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GuillainBarré syndrome in second trimester of pregnancy and its management with IVIG: An experience from eastern India

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ABSTRACT

GuillainBarré syndrome (GBS)is an autoimmune polyneuropathy with ascending flaccid paralysis. It is rare in pregnancy. We here report a case of GBS in second trimester of pregnancy in a 23 year old primigravid female from Eastern India. Diagnosis was made by electrophysiologic study. She had a rapidly progressive course and needed intravenous immunoglobulin (0.4 g/Kg/day for five days). However, she responded to the treatment and the weakness improved gradually. The foetus was normal throughout the course of treatment and there was normal vaginal delivery. The relevant literature regarding GBS in pregnancy is also discussed at length.

INTRODUCTION

Guillain-Barré syndrome (GBS) is an autoimmune motor predominant polyradiculoneuropathy that presents with acute onset ascending flaccid paralysis with or without other symptoms [1]. Rarely, the disease also presents with sensory and/or autonomic features. There are many varieties of the disease but acute inflammatory demyelinating polyneuropathy (AIDP) is the commonest. Pregnancy is rarely complicated with GBS[2]. The treatment of GBS in pregnancy and its outcome is highly variable and there are no standard guidelines on its proper approach. We here report a case of pregnancy complicated by GBS in the second trimester. She was treated with IVIG (intravenous immunoglobulin). As far as we searched, this is probably the first such case to be reported from Eastern India.

CASE REPORT

A 23 year old primigravida female, 16 weeks pregnant, presented with sudden onset weakness of lower limbs. She had no previous history of diarrhoea, fever or respiratory tract infection. She also had not received any vaccines in preceding three months and was not on any drugs. The weakness started in both legs and there was also intense pain in low back region. She also complained of tingling in the toes. The next day, when the patient was admitted, the lower limbs were flaccid and only flicker of movement was present in the toes. Her bowel and bladder control were normal. By the same evening, the patient also started complaining of weakness of right shoulder and tingling sensation of fingers of both hands. Power in right shoulder was 3/5 and left shoulder 4-/5. No objective sensory loss could be demonstrated. Deep tendon reflexes in all four limbs were depressed. Plantar response was flexor bilaterally. Her pulse rate was 140/minute, regular and blood pressure was 100/60 mm of Hg. Fetal profile, as assessed by ultrasonography, was normal.

Immediate blood tests revealed normal hemogram and urea and electrolyte values. HIV serology was negative. Immediate nerve electrophysiology study was arranged which showed (fig 1) absent F reflexes in all four limbs with decreased conduction velocity of motor nerves in all four limbs. Sensory nerve testing was normal. H reflex was absent bilaterally (fig. 2). There was some temporal dispersion of MAP, suggestive of demyelination. Thus, the case was diagnosed as acute motor predominant polyradioculoneuropathy. Meanwhile, by midnight, the patient started developing respiratory distress and her single breath count (SBC) decreased to 11. So, in consultation with the gynaecology department, IVIG was immediately started at the rate of 0.4 g/kg/day for five days. She was transferred to the HDU but she did not need ventilation. By 2nd day of IVIG use, her SBC increased to 27/breath and there was no new weakness. Arterial blood gas was also normal. However, her pulse rate continued to be high (100-120/min) and blood pressure varied from 100-140/60-90 mm of Hg. ECG showed only sinus tachycardia with no arrhythmia. The patient also did not develop facial paresis or bulbar symptoms. Pupillary reaction was normal. After one week, CSF study was

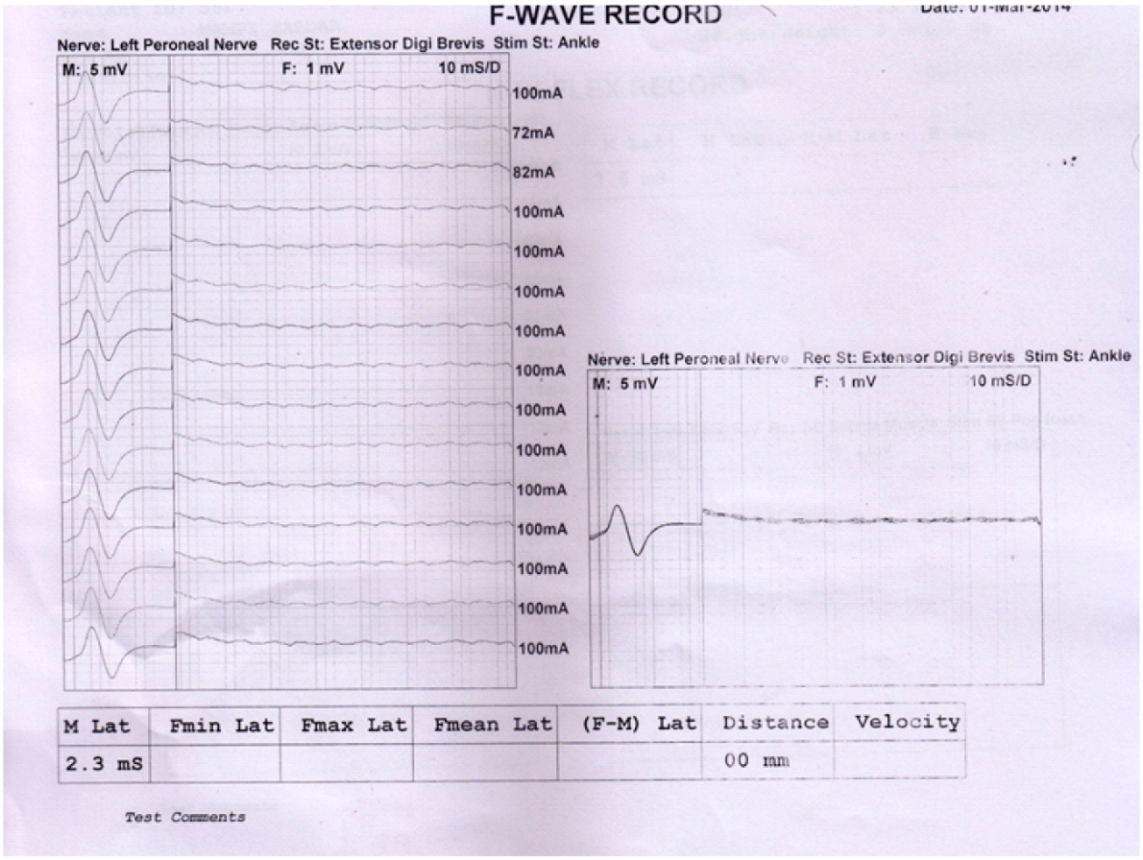

Fig 1. NCV study of the patient showing absent F waves in lower limb

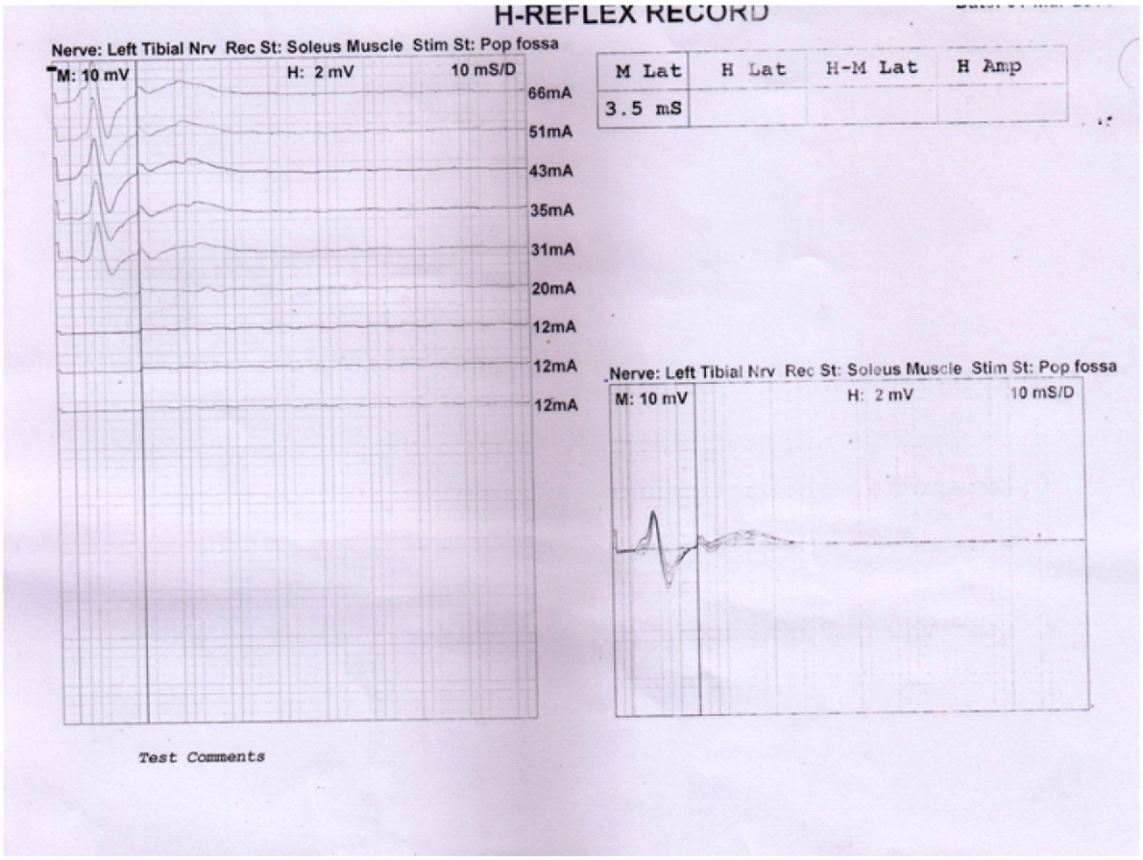

Fig 2. NCV study of lower limb showing absent H reflexes

done which revealed 10 cells/cmm with protein of 141 mg/dl. Blood for anti-nuclear factor and ANCA were negative. Serology for HSV, EBV and CMV were also negative.

Patient was started on physiotherapy regimen. Weekly ultrasonography was done to ensure fetal wellbeing. Residual paralysis remained in lower limbs. The blood pressure and pulse stabilized after two weeks. The patient was sent home but was on close supervision. At 37 weeks of pregnancy, she had vaginal forceps assisted delivery. At present (at five months post-partum), she is still on physiotherapy but can now walk with support. Power in upper limbs is now 5/5. There was no problem with breast feeding.

DISCUSSION

GBS is a rare immune mediated neuropathy that is thought to be secondary to molecular mimicry of neuronalgangliosides with some infectious agent [3]. Many patients report a diarrhoea or respiratory infection 46 weeks preceding the onset of GBS symptoms. However, our patient did not have any report of such infective ailment preceding her disease. GBS is a rare complication of pregnancy. Its incidence in pregnancy varies from 224/100000 [4]. The signs and symptoms of GBS in pregnancy are identical to a normal non-pregnant person [4]. It can occur in any trimester but is said to be particularly common in 3rd trimester and immediate post-partum period [3]. The symptoms are often subtle like malaise or tingling of legs and dismissed as psychiatric illness or normal weakness of pregnancy [5]. Mortality of GBS in pregnancy or puerperium is also higher compared to non-pregnant patients [5]. The following table shows some other reported cases of GBS in pregnancy and their outcome.

As the table shows, the majority of the patients were of 3rd decade of life. Most of them were treated with IVIG with good outcome. For non-pregnant patients, both plasmapheresis and IVIG are said to be equivalent in efficacy in treatment of GBS. But in pregnancy, IVIG is preferred over plasmapheres is due to various complications of the latter. But if done carefully, plasmapheres is also shows good results in pregnancy as depicted by Goyal et al [10]. However, even patients responding to treatment may show a sudden deterioration post-partum due to altered immunological environment[9]. Thus, patients should be closely observed for two weeks post-partum [9]. The pregnant patients with GBS are more likely to need mechanical ventilation due to mechanical restriction of the diaphragm by gravid uterus.

GBS is not an indication for caesarean section[8]. As the table shows, most of the deliveries were VD without any complications. The progress through stages of labour is also said to be normal in GBS patients [8]. GBS patients are also likely to acquire nosocomial infections and hence, proper precautions should be taken [8].

IVIG is a pregnancy category C drug but it has been used in pregnancy with minimal adverse effects [11]. It is said to cross the placenta increasingly after 30 weeks of gestation [11]. Thus, its use in second trimester, like our case, is probably safe. Yamada et al used massive doses (100 g) of IVIG in 30th week of gestation without any adverse effect [7]. GBS is also associated with autonomic symptoms like fluctuating heart rate and blood

Table 1. Table showing some other reported cases of GBS in pregnancy

Serial number	Author	Age of patient	Treatment given	Fate of patient	Fate of foetus
1.	Campos da Silva, 2009 [6]	15	IVIG, mechanical ventilation, corticosteroids	Good recovery	Vaginal delivery (VD)
2.	Vijayraghavan, 2006 [4]	29	IVIG	Rapid recovery	NA
3.	Yamada, 2001 [7]	NA	Massive dose of IVIG	improvement	Spontaneous vaginal delivery
4.	Inamdar, 2013 [8]	23	IVIG	Full recovery	Normal VD
5.	Zafar, 2013 [3]	29	physiotherapy	Good recovery	Caesarean section
6.	Bahadur, 2009 [9]	25	IVIG	Good recovery	Forceps assisted VD
7.	Present case	23	IVIG	Residual paralysis	Normal delivery

pressure. Our patient also had significant tachycardia for two weeks. In some cases, this has been managed with beta-blockers [3]. However, we did not use any drug for tachycardia. If caesarean section is needed in GBS patients, spinal anaesthesia is preferred [12]. If general anaesthesia is to be used, succinylcholine is avoided as the proliferating post-synaptic receptors are exquisitely sensitive to its effect and may lead to dangerous hyperkalemia [12]. Also, the dose of spinal anaesthesia needed is low as the unstable autonomic nervous system is sensitive to the effect of these drugs.

CONCLUSION

GBS in pregnancy is generally associated with good outcome for both mother and foetus if proper treatment is instituted early. However, regular monitoring is essential during pregnancy and puerperium. Management of these patients should be multi-disciplinary.

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