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Case Report

**A CASE REPORT ON GUILLAIN-BARRÉ SYNDROME
FOLLOWING SPINAL CORD TRAUMA****Jenimol Joseph^{1*}, Christy Sara Andrews¹, Deepa Poulouse¹, Navya Sunil¹, Alwin Jose¹,
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Erode, Tamil Nadu.⁴M Pharm, Ph D, Principal, Nandha College of Pharmacy, Erode, Tamil Nadu.**Abstract:**

Guillain-Barré Syndrome represents a condition that is acutely evolving, immune mediated and inflammatory disorder of the peripheral nervous system. Clinical hallmarks include flaccid muscle paresis and areflexia with increased cerebrospinal fluid protein content which can be caused by infection, trauma, surgery and blood transfusion. Early diagnosis and proper treatment should occur as there can be potential ventilatory failure and cardiovascular instability in some patients. Here we discuss a case of 37 year old female patient with complaints of weakness, inability to move right upper limb and lower limb for past 6 days. She had a history of spinal cord trauma before 5 months, which is considered to be a triggering factor that leads to Guillain-Barre Syndrome. The standard treatment for Guillain-Barré Syndrome is Plasmapheresis or Immunoglobulin, in our case the patient was treated with immunoglobulin for five days. Her condition was improved and thus she was discharged from the hospital.

Keywords: Areflexia, Guillain-Barre Syndrome, Immunoglobulin, Plasmapheresis**Corresponding author:****Jenimol Joseph,**
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INTRODUCTION:

Guillain-Barré Syndrome (GBS) is a complicated degenerative neurological disorder affecting 1 person in 100,000. It can be acute or chronic in nature in which the immune system attacks healthy nerve cells in peripheral nervous system and it is characterized by progressive, proximal and distal tingling, weakness and numbness [1]. Muscle weakness progress to temporary paralysis of respiratory muscle, difficulty with chewing and swallowing, difficulty with digestion and bladder control, difficulty with eye movement and speech and slow heart rate and low blood pressure [2].

There are several types of GBS, among them most common type is acute inflammatory demyelinating polyradiculoneuropathy (AIDP) and other types are acute motor axonal neuropathy (AMAN), acute motor sensory axonal neuropathy (AMSAN) and Miller Fisher syndrome [3]. The exact cause of GBS is unknown. It can be triggered by infection, vaccination and surgery.

Early diagnosis and prompt treatment should occur as it can cause potential ventilatory failure and cardiovascular instability[4]. There is no cure for GBS. But two types of treatments plasmapheresis and immunoglobulin therapy can hasten recovery and reduce the severity of illness [5].

CASE REPORT:

A 35 year old female patient was admitted in neurology department of a tertiary care teaching hospital with complaints of weakness, inability to move right upper limb and lower limb for past 6 days, difficulty in turning from side to side, regurgitation of food, difficulty in breathing, headache, diarrhoea and loss of bowel and bladder

control. Patient had a history of trauma before 5 months. The patient was conscious and well oriented to time and place. Patient's vitals were as follows B.P- 110/70mmHg and P.R-72bpm. Systemic examination showed CVS- S1S2(+), RS-BAE(+), P/A-SOFT and CNS examination is in table 1.

MRI of cervical spine showed posterior disc bulge indenting thecal sac from C3-4 to C6-7 levels. In whole spine survey, L5-S1 disc showed posterior bulge with annular tear indenting thecal sac touching the traversing root at lateral recess. Blood investigation revealed slightly elevated ESR of 32mm/hr. MRI Brain was normal. CSF analysis showed increased level of protein (120mg/dl) whereas lymphocytes and glucose levels were normal.

Based on the subjective and objective evidence the patient was diagnosed as a case of Guillain-Barré Syndrome following spinal cord trauma. As the patient had breathing difficulties and inability to move herself, she was shifted to ICU. In ICU she received ventilatory assistance, monitoring of blood pressure, fluid status and cardiac rhythm. The patient received physiotherapy throughout the hospital stay. She was treated with intravenous Immunoglobulin (IVIG) (0.4g/kg/day), IV fluids, Nootropic drugs (Citicoline 250 mg and Piracetam 200mg), Corticosteroid (16 mg), anti-diarrhoeal agent (Loperamide 2mg), H2 receptor antagonist (Ranitidine 50 mg) and vitamin B12 supplement. After treatment for 5 days patient's CNS examination showed improvement in power, tone and reflex and it is showed in table 2.

Table 1: CNS Examination before treatment

CNS		Right	Left
Tone	Upper limb	Hypotonic	Normal
	Lower limb	Hypotonic	Hypotonic
Power	Upper limb	1/5	4/5
	Lower limb	1/5	1/5
Sensation	Upper limb	No response	Response
	Lower limb	No response	No response

Table 2: CNS Examination after treatment

CNS		Right	Left
Tone	Upper limb	Normal	Normal
	Lower limb	Normal	Normal
Power	Upper limb	3/5	4/5
	Lower limb	3/5	3/5
Sensation	Upper limb	Response	Response
	Lower limb	Response	Response

DISCUSSION:

Guillain-Barré Syndrome (GBS) is a rare autoimmune disorder in which the body's immune system attacks peripheral nervous system and affects the nerves that control muscle movement as well as those that are transmit pain, temperature and touch sensation [3]. This results in muscle weakness and loss of sensation in the legs and/or arms. The core clinical feature of GBS is rapidly progressive weakness which will reach its peak within 4 weeks but most patients reach it within 2 to 3 weeks [6]. The case reported here had an ascending paralysis that was preceded by trauma of spinal cord, the only clear precipitating event which we infer to be the inducing stimulus for the development of GBS. Several mechanisms have been suggested for development of GBS following traumatic bone injuries like missed viral infections, surgical stress and genetic susceptibility. This patient showed typical features of GBS with rapid development of limb paralysis, breathing difficulties, diarrhoea, loss of bowel and bladder control, areflexia and sensory loss. The diagnosis of GBS is most clinically supported by CSF and electro diagnostic criteria. Here the diagnosis was made because this case had fulfilled the clinical features and satisfied the electrophysiological criteria required. The standard treatment of GBS includes supportive care and immunotherapy, IVIG or plasmapheresis. IVIG is made from donated blood consisting of healthy antibodies and they helps in stopping the harmful antibodies from damaging the nerves. In this case the patient was treated with intravenous immunoglobulin 0.4g/kg/day for 5 consecutive days (totally 2g/kg/day). On the sixth day patient's condition improved and hence she was discharged.

CONCLUSION:

Guillain-Barré Syndrome is a neurological disorder that results primarily in muscle paralysis which may in a small percentage leads to death. Therefore it is extremely important to identify potential severe cases in order to have the appropriate investigations and for the appropriate care administered.

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CONFLICT OF INTEREST:

The author declares there is no conflict of interest

ABBREVIATIONS:

GBS- Guillain-Barré Syndrome, BP- Blood Pressure , PR- Pulse Rate , CVS- Cardiovascular System , RS- Respiratory System, BAE-Bilateral Air Entry, CNS- Central Nervous System, P/A- Per Abdomen, ESR-Erythrocyte Sedimentation Rate, MRI-Magnet Resonance Imaging, CSF- Cerebrospinal Fluid, ICU- Intensive Care Unit, IVIG- Intravenous Immunoglobulin, C- Cervical Vertebrae, L- Lumbar Vertebrae, S-Sacral Vertebrae

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