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Case (Index Case)

Patient Profile

35-year-old male

HIV Status: Positive

CD4 Count: 88 cells/mm³ (advanced immunosuppression)

Annual Screening Findings

Serum VDRL: Positive (titer 1:64)

FTA-Abs IgG & IgM: Positive

Clinical Symptoms: No neurological or systemic symptoms

Lumbar Puncture (CSF Analysis)

WBC: 55 cells/mm³ (lymphocytes 45, PMN 10)

Protein: 88 mg/dL (elevated)

Glucose: 60 mg/dL (normal)

CSF VDRL: Negative *(assumed for presentation purposes)*

Viral PCR Panel & Bacterial Cultures: Negative

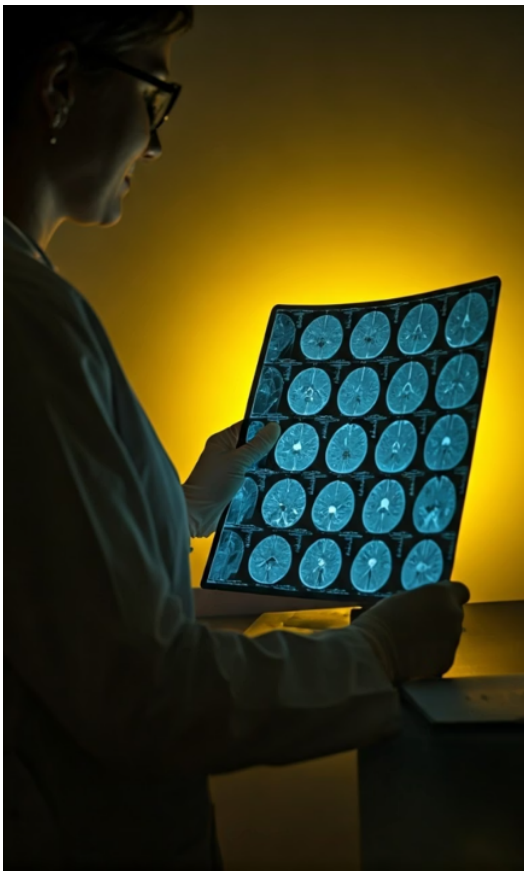
Diagnostic Challenge and Clinical Reasoning

Key Findings Suggestive of Neurosyphilis

- HIV-positive patient with CD4 < 200 cells/mm³ (high risk for opportunistic infections and neuroinvasive disease)
- Positive serological markers (VDRL + FTA-Abs) indicating active or past syphilitic infection
- Abnormal CSF profile: Lymphocytic pleocytosis, Elevated protein (hyperproteinorrachia)
- No alternative etiology identified (negative viral and bacterial work-up)

Important Note

- A negative CSF VDRL does not exclude neurosyphilis.
- The sensitivity of CSF VDRL is estimated at only 50–70%, especially in early or treated cases.
- Therefore, neurosyphilis should be diagnosed based on a combination of clinical, serologic, and CSF findings, even in the absence of a positive CSF VDRL.

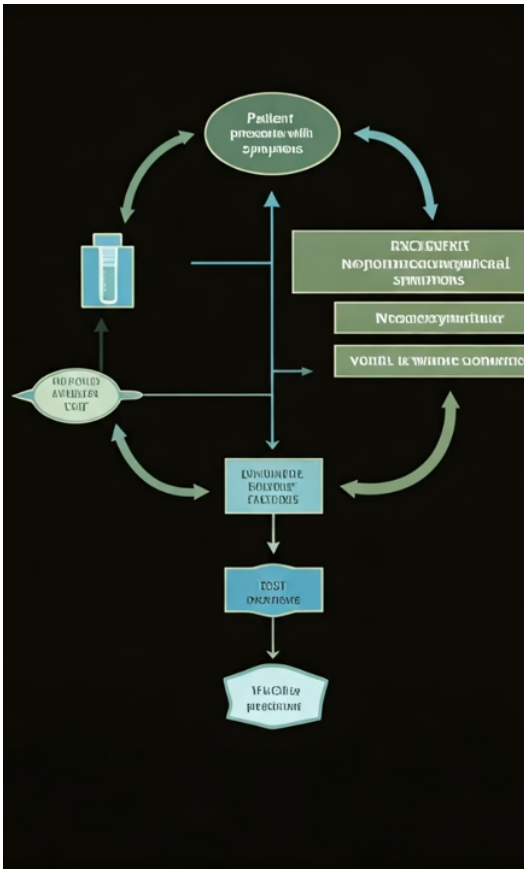


CDC Diagnostic Criteria for Neurosyphilis (2023)

Abnormal CSF AND Reactive serology for syphilis AND No other identifiable cause

Abnormal CSF defined as WBC >5 cells/mm³ or protein >45 mg/dL. This criterion is met in our patient case.

In this patient, all diagnostic criteria are met; therefore, **probable neurosyphilis** is strongly suspected.



Recommended Treatment

First-line Therapy

Aqueous Crystalline Penicillin G IV – 18–24 million units/day divided every 4 hours for 10–14 days

Alternative (if penicillin-allergic)

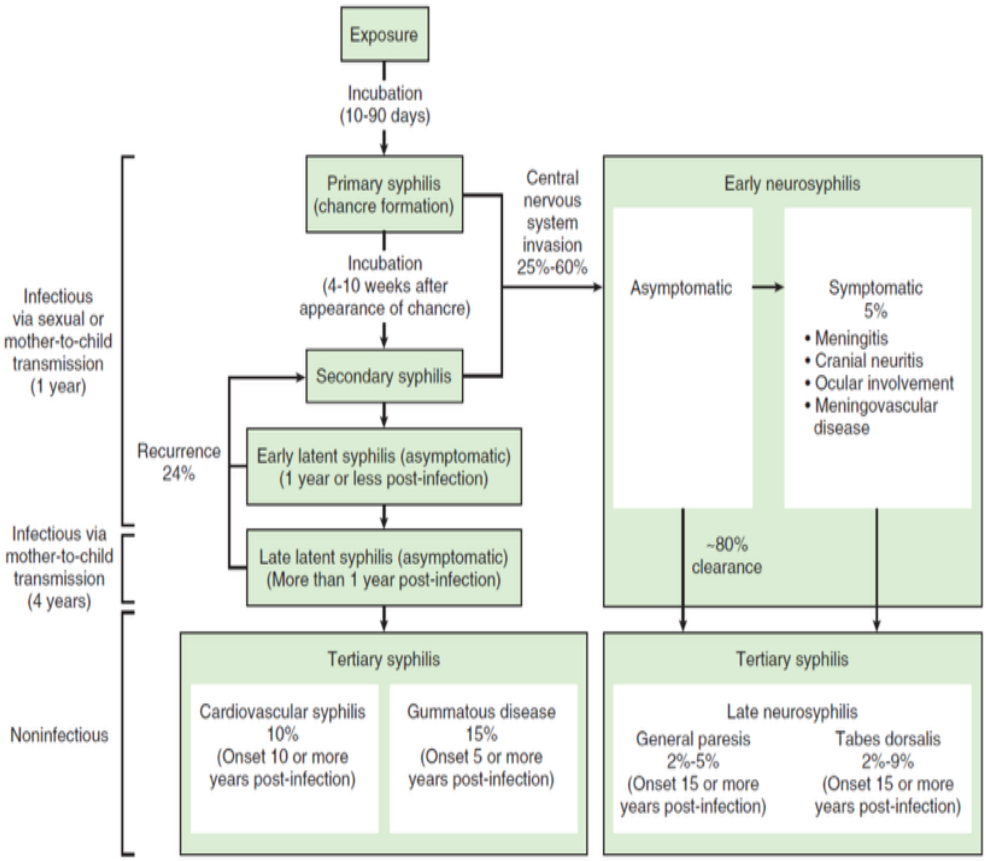
Ceftriaxone IV – 2 g daily for 14 days

Follow-up

Repeat LP after 6 months to assess response (WBC and protein levels)

In HIV-positive patients, prolonged courses may be considered depending on response

Consider retreatment if incomplete resolution is observed



Final Clinical Take-home Message

CSF VDRL, neurosyphilis should be treated in seropositive patients
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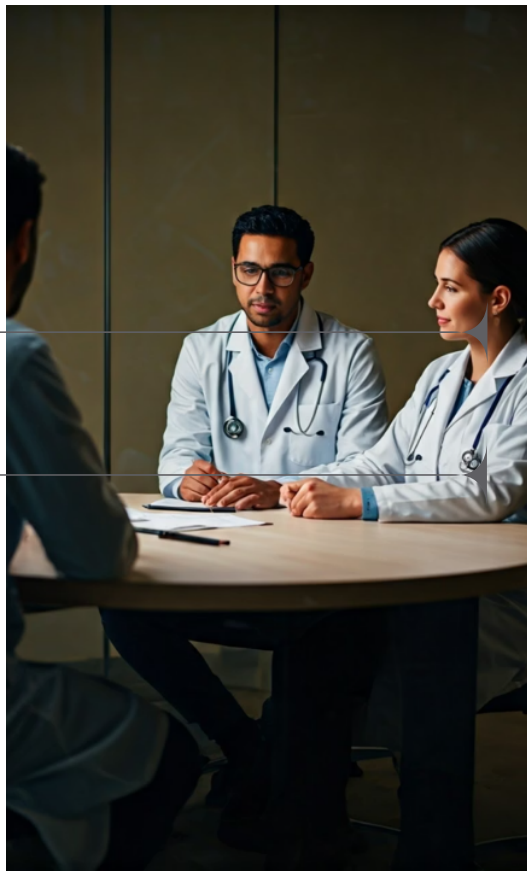
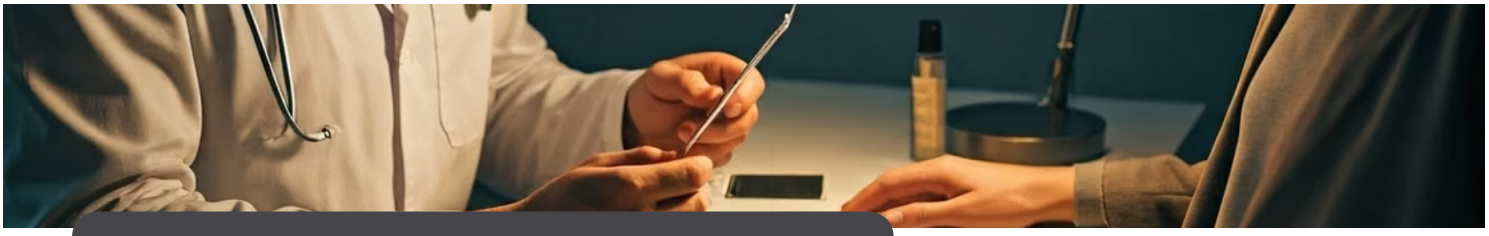


HIV Considerations

In HIV-positive patients, neurosyphilis can present asymptomatically and may only be detected through CSF abnormalities

Early Intervention

Early diagnosis and treatment are essential to prevent long-term neurological complications



Response to Late Latent Syphilis Therapy

Monitoring Schedule

Use non-treponemal serologic tests (e.g., RPR or VDRL) at 6, 12, 18, and 24 months post-treatment.

Treatment Goals

Aim for a four-fold decline in titer if the initial titer was high (≥1:32).

Ensure adequate response within 12–24 months of therapy.

Treatment Failure Assessment

If clinical symptoms develop or there is a four-fold increase in non-treponemal titers, consider treatment failure or re-infection.

Manage based on sexual history and risk assessment.

There is limited data defining precise time intervals for adequate serological responses.

Assess potential for re-infection based on sexual behavior and risk factors.

CSF Response to Neurosyphilis Treatment

1

Earliest Indicator

The earliest indicator of response to neurosyphilis treatment is a decline in CSF lymphocytosis.

2

CSF VDRL Response

May respond more slowly compared to serum markers.

[redacted]

CSF examination at 6 months.

4

HIV Infection Consideration

Limited data suggest that changes in CSF parameters may occur more slowly in patients with HIV infection, especially with advanced immunosuppression.

5

Re-treatment Criteria

If the cell count has not decreased after 6 months or if the CSF WBC is not normal after 2 years, re-treatment should be considered.

In persons on ART with neurosyphilis, declines in serum RPR titers after treatment correlate with normalization of CSF parameters.

ART use is associated with a reduced risk of serologic failure of syphilis treatment and a lower risk of developing neurosyphilis.

[redacted]anks for your attention