Bangladesh Journal of Medicine (BJM)
ISSN : 1023 - 1986
eISSN : 2408 - 8366

CASE REPORT

OCULAR SYPHILIS PRESENTING AS A DIAGNOSTIC DILEMMA: AN EDUCATIONAL CASE REPORT AND LITERATURE REVIEW

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Abstract

Ocular syphilis is a rare manifestation of Treponema pallidum infection that can occur at any stage of disease and may lead to irreversible vision loss if not recognized and treated promptly. Because it can mimic a wide range of ocular inflammatory conditions and may occur without classic systemic features of syphilis, diagnosis is often delayed. Recent epidemiologic data demonstrate a marked rise in syphilitic uveitis cases globally. We report a 44-year-old woman with bipolar disorder, seizure disorder, hepatitis C, and polysubstance use who presented with acute right eye swelling, irritation, and bilateral visual disturbances. Her visual symptoms were repeatedly attributed to allergic irritation, delaying diagnosis.Ophthalmologic evaluation demonstrated mild ocular inflammation, and serologic testing confirmed syphilis with positive treponemal and nontreponemal results. Despite multiple interruptions in therapy, she ultimately completed treatment with intravenous penicillin G in accordance with current guidelines. This case highlights the importance of maintaining a high index of suspicion for ocular syphilis, obtaining timely serologic testing, and addressing barriers to treatment adherence through coordinated multidisciplinary care.

Keywords : *Ocular syphilis, uveitis, neurosyphilis, penicillin, blindness*

Date of submission: 11.01.2026 Date of acceptance: 20.04.2026

DOI: https://doi.org/10.3329/bjm.v37i2.87536.

Citation: *Cardoza K, Hoque F. Ocular Syphilis Presenting as a Diagnostic Dilemma: An Educational Case Report and Literature Review. Bangladesh J Medicine 2026; 37(2): 161-164*

Introduction

Ocular syphilis is a rare manifestation of Treponema pallidum, most commonly presenting as uveitis and often without classic systemic findings.[3,4] Recent epidemiologic data demonstrate a marked rise in syphilitic uveitis cases, paralleling the overall increase in syphilis incidence in the United States and globally.[2,4] In the U.S., ocular syphilis occurs in approximately 1% of syphilis cases, with uveitis present in about 65% and bilateral involvement in roughly half of patients.[4,7] The clinical presentation is highly variable, ranging from anterior and posterior uveitis to optic neuritis, retinal vasculitis, and chorioretinitis.[3,14] Posterior uveitis and panuveitis are the most common manifestations, though involvement of nearly any ocular structure is possible.[3] Bilateral disease is frequent, and patients may present solely with ocular symptoms such as decreased vision, without cutaneous or neurologic findings.[8,15]

Case Report

A 44-year-old female with Bipolar I Disorder, seizure disorder, hepatitis C infection, and polysubstance use presented with two days of malaise, body aches, subjective fevers, and right eye swelling, irritation, and discharge. Her symptoms included pain with eye movement, photophobia, nasal congestion, nausea, and intermittent headache.Six months earlier, she presented with several weeks of bilateral vision changes. She had sought care from multiple outpatient clinicians, where her visual symptoms were repeatedly attributed to allergic irritation rather than an infectious

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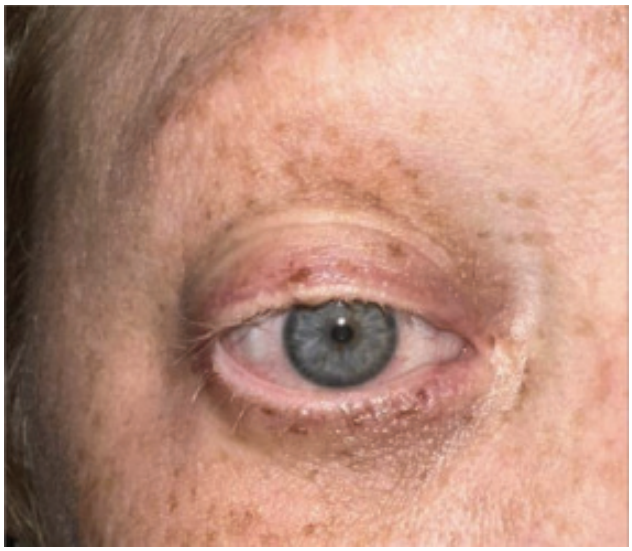

Figure 1. *Right eye with mild inflammation prior to restarting IV Penicillin treatment.*

etiology, leaving her frustrated by the lack of improvement. At our hospital, given her persistent symptoms and history of multiple sexual partners, the primary team ordered an RPR and treponemal antibody test, which returned positive, and serology confirmed an RPR titer of 1:128. Ophthalmology and infectious disease teams were consulted. These findings were consistent with ocular syphilis.[3,4] After being informed of the need for treatment, she left against medical advice (AMA). She returned 12 days later but again left AMA due to prolonged wait times. She was evaluated by infectious disease three days later and transferred to the emergency department for urgent treatment. She began a 14-day course of IV penicillin G but left AMA on day six. She was subsequently hospitalized three more times but never completed more than nine consecutive days of IV penicillin G due to repeatedly leaving AMA, an interruption known to worsen visual outcomes.[15] During the current admission, ophthalmology noted trace conjunctival injection in the right eye, bilateral trace nuclear sclerotic cataracts, and vitreous syneresis without cells (Figure 1). Her best corrected visual acuity was 20/25 bilaterally, with normal intraocular pressures, pupillary responses, color vision, and fields. These findings were consistent with mild inflammation.[3] Laboratory testing showed leukocytosis to 13.5, AST 84, ALT 45, an RPR titer of 1:4, negative COVID/flu testing, HIV negativity, and a positive urine drug screen. Given her history of incomplete treatment and current systemic symptoms, ophthalmology recommended hospital admission. Infectious disease initiated topical prednisolone 1% drops for five days and IV penicillin G for 14 days, to be followed by Bicillin IM. After three days, she reported subjective improvement, though photophobia persisted. She left AMA again on day five. Six weeks later, she returned to the infectious disease clinic with persistent pain and blurred vision. She declined another inpatient admission. She was not a candidate for PICC-based outpatient therapy due to substance use disorder. Daily IM ceftriaxone, a less preferable alternative, was unavailable on weekends.[1] She planned to consult her psychiatrist for anxiety management before attempting another inpatient course.

Discussion

This case highlights the diagnostic and therapeutic complexities of ocular syphilis. Her presentation with acute right eye inflammation and bilateral visual changes is consistent with the protean manifestations of ocular syphilis, which most commonly presents as uveitis and can occur at any stage of infection.[3,14] Notably, her symptoms were limited to the eye, without classic cutaneous or neurologic findings, a pattern reported in up to half of cases.[8] The diagnostic approach in this case—recognizing compatible ophthalmic findings and confirming infection through serologic testing—aligns with current recommendations, which emphasize evaluation for syphilis in all patients with unexplained uveitis or vision loss.[1,11] Both treponemal and nontreponemal tests are recommended, along with a comprehensive ocular and cranial nerve examination.[1] HIV testing should also be performed at diagnosis.[1,5,6] Although cerebrospinal fluid abnormalities may occur, CDC and IDSA guidelines do not recommend routine lumbar puncture in patients with isolated ocular syphilis in the absence of neurologic findings.[1,6]

Ocular syphilis is managed as neurosyphilis and requires prompt initiation of intravenous aqueous crystalline penicillin G for 10–14 days, as recommended by the CDC.[1] Ceftriaxone may be considered in patients with penicillin allergy, although penicillin desensitization remains the preferred approach when feasible.[1,6]Adjunctive corticosteroids may help reduce inflammation, although evidence supporting long-term benefit remains limited.[10,12] Visual outcomes are strongly associated with early diagnosis and uninterrupted therapy. Studies suggest that 91–95% of patients experience improvement in visual acuity when treatment is initiated promptly.[15,16] In contrast, delayed recognition, optic atrophy, and acute retinal necrosis are associated with poor visual recovery.[8,14,18]

This patient's comorbidities, including hepatitis C and substance use, likely contributed to treatment interruption, a factor associated with worse outcomes

and a higher risk of permanent visual impairment.[16] This case therefore underscores the importance of early, clear communication regarding the anticipated duration of intravenous therapy, the rationale for continuous treatment, and the consequences of premature discontinuation. Shared decision making is equally important, as it enables patients to anticipate challenges, participate in collaborative problem solving, and engage in a treatment plan aligned with their values and circumstances.[17] Addressing social determinants of health is also critical, as barriers such as unreliable transportation to follow-up appointments and limited access to medications can directly undermine continuity of care and treatment adherence.18 Early recognition of these barriers and provision of available support resources may improve treatment completion and reduce preventable vision-related complications.

This case reinforces several key points from the literature: ocular syphilis is a re-emerging cause of visual morbidity; early recognition and prompt treatment are essential; and delayed or incomplete therapy may result in irreversible vision loss. Physicians play a pivotal role in improving outcomes through timely diagnosis, patient education, and coordination of multidisciplinary care. Collaboration with ophthalmology, infectious disease, psychiatry, and social work may help address both medical and nonmedical barriers to treatment completion, particularly in vulnerable populations. Further research is needed to refine management strategies and improve outcomes in patients with comorbidities or challenges related to access and adherence[19,20]

Conclusion

Ocular syphilis remains a vision-threatening but treatable condition that requires a high index of suspicion, particularly in patients presenting with unexplained ocular inflammation without classic systemic manifestations. Early diagnosis, prompt completion of intravenous penicillin therapy, consistent patient education, shared decision making, and careful attention to social and behavioral barriers to adherence are essential to optimizing visual outcomes and preventing irreversible vision loss.

Acknowledgments

We acknowledge the co-operation patient for consenting to the publication of his clinical information

Data Availability Statement

Any inquiries regarding supporting data availability of this study will be made available by the corresponding author, without undue reservation and upon reasonable request.

Ethical approval and consent of participant

Informed written consent was obtained from the patient. All procedures and methods were performed in accordance with the appropriate regulations.

Disclosure

The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

Financial Disclosure

The authors received no specific funding for this work

Conflicts of interest: None

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