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Guillain Barre Syndrome: A Case Report

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ABSTRACT :

Guillain-Barre syndrome is a condition in which the body's immune system attacks the nerves. It can cause weakness, numbness or paralysis. A 40-year-old female presents with the chief complaint of sudden loss of consciousness, tingling sensation, muscular weakness and inability to breath at IGMC Hospital, Shimla during the month of February' 2025. After physical examination and radiological investigation, she was diagnosed with Guillain Barre Syndrome. No surgical intervention was given.

Keywords: Paralysis, Numbness, Tingling sensations.

INTRODUCTION

Guillain-Barre syndrome is a condition in which the body's immune system attacks the nerves. It can cause weakness, numbness or paralysis. Weakness and tingling in the hands and feet are usually the first symptoms. These sensations can quickly spread and may lead to paralysis

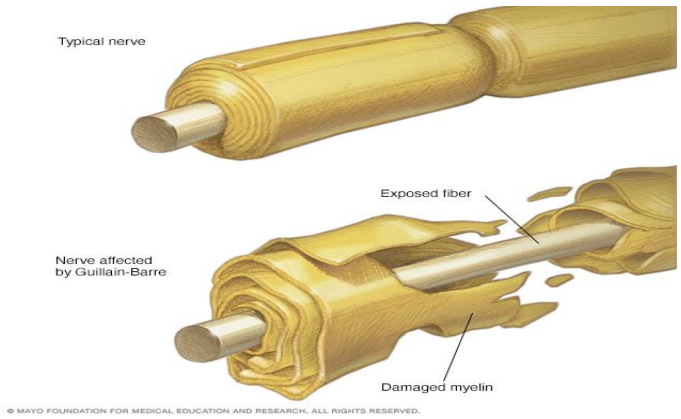


Fig.1: shows the normal myelin sheath and demyelinated sheath

ACUTE INFLAMMATORY DEMYLEINATING POLYNEUROPATHY

AIDP (Acute Inflammatory Demyelinating Polyneuropathy) is the most common form of Guillain-Barré Syndrome (GBS). It is an autoimmune disorder where the body's immune system attacks the myelin (the protective covering around nerve fibres) in the peripheral nervous system (the nerves outside of the brain and spinal cord). This damage leads to nerve signal disruption, which results in symptoms like muscle weakness, sensory changes, and, in severe cases, paralysis.

MILLER FISHER SYNDROME

Miller Fisher Syndrome (MFS) is a rare variant of Guillain-Barré Syndrome (GBS). It is a neurological disorder that primarily affects the cranial nerves (nerves that control the head and face). MFS is considered an autoimmune disorder in which the body's immune system mistakenly attacks the nervous system, but it generally has a different set of symptoms compared to classic GBS.

Another variant of MFS is **Bickerstaff brainstem encephalitis (BBE)** and involves altered **consciousness, ataxia, ophthalmoparesis, and paradoxical hyperreflexia.**
Characterised by "DESCENDING PARALYSIS"

TRIAD OF MILLER FISHER SYNDROME:

ATAXIA (Loss of co-ordination, walking)

Areflexia **OPTHALMOPLEGIA**
(Absence of deep tendon reflexes) (Paralysis of eye ball)

ACUTE MOTOR AXONAL NEUROPATHY

Acute motor axonal neuropathy (AMAN) is a variant of Guillain–Barré syndrome. It is characterized by acute paralysis and loss of reflexes without sensory loss. Pathologically, there is motor axonal degeneration with antibody-mediated attacks of motor nerves and nodes of Ranvier.

- AMAN, also known as Chinese Paralytic Syndrome.
- Loss of motor function only and sensory function remains intact

ACUTE MOTOR AND SENSORY AXONAL NEUROPATHY

Acute Motor and Sensory Axonal Neuropathy (AMSAN) is a rare and severe form of Guillain-Barré Syndrome (GBS), a condition where the body's immune system attacks the peripheral nervous system. AMSAN specifically affects the motor and sensory axons of nerves, leading to muscle weakness, sensory loss, and sometimes paralysis.

CASE PRESENTATION :

A 40-year-old female presents with the chief complaint of sudden loss of consciousness, tingling sensation, muscular weakness and inability to breath at IGMC Hospital, Shimla during the month of February' 2025. After physical examination and radiological investigation, she was diagnosed with Guillain Barre Syndrome (AMSAN)

Present Medical History:
Patient was apparently well 3 days before admitting in GICU Unit of IGMC Shimla.
On dated: 31-01-2025 she felt tingling sensation in fingers of hands which suddenly progress towards whole arm. Radiation of motor loss is from periphery to proximal. Later on, dated: 01-02-2025 in the early morning patient was not able to walk and developed ataxia which further progress to sudden unconsciousness in patient.
After unconsciousness patient was admitted in regional hospital of Kinnaur from where she is referred to IGMC Shimla on dated 02-02-2025 in Emergency Medical Unit.
Then on dated 02-02-2025 at 11:00 am patient is shifted to GICU ward of IGMC.
Patient was intubated on the same day with Endotracheal Tube and put on ventilator for respiratory support.

Present surgical history- No surgery planned, patient is on ventilator
Mode of ventilator: - Volume Control: Synchronised intermittent mandatory ventilation.

PEEP	**5cmH2O**
VT	**432**
MV	**24**
FiO2	**50%**
Ps	**10cmH20**

HISTORY OF PAST ILLNESS.

Past medical history-
Patient had history of strep throat, pain in sweeling from last 2 weeks.
Past surgical history-
Patient had no any specific and significant past surgical history in the past years.

FAMILY HISTORY & FAMILY TREE

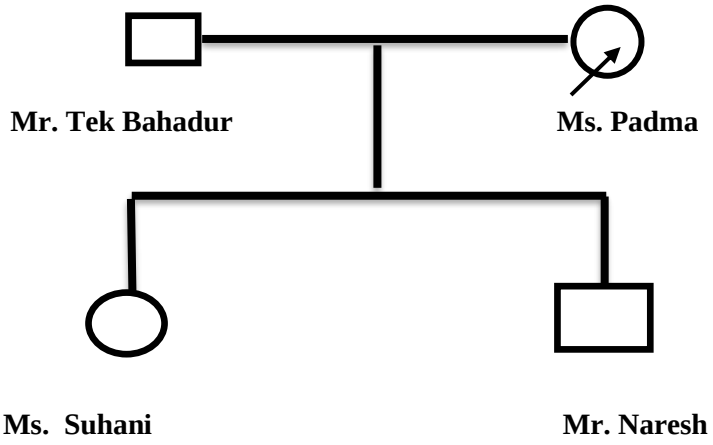
MEDICAL HISTORY-

All the family members of patient are healthy and medically fit. No any history of genetic disorder and hereditary problems like Diabetes mellitus, hypertension etc.

SURGICAL HISTORY-

Patient's family members had no any specific and significant past or present surgical history as of appendectomy, hysterectomy, cholecystectomy or no history of genetic disorders etc. All the family members are healthy

FAMILY TREE




- Death


- Diseased Male


- Healthy Male


- Healthy Female


- Unhealthy Female

FAMILY COMPOSITION

Family Members	Age	Sex	Relationship with the patient	Occupation	Education	Health status
Mr. Tek Bahadur	49yrs	M	Husband	Driver	10^{th} pass	Healthy
Mrs. Padma	40 yrs	F	Patient	Housewife	Uneducated	Unhealthy
Ms. Suhani	19 yrs	F	Daughter	Teacher	B.Ed.	Healthy
Ms. Naresh	17 yrs	M	Son	----	Studying	Healthy

PERSONAL HISTORY

- **Sleeping Pattern:** Patient is on ventilator and is intubated with ET-Tube which create difficulty for patient to get enough and good sleep.
- **Economic Status:** Patient belongs to a middle-class family. Her sources of family income is her husband. Annual income is approximately Rs.1, 50,000.
- **Dietary Pattern:** Patient is on NG- tube feeding. Dietary patter of patient is liquid diet only.
- **Addiction:** Patient is not addicted to any form of addiction of drugs, alcohol and smoking/tobacco chewing.

- **Elimination Pattern:** Patient's elimination pattern is normal. Indwelling catheter was inserted on the day of admission and after that fluid balance chart of patient is maintained by staff.

PHYSICAL EXAMINATION

GENERAL APPEARANCE-

- Nourishment - Nourished
- Body build - Thin in appearance
- Health - Unhealthy
- Weight - 49 kg
- Height - 5 ft. 1 inch

a) MENTAL STATUS

- Consciousness - Semi-Conscious
- Orientation - Not- oriented to time, place and person
- Look - Calm

b) POSTURE

- Body Curve - Normal
- Lordosis - Not present (Absent)
- Kyphosis - Not present (Absent)

CENTRAL NERVOUS SYSTEM

Inspection –

- Patient is semi -conscious and oriented to time, place and person
- Level of attentiveness - Patient is not attentive

Palpation –

- Spinal deformity - No spinal deformities
- Superficial sensation - Normal

2. G.I. SYSTEM

Inspection –

- Colour & texture of lips - Dry and brownish
- Oral Hygiene - Healthy

Palpation –

- Pain & tenderness - No
- Enlargement - No any enlargement

Percussion –

- Presence of air or fluid - No ascites
- **Auscultation –** Bowel Sounds - Normal 30/ minutes

HAEMATOLOGICAL STUDIES:

S.no	Lab Tests	Patient's Value	Normal Value	Remarks
1.	CBC			
	i. Hb	12 gm/dL	11-16gm/dL	Normal
	ii. TLC	10,000/cumm	4000-11,000/cumm	Normal
	iii. TEC	4.38/cumm	3.5-5.5/cumm	Normal
	iv. Platelet count	$169*10^3$	$150-450*10^3$	Normal
	v. MPV	13.30	7.2-11.7 ft	Normal
	vi. PCT	0.23	0.05 ng/ml	Normal
	vii. PWD	20.90	9.0-17.0%	Normal
		39.10%	35-48%	Normal
		89.10 fL	82-95 fL	Normal

	viii.	PCV (HCT)	27.40 pg	25-33 pg	Normal
	ix.	MCV	34.70 g/dl	33-37 g/dl	Normal
	x.	MCH	40.10%	40-70%	Normal
	xi.	MCHC	40%	20-45%	Normal
	xii.	Neutrophils	5.60%	0-8%	Normal
	xiii.	Lymphocytes	0.20%	0-6%	Normal
	xiv.	Monocytes	0.30%	0-1%	Normal
	xv.	Eosinophils	10mg/dl	Less than 0.3 mg/dl	Increased
	xvi.	Basophils			
	xvii.	CRP			

No such serious deviations were noted in blood test.

OTHER LAB TEST

CT Scan Report:

CT Reports reveals that patient is having Lower motor neuropathy and no demyelination of myelin sheath is happened.

From this report doctors suspected **Guillain Barre Syndrome** with variant **Acute motor sensory axonal neuropathy.**

TREATMENT

S.no	Drug Name & Salt Name	Dose	Route	Frequency	Action
1.	Inj. IVIg	4*5 gram 2*1o gram	Intravenous	OD	Immunoglobulin
2.	Tab. Telmisartan	40 mg	Orally	OD	Angiotensin Receptor-II Blocker (To reduce blood pressure)
3.	Tab. Amlodipine	40mg	Orally	OD	Calcium Channel Blockers
4.	Inj. Avil	40 mg	Intravenous	STAT	Antihistamine
5.	Inj. Midazolam	2 ml	Intravenous	--	Benzodiazepines (To provide sedation)
6.	Inj. LMWH	0.4 ml	Subcutaneous	OD	To prevent DVT

DISCUSSION :

ACUTE MOTOR AND SENSORY AXONAL NEUROPATHY

Acute Motor and Sensory Axonal Neuropathy (AMSAN) is a rare and severe form of Guillain-Barré Syndrome (GBS), a condition where the body's immune system attacks the peripheral nervous system. AMSAN specifically affects the motor and sensory axons of nerves, leading to muscle weakness, sensory loss, and sometimes paralysis.

Key Features of AMSAN:

- Motor Axonal Involvement: The motor neurons (responsible for movement) are affected, leading to muscle weakness or paralysis.

- Sensory Axonal Involvement: Sensory nerves, which transmit sensations like touch, pain, and temperature, may also be affected, causing numbness or abnormal sensations.
- Rapid Onset: AMSAN develops quickly, often within days to a few weeks of infection or another triggering event like surgery or vaccination.
- Severe Weakness: It can lead to paralysis, with patients often requiring support for basic functions like breathing or swallowing.

Symptoms:

- Progressive muscle weakness, starting in the lower limbs and spreading upward
- Numbness, tingling, or abnormal sensations in the limbs
- Loss of reflexes
- Difficulty walking or standing
- In severe cases, respiratory failure due to muscle paralysis

Causes and Risk Factors:

AMSAN can be triggered by an infection (often a viral infection like Cytomegalovirus or Campylobacter jejuni) or other factors like surgery or vaccination. In some cases, it can follow a respiratory or gastrointestinal illness.

Diagnosis:

- Clinical examination: Checking for weakness, sensory loss, and loss of reflexes.
- Nerve conduction studies: To evaluate the function of the nerves.
- Lumbar puncture: Measuring cerebrospinal fluid to rule out other causes.

Treatment:

- Plasmapheresis or IV immunoglobulin (IVIg): These therapies help reduce the immune attack on the nerves.
- Supportive care: This includes physical therapy to help regain muscle strength and respiratory support if needed.
- Pain management: For any neuropathic pain

CONCLUSION :

A 40-year-old female presents with the chief complaint of sudden loss of consciousness, tingling sensation, muscular weakness and inability to breath at IGMC Hospital, Shimla during the month of February' 2025. After physical examination and radiological investigation, she was diagnosed with Guillain Barre Syndrome. No surgical intervention was given.

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