CASE REPORT

Diagnosing Gullian Barre Syndrome in the Post-partum Period: A Case Report

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ABSTRACT

Guillain–Barré syndrome (GBS) presents as an acute inflammatory polyradiculoneuropathy with diminished reflexes and resultant weakness. Most patients complain of paresthesias, numbness, or similar sensory changes. Paresthesia begins in the toes and fingertips, progressing upwards, but generally does not extend beyond the wrists or ankles. GBS is a rare condition in pregnancy with an incidence of 1.2 and 1.9 cases per 100,000 annually, and carries a high maternal risk. Usually, GBS occurs within a few days or weeks after the patient has had a respiratory or gastrointestinal viral infection. We report a unique case of GBS complicating pregnancy in the post-partum period. The patient recovered well with supportive measures and intravenous immunoglobulin.

KEY WORDS: Guillain–Barré syndrome, intravenous immunoglobulin, post-partum

Introduction

Guillain–Barré syndrome (GBS) is a collection of clinical syndromes that manifests as an acute inflammatory polyradiculoneuropathy with resultant weakness and diminished reflexes. However, GBS complicating pregnancy is a rare condition with an incidence of 1.2 and 1.9 cases per 100,000 annually, with a high maternal risk.[1,2] The risk of GBS increases in the post-partum period, especially the first 2 weeks post-delivery. The disease presents as an acute inflammatory polyradiculoneuropathy with diminished reflexes and resultant weakness. Most of the patients complain of paresthesias, numbness, or similar sensory changes. Paresthesia begins in the toes and fingertips, progressing upwards, but generally does not extend beyond the wrists or ankles. Usually, GBS occurs within a few days or weeks after the patient has had a respiratory or gastrointestinal viral infection. We report a unique case of GBS complicating pregnancy in the post-partum period. The patient recovered well with supportive measures and intravenous immunoglobulin (IVIG).

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Case Report

A 27-year-old female, Primigravida underwent caesarean section at term for non-progress of labor. On the post-operative day 4, the patient developed pain, progressive weakness, and numbness with tingling sensation in lower limbs below the knees and in both hands and wrists. She developed difficulty in walking; the weakness progressed gradually to the entire upper limbs. On examination, the patient was acutely ill, pallor was present and she was afebrile. There was no cynosis, no icterus and hydration status was satisfactory. She was conscious but restless, and apprehensive. During her intensive care unit stay, neurological evaluation revealed bilateral limb weakness, areflexia, and generalized paresthesia. She had progressive ascending paralysis with involvement of the upper limbs, followed by trunkal weakness without bladder, bowel, and sensory involvement. The respiratory system, autonomic system, and all her cranial nerves were normal. She presented with all features of the flaccid quadriplegia with grade zero power in both lower limbs and grade three in upper limbs. Muscle tone was decreased, and deep tendon reflexes were lost. Hemogram with peripheral smear, kidney and liver function test and urinalysis were normal. Viral markers, venereal disease research laboratory, anti-phospholipid antibodies (IgG and IgM) and lupus anticoagulant test were negative, and so were her antinuclear antibodies (ANA), rheumatoid factor

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(ANA), C-reactive protein. Thyroid function tests were within normal range. Magnetic resonance imaging was normal. Nerve conduction tests and cerebrospinal fluid analysis suggested diagnosis of GBS.

Treatment

Her treatment was immediately started with IVIG 2 mg/kg, which was continued for 7 days. Her recovery was fast with improvement in muscle weakness. On day 8 of illness, she was discharged; she could walk with support and was advised physiotherapy. Power in the limbs gradually improved. She had little residual sequelae at 3 months follow-up post-partum. The patient gradually improved and recovered completely after 6 months.

Discussion

GBS rarely complicates pregnancy but when it does the disease is associated with maternal and perinatal morbidity especially when not treated properly. As clinicians we need a high index of suspicion and give supportive measures to the patient. The cornerstone of management of GBS in pregnancy is access to intensive care unit and IVIG therapy.

GBS is a neurological disorder resulting primarily in muscle paralysis, which in most cases is symmetrical. Most patients complain of numbness, paresthesias, or similar sensory changes. Paresthesias generally begin in the toes and fingertips, and then progresses upwards, but generally do not extend beyond the wrists or ankles. Pain associated with GBS is most severe in the shoulder girdle, back, buttocks and thighs and occurs even with the slightest movements. The pain in GBS is often described as throbbing or aching in nature.

GBS can strike at any age, and both sexes are equally prone to the disorder. The precise cause of Guillain–Barre is unknown. However, 60% of cases have followed a lung infection or a gastrointestinal infection. *Campylobacter jejuni* infection, influenza, cytomegalovirus, Epstein–Barr virus infection, mycoplasma pneumonia, and HIV are some of the infections associated with GBS. Occasionally surgery and anesthesia may trigger the syndrome and in rare instances vaccination may increase the risk of GBS. After the first clinical manifestations of the disease, symptoms may progress over a period of hours, days or weeks. It has been observed that most people tend to reach the stage of greatest weakness within the first 2 weeks after symptoms have appeared, and by the 3rd week of illness 90% of all patients are at their weakest. The most typical symptoms of the disease begins with ascending paralysis with weakness beginning in the feet, hands and migrating upwards towards the trunk while some subtypes cause change in sensation or pain and dysfunction of the autonomic nervous system. GBS can cause life-threatening complications, especially when the respiratory muscles or the autonomous nervous system is involved. Loss of autonomic function is common in severe cases of GBS manifesting as wide fluctuations of blood pressure with orthostatic hypotension and sinus tachycardia and even cardiac arrhythmias.[3,4] It can sometimes be difficult to distinguish the symptoms of GBS from other brain and nervous system disorders. The following two tests are usually used to confirm the diagnosis:

a) Nerve conduction studies and electromyography test that measure nerve and muscle function
b) Lumbar puncture shows a higher level of proteins with a normal cellular count.

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.[5] During the course of pregnancy, there is a decrease in cellular immunity and an increase in humoral immunity, which is due to an overall increase in the pro-inflammatory cytokines in the post-partum period. After termination of pregnancy, this process gets reversed thereby resulting in an increased incidence and also worsening of symptoms in the post-partum period.

A favorable outcome with full recovery has been seen in 70-80% of patients when they have been treated with plasma exchange and IVIG. The efficacy and cost-effectiveness of the current therapies in GBS have been elaborated by Mehndiratta *et al*.[6] The treatment of choice for GBS is IVIG and plasma exchange. However, IVIG is preferred over plasma exchange as it has lesser complications.[7] The cost of plasma exchange is much less compared to IVIG although both have similar results. Bahadur, *et al*. reported a 25-year-old, gravida 3, para 2, woman at 21 weeks of pregnancy with successful maternal and fetal outcome.[8] Successful management of a primigravida presenting at 26 weeks' gestation with plasmapheresis has been reported in the literature by Goyal *et al*.[9]

Reports of treatment of acute inflammatory demyelinating polyneuropathy in pregnancy with IVIG and plasma exchange are available in the literature.[10,11] GBS has been found to worsen in the post-partum period because of an increase in delayed type of hypersensitivity. Silva, *et al*. had reported a case of GBS, which was diagnosed at 15 weeks of pregnancy and aggravated in the post-partum period.[12]

The reason for our case being unique was that we treated this critically ill patient with IVIG in the immediate post-partum period of pregnancy. High-quality intensive care remains the most important aspect in the management of severe cases of GBS. Obstetricians should have a high index of suspicion in any pregnant patient complaining of muscle weakness, general malaise, tingling of the fingers and respiratory difficulty in the context of a recent diarrheal illness or viral infection.[13] An early diagnosis with intensive multi-disciplinary supportive care helps in improving the prognosis for the mother and fetus.

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