Psoriasis & Guillain 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 quadriplegia 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.

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> 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 (98.6°F)

**Nervous System Examination**

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

### Vital Signs:

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### Nervous System Examination

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### Cranial Nerve

<table>
<thead>
<tr>
<th>Cranial Nerve</th>
<th>Right</th>
<th>Left</th>
</tr>
</thead>
<tbody>
<tr>
<td>Olfactory Nerve:</td>
<td>Able to smell</td>
<td>Yes</td>
</tr>
<tr>
<td>Ophthalamic Nerve:</td>
<td>1) Visual acuity: Near Normal</td>
<td>Normal</td>
</tr>
<tr>
<td></td>
<td>Far</td>
<td>Normal</td>
</tr>
<tr>
<td></td>
<td>1) Visual Field</td>
<td>Normal</td>
</tr>
<tr>
<td></td>
<td>2) Colour Vision</td>
<td>Normal</td>
</tr>
<tr>
<td>3) Fundus</td>
<td>Normal</td>
<td>Normal</td>
</tr>
<tr>
<td>3:4:6. Occulomotor, ABDUCENS AND TROCHLEAR</td>
<td>1) Ptosis: No</td>
<td>No</td>
</tr>
<tr>
<td></td>
<td>2) Squint: No</td>
<td>No</td>
</tr>
<tr>
<td>3) Extraocular movements:</td>
<td>Conjugate Free and Full</td>
<td>Free and Full</td>
</tr>
<tr>
<td></td>
<td>Unconjugate Free and Full</td>
<td>Free and Full</td>
</tr>
<tr>
<td></td>
<td>1) Pupil Size: 4mm</td>
<td>4mm</td>
</tr>
<tr>
<td></td>
<td>2) Light reflex:</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Direct Reactive</td>
<td>Reactive</td>
</tr>
<tr>
<td></td>
<td>Indirect Reactive</td>
<td>Reactive</td>
</tr>
<tr>
<td>1) Accommodation Reflex:</td>
<td>Normal</td>
<td>Normal</td>
</tr>
<tr>
<td>5. Trigeminal Nerve</td>
<td>Touch, pain and temperature over face</td>
<td>Normal</td>
</tr>
<tr>
<td></td>
<td>Prominence of masseter on teeth</td>
<td>Normal</td>
</tr>
<tr>
<td></td>
<td>Corneal reflex: Present</td>
<td>Present</td>
</tr>
<tr>
<td></td>
<td>Conjunctival reflex: Present</td>
<td>Present</td>
</tr>
<tr>
<td></td>
<td>Frowning Normal</td>
<td>Normal</td>
</tr>
<tr>
<td></td>
<td>Wrinkling of Forehead Present</td>
<td>Present</td>
</tr>
<tr>
<td></td>
<td>Deviation of angle of mouth No</td>
<td>No</td>
</tr>
<tr>
<td></td>
<td>Blowing cheeks Normal</td>
<td>Normal</td>
</tr>
<tr>
<td></td>
<td>Taste sensation over anterior Normal</td>
<td>Normal</td>
</tr>
<tr>
<td>8. Vestibulocochlear nerve</td>
<td>Rinnes test: Positive</td>
<td>Positive</td>
</tr>
<tr>
<td></td>
<td>Webers test: No lateralization</td>
<td>No lateralization</td>
</tr>
<tr>
<td></td>
<td>Nystagmus: Absent</td>
<td>Absent</td>
</tr>
<tr>
<td></td>
<td>Absolute bone Conduction Normal</td>
<td>Normal</td>
</tr>
<tr>
<td>9; 10. Glossopharyngeal and vagus nerve:</td>
<td>Uvula Midline</td>
<td>Midline</td>
</tr>
<tr>
<td></td>
<td>Palatal Movements Normal</td>
<td>Normal</td>
</tr>
<tr>
<td></td>
<td>Gag reflex Present</td>
<td>Present</td>
</tr>
<tr>
<td>11. Spinal Accessory Nerve:</td>
<td>Shrugging of shoulders against resistance Yes</td>
<td>Yes</td>
</tr>
<tr>
<td></td>
<td>Turning neck against resistance Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>12. Hypoglossal Nerve:</td>
<td>Bulk Normal</td>
<td>Yes</td>
</tr>
<tr>
<td></td>
<td>Pushes tongue against resistance Normal</td>
<td>Yes</td>
</tr>
</tbody>
</table>

### 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.
Wasting:

- Wasting of small muscles of both hands +

<table>
<thead>
<tr>
<th>Bulk</th>
<th>Right</th>
<th>Left</th>
</tr>
</thead>
<tbody>
<tr>
<td>Arm</td>
<td>17 cm</td>
<td>17 cm</td>
</tr>
<tr>
<td>Fore Arm</td>
<td>12 cm</td>
<td>13 cm</td>
</tr>
<tr>
<td>Thigh</td>
<td>30 cm</td>
<td>25 cm</td>
</tr>
<tr>
<td>Leg</td>
<td>23 cm</td>
<td>23 cm</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>TONE</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Upper Limb</td>
<td>hypotonia</td>
</tr>
<tr>
<td>Lower Limb</td>
<td>Hypotonia</td>
</tr>
</tbody>
</table>

Sensory System

<table>
<thead>
<tr>
<th>Sensory System</th>
<th>RIGHT</th>
<th>LEFT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Crude Touch</td>
<td>Normal</td>
<td>Normal</td>
</tr>
<tr>
<td>Pain</td>
<td>Normal</td>
<td>Normal</td>
</tr>
<tr>
<td>Temperature</td>
<td>Normal</td>
<td>Normal</td>
</tr>
<tr>
<td>Fine touch</td>
<td>Normal</td>
<td>Normal</td>
</tr>
<tr>
<td>Vibration</td>
<td>Normal</td>
<td>Normal</td>
</tr>
<tr>
<td>Joint position</td>
<td>Normal</td>
<td>Normal</td>
</tr>
</tbody>
</table>

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:
  - CV/S- 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

Gait: could not be assessed

Co-ordination: consistent with weakness
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: 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 dysrhythmias
Variants

Regional variants:

• Miller fischer syndrome
• Cervico brachio Pharyngeal weakness with ptosis
• Oculopharyngeal weakness
• Paraparesis variant
• B/L facial/ abducent 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)

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

Atypical manifestations of GBS

• Papilledema
• Pseudo tumour cerebri
• Pyramidal sign

Mechanism

Psoriasis: Pathogenesis

• 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.
• 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

References


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