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Guillain-Barré Syndrome in Immediate Postpartum: An Obstetrician's Dilemma

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ABSTRACT

Guillain-Barré syndrome is a rare neurological complication that presents in pregnancy and postpartum. We present a case of a 23-year-old Gravida 2 Para 1 Living 1 with 39 weeks of gestation and previous lower (uterine) segment cesarean section (LSCS) who presented with nonspecific symptoms in the antenatal period and progressed to develop symmetrical progressive ascending paralysis in the postpartum period with no antecedent history of infection. The patient was managed by a multidisciplinary team and treated with plasma exchange, with complete recovery at follow-up. We are reporting this case because of the rarity of Guillain-Barre syndrome in pregnancy and postpartum and the nonspecific initial presentation with an unexpected diagnosis in the immediate postpartum.

Keywords: AIDP, Pregnancy, Tachycardia, Postpartum

Introduction

Guillain-Barré syndrome (GBS) is an autoimmune disorder of the peripheral nervous system characterized by symmetrical, progressive ascending polyneuropathy. GBS may occur at any time of pregnancy with an increased incidence during the postpartum period and accounts for 1.2-1.9 cases per 100,000 **(1)**. GBS classically presents with pain, numbness, paresthesia, or weakness of the limbs and this can be mistaken for a psychological complaint during pregnancy and postpartum leading to delay in diagnosis and treatment **(2)**. GBS occurring in pregnancy is associated with an increased need for ventilator support, and an increase in maternal mortality up to 7% and 20% patients are disabled after a period of 1 year **(3)**. We are reporting the case of a 23-year-old patient presenting with nonspecific symptoms in antepartum period, with no preceding causative factors and diagnosed with autoimmune demyelinating polyneuropathy in the immediate postpartum period. The patient was managed successfully through plasma exchange and other supportive care by a multidisciplinary team. This case of Guillain-Barré syndrome in the immediate postpartum is reported for its rare occurrence.

Case Presentation

A 23-year-old gravid 2 para 1 living 1 with 39 weeks of gestation and previous LSCS was referred to the Obstetrics and Gynecology Department of JSS Hospital, Mysore, with complaints of generalized weakness, backache, breathing difficulty and pedal edema for 4 days. There was no history of preeclampsia, headache, blurring of vision, epigastric pain, vomiting, and weakness of the limbs, cough or fever.

On examination, the patient was afebrile and had no pallor. The patient had a tachycardia of 130 beats per minute with normal blood pressure recordings and a normal respiratory rate, SpO2 was 98% at room air. On obstetric examination, the patient was diagnosed to be in the latent phase of labor with suspected scar dehiscence in view of persistent maternal tachycardia.

She underwent emergency LSCS and delivered a live female baby with a 3.2kg birth weight. Intraoperatively, the uterine scar showed no features of dehiscence, and there were no perioperative complications. In the first post-operative day, the patient continued to have persistent tachycardia, with an ECG showing sinus tachycardia. Echocardiography was normal with a 65% ejection fraction. On her second post-operative day, she complained of weakness in both lower limbs in the form of an inability to lift the lower limb off the ground. The weakness was progressive, and she soon developed weakness of the upper limb in the form of an inability to make a fist, hold objects, or mix food. There were no sensory symptoms or bowel and bladder disturbances. The neurology opinion was taken and further managed by the multidisciplinary team. On neurological examination, the power of the upper limb was 4/5 and the lower limb was 3/5, with preserved deep tendon reflexes in both limbs. The nerve conduction study of all four limbs and CSF analysis done on the second post-operative day were inconclusive. The serum vitamin B12 level was found to be normal. In view of the preserved reflexes, an MRI of the brain and spine was done to rule out myelopathy, which was found to be normal. A repeat nerve conduction study done on the 4th post-operative day showed features of Acute inflammatory demyelinating polyradiculoneuropathy (AIDP) with motor axonopathy of both the ulnar and common peroneal nerves (right >left) and conduction block in the antecubital fossa of the right median nerve. A clinical diagnosis of AIDP was made. The weakness of the lower limbs progressed from 1/5 in hip flexors to 2/5 in others with depressed bilateral ankle jerks and no sensory deficits. Plasma exchange was planned in view of worsening weakness in both the lower and upper limbs. Three cycles of plasma exchange were done on alternate days. The patient showed a gradual and slow recovery of symptoms. Further cycles of plasma exchange were withheld as the patient showed gradual improvement in symptoms and a return of power in both upper and lower limbs. The patient was started on physiotherapy and discharged after two weeks. On discharge, the power of the upper and lower limbs was 4/5 with areflexia. The patient showed complete recovery of power in both the upper and lower limbs on follow-up at 6 months.

Discussion

Acute inflammatory demyelinating polyradiculoneuropathy (AIDP) or GBS, is one of the rare neurological conditions encountered in pregnancy. AIDP is an acute monophasic demyelinating neuropathy with symmetrical muscle weakness, areflexia, and ascending paralysis. GBS occurs in all trimesters of pregnancy and during the postpartum period, but is particularly more common during the third trimester and the first 2-weeks postpartum **(4)**. The nonspecific initial presentation of neurological conditions like GBS and their similarity with common symptoms of pregnancy make the diagnosis of such conditions difficult and lead to delays in diagnosis.

GBS typically presents with pain, numbness, paresthesia or weakness in the limbs, and this can be mistaken for a psychological complaint, leading to delays in diagnosis and treatment **(5)**. Loss of autonomic function is common in severe cases of GBS, manifesting as wide fluctuations of blood pressure with orthostatic hypotension, sinus tachycardia and even cardiac arrhythmias **(6)**. GBS is thought to be an immune response to a precedent infection. About two-thirds of patients have had an infection within the previous six weeks, most commonly a flu-like illness or gastroenteritis. Implicated infectious agents include *Mycoplasma pneumoniae, Campylobacter jejuni*, *Cytomegalovirus* and *Epstein–Barr virus* **(7)**. GBS typically occurs after gastroenteritis and respiratory tract infections, but surgery has also been considered one of the triggers **(6)**. Recently, Mangar et al. reported acute precipitation of GBS after epidural analgesia **(8)**. Vinay et al. have reported GBS following cesarean section under spinal anesthesia **(9)**.

Guillain-Barré syndrome (GBS) is considered a clinical diagnosis; therefore, a diagnosis can be made with confidence at the bedside in most cases. For atypical cases or unusual subtypes, ancillary testing can be useful **(10)**. Cerebrospinal fluid (CSF) shows a classic pattern of albuminocytologic dissociation. This term means that spinal fluid shows a normal amount of white blood cells and an elevated CSF protein level **(10)**. However, this pattern is only present in 80% of patients at 2 weeks following symptom onset. Therefore, the absence of this classic finding does not exclude the diagnosis. Electromyography and nerve conduction studies may be helpful in distinguishing GBS from its mimics **(11)**. Brain and spinal MRI are indicated to eliminate other causes of polyneuropathy such as subacute compressive myelopathy and transverse myelopathy, and they can show enhancement of spinal roots or cranial nerves in patients with GBS **(12)**.

In our patient, there was no antecedent history of infection, and she presented with backache, difficulty breathing, and palpitations at 39 weeks of gestation. She developed symptoms of lower limb weakness on the second post-operative day, with sustained tachycardia from the antenatal period. She underwent emergency LSCS for the indication of scar dehiscence in view of maternal tachycardia and scar tenderness. Intraoperative findings did not show any signs of scar dehiscence. Pain, located in the back and extremities, can be the presenting symptom in the acute phase in up to 66% of patients **(13)**. In our patient, backache was initially considered a symptom of early labor, but later could be attributed as one of the initial symptoms of GBS. Retrospectively, tachycardia could be attributed to autonomic dysfunction associated with GBS. Sustained sinus tachycardia, the most common

abnormality observed in monitored GBS patients, rarely needs to be treated as it is usually transient **(14)**. An obstetrician needs to be aware of these rare presenting symptoms and signs of a rare neurological condition when other causes of tachycardia have been excluded. In our patient, backache and palpitations were the initial presenting symptoms of Guillain-Barré syndrome.

In randomized controlled trials, there are two treatment options currently considered the standard of care for Guillain-Barré syndrome (GBS). These include either intravenous immunoglobulin (IVIG) or plasma exchange **(11)**. Our patient was only treated with plasma exchange. According to moderate-quality evidence, plasma exchange improved the majority of outcomes compared to supportive care alone. The time to recover walking with aid, the time to recover walking unaided, and the time to improve by one or more disability grades were all shortened by plasma exchange **(15)**. Up to 20% of patients are disabled after one year, and a maternal mortality rate exceeding 10% has been described (nonpregnant GBS has a mortality <5%) **(16)**. Our patient completely recovered with multidisciplinary management and plasma exchange without respiratory distress and without the need for mechanical ventilatory support or IVIG therapy.

Conclusion

GBS occurring in pregnancy and postpartum is rare. A treating clinician should be aware of this rare condition for timely diagnosis and treatment, as the initial presentation of GBS is nonspecific and presents with symptoms similar to common symptoms of pregnancy.

Clinical Significance

Early recognition and multidisciplinary treatment can reduce the morbidity and mortality associated with GBS.

Acknowledgments

Written informed consent was obtained from the patient's family.

Conflict of Interest

None.

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