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Psoriasis & Guillian Barre' Syndrome a Rare Association

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Abstract: ***Psoriasis is a systemic inflammatory disease The proposed common pathways between psoriasis and co-morbidities highlight the importance of treating psoriasis as a multifaceted disease and the need of regular screening for CV risk factors.***

Keywords: Psoriasis, GB Syndrome

1. Case Details

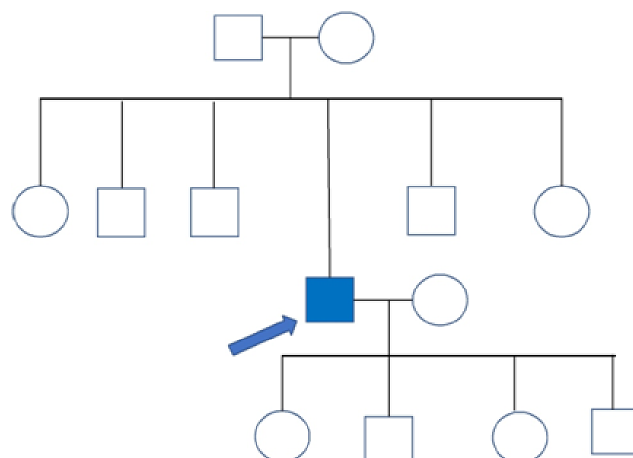
A 45 Year old male came with complaints of Paresthesia over both lower limbs since 4 days Weakness of lower limbs since 2 days

- Paresthesia in the form of heaviness of limbs since 4 days
- Two days later patient complained weakness of both lower limbs which he noticed difficulty while walking and climbing stairs
- He also felt difficulty in gripping chappals
- Later after a day he is assisted by 2 persons for walking and doing his daily activities
- By the end of the day he noticed weakness in both upper limbs in the form of difficulty in mixing food and getting food to the mouth
- C/o difficulty in rolling side to side over bed
- C/o difficulty in sitting from lying down position over couch
- He is completely bed ridden by the end of the day and brought to GGH Kurnool
- No h/o thinning of limbs
- No H/o loss of hot and cold sensations over the body
- No h/o loss of hot or cold sensations over the body while bathing
- No h/o girdle like sensations over the trunk
- No h/o radicular / muscle pains
- No h/o loss of smell
- No h/o loss of vision; able to match colors
- No h/o drooping of eyelids; double vision
- No h/o difficulty in mastication / decreased sensations over face
- No h/o facial asymmetry /drooling of saliva

- No h/o hearing loss / tinnitus / vertigo
- No h/o dysphagia / dysarthria / nasal regurgitation
- No h/o difficulty in turning head to side to side
- No h/o difficulty in making bolus with in the mouth
- No h/o bladder disturbances
- No h/o constipation / diarrhoea
- No h/o erectile dysfunction
- No h/o postural giddiness
- No h/o recent immunisation / dogbite / trauma / ear discharge
- Non HTN / DM

Past history: No similar complaints in past
No h/o URTI / Diarrhoeal disease in recent past
He was diagnosed to having some skin disease and he was on some topical medications

Family History: No Significant



Personal History:
Mixed diet
Smoker; smokes beedies 30 /day
Alcoholic; drinks occasionally
No extramarital contacts

Clinical Diagnosis

Acute symmetric ascending flaccid quadriparesis without cranial nerve palsies and without bladder / bowel disturbances with no distinct sensory level probable diagnosis: AIDP (GBS)

Gen. Examination

- Conscious; coherent; oriented to time, place, person
- Pallor +
- No cyanosis
- No Icterus
- No clubbing
- No Lymphadenopathy

Multiple discrete plaques with silvery white scaling present over scalp;

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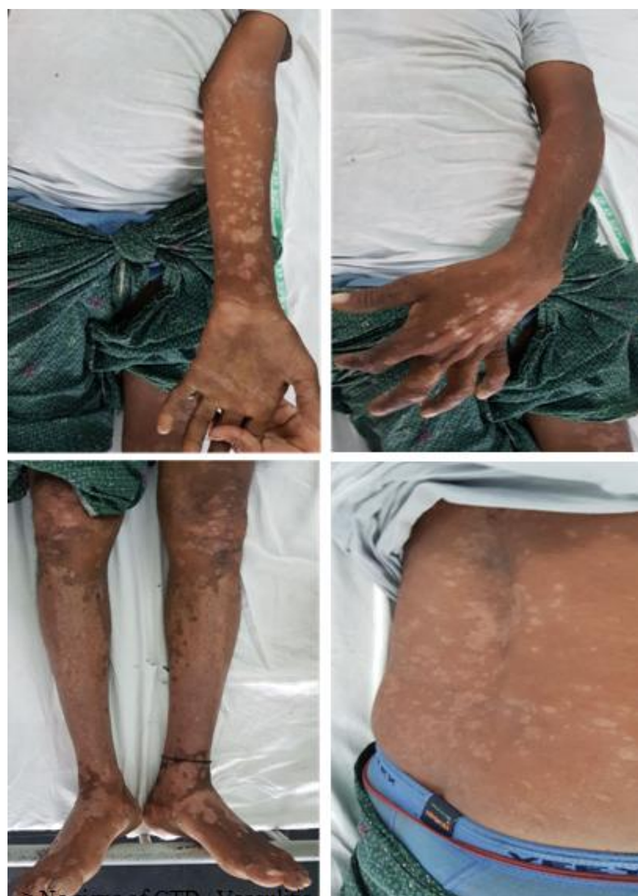
Both external ears; both Upper limbs; Lower limbs; Palms & soles; over back and abdomen suggestive of psoriasis



> No signs of CTD / Vasculitis

- No e/o nerve thickening

Vital Signs:

- PR: 98 bpm regular in rate; rhythm;
- No radio radial / radio femoral delay;
- All other peripheral pulses felt equally and vessel wall not thickened
- BP: 180 / 100 mm Hg Lt Arm supine posture
- RR: 14 br/min abdomino thoracic; regular
- Temp: a febrile (98.6ºF)

Nervous System Examination

- Right handed person
- Speech: normal
- No delusions; Hallucinations; illusions

Cranial Nerve		Right	Left
1. OLFACTORY NERVE: Able to		Yes	Yes
identify smells			
2. OPHTHALMIC NERVE:			
1) Visual acuity- Near		Normal	Normal
Far	Far	Normal	Normal
1) Visual Field		Normal	Normal
2) Colour Vision		Normal	Normal
3) Fundus		Normal	Normal
3;4;6 . OCCULOMOTOR,			
ABDUCENS AND TROCHLEAR			
1) Ptosis		No	No
2) Squint		No	No
3) Extraocular movements			
Conjugate		Free and Full	Free and Full
Unconjugate		Free and Full	Free and Full
1) Pupil Size		4mm	4mm
2) Light reflex			
Direct		Reactive	Reactive
Indirect		Reactive	Reactive
1) Accommodation Reflex		Normal	Normal

Cranial Nerve	Right	Left
5. Trigeminal Nerve		
Touch, pain and temperature over	Normal	Normal
face		
Prominence of masseter on teeth	Normal	Normal
clenching		
Corneal reflex	Present	Present
Conjunctival reflex	Present	Present
7. Facial Nerve:		
Facial Symmetry	Equal	Equal
Frowning	Normal	Normal
Wrinkling of Forehead	Present	Present
Deviation of angle of mouth	No	No
Blowing cheeks	Normal	Normal
Taste sensation over anterior	Normal	Normal
2/3rd of tongue		
8. Vestibulocochlear nerve		
Rinnes test	Positive	Positive
Webers test	No lateralization	No lateralization
Nystagmus	Absent	Absent
Absolute bone Conduction	Normal	Normal

Cranial Nerve	Right	Left
9; 10. GLOSSOPHARYNGEAL AND VAGUS NERVE: q Uvula q Palatal Movements q Gag reflex	 Midline Normal Present	 Midline Normal Present
11. SPINAL ACCESSORY NERVE: q Shrugging of shoulders against resistance q Turning neck against resistance	 Yes Yes	 Yes Yes
12. HYPOGLOSSAL NERVE: q Bulk q Pushes tongue against resistance	 Normal Yes	 Normal Yes

2. Motor System

Attitude:

- Patient in supine position.
- Both Lower limbs extended and externally rotated at hip, extended at knee and ankle joints plantar flexed with medial border facing the roof.

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Wasting:

• Wasting of small muscles of both hands +

Bulk	Right	Left
Arm	17 cm	17 cm
Fore Arm	12 cm	13 cm
Thigh	30 cm	25 cm
Leg	23 cm	23 cm
TONE		
Upper Limb	hypotonia	hypotonia
Lower Limb	Hypotonia	Hypotonia

Power	**Right**	**Left**
Shoulder		
q Flexion	2/5	2/5
q Extension	2/5	2/5
q Adduction	2/5	2/5
q Abduction	2/5	2/5
q Internal rotation	2/5	2/5
q External Rotation	2/5	2/5
Elbow		
q Flexion	3/5	2/5
q Extension	3/5	3/5
Wrist		
q Flexion	3/5	3/5
q Extension	3/5	3/5
Hand Grip	**10%**	**10 %**

Power	**Right**	**Left**
Hip		
1) Flexion	0/5	0/5
2) Extension	0/5	0/5
3) Abduction	0/5	0/5
4) Adduction	0/5	0/5
Knee		
1)Flexion	0/5	0/5
2) Extension	0/5	0/5
Ankle		
1)Dorsiflexion	2/5	2/5
2) Plantar Flexion	2/5	2/5
3) Inversion	2/5	2/5
4) Eversion	2/5	2/5
Toes		
1) Flexion	2/5	2/5
2) Extension	2/5	2/5

DTR	**Right**	**Left**
Biceps	Absent	Absent
Triceps	Absent	Absent
Supinator	Absent	Absent
Knee	Absent	Absent
Ankle	Absent	Absent

Superficial Reflexes	**Right**	**Left**
Corneal	**Present**	**Present**
Conjuctival	Present	Present
Abdominal	present	present
Cremasteric	**Absent**	**Absent**
Plantar	flexor	flexor

Co-ordination: consistent with weakness

Gait: could not be assessed

Sensory System

	RIGHT	**LEFT**
Crude Touch	Normal	Normal
Pain	Normal	Normal
Temperature	Normal	Normal
Fine touch	Normal	Normal
Vibration	Normal	Normal
Joint position	Normal	Normal

Cerebellum-

Titubation- Negative
Nystagmus- Negative
Tremors- Negative
Finger nose finger, finger nose, dysdiadokinesia, heel knee and foot tap test, stance, gait could not be assessed

Autonomic Nervous System:

Orthostatic hypotension could not be assessed. HR variability with deep breathing: 18bpm

- **Spine and Cranium - Normal**
- No meningeal signs
- No signs of raised ICT
- Fundus: normal study

- **Other Systems:**
- CVS- S1S2 heard. No murmurs or gallop heard.
- RS- Bilateral Air entry+.
- P/A- Soft. No organomegaly

Final Diagnosis

Acute Flaccid
Symmetric Pure motor Quadriparesis
Involving Proximal Muscles > distal muscles with wasting
Large fibre predominant

Polyneuropathy
With no Pyramidal signs
With Autonomic signs
Without cerebellar signs
With normal HMF

3. Investigations

- Hb %: 9 gm%
- WBC: 8, 000 cells /cumm
- Platelets: 1.9 lac /cumm
- S. Creatinine: 1.1 mg/dl
- S. Bilirubin: 1.2mg/dl
- S. Electrolytes:

Na: 142 mEq /L
K: 4.5mEq /L
Cl: 102 mEq /L

- ECG: WNL
- CXR: WNL

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Investigations

Nerve Conduction Studies:

- Acute Demyelinating Poly Radiculo neuropathy with Secondary Axonal degeneration in sampled nerves CSF analysis:
- Protein:
- Cells: 10 cells /cumm

Course in Hospital

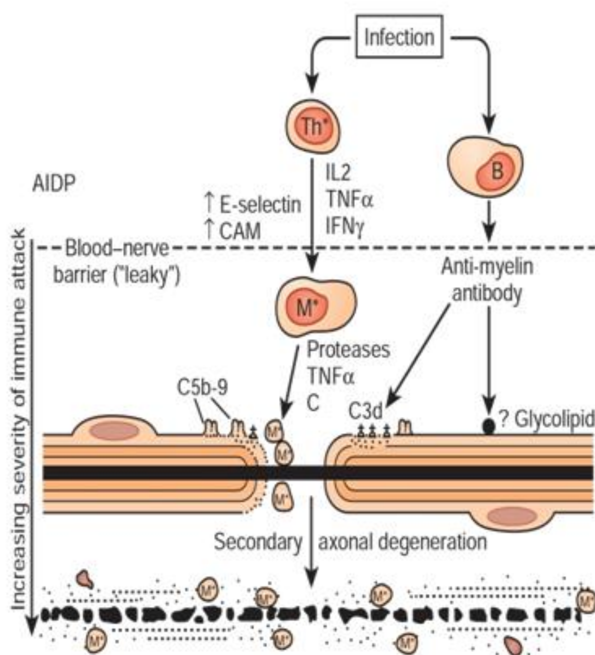
- Received immunoglobulin therapy
- 400mg/kg for 5 days
- Didn't had complete recovery
- advised physiotherapy
- Discharged and advised for follow up

4. Discussion

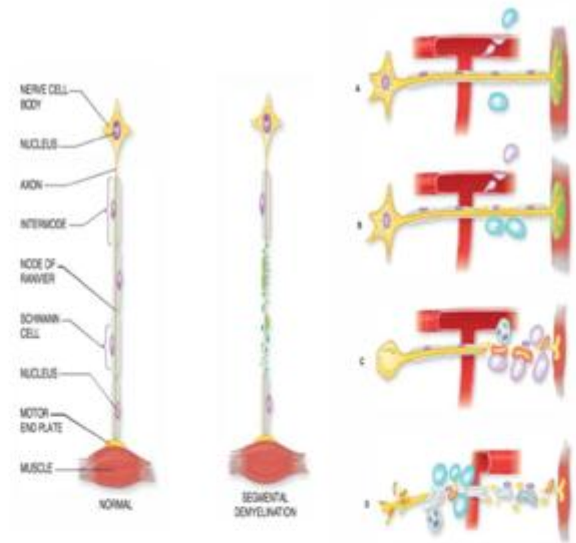
- Landry - Guillian - Barré – Strohl Syndrome is a common acute severe immune mediated demyelinating polyradiculo neuropathy
- Incidence: 1 – 4 / lac / yr (US)
- M > F
- Age: 8 months – 81 yrs
- Commonly associated with CMV; EBV; VZV; HAV; HBV; HIV; Zika
- C.jejuni; Mycoplasma; hemophilus etc

- Vaccinations like Influenza; Tt; Diptheria; OPV; Meningococcal conjugate vaccine

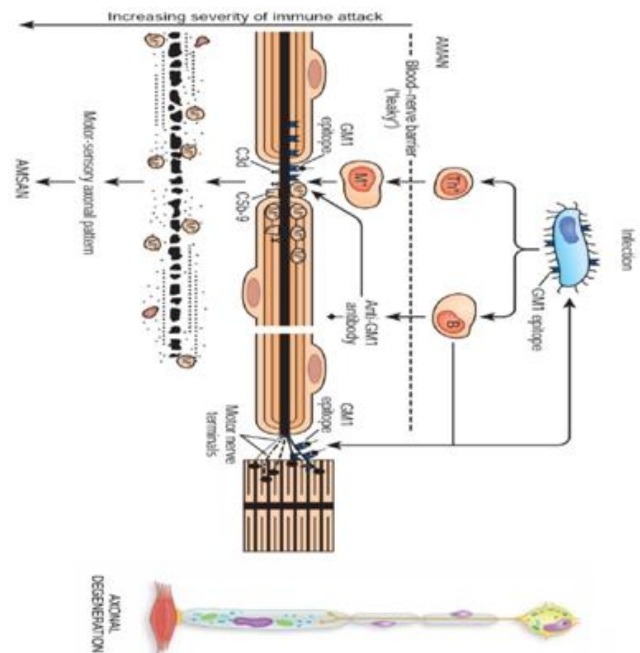
- Asso with Hodgikins lymphoma; Solid organ Transplantation; BMT



Pathophysiology: AIDP



Pathophysiology: Axonal Variants



Clinical Manifestations

Classical form:

- Dysesthesias and pain
- Ascending areflexic paralysis involving respiratory muscles and B/L facial paralysis
- Weakness reaches nadir by 2 wks
- No fever at the onset of disease
- Bladder and bowel involvement rules out GBS
- Weakness progression stops and reaches plateau by 4 wks
- Autonomic manifestations

OH; iridoplegia; episodic / sustained HTN; anhidrosis; Diaphoresis; Cardiac dysrythmias

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Variants

Regional variants:

- Miller fischer syndrome
- Cervico brachio Pharyngeal weakness with ptosis
- Oculopharyngeal weakness
- Paraparesis variant
- B/L facial/ abduscent weakness with distal paresthesias
- Ophthalmoplegia with GQ1b autoantibodies

Systemic Specific

- Generalised Ataxia without dysarthria or nystagmus
- Pure sensory
- Pure motor
- Pandysautonomia
- Axonal forms (AMAN; AMSAN)

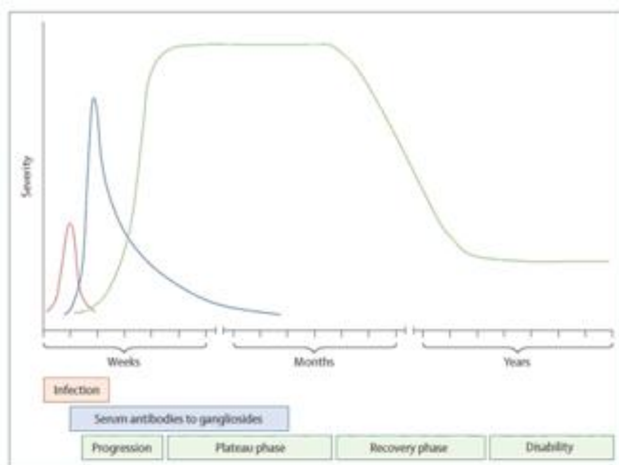


Figure 1: Guillain-Barré syndrome time course

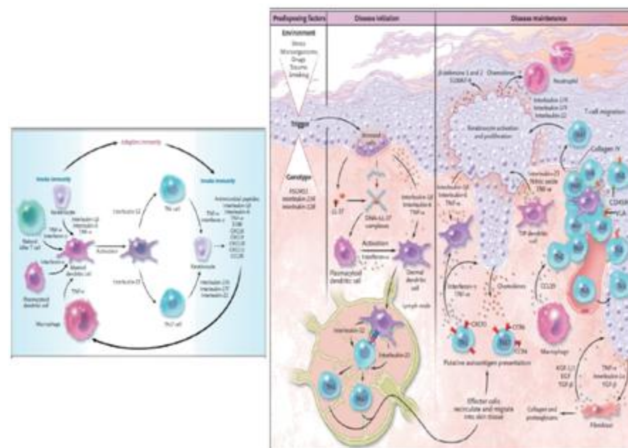
Atypical manifestations of GBS

- Papilledema
- Pseudo tumour cerebri
- Pyramidal sign

Mechanism

Psoriasis: Pathogenesis

Psoriasis is now not a disease confined to skin but a systemic inflammatory disease with a cutaneous manifestations



- Because of its similarities in the inflammatory process and The spectrum of associated diseases, as well as

The response to certain types of treatment, have enabled psoriasis to be classified as one of the "immune-mediated inflammatory diseases" (IMID)

Psoriasis is a chronic immune mediated skin disease with many systemic manifestations.

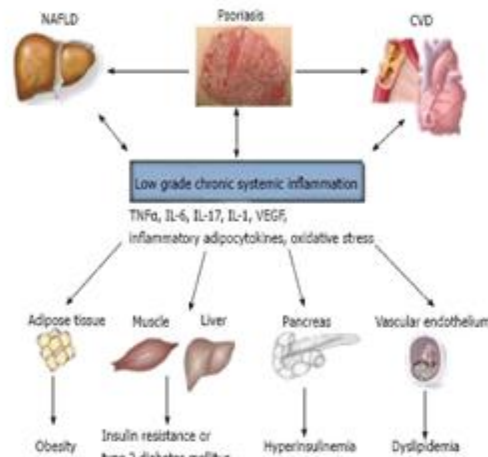


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Table 1: Neurological and psychiatric disorders in psoriasis

Neurological disorders	Psychiatric disorders
Multiple sclerosis	Depression
Epilepsy	Bipolar mood disorder
Migraine	Anxiety
Restless leg syndrome	Psychosis
Guillain-Barré syndrome	Cognitive impairment
Myasthenia gravis	Personality change
	Sexual disorders
	Sleep disturbance
	Eating disorders

- GBS is very rarely reported in literature in association with Psoriasis

Mechanism of GBS

1. With therapy related
2. As a part of disease process

With therapy

Nakao et al. (2016)

A 42-year-old Japanese man with juvenile onset of psoriasis vulgaris. Seven months after administration of adalimumab with initiation dose of 80 mg, followed by 40 mg twice a week, the symptoms of Guillain-Barre presented

- Literature showed around 16 such cases where patients of auto immune diseases like RA(10); Psoriasis(2) with or without arthritis; Chrons Disease(4) on Anti TNFα therapy developed GB syndrome during their course of treatment.
- Anti TNF α agents like Adalimumab; Etanercept; Infliximab
- Sargin and Gürer (2017)

A 66-year-old male with a history of chronic plaque psoriasis affected lower limbs, presented with numbness, tingling, and weakness in his legs and was diagnosed with Guillain-Barre. No specific etiology such as drug complication was considered for this coexistence.

5. Treatment

Most Plausible Mechanisms of Action of IVIg in Inflammatory

Neuropathies

1. Anti-idiotype antibody production
2. Inhibition of complement pathway
3. Fc receptor modulation on macrophages and other effector cells
4. Suppression of pathogenic cytokines
5. Effects on cell migration by modulation of adhesion molecules
6. T-cell modulation
7. Direct effect on remyelination

6. Conclusions

- Psoriasis is a systemic inflammatory disease
- The proposed common pathways between psoriasis and co-morbidities highlight the importance of treating psoriasis as a multifaceted disease and the need of regular screening for CV risk factors.
- When neurologic dysfunctions develop in patients with psoriasis history, the possibility of CIDP/GBS should be kept in mind and the patients should be examined in this respect.
- Therapy with IVIg often clears the psoriatic skin lesions

References

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