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Case Study

Anesthetic Management and Role of TAP (Transversus abdominis plane) block and GBS (Gullain barre syndrome) Block in a Pregnant Patient with GBS and Psychiatric Illness, A Case Report

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ABSTRACT

We report a case of 26 year parturient, with GBS manifested by psychiatric illness scheduled for hysterotomy. Our case is unique in a way that we managed her post operative pain with TAP (transversus abdominis plane) block using ropivacaine, a long-acting amide local anesthetic with a potentially improved safety profile when compared to bupivacaine, as the literature showing the significance of TAP block in such patients in scanty. GBS with psychiatric illness made her anesthetic management, a challenge for us.

INTRODUCTION

GBS (Guillain barre syndrome), a rare condition during pregnancy with incidences of 1.2–1.9 cases per 100,000 annually Guillain-Barre Syndrome (GBS) is an auto immune neuropathy, resulting from the autoimmune destruction of nerves in the peripheral nervous system causing symptoms such weakness, tingling and numbness that can progress to paralysis [1, 2]. Although there are many case reports on the anesthetic management of pregnant patient with GBS, our case is unique due to rare presentation of GBS with psychological sequelae in pregnancy, it's anesthetic management and role of TAP (transversus abdominis plain) block in this patient which has scanty evidence in literature.

Case Report

A 26-year parturient, gravida 2 para 1+0, weighing 40 kg, diagnosed with GBS in her nineteenth week of gestation, with complain of psychiatric behaviour including irritability, mood changes, inappropriate smile, loss of interest to the surroundings and anger issues for which she was taking quetiapine as prescribed by her psychiatrist. With the patient's history of gastro-intestinal symptoms following motor and sensory weakness which was bilateral and ascending, a diagnosis of GBS (in resolving phase) was made. She was admitted to the hospital for ten days during which supportive treatment was provided including replacement of electrolytes, nutritional support, physiotherapy and anti-emetics. She was then discharged with the advice to get re admitted if her weakness worsens.

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At twenty second week of gestation, she underwent a fetal anomaly scan which showed an anomalous fetus after which elective hysterotomy was planned. Pre operative anesthesia assessment was made and her husband was counselled regarding the surgery and the mode of anesthesia with possible complications owing to her condition. At the time of presentation, she had motor power of 3/5 in bilateral lower limbs and 4/5 in the upper limbs with complete reversal of sensory deficit. Multidisciplinary team including obstetrician anesthesiologist, neurologist, and intensivist was taken on board and it was decided to proceed with general anesthesia considering her residual motor deficits, psychiatric behaviour and unpredictable recovery from spinal anesthesia. In the OR (operating room), ASA (American Society of Anesthesiologists) standard monitoring was applied including electrocardiography, non-invasive blood pressure, capnograph, pulse oximetry and temperature. Two 18-gauge cannula were placed. At induction the vitals showed, heart rate of 135 beats per min, BP: 150/90mmHg, SPO_2: 100%. The airway was anesthetized with 4% xylocaine nebulization and 10% xylocaine spray prior to induction to avoid the use of muscle relaxant. The patient was then preoxygenated using 100% oxygen for a total of three minutes. At induction 100mg propofol. On achieving loss of verbal response, patient was intubated smoothly with a PVC (polyvinyl chloride) of 6.5mm by the consultant anesthesiologist. Post induction, the patient was kept on intermittent positive pressure ventilation on volume-controlled mode. FiO_2 was kept at 40% using a mixture of oxygen and nitrous oxide. MAC minimum alveolar concentration) was targeted to 0.9-1.0 using Isoflurane. Paracetamol 1mg IV was administered, and nalbuphine IV was given according to weight for a better pain management. Hysterotomy was performed using a Pfannenstiel incision. A total of 200ml of blood loss was estimated. Single alive fetus was delivered and handed over to the pediatrician for assessment and management. At the end of the procedure, transversus abdominus plane (TAP) block was performed, bilaterally using landmark technique with the classical approach, 20ml 0.25% Ropivacaine was given as a bolus. After closure of uterus and skin, anesthesia was discontinued and the patient was extubated, she got fully awake with intact airway reflexes. She was transferred to the recovery room for observation, where pain assessment was done via observing behaviour and mood changes, hemodynamics (blood pressure and heart rate), signs of irritability agitation owing to her psychiatric illness, and found to be negative postoperatively. After six hours, our team visited her again to ask about the discomfort at the incision site for which she denied, no signs of irritability, anger or mood swings, no other sensory or motor deficits were observed. The fetus expired after 48 hours owing to multiple congenital defects. She was then shifted to the special care unit on third postoperative day and then discharged on request because of financial constraint.

DISCUSSION

The most important dilemma in managing such patients is the usage of neuraxial techniques. Recovery from subarachnoid block is unpredictable, so we decided to proceed with general anesthesia. We avoided the use of muscle relaxant by anesthetizing the airway with xylocaine so as to create the state for intubation as early as possible without the need of bag mask ventilation. Literature has reported some psychiatric symptoms of GBS including depression, stress, anxiety, fatigue, sleep abnormalities, disorientation, visual hallucinations, paranoid delusions, psychosis and terror [3], therefore another reason of planning general anesthesia for this patient is her unusual psychiatric behavior along with GBS. In an effort to avoid post operative complications, tap block was planned as a part of multi modal analgesia. There are no reported cases of TAP catheters used during pregnancy although many cases with application of TAP catheters have been described for acute and chronic abdominal pain [4]. There is no crisp evidence of applying TAP block in pregnant patients especially in GBS maybe due to unexpected outcome but our patient responded well to this block showing no hemodynamic alterations, irritability and discomfort in the recovery area. Ropivacaine was chosen for TAP block because of its potentially improved safety profile when compared to bupivacaine [5].

CONCLUSIONS

The key point in reporting this case was to demonstrate the successful management of a pregnant patient with GBS undergoing hysterotomy without the use of muscle relaxant. Our motive was to have a pain free postoperative period in such patient by giving TAP block using ropivacaine having less side effects than bupivacaine which was our desired effect in a GBS patient with psychiatric illness, avoiding morbidity in the intra as well as postoperative period using meticulous multidisciplinary approach.

Authors Contribution

Conceptualization: AA,
Methodology: FK
Formal Analysis: AA
Writing-review and editing: AA, YA, SK, AURY

All authors have read and agreed to the published version of the manuscript.

Conflicts of Interest

The authors declare no conflict of interest.

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