Case Report

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Management of cesarean section in a patient with paraplegia and difficult airway with full stomach

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Abstract

This case report describes the anaesthetic management of a paraplegic patient posted for emergency cesarean section. She was full stomach with an anticipated difficult airway and had a history of spinal tuberculosis, as a result of which she had become paraplegic. The obstetrician noted signs of impending scar rupture and fetal distress and immediately posted her for cesarean delivery. We chose epidural anesthesia as the modality of anesthesia. The surgery was performed successfully with favourable maternal and fetal outcome. Thus, epidural anesthesia offers a good management modality which is safe, results in reduced blood loss and helps to circumvent the problem of full stomach with difficult intubation.

Keywords: Cesarean Section; paraplegia; difficult airway; full stomach.

Introduction

Difficulty in airway management in a parturient with full stomach can be a nightmare for the anesthesiologist. This case report describes the anaesthetic management of a paraplegic patient posted for emergency cesarean section. She was full stomach with an anticipated difficult airway.

Case Report

A 27 years old second gravida, presented to the obstetric emergency with labour pains since 6 hours. She had a previous cesarean section two years back under sub-arachnoid block. Sometime later, she had spinal tuberculosis as a result of which she had become paraplegic and was bed ridden for last one and a half years. The obstetrician noted signs of impending scar rupture and fetal distress and immediately posted her for cesarean delivery.

On clinical examination, the patient was very pale and was severely malnourished. She was a thin built patient with contractures in the hip and knee joints due to which she was unable to extend her hips and legs. She had been bed ridden for last one and a half years and had Grade-III bed sores on both the ischial tuberosities and over the sacral region. There was sensory loss in all the dermatomes below spinal dermatome T10 with no response to superficial touch or temperature, absence of proprioception but pin prick was felt. Motor power was Grade II in both the lower limbs. Bowel and bladder were not involved. The gross external examination of the spine was unremarkable.

The patient had been a tobacco chewer and the airway examination revealed restricted mouth opening admitting only the index and the middle fingers. She had taken her last meal one hour prior to being posted for the cesarean section. Her haemoglobin level was 5.5 g% and other investigations were normal.

On admission, she had a pulse rate of 108/min, BP 110/80 mmHg, and normal chest examination. We decided to give epidural anaesthesia to the patient for the cesarean section. A written informed consent was obtained from the patient as well as her husband and they were made aware of the high risks involved because of the emergent nature of the surgery and because of many co-morbidities. Two large bore 18G intravenous lines were secured. Two units of packed red blood (approx. 700 ml) cells were transfused. Monitors were attached which included ECG, NIBP and Pulse-oximeter which showed SpO₂ 99%. Aspiration prophylaxis in the form of intravenous Ranitidine 50mg and Metochlopramide 10mg was administered. Adequate preloading was done with Ringer lactate 500ml. All preparations were made for management of autonomic hyperreflexia. A proSeal LMA was kept ready and availability of equipment for obtaining surgical access of the airway was ensured. Epidural was attempted in the left lateral position in the L3-4 lumbar space using Tuohy's 18G needle. The loss of resistance technique was used which was felt at 2 cms, however bloody tap was obtained. A second attempt was made in L2-3 space and this time

the catheter was threaded successfully. Test dose comprising 3ml of inj Lignocaine 2% in 1:200,000 inj adrenaline was given, which was negative for intrathecal or intravascular placement. Epidural was then activated with 8ml of bupivacaine 0.5%. After eliciting absence of response to pin prick, the surgery was allowed to be started. She was comfortable during the rest of the surgical procedure which was successfully completed. There was no hypotension in the perioperative period. Total intra-operative blood loss was 800 ml. A healthy baby boy was born with Apgar Score 8/10 at 1 min and 10/10 at 5 min respectively. After surgery, she was monitored closely for 12 h in the postoperative ward. No change in the neurological status was noticed. The patient was discharged 4 days later with instructions for follow up in neurology department.

Discussion

An important focus in obstetric surgery is the safe and skilled anaesthetic management to minimize risk to the mother and the fetus.

Pregnancy with paraplegia is a problem sometimes encountered in obstetric practice. The etiology of paraplegia in the developed world is mainly spinal cord tumor or accident, while in the developing countries the main cause is tuberculosis of the spine. Literature on the subject makes frequent reference to the life-threatening complication of autonomic hyperreflexia encountered during pregnancy and delivery^{1,2}. It is characterized by sweating, headache, severe hypertension leading to unconsciousness and convulsions. These complications, surprisingly, were absent in our patient.

There is absence of uniform anaesthetic guidelines for pregnant patients with neurological disorders, and the decision whether or not to administer regional anaesthesia is based on an individual risk-to-benefit ratio on a case-by-case basis, few of these disorders contraindicate the use of neuraxial anaesthesia.

Our case was further complicated by the presence of a difficult airway and full stomach. Also, our patient had reduced mouth opening and full stomach, therefore, giving general anaesthesia would have entailed high risk of difficulty in airway establishment and aspiration. There are few options available for such patients. Awake fiberoptic bronchoscope guided intubation in the emergency situation is not a viable option especially in the full stomach patient. Even if we were able to intubate the patient, extubation of the patient would have been full of the risk of aspiration due to the altered airway reflexes by local anesthesia as well as reduced mouth opening. Use of Proseal LMA could have been an option however we decided not to take the risk of administering general anesthesia and risking aspiration in such a patient. Administration of succinylcholine for rapid sequence induction can lead to hyperkalemia because of the release of potassium from the wasted muscles.³ The only other option left was surgical airway management which itself may take a certain amount of time. However, we were prepared for surgical access if the need arose.

Regional anaesthesia certainly merits its place because it offers undeniable advantages in such patients. Titrated epidural anesthesia with a catheter has a certain degree of safety because the level of blockade can be controlled. A thorough neurological examination

is very important while patients should also be informed about perioperative implications of anaesthesia, surgery and stress. Regional epidural anaesthesia in a patient who has a prior history of spinal tuberculosis is a technical challenge to the anaesthetist, as it can distort the anatomy and prevent the successful location of the epidural or spinal space. The rate of successful epidural placement varies depending on the level of vertebrae involved.³

There are reports of parturients with spinal disorders undergoing cesarean section using a combined spinal epidural⁴, continuous spinal anaesthesia⁵, and local infiltration anaesthesia on failure of spinal or epidural anaesthesia⁶. Epidural anaesthesia may be successfully performed in patients who have had previous spinal surgery, but successful catheter placement may be possible on the first attempt in only 50% of patients, even by an experienced anaesthesiologist. Although adequate epidural anaesthesia is eventually produced in 40-95% of patients, there appears to be a higher incidence of traumatic needle placement (as in our case), unintentional dural puncture and unsuccessful epidural needle or catheter placement^{7,8}.

Conclusion

Anaesthetic management of patients with neurological diseases such as paraplegia pose a dilemma for the anaesthetist. Epidural anaesthesia offers a good management modality which is safe, results in reduced blood loss and helps to circumvent the problem of full stomach with difficult intubation.

References

1. Vaidya MK, Shah GV, Bharucha KE. Pregnancy and its outcome in quadriplegia due to Pott's spine. *Int J Gynaecol Obstet* 1995 Jun; 49(3):319-21.
2. Wanner MB, Rageth CJ, Zäch GA. Pregnancy and autonomic hyperreflexia in patients with spinal cord lesions. *Spinal Cord*; 1987; 482-490.
3. Martyn JAJ, Richtsfeld M. Succinylcholine-induced Hyperkalemia in Acquired Pathologic States: Etiologic Factors and Molecular Mechanisms. *Anesthes*. 2006; 104(1):158-169.
4. Kulkarni AH, Ambareesha M. Scoliosis and anesthetic considerations. *Indian J Anaesth*. 2007;51:486-95.
5. Han, In-Ho MD et al Clinical Approach and Surgical Strategy for Spinal Diseases in Pregnant Women: A Report of Ten Cases. *Spine* 2008;30(17):E614-19
6. Bansal N, Gupta S. Anaesthetic management of a parturient with severe kyphoscoliosis. *Kathmandu Univ Med J*. 2008;6:379-82. [PubMed]
7. Hebl JR, Horlocker TT, Schroeder DR. Neurologic complications after neuraxial anesthesia or analgesia in patients with pre-existing spinal stenosis or lumbar disc disease. *Reg Anesth Pain Med*. 2005;29:A89.
8. Vercauteren MI, Heytens L. Anaesthetic considerations for patients with a pre-existing neurological deficit: are neuraxial techniques safe? *Acta Anaesthesiol Scand*. 2007 Aug;51(7):831-8.