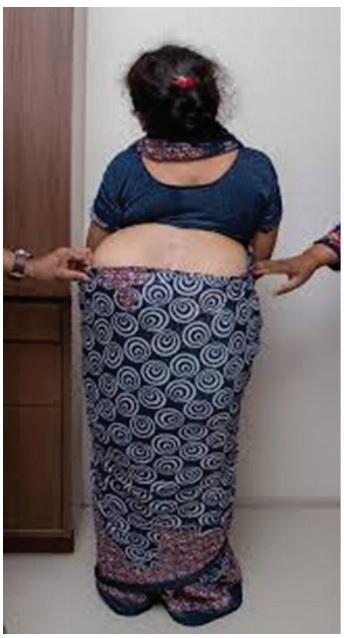
INTRODUCTION

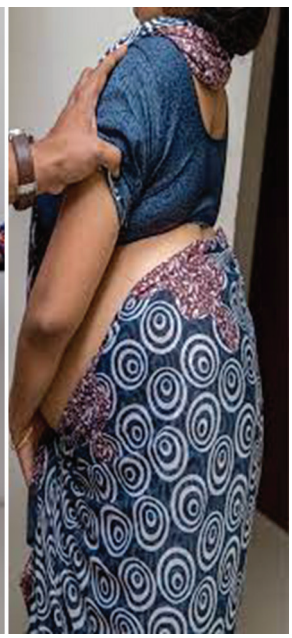
Kyphoscoliosis is a complex spinal deformity characterized by abnormal lateral curvature (scoliosis) combined with excessive posterior curvature (kyphosis).[1] The condition leads to distortion of the thoracic cage, resulting in restrictive lung disease, impaired cardiopulmonary function, and significant challenges during pregnancy and delivery. While advances in medical care have enabled more women with kyphoscoliosis to reach reproductive age, pregnancy in such patients remains high risk for both the mother and the fetus.

Kyphoscoliosis in pregnancy poses unique challenges due to restrictive lung mechanics, altered cardiopulmonary reserve, and potential difficulties with neuraxial anesthesia and positioning. Timely multidisciplinary coordination is essential to ensure maternal and fetal safety.

CASE PRESENTATION

A 26-year-old primigravida at 39+2 weeks with known thoracolumbar kyphoscoliosis presented to the Emergency Department of Obstetrics and Gynaecology, LTMMC and General Hospital (Sion), in active labor with inadequate progress and non-reassuring fetal heart rate tracings. She reported increasing dyspnea on exertion in the late third trimester but no prior admissions.





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Antenatal course was otherwise uneventful; echocardiogram and baseline spirometry earlier in pregnancy showed no pulmonary hypertension and a moderate restrictive pattern.

On examination, she was afebrile, SpO_2 97% on room air, respiratory rate 22/min, pulse 102/min, and blood pressure (BP) 118/72 mmHg. The patient had a Mallampati grade II airway with limited spinal flexion. She was at 36 weeks of gestation with a term-size uterus and cephalic presentation. On examination, the cervix was 4 cm dilated and 60% effaced, with intact fetal membranes. The fetal heart rate was 170 beats per minute. Given evolving fetal compromise and anticipated difficulty maintaining optimal positioning for instrumental delivery, a decision for emergency lower-segment cesarean section was taken after counseling and consent.[2,3]

Perioperative management

A senior anesthesiologist attempted a neuraxial block using ultrasound-guided landmarking; due to severe vertebral rotation and narrow interspaces, epidural placement was abandoned. Rapid-sequence induction for general anesthesia was performed with ramped positioning, pre-oxygenation, and difficult-airway cart ready. Intra-operative monitoring included capnography and an arterial line for beat-to-beat BP, given restrictive physiology. A healthy male neonate (APGAR score 8 and 9 at 1 and 5 min) was delivered within 6 min of incision. Estimated blood loss was 600 mL; prophylactic uterotonics were administered.

Outcome

Postoperatively, the patient was extubated uneventfully in theater, maintained $SpO_2 \geq 96\%$ on room air, and mobilized early with incentive spirometry. Pain was managed with multimodal, opioid-sparing analgesia. Mother and baby were discharged on postoperative day 3 in good condition, establishing exclusive breastfeeding.

DISCUSSION AND CONCLUSION

This case highlights key principles for managing labor in women with kyphoscoliosis: Early recognition of respiratory reserve, preparedness for neuraxial difficulty, and a low threshold for operative delivery when fetal status deteriorates. Ultrasound-assisted neuraxial techniques may reduce failure, but safe, well-planned general anesthesia remains appropriate when anatomy precludes regional blockade. Multidisciplinary planning ensured favorable maternal and neonatal outcomes.

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