

Research Article

PERIOPERATIVE MANAGEMENT OF A RECOVERED CASE OF GUILLAIN BARRE SYNDROME FOR EMERGENCY LSCS : ANAESTHETIC IMPLICATIONS

Jyotsna Bhosale¹, Harshwardhan², Shubhada Aphale³

Dept of Anesthesiology, Bharati vidyapeeth Deemed University and Medical College, Pune.

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Corresponding Author:

Dr Jyotsna Bhosale

Dept of Anesthesiology, Bharati vidyapeeth Deemed University, Pune.

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ABSTRACT

Guillain Barre Syndrome (GBS) is an acute post-infectious polyneuropathy of autoimmune nature, characterised by demyelination of peripheral nervous system and rapidly progressive paralysis. GBS is rare entity and possibly even rarer in pregnancies with incidence of 1.7 per one lakh pregnancies. The course of GBS is self-limiting, generally with excellent prognosis. 85 percent of patients with GBS obtain a good to full recovery while 3-5% experience recurrent or chronic neuropathy. We present a case of 28 yr female known case of GBS, recovered completely with IV immunoglobulins, posted for emergency LSCS in view of severe fetal bradycardia. Our patient was given general anaesthesia considering emergency nature of surgery. The literature search for the anaesthetic management of such a case revealed no consensus, which prompted us to report this case.

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INTRODUCTION

Guillain Barre Syndrome (GBS) is an acute inflammatory demyelinating polyradiculopathy. The clinical presentation is one of ascending motor weakness which plateaus within 28 days.^[1] It is self limiting and full recovery is possible.

It is essential to remember that patients who have recovered from GBS may present with an adverse reaction to anaesthesia and surgery.^[2] When anaesthetising these patients, the anaesthetist must have complete understanding of GBS and its effects on various body systems.

CASE REPORT

A 28 year old female 2nd gravida at term gestation was posted for emergency LSCS in view of fetal distress.

History revealed GBS 10 years back with full recovery. Patient had received immunoglobulin for the same. Patient had history of uneventful vaginal delivery 6 years back.

Her airway, neck and spine were unremarkable. In the CNS examination, higher functions, cranial nerves, sensory system and motor system were normal with good reflexes and tone, power (5/5) in all limbs. Preoperative investigations were within normal limits.

Risk of anaesthesia was explained to patient and relatives and consent for postoperative ventilatory support was obtained.

In the OR standard monitoring and intravenous line started. General anaesthesia was given in view of severe fetal distress. Rapid sequence induction with thiopentone sodium and rocuronium (1mg/kg) as relaxant

was done and airway secured with cuffed portex ETT number 7. Succinylcholine was avoided to prevent hyperkalemic response, which may lead to cardiac arrest. Anaesthesia was maintained with oxygen, nitrous oxide 50:50 with isoflurane (0.2 - 0.6%) and top ups of rocuronium. The baby was delivered within 8 minutes after surgical incision. Oxytocin 20 IU mixed with 500 ml of normal saline was administered intravenously slowly. Intra-operatively only one top-up of rocuronium was required.

Post operatively patient did not show any respiratory attempts for 60 minutes after last dose of rocuronium, so ventilation was continued for further 30 minutes, after which patient started showing respiratory attempts. Therefore patient was reversed with neostigmine 0.04 mg/kg and glycopyrolate 0.01 mg/ kg.

After reversal patient had adequate spontaneous respiration and was maintaining 100% oxygen saturation on room, but tone was not satisfactory. Patient was observed for further 45 minutes.

In view of hypotonia, we decided to continue elective ventilation and patient was shifted to ICU. During all these events, vital parameters including oxygen saturation remained normal.

In postoperative period, after 5 hours of ventilation, patients developed adequate tone and power of grade V. Weaning was started, patient was extubated on following day.

DISCUSSION

Patient with GBS or history of GBS who comes for operation, presents with a wide range of clinical challenges to anaesthesiologist.^[2] Therefore careful preoperative evaluation and preparation can help to prevent many anaesthesia complications.

Literature search revealed no consensus over the anaesthetic technique with no established guidelines for anaesthesia for caesarean section in the patients with history of GBS.^[3] Both regional and general anaesthesia techniques are used by various authors.

The choice of the anaesthesia for caesarean section in pregnant women with GBS should be carefully evaluated because both the techniques are known for high risk in this population.^[4]

The potential risk of regional anaesthesia in patients with neurological disease should not be underestimated. Good documentation of patient's neurological deficit prior to regional anaesthesia is important for future monitoring for deterioration, as well as for medicolegal reasons. Fear of paralysis or loss of sensation may also be a problem encountered by those who recover from GBS.^[4]

There are controversies for use of regional anaesthesia in GBS patients. Steiner et al. reported the occurrence of GBS one to two weeks after epidural anaesthesia in two patients undergoing general surgery and in one patient undergoing caesarean section.^[5] A causal relationship between the anaesthesia performed in these patients and GBS could not be established. Few reports have shown the development of GBS in patients undergoing surgical procedures under general anaesthesia.

Regional anaesthesia in patients with GBS has following disadvantages.

- 1) These patients have greater sensitivity to local anaesthetics.
- 2) Due to increased sensitivity to local anaesthetics, a spread of sympathetic block may be greater than expected with unexpected hemodynamic effects (hypotension, bradycardia and cardiovascular collapse).^[6]

However Brooks et al^[7] and Mac Grady^[8] reported that particularly in the pregnant population with GBS, the epidural/subarachnoid block for caesarean section were uneventful with good tolerability by the patients.

Administration of general anaesthesia in patient with GBS or history of it in the past is associated with potential risks. Followings are the anaesthesia concerns when administering GA to these patients

- 1) Administration of succinylcholine should be avoided because of its risk of exaggerated hyperkalemia.^[9] Feldman, reported that a parturient with Guillain Barre syndrome had a cardiac arrest due to hyperkalemia that occurred shortly after succinylcholine administration for general anaesthesia.^[10]

- 2) Non-depolarizing muscle relaxants should be administered with caution, because they may result in prolonged neuromuscular block and postoperative mechanical or assisted ventilation.^[7]
- 3) The TOF count should be monitored from the beginning of induction of anaesthesia to prevent overdosing of muscle relaxant.

Our choice of GA in this patient was related to cause of caesarian section that is fetal distress, lack of time, patient's anxiety about paralysis and loss of sensation. In our case neuromuscular monitoring could not be done due to non availability of instrument.

CONCLUSION

It is essential to remember that patients who have recovered from GBS may manifest an adverse reaction to anaesthesia and surgery.

Careful evaluation and documentation of the patient's baseline neurological status and timely discussion with patient regarding risk and benefits of various anaesthetic techniques will help in achieving safe perioperative outcome in a recovered case of GBS.

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