CASE REPORT

Anesthetic implications in a pregnant patient posted for emergency dilatation and curettage with antiphospholipid antibody syndrome and Guillain-Barré syndrome

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Abstract

This case report examines the anesthetic management of a 28-year-old pregnant woman (10 weeks gestation) with a history of Guillain-Barré Syndrome (GBS) and Antiphospholipid Antibody syndrome (APLA) undergoing emergency dilatation and curettage for missed abortion. General anesthesia was carefully administered using propofol-based Total Intravenous Anesthesia (TIVA) with fentanyl and midazolam, avoiding neuromuscular blocking agents due to their potential complications in GBS patients. The procedure was completed successfully with stable hemodynamics and no neurological deterioration. This case highlights three key considerations: (a) the benefits of TIVA in maintaining cardiovascular stability, (b) the need for multidisciplinary planning when managing pregnant patients with neurological comorbidities, and (c) the importance of avoiding depolarizing muscle relaxants in GBS patients due to risk of hyperkalemia. This report discusses perioperative care in this high-risk population, emphasizing preoperative assessment, careful drug selection, and postoperative monitoring.

Keywords: Guillain-Barré Syndrome, Antiphospholipid Antibody Syndrome, Total Intravenous Anesthesia (TIVA), Missed Abortion

Introduction

Guillain-Barré Syndrome (GBS) is an acute or subacute demyelinating polyradiculoneuritis which is an autoimmune response, often following a gastrointestinal or respiratory infection [1]. Clinically, it presents as ascending limb weakness along with areflexia, facial palsy, bulbar weakness, ophthalmoplegia, and weakness of respiratory muscles. Anesthetising patients with history of GBS, presenting to the operating room as an emergency, requires knowledge and skill. Careful considerations of residual neurologic deficits, heightened sensitivity to neuromuscular blocking agents and autonomic dysfunction are mandatory prior to planning the anesthetic management in such individuals [2]. GBS is often associated with autonomic symptoms such as variation in blood pressure, heart rate, ileus, and excessive sweating [3]. Pregnancy further complicates anesthetic considerations due to physiological changes, including increased plasma volume, reduced functional residual capacity, and a hypercoagulable state [4]. These challenges, when faced in an emergency situation, in a pregnant individual, mandate involvement of obstetricians, neurologists, intensivists, and anesthesiologists. This case highlights the importance of tailored strategies in GBS patients, particularly during pregnancy, where a thorough understanding of the interaction between pregnancy-related physiological alterations and pre-existing neurological deficits necessitates a multidisciplinary approach to ensure safe perioperative care [2].

Case Report

A 28-year-old, gravida 7 para 1, at 10 weeks of

gestation, presented with bleeding per vagina and missed abortion, requiring emergency dilatation and curettage. The patient had a significant medical history of Guillain-Barré syndrome diagnosed 1 year ago. Documented history of progressive ascending motor weakness of the lower limbs and diminished deep tendon reflexes in the lower limbs, consistent with peripheral nerve involvement, was present. Discharge notes revealed history of desaturation, carbon dioxide retention, and use of non-invasive ventilatory support (0.5 FiO_2 PEEP of 5 cm of H_2O, and pressure support of 8cm H_2O) one year ago. The patient received intravenous immunoglobulin at 400 mg/ kg for 5 days and plasmapheresis at that time. There was no documentation of autonomic dysfunction like arrhythmias, labile blood pressure or paralytic ileus. A history of Antiphospholipid Antibody syndrome (APLA) diagnosed 2 years earlier was also noted. Her current medications included tablet aspirin 75mg OD, tablet hydroxychloroquine 200mg BD, and subcutaneous Low Molecular Weight Heparin (LMWH) 0.1mg/kg once daily dose (last taken < 4 hours ago) for APLA management during pregnancy. In addition to the standard preoperative assessment, detailed neurologic examination was done. Motor and sensory systems were normal. Power was 5/5 in all four limbs. No autonomic dysfunction (tilt table test/heart rate variability with deep breathing test) was detected clinically. No other neurologic deficits were noted. Routine blood parameters were within normal limits. Neurology consultation was sought, and they confirmed our findings and opined that the patient was fit for the emergency procedure. Arterial Blood Gas (ABG) analysis was normal (did not reveal acidosis or hypercarbia). The patient was hemodynamically stable and was nil per oral for 6 hours. Intravenous ranitidine 150mg and metoclopramide 10mg were administered prophylactically preoperatively as gastroparesis is expected in patients with GBS.

In the operating theatre, standard monitoring was established. Preoxygenation was performed for 4 minutes with 6L of oxygen, using a transparent face mask and closed-circuit anesthesia system. Glycopyrrolate 0.2 mg and ondansetron 4 mg were administered before induction. Anesthesia was induced with intravenous fentanyl 100 mcg, midazolam 2 mg and propofol 60 mg. Intermittent boluses of propofol 20 mg and fentanyl 25 mcg were used for maintenance. In total, 120 mg of propofol and 150 mcg of fentanyl were used. The patient was breathing spontaneously throughout the procedure with 100% oxygen via face mask. The procedure was completed without any complications. Intravenous paracetamol 1g was administered for analgesia. Postoperatively, the patient maintained stable vital signs and was transferred to the recovery ward. No significant perioperative changes in neurological status were observed throughout the anesthetic course.

Discussion

The anesthetic management of patients with a history of GBS presents unique challenges, particularly when compounded by pregnancy and additional comorbidities such as APLA [5]. This discussion explores the perioperative considerations in this case, compares management strategies with similar published reports, and highlights evidence-based recommendations for safe anaesthesia in such complex scenarios [6,7].

GBS is known to cause autonomic dysfunction, manifesting as labile blood pressure, arrhythmias, and exaggerated responses to vasoactive drugs [3]. Preoperative assessment of autonomic function is

crucial, as intraoperative hypotension or hypertension may require careful titration of anesthetic agents. The use of glycopyrrolate in this case helped prevent vagal responses and bradyarrhythmias. Respiratory muscle weakness is a hallmark of severe GBS, and even patients in remission may have residual diaphragmatic impairment [8].

Preoperative Pulmonary Function Tests (PFTs) and ABG are recommended in symptomatic patients. PFT was not performed in this case, as our patient was not symptomatic and as the procedure was an emergency surgery. GBS patients exhibit hypersensitivity to both depolarizing (succinylcholine) and non-depolarizing Neuromuscular Blocking Agents (NMBAs) [8].

Succinylcholine can cause catastrophic hyperkalemia due to upregulation of acetylcholine receptors, while non-depolarizing agents may have an unpredictable duration of action. In this case, the avoidance of NMBAs was prudent, and Total Intravenous Anesthesia (TIVA) with propofol and opioids was preferred. The importance of maintaining spontaneous ventilation, especially in short procedures like Dilatation and Curettage (D&C) was also acknowledged and followed. In patients with GBS, there is no superior mode of anesthesia, and a tailored approach is always advocated, as administration of both regional and general anesthesia has each been associated with potential risks. Neuraxial techniques, though beneficial in some cases, were avoided here due to LMWH administration. GBS patients may have altered pain perception due to nerve damage, yet they remain susceptible to opioid-induced respiratory depression [8]. Similar case reports advocate for non-opioid adjuncts like Non-Steroidal AntiInflammatory Drugs (NSAIDs)/ paracetamol (if not contraindicated) and regional techniques when feasible [9].

Pregnancy induces significant cardiovascular, respiratory, and hematological changes that influence anesthetic management. These physiological changes and the anesthetic concerns may vary at different gestational periods, and will impact the management. The hypercoagulable state in pregnancy, exacerbated by APLA, necessitated LMWH prophylaxis in this patient, which in turn influenced our choice of anaesthesia. The decision to proceed with general anesthesia rather than spinal anesthesia was justified, given the bleeding risk. While pregnancy does not typically trigger GBS relapse, hormonal and immunological changes may theoretically increase susceptibility [10]. Although there is no clear association between pregnancy and GBS recurrence, close monitoring is still advised. In this case, the patient's stable neurological status pre- and post-operatively suggests no perioperative exacerbation.

Key recommendations for future practice emphasize a comprehensive, multidisciplinary approach to managing patients with GBS undergoing anesthesia. Preoperative optimization should include autonomic and respiratory function assessments (e.g., PFT and cardiac evaluation), along with collaborative planning involving neurologists, obstetricians, and anesthesiologists to address potential complications. Intraoperatively, succinylcholine must be avoided due to the risk of hyperkalemia, with preference given to propofol-based TIVA for general anesthesia. If neuromuscular blockade is unavoidable, short-acting nondepolarizing agents should be used with quantitative monitoring to minimize prolonged effects. Postoperatively, close monitoring for respiratory depression particularly in opioid-exposed patients is essential, while thromboprophylaxis in APLA patients should be carefully balanced against bleeding risks. These strategies aim to optimize patient safety

and reduce perioperative morbidity in this high-risk population.

Conclusion

Although the procedure was a minor surgery, the anaesthetic management required meticulous planning and careful execution.

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