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Case Report

RELAPSE OF GUILLAIN-BARRE SYNDROME AFTER SPINAL ANESTHESIA: A CASE REPORT

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ABSTRACT

Guillain-Barre Syndrome (GBS) is an acute inflammatory demyelinating polyneuropathy characterized by progressive symmetric ascending muscle weakness, paralysis and hyporeflexia with or without sensory or autonomic symptoms. It is most commonly caused by an autoimmune response of the body to an infectious agent like Campylobacter jejuni.It is less common during pregnancy but it may relapse during postpartum period. Cases of GBS have been reported after Spinal, epidural and general anesthesia. Here we report a case of 28year old female patient who had relapse of GBS after undergoing emergency laparotomy for ruptured ectopic pregnancy. In this case report, we are presenting an unusual case of GBS relapsing 4 years after initial episode following spinal anesthesia.

KEYWORDS: Guillain-Barre Syndrome, Campylobacter jejuni, Postpartum period.

INTRODUCTION

Guillain-Barre Syndrome (GBS) is an acute, frequently severe and fulminant polyradiculopathy that is autoimmune in nature[1].Guillian-Barre Syndrome manifests as a rapidly evolving areflexic motor paralysis with or without sensory disturbance. Weakness typically evolves over hours to a few days and is frequently accompanied by tingling dyesthesias in the extremities.The lower limbs are more affected than upper limb, and 50% of patients may have facial diparesis. The majority of the the patient have history of an infection, vaccination, Surgery or some aggravating factor 2-3 weeks prior to the development of symptoms. The incidence of Guillain Barre Syndrome like every other autoimmune disorder is less during pregnancy but is more in postpartum period[2]. The anesthetic techniques used in patients having a history of Gullain-barre syndrome is of special interest especially in pregnancy because of increased susceptibility of patients to have Gullain-barre syndrome following anesthesia and during postpartum period[3].

CASE REPORT

A 28-year-old female was brought to the casualty with complaints of severe pain in abdomen. An USG abdomen showed ruptured ectopic pregnancy on right side. Patient was taken in Operation theatre for emergency laparotomy. Her medical history was remarkable as she had history of paraplegia without bowel and bladder involvement 4 years back. At that time she was diagnosed to be having GBS. She received supportive treatment only and recovered completely after 15 days of onset of signs and symptoms. Later she was completely asymptomatic for about 4 years. As she had no neurological deficit and was haemodynamically stable she was planned to be operated under spinal anesthesia. She was given spinal anesthesia with3ml hyperbaric bupivacaine. Surgery was uneventful and patient was shifted to ward.

On postoperative day 2, patient started complaining of back pain and tingling numbness in lower limb without any focal deficit. These symptoms subsided on its own in next 48 -72 hours. On postoperative day 7, patient was alright and was discharged from the hospital. After discharge patient had recurrent episodes of backpain, tingling and numbness which over a period of one month progressed to lower limb weakness on both sides without bowel or bladder involvement. For these complaints patient was again admitted. On examination, patient's higher functions were normal. Tone and Power (3/5) in both lower limbs were decreased. Plantars were absent bilaterally. Routine investigations like haemogram, Kidney Function Tests, Serum electrolytes, Liver Function Tests and blood sugar levels were within normal limits. Computed Tomography (CT) and Magnetic Resonance Imaging (MRI) scans were normal. Cerebrospinal Fluid studies were also within normal limits. Nerve conduction studies in tested nerves were suggestive of 'f wave' impersistence in lower limbs suggestive of pure motor polyradiculopathy involving lower limbs. Thus diagnosis of GBS was confirmed on nerve conduction study. The patient was treated with IV Immunoglobulin 400mg/kg/day for 5 days. She responded well to this treatment.

DISCUSSION

GBS is a rare occurrence in medicine, and possibly even rarer in pregnancies, with an incidence of 1.7/lakh pregnancies[4]. Even though GBS is uncommon in pregnancy, risk of GBS is increased in postpartum period. Though the exact cause for this is not known, cytokines are secreted by placenta during pregnancy. This cytokine release may be responsible for mediating cellular immunity during pregnancy. Humoral immunity also is affected by pregnancy but after delivery there is abrupt withdrawal of cytokine mediated changes in immunity which is thought to be responsible for exacerbation of immunologically mediated neurological diseases such as Guillain-Barre Syndrome[5].

No uniform guidelines exist in literature over the anesthetic technique to be used in pregnant women with active Guillain-Barre Syndrome or someone who had a previous history of Guillain-Barre Syndrome. Different authors have difference in opinion regarding the use of spinal, epidural and general anaesthesia for lower segment caesarian section as each of the technique is associated with risk in these patients. While giving anesthesia or analgesia to a pregnant woman who had a history of Guillain-Barre Syndrome it is of utmost important that patient be carefully evaluated as there is possibility of perioperative complications in these patients[6].

Regional anesthesia is not contraindicated in patients with Guillain-Barre Syndrome but the possibility of increased susceptibility to autonomic dysfunction and hypersensitivity to local anaesthetics in these patients must be considered carefully as these patients are prone for developing exaggerated hemodynamic instability in the form of severe hypotension, bradycardia and even shock.

Brooks et al suggested the cautious administration of local anesthetic through an epidural catheter to establish the desired level of blockade for cesarean section in patients with Guillain-Barre Syndrome and the use of direct-acting sympathomimetic agents to correct hypotension, as the indirect-acting drug response is unpredictable in these cases[7]. There are some case reports in which GBS has occurred 2 weeks after epidural anaesthesia[8].

Whether this Gullian-Barre Syndrome was in anyway related to anaesthetic technique or drugs used can not be established as there are other case reports in which the patients have developed Gullian-Barre Syndrome after undergoing surgeries under general anaesthesia. Despite not being able to establish the casual relationship between anesthetic techniques or drugs and incidence of Gullian-Barre Syndrome it is important that while giving anaesthesia in patient who have active Gullian-Barre Syndrome or have a history of Gullian-Barre Syndrome depolarizing muscle relaxant like succinylcholine should better be avoided as in these patients as there is always a risk of dangerous hyperkalemia. This hyperkalemia may lead to cardiovascular instability including dangerous cardiac arrhythmias or even cardiac arrest[9]. Patients with Gullian-

Barre Syndrome may have prolonged effect of non-depolarizing muscle relaxants and are more likely to require ventillatory support in post-operative period due to late reversal of effect of muscle relaxants[10]. Also, there is risk of acute respiratory distress and pulmonary thromboembolism in patients with Gullian-Barre Syndrome.

CONCLUSION

To conclude, anesthetic management in Gullian-Barre Syndrome or past history of it needs special consideration because these patients are prone for complications in immediate post-operative period. There is also a risk of having relapse of GBS in postpartum period and patient may also develop respiratory muscle fatigue or paralysis, dysautonomia, electrolyte imbalance especially hyperkalemia and thromboembolism. Anesthetists should be more careful with the techniques and drugs being used if a pregnant woman gives a past history of GBS and be more vigilant in managing such patients. The possibility of postpartum relapses, as in our case, should also be kept in mind and patient should be advised more frequent follow up so that an early diagnosis can be made leading to prompt treatment. This will help in improving overall outcome of the patients with GBS.

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