



## A Case Report That Unveils The Atypical Presentation Of Guillain-Barre Syndrome

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### Abstract

One or two people out of every lakh are affected by Guillain-Barre Syndrome (GBS), a rare and degenerative neurological condition. Generally, it presents as acute neuromuscular paralysis with sensory involvement. Here, we address the case of a 40-year-old woman who had upper limb weakness that progressed to lower limb weakness with power grade 05-1/5. There was no sensory involvement. Investigations revealed no signs of demyelination, infection, stroke, or tumour compressing the spine. An examination of nerve conduction revealed signs of motor polyradiculopathy. IgG and IgM mix antibodies to GD1b and GM1 turned out to be significantly elevated in the blood sample, which raised suspicions of an unusual presentation of GBS. The patient began receiving IV Ig and plasma exchange (PLEX)/plasmapheresis. By day seven, the patient had recovered from elective ventilator support owing to a timely diagnosis and effective treatment. Fortunately, the patient left the hospital with the capacity to walk with assistance, and routine follow-up was scheduled.

### Conclusion

This was an unusual way for GBS manifestation. We draw attention to the fact that, one should be alert to neurological symptoms and proactive in going beyond the usual course of symptoms.

**Keywords:** Guillain-Barre Syndrome, Motor polyradiculopathy, atypical presentation

### Introduction

Guillain-Barré Syndrome (GBS) is a rare but potentially life-threatening autoimmune disorder with an annual incidence of approximately 1–2 cases per 100,000 individuals<sup>1</sup>. The condition results from immune-mediated damage to peripheral nerves following infections, leading to varying degrees of motor and sensory dysfunction, and in severe cases, respiratory failure. It usually presents as an acute, ascending paralysis<sup>2</sup>. GBS profoundly impacts patients' quality of life, with significant morbidity and

prolonged recovery periods, sometimes leaving lasting deficits despite treatment. Early diagnosis is essential but can be challenging due to its variable presentation and overlap with other neuromuscular conditions. Clinical suspicion is often supported by electrodiagnostic studies showing nerve involvement. Treatment options, including intravenous immunoglobulin (IVIG) and plasmapheresis, are generally effective if initiated promptly. However, resource limitations and delays in diagnosis may

impact outcomes, highlighting the need for heightened clinical awareness. This case report illustrates the clinical course of GBS, emphasizing its diagnostic challenges and the importance of timely intervention to improve patient prognosis.

### Case Description

A 40-year-old female, presented with bilateral upper limb weakness for 2 days. She had difficulty in doing routine activities like packing food and buttoning the shirt. Within a day the weakness progressed to bilateral lower limbs. She had difficulty in walking and getting up from chair. There was no history of seizure, sensory loss, bowel or bladder incontinence. She had a history of lower respiratory tract infection 2 weeks back. None of the family members had experienced similar symptoms. She had a history of surgery for posterior fossa arachnoid cyst, 17 years back. On admission to the emergency department, her vitals were normal, and the higher mental functions were appropriate. Her muscle strength was 0/5 in left and 3/5 in right upper limb. The power in both lower limbs was found to be 3/5. Deep tendon reflexes were present and symmetrical. All other physical examinations were normal.

Differential diagnosis considered were anterior spinal artery territory stroke versus demyelination. Hence MRI brain and spine with contrast including spinal cord diffusion was done, which did not show any features of CNS demyelination or infarct. LP and CSF study was done, which showed TC, RBC, protein and sugar within normal range. Since the neuroimaging investigations were normal, a diagnosis of GBS was considered. Nerve conduction showed evidence of motor polyradiculopathy - predominantly demyelinating. The motor nerve conduction study showed prolonged distal latencies and reduced conduction velocities from all nerves tested (bilateral median nerve, ulnar nerve, sural nerve and superficial peroneal nerve). F waves were borderline from lower limbs and in elicitable from upper limbs. Bilateral H reflexes responses were showed borderline. Sensory nerve conduction study was found to be within normal limits. Anti-ganglioside antibody analysis of the serum revealed high levels of IgG and IgM mix antibody to GD1b and GM1. She also had normocytic normochromic anaemia with Hb 7.8gm/dl.

As there was rapid progression of the weakness and in view of impending respiratory compromise, the

relatives were explained about initiating IV immunoglobulin or plasmapheresis. 5 cycles of plasmapheresis were given after consent. Due to severe bulbar weakness and respiratory compromise, she was electively ventilated for 7 days. She developed DVT of the right femoral vein despite DVT prophylaxis. Lower limb venous doppler showed thrombosis of the right common femoral vein, superficial femoral vein, popliteal vein, upper half of the posterior tibial vein and peroneal vein. She was treated with full therapeutic dose of injection Enoxaparin. She was discharged on day 18 of hospital stay. At discharge she was able to walk with support and take oral feeds on her own. She was discharged with oral anticoagulants and oral steroids. She was also advised for regular follow-up and revert in case of fever.

### Discussion

Guillain-Barré Syndrome (GBS) is a rare autoimmune condition with diverse clinical manifestations, as highlighted in this case of a 40-year-old female presenting with rapidly progressive motor weakness. The antecedent lower respiratory tract infection in this patient aligns with the well-documented association between GBS and preceding infections, particularly with *Campylobacter jejuni* and other respiratory or gastrointestinal pathogens. Such infections are thought to trigger molecular mimicry, leading to the production of antibodies that target gangliosides on peripheral nerves, as evidenced by the elevated anti-GD1b and GM1 antibodies in this patient<sup>3</sup>. The diagnosis of GBS in this case was guided by clinical presentation, normal neuroimaging, and supportive findings from nerve conduction studies, which revealed motor polyradiculopathy with demyelination. This correlates with existing literature, where electrodiagnostic findings are central to diagnosing GBS and its variants, particularly acute inflammatory demyelinating polyneuropathy (AIDP)<sup>4</sup>. However, the initial diagnostic uncertainty requiring MRI highlights the overlap of GBS symptoms with other neurological conditions, such as anterior spinal artery stroke, a diagnostic challenge reported in similar studies<sup>5</sup>. There are several diagnostic criteria's developed for the reducing the diagnostic dilemma<sup>6</sup>. The patient's severe bulbar and respiratory involvement, necessitating mechanical ventilation, is consistent with data showing that up to 30% of GBS patients may require ventilatory support<sup>7</sup>. Early

initiation of plasmapheresis, which is an established first-line treatment alongside IV immunoglobulin (IVIG), likely contributed to her recovery. Comparative studies suggest no significant difference in efficacy between these therapies, but resource availability often guides treatment choice<sup>8</sup>. This case also underscores complications such as deep vein thrombosis (DVT), a recognized risk in immobilized GBS patients, even with prophylaxis. Studies have shown that more than 50% of the GBS patients develop DVT due to various reasons like prolonged immobilization and artificial ventilation<sup>9</sup>. This aligns with findings in recent studies that emphasize the need for vigilant thromboembolic monitoring in GBS management. In summary, this case reflects the characteristic progression, diagnostic challenges due to atypical presentation, and complications of GBS. Early recognition, prompt initiation of immunomodulatory therapy, and comprehensive supportive care remain critical for optimizing outcomes. Further research into specific biomarkers, including ganglioside antibodies, and tailored therapeutic strategies could improve diagnostic precision and management in severe GBS cases.

## Conclusion

This case highlights the rapid progression and potential severity of Guillain-Barré Syndrome (GBS), emphasizing the importance of timely diagnosis and intervention. The clinical presentation, coupled with supportive electrophysiological and serological findings, allowed for the accurate identification of GBS despite initial diagnostic uncertainty. Early initiation of plasmapheresis played a crucial role in stabilizing the patient, while vigilant supportive care, including mechanical ventilation and management of complications like deep vein thrombosis, was pivotal in her recovery. This case underscores the significance of heightened clinical awareness, particularly in patients with preceding infections, to ensure early treatment and mitigate severe outcomes. Further research into improved diagnostic tools and personalized therapies is essential to enhance the care of GBS patients, especially in resource-limited settings.

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