

2023

## Ocular Syphilis: A Case Report and Public Health Discussion

Andrew L. Fine

*Lake Erie College of Osteopathic Medicine, AFine47428@med.lecom.edu*

Hope V. Daskalakis

*Lake Erie College of Osteopathic Medicine, HDaskalaki96243@med.lecom.edu*

Rutwik Pradeep Sharma M.D.

*Rochester Regional Health System, RutwikPradeep.Sharma@rochesterregional.org*

Mirna Ogeilat M.D.

*Rochester Regional Health System, mirna.ogeilat@rochesterregional.org*

Follow this and additional works at: <https://scholar.rochesterregional.org/advances>



Part of the [Community Health and Preventive Medicine Commons](#), [Infectious Disease Commons](#), and the [Ophthalmology Commons](#)



This work is licensed under a [Creative Commons Attribution-NonCommercial 4.0 International License](#)

---

### Recommended Citation

Fine AL, Daskalakis HV, Sharma R, Ogeilat M. Ocular Syphilis: A Case Report and Public Health Discussion. *Advances in Clinical Medical Research and Healthcare Delivery*. 2024; 4(1). doi: 10.53785/2769-2779.1194.

ISSN: 2769-2779

This Case Report is brought to you for free and open access by RocScholar. It has been accepted for inclusion in *Advances in Clinical Medical Research and Healthcare Delivery* by an authorized editor of RocScholar. For more information, please contact [Advances@rochesterregional.org](mailto:Advances@rochesterregional.org).

---

## Ocular Syphilis: A Case Report and Public Health Discussion

### Abstract

Ocular Syphilis describes a localized manifestation of a systemic *treponema pallidum* infection. It most commonly presents with decreased visual acuity due to uveitis and can occur at any time throughout the disease course. This report describes a case of undiagnosed syphilis that was serendipitously diagnosed with blood product screening. This case highlights the need for better public education and outreach pertaining to sexually transmitted infections. This report will detail this patient's clinical course and discuss how healthcare providers can aid in early disease detection to improve both patient outcomes and overall public health.

### Keywords

Ocular Syphilis, Sexually Transmitted Infection (STI), Screening, Infectious Disease, Ophthalmology

### Creative Commons License



This work is licensed under a [Creative Commons Attribution-NonCommercial 4.0 International License](https://creativecommons.org/licenses/by-nc/4.0/)

## CASE REPORT

# Ocular Syphilis: A Case Report and Public Health Discussion

Andrew L. Fine <sup>a,\*</sup>, Hope V. Daskalakis <sup>a</sup>, Rutwik P. Sharma <sup>b</sup>, Mirna Ogeilat <sup>b</sup>

<sup>a</sup> Lake Erie College of Osteopathic Medicine, Elmira, NY, USA

<sup>b</sup> Rochester Regional Health System, Rochester, NY, USA

## Abstract

Ocular Syphilis describes a localized manifestation of a systemic *treponema pallidum* infection. It most commonly presents with decreased visual acuity due to uveitis and can occur at any time throughout the disease course. This report describes a case of undiagnosed syphilis that was serendipitously diagnosed with blood product screening. This case highlights the need for better public education and outreach pertaining to sexually transmitted infections. This report will detail this patient's clinical course and discuss how healthcare providers can aid in early disease detection to improve both patient outcomes and overall public health.

**Keywords:** Ocular syphilis, Sexually transmitted infection (STI), Screening, Infectious disease, Ophthalmology

## 1. Introduction

Syphilis is a systemic infection spread by the spirochete *Treponema pallidum* via vaginal, anogenital, and orogenital contact, as well as rarely by non-sexual contact, such as skin-to-skin or blood transfusion.<sup>1</sup> Syphilis was first characterized in 1905, with increasing incidence rates in the United States before the discovery and routine use of penicillin. The Centers for Disease Control and Prevention (CDC) has reported that the incidence of primary and secondary syphilis is once again steadily increasing among both women and men.<sup>1</sup> Although the incidence of ocular syphilis is less than 1 %, syphilis is the 3rd most common cause of active interstitial keratitis.<sup>2</sup> There is also evidence of disparities of sexually transmitted infection (STI) prevalence by race, with multiple studies finding Black patients have a higher prevalence of ocular syphilis; this coincides with the CDC's overall syphilis prevalence rates by race.<sup>3</sup>

Primary syphilis is characterized by a single, painless chancre that may present 20–90 days after inoculation, and will go away on its own without

treatment. However, if untreated, secondary syphilis will develop, and it can spread hematogenously, leading to systemic effects. These may include condyloma lata, diffuse lymphadenopathy, myalgia, and arthralgia, as well as other vague systemic symptoms.<sup>1</sup> Not all patients with secondary syphilis will progress to tertiary syphilis. Patients who do eventually develop tertiary syphilis may experience aortitis and tabes dorsalis, which is degeneration of the dorsal column of the spinal cord, resulting in decreased proprioception.<sup>4</sup> In addition, gummas, granulomatous growths of tumor-like tissue, can present in the central nervous system, skin, or internal organs, including the iris and choroid.<sup>5</sup>

Ocular involvement is a rare sequela of syphilis infection and can develop at any stage.<sup>4</sup> In primary syphilis, ocular involvement could present as a chancre on the eyelid or conjunctiva. Ocular involvement in secondary syphilis can have multiple presentations. The most common is posterior uveitis or panuveitis.<sup>6</sup> In tertiary syphilis, ocular involvement can present as optic neuritis, optic perineuritis, papilledema, and/or Argyll Robertson pupil.<sup>6</sup>

Accepted 12 December 2023.  
Available online ■■■

\* Corresponding author.  
E-mail address: [Afine47428@med.lecom.edu](mailto:Afine47428@med.lecom.edu) (A.L. Fine).

<https://doi.org/10.53785/2769-2779.1194>  
2769-2779/© 2023 Published by Rochester Regional Health.

## 2. Case presentation

A 57-year-old male with a past medical history of hepatitis C (diagnosed 15 years prior and having completed treatment) and alcohol abuse presented to the emergency department for blurry vision. After a blood donation, the patient received a call from the health department informing him that his blood products showed positive serology for syphilis. The health department advised him to go to the nearest emergency department. The patient adhered and presented to a local hospital. The workup included confirmatory syphilis rapid plasma reagin (RPR) and human immunodeficiency virus (HIV) testing, as well as an ultrasound of the eye that showed evidence of vitreous detachment. A dose of intramuscular penicillin G was given, and he was instructed to follow up with outpatient ophthalmology for further management of his visual symptoms. He was diagnosed with bilateral posterior uveitis secondary to syphilitic retinitis. The recommendation from the ophthalmologist was to immediately return to the hospital for emergent treatment, which would include intravenous penicillin G, and then prednisone administration 48 h after to prevent Jarisch-Herxheimer reaction. It was at this point that the patient was admitted to the inpatient medicine floor.

The patient reported an extensive family history involving drug and alcohol abuse. He denied any known drug allergies, previous surgical history, or taking any medications or supplements at home. The patient reported a 26 pack-year tobacco smoking history, and admitted to drinking one to three beers per week. He also admitted to previous "crack" cocaine use, the last use being 6 months prior to presentation. He denied any history of intravenous drug use. He worked as a bus driver before retiring. The patient's sexual history was notable for multiple female partners per week, without the use of barrier protection. He reportedly was diagnosed with gonorrhea in the past and underwent treatment. He admitted to seeing a chancre on the side of his penile shaft two years earlier that resolved one month later, and he had never sought evaluation for this.

On review of systems, the patient attested to fatigue, photophobia, visual changes, cough, and arthralgias. He stated that his visual changes began one year prior, with a blurry area in the right outer quadrant of his right eye. Two months earlier, he developed blurry central vision in both eyes, and experienced associated floaters and photophobia. He denied any eye pain, discharge or redness.

The patient underwent peripherally inserted central catheter (PICC) placement to start on 4

million units of intravenous (IV) penicillin G every four hours for 14 days with prednisone 40 mg to be started 48 h after initiation of penicillin G. A lumbar puncture was recommended to evaluate the treatment of neurosyphilis, however the patient refused this. After improvement with IV penicillin G over four days inpatient, the patient was discharged to complete the complete 14 day regimen of IV penicillin G at home through his PICC line.

## 3. Discussion

This case described a patient with known development of a painless chancre who did not seek evaluation. Years later, through safety mechanisms put in place with blood product donation, he was found to have positive syphilis serology. On presentation, he complained of blurry vision and with further ophthalmologic work up, this was found to be a case of ocular syphilis. We believe that both checkpoints in the medical system and public education play a large role in ensuring prevention, identification, and prompt treatment to provide the best patient outcomes. We are presenting this case to encourage a call to action for providers to focus on STI education and encourage patients to undergo STI screening when applicable.

The United States Preventive Services Taskforce (USPSTF) recommends that all persons who are at increased risk of infection should be screened, including those who are asymptomatic.<sup>7</sup> Risk factors include HIV infection, multiple sexual partners, men who have sex with men (MSM) and history of IV drug use. Screening typically first involves two serologic tests, RPR test and the Venereal Disease Research Laboratory (VDRL) test. If the RPR or the VDRL return reactive, the enzyme immunoassay (EIA), *Treponema pallidum* hemagglutination (TPHA) tests, or the fluorescent treponemal antibody absorption test (FTA-ABS) can be performed to confirm the infection.<sup>7</sup> Changes in the titers may be followed afterwards every three months for up to one year post treatment to show resolution of the infection.<sup>7</sup>

When a patient delays evaluation of a medical condition, multiple factors are usually contributing. When discussing these topics with patients, a medical provider should especially consider social barriers, in addition to traditional determinants of health, such as cost, transportation, and time off from work. This patient's original chancre presented in 2020, a time of world disruption and regulations regarding health care were changing rapidly due to COVID-19. Given the burden of the pandemic, the patient may have elected to avoid seeking medical

attention. In addition to these factors outside of the patient's control due to a global pandemic, there is also the societal stigma and lack of knowledge surrounding STIs, which contributes to the underutilization of medical treatment.<sup>8</sup> Our patient initially noticed a painless sore which went away on its own, and then forgot about it, not aware that there is underlying spread of infection still present. Waller et al. found that more knowledge regarding STIs led to decreased reported levels of stigma and shame surrounding Human Papilloma Virus among infected patients.<sup>9</sup> By extension to other STIs, improving awareness should play a role in patients seeking diagnosis and treatment, with the subsequent lowering of rates of STIs and their potentially severe complications. For our patient, it was not until he donated blood two years after the chancre that he was told to seek care due to routine screening of blood products.

In this patient's case, donating blood provided him access to care he otherwise would not have presented to receive himself. This is a prime example of the benefits screening blood products provides to not only the potential recipient of the product, but the donor themselves. As discussed, there were many factors preventing this patient from receiving care at the time of initial presentation. However, blood donation does provide an extra opportunity to discover disease such as HIV at an earlier stage. Making these diagnoses early can be life-changing for patients regarding the extent of treatment they will need and their quality of life after diagnosis. In the case of syphilis, early diagnosis is imperative to decrease the rates of one of the preventable causes of blindness.<sup>10</sup>

#### 4. Conclusion

This case described the presentation of a patient who did not seek treatment upon discovery of a painless chancre and was later found to have positive serology after donating blood two years later.

After further workup, it was determined that the syphilis had progressed to ocular syphilis, presenting initially as blurry vision. This report highlights the public health implications of an indolent syphilis infection and the barriers to care that should be considered by providers. By making an effort to understand these barriers, physicians can make changes to not only help those affected by syphilis but prevent further spread in their communities.

#### Conflict of Interest

The authors report there are no conflicts of interest.

#### References

1. Tudor ME, Al Aboud AM, Leslie SW, Gossman W. Syphilis. In: *StatPearls. Treasure Island (FL)*. StatPearls Publishing; May 30, 2023.
2. Aldave AJ, King JA, Cunningham Jr ET. Ocular syphilis. *Curr Opin Ophthalmol*. 2001;12(6):433–441. <https://doi.org/10.1097/00055735-200112000-00008>.
3. Tam EK, Port A, Martin D, Fridman G, Ness S, Siegel NH. Ocular syphilis resurgence in an urban underserved community in the United States. *Int J Ophthalmol*. 2022;15(8):1357–1362. <https://doi.org/10.18240/ijo.2022.08.20>.
4. Koundanya VV, Tripathy K. Syphilis ocular manifestations. In: *StatPearls. Treasure Island (FL)*. StatPearls Publishing; August 25, 2023.
5. Gonzalez H, Korolnik IJ, Marra CM. Neurosyphilis. *Semin Neurol*. 2019;39(4):448–455. <https://doi.org/10.1055/s-0039-1688942>.
6. Gervasio KA, Peck TJ. Syphilis. In: *The Wills Eye Manual Office and Emergency Room Diagnosis and Treatment of Eye Disease*. eighth ed. Philadelphia: Wolters Kluwer; 2022.
7. Jin J. Screening for syphilis. *JAMA*. 2022;328(12):1266. <https://doi.org/10.1001/jama.2022.16887>.
8. Lee ASD, Cody SL. The stigma of sexually transmitted infections. *Nurs Clin North Am*. 2020;55(3):295–305. <https://doi.org/10.1016/j.cnur.2020.05.002>.
9. Waller J, Marlow LA, Wardle J. The association between knowledge of HPV and feelings of stigma, shame and anxiety. *Sex Transm Infect*. 2007;83(2):155–159. <https://doi.org/10.1136/sti.2006.023333>.
10. Gu X, Gao Y, Yan Y, et al. The importance of proper and prompt treatment of ocular syphilis: a lesson from permanent vision loss in 52 eyes. *J Eur Acad Dermatol Venereol*. 2020;34(7):1569–1578. <https://doi.org/10.1111/jdv.16347>.