

# THE NEUROLOGICAL PATIENT WITH SYPHILIS: DIAGNOSTIC AND THERAPEUTIC CHALLENGES IN DERMATOLOGICAL PRACTICE - A CASE PRESENTATION

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## Summary

**Background:** Syphilis, widely recognized as “the great imitator”, frequently poses diagnostic challenges due to the polymorphism of its clinical manifestations. The intersection between *Treponema pallidum* infection and immune-mediated pathologies, such as Guillain-Barré Syndrome (GBS), raises fundamental questions regarding the role of infectious triggers in initiating systemic autoimmunity.

**Objective:** To present a complex case of acutely installed flaccid tetraparesis in a patient with positive syphilitic serology, highlighting the interdisciplinary management.

**Material and methods:** A retrospective case report study focusing on a 56-year-old male admitted to the emergency department. The evaluation included detailed clinical examinations (neurological and dermatological), para-clinical investigations (CSF analysis, brain and spinal MRI, dynamic biochemistry), and monitoring the response to combined therapeutic interventions.

**Results:** The patient exhibited predominantly proximal tetraparesis, abolished deep tendon reflexes, and right-sided peripheral facial nerve palsy. CSF analysis revealed albumin-cytologic dissociation. Serological testing confirmed late latent syphilis, discovered incidentally. Under a combined treatment regimen (intravenous immuno-globulins, corticosteroids, and an antibiotic protocol consisting of Tetracycline followed by Benzathine Penicillin), the clinical course was favorable, resulting in a partial remission of the motor deficit.

**Conclusions:** This case underscores the necessity of systematic syphilitic serological screening in all acute neurological presentations of the polyradiculoneuritis type. Eradicating the infectious focus is essential to prevent neuroprogression and ensure the success of the neurological rehabilitation program.

**Keywords:** *Treponema pallidum*, late latent syphilis, Guillain-Barré syndrome, albumin-cytologic dissociation, Benzathine Penicillin.

Received: 15.06.2026

Accepted: 9.07.2026

## Introduction

Syphilis, often referred to in medical literature as “the great imitator,” continues to represent a major diagnostic challenge due to the polymorphism of its clinical manifestations. In the fields of neurology and dermatology, the intersection between *Treponema pallidum* infection and immune-mediated pathologies, such as Guillain-Barré Syndrome (GBS), raises fundamental questions regarding the role of

infectious triggers in initiating systemic auto-immune responses [1, 2,3].

## Objective

To present a complex case of acutely installed flaccid tetraparesis in a patient with positive syphilitic serology, highlighting the interdisciplinary management and the critical importance of infectious screening in neurological pathology.

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## Material and methods

This study is a retrospective clinical analysis of a complex medical case, utilizing the clinical and paraclinical data of a 56-year-old male patient admitted as a medical emergency.

### **The investigation methodology included:**

*Multidisciplinary clinical evaluation:* Detailed neurological examination (assessing motility, reflexes, cranial nerves, and sensitivity) and a specialized dermatological consultation to identify potential mucocutaneous lesions or lymphadenopathy.

*Laboratory tests and biomarker dynamics:* Monitoring muscle injury markers (Creatine Kinase - CK, Myoglobin) and inflammatory markers (ESR, CRP) at admission, mid-treatment, and discharge.

*Invasive and imaging investigations:* Cerebrospinal fluid (CSF) evaluation via lumbar puncture (proteinorrhachia, cellularity, glycorrhachia) for the differential diagnosis of polyradiculoneuritis, along with brain and spinal magnetic resonance imaging (MRI).

*Serological screening:* Immunological testing for syphilis using treponemal and non-treponemal methods (TPHA, VDRL/RPR, FTA-abs, IgM) performed in the hospital and confirmed by the Public Health Laboratory (DSP).

*Therapeutic protocol and follow-up:* Implementation of an integrated combined treatment strategy (neurological and dermatological) and establishing a long-term monitoring algorithm.

## Case presentation

### **Medical History**

A 56-year-old male, known with medically uncontrolled hypertension, presented to the emergency department complaining of distal limb paresthesia, followed by a rapidly progressive motor deficit in the scapulohumeral and pelvic girdles, with an onset of 24 hours.

### **Clinical and Neurological Examination**

Upon admission, the neurological presentation was dominated by signs of peripheral motor neuron involvement, distributed symmetrically and progressively:

**Voluntary Motility:** Predominantly proximal tetraparesis, with a segmental strength score of 3/5 on the MRC scale. The deficit prevented the maintenance of orthostatic posture, resulting in a waddling gait.

**Reflexes:** Abolished deep tendon reflexes (DTR) in the lower limbs (patellar, Achilles) and bilaterally in the radial nerves.

**Cranial Nerves:** Right-sided peripheral facial nerve palsy, characterized by the inability to close the eyelid and the loss of the nasolabial fold.

**Sensitivity:** Distal paresthesia in the limbs, associated with diminished pain sensitivity (which improved significantly under treatment).

### **Paraclinical Investigations**

#### *1. CSF Analysis (Lumbar Puncture)*

The results obtained were essential for the differential diagnosis of polyradiculoneuritis:

**Proteinorrhachia:** Significantly increased protein level (highlighting albumin-cytologic dissociation), a phenomenon characteristic of Guillain-Barré Syndrome, where the protein level in the CSF increases without a proportional increase in the number of cells.

**Cellularity:** The cerebrospinal fluid examination revealed a clear appearance, being an acellular fluid (no pleocytosis was noted), with negative bacterial cultures.

**Glycorrhachia:** The determined value was 96.3 mg/dL.

#### *2. Imaging Investigations*

**Brain MRI:** Revealed cortical atrophy and small bilateral old ischemic lesions.

**Spinal MRI:** Confirmed severe degenerative changes (Modic II, osteophytes) and minor disc protrusions, which, however, did not explain the acute nature of the tetraparesis.

#### *3. Serological Profile and Dermatological Evaluation*

Upon specialist dermatological evaluation, the clinical examination showed no peripheral lymphadenopathy and no cutaneous or mucosal signs specific to syphilis (such as primary chancre, palmoplantar syphilids, or condylomata lata).

The serological profile showed the following:

**Initial Hospital Testing:** Positive for TPHA and RPR/VDRL; however, a highly intense positive serology (high-titer reactivity) was not confirmed.

**Public Health Laboratory Confirmation (DSP):** Confirmed positivity for TPHA and

VDRL. Immunoblotting showed negative FTA-abs test results, and non-treponemal anti-Treponema IgM antibodies were equivocal.

Diagnostic Interpretation: Given the complete absence of clinical manifestations, the lack of high-titer serological intensity, and the unknown duration of exposure, this case represents an incidental find of \*late latent syphilis\* (syphilis latent tardiv), discovered solely due to the systematic screening required by the acute neurological presentation.

#### 4. Biochemical Tests

Marked elevations in Creatine Kinase (CK: 2355 U/L) and Myoglobin (1066 ng/dL) were recorded, suggesting concomitant muscle/

## Results and Clinical Course

Under combined treatment, the clinical course was favorable, with a partial remission of the motor deficit. At discharge (Day 18), the patient was hemodynamically and respiratory stable, mobilizing with the aid of a walking frame, and showing significant improvement in facial palsy and pain sensitivity.

### Dynamics of Biological and Motor Parameters

The evolution of the main markers indicates a close correlation between the resolution of tissue damage and the improvement of motor status:

| Parameter                         | Admission (Day 1)    | Mid-Treatment (Day 58)   | Discharge (Day 18)                |
|-----------------------------------|----------------------|--------------------------|-----------------------------------|
| <b>Motor Strength (MRC Score)</b> | 3/5 (Severe Deficit) | 3.5/5 (Slow Progression) | 4/5 (Improved, Mobile with Frame) |
| <b>ESR (mm/h)</b>                 | 55                   | 100 (Inflammatory Peak)  | 90 (Slowly Decreasing)            |
| <b>CK (U/L)</b>                   | 2355 (Peak)          | 1023                     | 268 (Near Normal)                 |
| <b>Myoglobin (ng/dL)</b>          | 1066                 | 562                      | 168                               |

myopathic involvement. Elevated inflammatory markers were also noted (ESR: 55-100 mm/h, CRP: 21.4 mg/dL).

### Therapeutic Management

An integrated interdisciplinary approach was adopted (Neurology - Dermatology):

1. GBS Treatment (Neurological): Intravenous immunoglobulin therapy was administered (IVIG - KIOVIG 100ml), alongside corticosteroid therapy (Dexamethasone, Hydrocortisone), neurotrophic agents (Cerebrolysin), and antihypertensive support.

2. Dermatological Protocol (Antibiotic): In the initial phase, treatment was initiated with Tetracycline 250 mg (2 tablets every 6 hours for 14 days). Subsequently, since a cerebrospinal fluid (CSF) serological test for syphilis was missing at that time, it was strictly recommended to cover late latent stages by administering Benzathine Penicillin G 2.4 million IU intramuscularly, once a week for 3 consecutive weeks (split into two injections of 1.2 million IU per session, totaling 7.2 million IU).

### Discussion Based on Biomarker Dynamics

1. Biomarker Correlation: \* The sharp decline in Creatine Kinase (CK) and Myoglobin levels directly correlates with the initiation of high-dose IVIG and corticosteroid therapy, indicating the cessation of acute muscle fiber injury and nerve root inflammation.

2. Recovery of Functional Mobility: \* A clear inverse relationship between tissue damage markers and the MRC scale was evident. As enzymatic markers normalized, motor strength followed a steady upward trend, allowing the patient to transition from immobility to assisted gait.

3. The "Inflammatory Plateau": \* While muscle enzymes normalized rapidly, the ESR remained elevated (reaching a peak of 100 mm/h). This suggests a persistent systemic inflammatory state, likely sustained by the underlying syphilitic infection, which fully justifies the long-term antibiotic regimen (Benzathine Penicillin) required for full biological remission.

### Long-Term Monitoring Protocol

Following the completion of the antibiotic therapy, quantitative monitoring of TPHA and VDRL titers (tracking dilutions in dynamics) is mandatory. The patient must repeat these serological tests every 3 months during the first year, and every 6 months during the second year (for a total follow-up period of 2 years) through the outpatient dermatology service.

### Conclusions

This case underscores the necessity of systematic syphilitic serological testing in all acute neurological presentations of the polyradiculoneuritis type. The coexistence of syphilis with Guillain-Barré Syndrome necessitates increased therapeutic vigilance; eradicating the infectious focus through the Penicillin protocol is essential to prevent neuroprogression and to facilitate the success of the neurological rehabilitation program.

### Bibliography

1. Wandinger, K. P., et al. (2019). Neurosyphilis mimicking autoimmune neurological syndromes. *Journal of Neurology*.
2. Tsui, H. W., et al. (2004). Guillain-Barré syndrome in early syphilis. *International Journal of STD & AIDS*.
3. CDC Guidelines. (2024). Syphilis Treatment and Monitoring Protocols for Neurosyphilis

Conflict of interest  
NONE DECLARED

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