

# Ocular Syphilis in HIV-positive Male

I G A M Juliari\* and N K N Susila

Ophthalmology Departement, Faculty of Medicine, Udayana University/Sanglah Hospital, Bali, Indonesia

arie\_mata@yahoo.com

**Abstract.** The incidence of syphilis has increased over the last decade, particularly among men who have sex with men (MSM). Ocular involvement is a potentially devastating clinical manifestation of syphilis. It is both immediately sight threatening and associated with the risk of both systemic and ocular long-term complications that may result in severe loss of function. Human immunodeficiency virus (HIV) infection appears to increase the risk of ocular syphilis. Prompt diagnosis of ocular syphilis required high index of suspicion due to the lack of pathognomonic features and its ability to occur in both immunocompetent and immunosuppressed individuals. Nonetheless, with prompt diagnosis, it is curable with a relatively short course of antibiotic treatment. This case describes a presentation of ocular syphilis in a HIV-positive MSM patient.

## 1. Introduction

Syphilis is a sexually transmitted disease caused by *Treponema pallidum*, which can infect almost any part of the body. Depending on the stage of the disease, acquired syphilis is classified into early (primary, secondary, and early latent) syphilis and late (tertiary) syphilis [1]. Ocular syphilis, a form of neurosyphilis defined as symptoms or signs of ocular disease in a person with laboratory-confirmed syphilis of any stage [2]. Ocular syphilis can mimic a variety of eye diseases, thus, it is termed the great masquerader. Failure to recognize the ocular manifestations of syphilis or delayed treatment can lead to irreversible visual loss [3]. In Asia, there are several cases of ocular syphilis being reported [4], [5]. The epidemic in this population is exacerbated by high rated of coexisting HIV infection, drug behaviors, and risky sexual (such as male sex with men) [6].

## 2. Case report

A 36-year-old male was sent to eye clinic by dermatologist for concern of painless unilateral vision loss on his right eye for a month before the admission. He also complained seeing intermittent floaters over the past months. He denied headache, photophobia, neck stiffness, nausea, vomiting, and focal neurological deficits. He also denied use of illicit drug. He has stopped using tobacco and alcohol for past years. He endorsed having unprotected sex with men in the past, although he had been in a monogamous relationship. He has gotten antiretroviral drug for 3 years. From dermatology clinic, he was diagnosed as acneformic eruption, and still in the therapy.

On physical examination, he had maculopapular erythematous rash all over his body. Visual acuity of the right eye was 1/60, and the left eye was 6/6. The anterior segment of both eyes were within normal limit. Funduscopic examination on the right eye revealed severe vitritis (figure 1). Laboratory analysis was notable for a normal complete blood count. *Treponema pallidum* haemagglutination (TPHA) and



*Venereal disease research laboratory* (VDRL) were positive. HSV-1, HSV-2, varicella zoster virus and CMV PCR tests on the blood were negative. Serum Toxoplasma IgG and IgM levels were also negative.



**Figure 1.** Fundusoscopic examination of the right eye.

The patient was informed of the diagnose of neurosyphilis with ocular involvement. He was never being diagnosed with primary syphilis in the past. It was unknown if his partner had ever had syphilis. The patient was given intravenous benzatin penicillin therapy for 3 weeks. At 1 month follow up, patient had better vision. It was recommended that his partner undergoes evaluation for syphilis and HIV.

### 3. Discussion

The prevalence of HIV infection in Bali has reported being increased with various problems and also toxicities related to the antiretroviral treatment [7], [8]. A global resurgence of ocular syphilis has been reported recently. In Asia, a number of ocular syphilitic cases have been reported over the past decade. Yang *et al* studied 35 eyes of 19 patients in China with syphilitic uveitis and reported that most of the patients were male, and that 4 were co-infected with HIV [9]. In United States, 67% of the syphilis occurs in younger men who have had sex with other men [10]. In a study in France, from 2000 to 2011, the syphilitic uveitis group was almost entirely men having sex with men, and 18 persons (50%) were HIV positive [11]. In a study of MSM presenting to sexually transmitted disease clinics, a significantly higher proportion of HIV-infected individuals had coexisting primary or secondary syphilis compared with those who were HIV-negative (10,1% versus 2,6%) [12]. The interaction between syphilis and HIV is thought to be symbiotic. Some studies suggest that syphilis facilitates HIV transmission by increasing expression of its CCR5 receptors or inducing expression of the HIV-1 gene in human monocytes [13]. Ocular syphilis in the setting of untreated HIV is more frequently bilateral and more likely to involve the posterior chamber than in those without HIV [14]. In our case, the patient was male, co-infected by HIV and had history of having sex with male.

Ocular syphilis can occur at any stage of infection and may be the only clinical manifestation of infection. Clinically, patients may present with eye pain and changes in vision, including loss of visual acuity, central scotomas and unilateral or bilateral involvement [15]. Several studies showed that the most common finding was posterior uveitis manifesting as placoid chorioretinitis [7], [16], [17]. There are no pathognomonic examination findings. Ophthalmoscopic examination may reveal the presence of leukocytes and cloudy flares in the aqueous humor, synechiae, keratic precipitates, cells in the vitreous,

and other retinal lesions [18]. In our case, the patient complained unilateral painless blurry vision and we found cells in the vitreous aqueous and vitreous.

Therapy for ocular syphilis is the same as for other forms of neurosyphilis. Continuous infusion of intravenous penicillin G for 10-14 days is considered first line therapy. An alternative treatment regimen is once daily intramuscular procaine penicillin plus oral probenecid four times daily, both for 10-14 days [19]. Yap *et al* also found that most patients with syphilitic uveitis resolved after being treated with an appropriate penicillin regimen.<sup>4</sup> Doris *et al* reported the remission of six cases of syphilitic uveitis at the Manchester Uveitis Clinic following intramuscular treatment with procaine penicillin G and oral probenecid [20]. In our case, the patient had an improved visual acuity and ocular presentations after treating the syphilis with bencathine penicillin therapy alone.

#### 4. Conclusion

The incidence of syphilis is increasing, particularly among MSM. Ocular manifestations of syphilis is rare but can present at any stage of syphilis. The diagnosis of ocular syphilis requires a high index of suspicion and should be included in the differential diagnosis of unexplained subacute or acute visual complaints, particularly in MSM and HIV-infected patients. This ocular inflammation is curable with treatment.

#### References

- [1] Moradi A, Salek S, Daniel E, Gangaputra S, Ostheimer TA, and Burkholder BM 2015 Clinical features and incidence rates of ocular complications in patients with ocular syphilis *American Journal of Ophthalmology* **159** 334-343
- [2] Woolston S, Cohen SE, and Fanfair RN 2015 A cluster of ocular syphilis cases-Seattle, Washington, and San Fransisco, California, 2014-2015 *Morbidity and Mortality Weekly Report* **64** 1150-1151
- [3] Kiss S, Damico FM, and Young LH 2005 Ocular manifestations and treatment of syphilis *Seminars in Ophthalmology* **20** 161-167
- [4] Yap SC, Tan YL, Chio MT, and Teoh SC 2014 Syphilitic uveitis in a Singaporean population *Ocular Immunology and Inflammation* **22** 9-14
- [5] Anshu A, Cheng CL, and Chee SP 2008 Syphilitic uveitis: an Asian perspective *British Journal of Ophthalmology* **92** 592-597
- [6] Wong W, Chaw JK, Kent CK, and Klausner JD 2005 Risk factors for early syphilis among gay and bisexual men seen in an STD clinic *Sexually Transmitted Disease* **32**(7) 458-463
- [7] Masyeni S, Utama S, Somia A, Widiana R, and Merati T P 2013 Factors influencing bone mineral density in ARV-naïve patients at Sanglah Hospital, Bali. *Acta Med Indonesia* **45**(3) 175-9
- [8] Masyeni S, Sintya E, Megawati D, Sukmawati N M H, Budiayasa D G, Aryastuti S A, and Nasronudin N 2018 Evaluation of antiretroviral effect on mitochondrial DNA depletion among HIV-infected patients in Bali *HIV/AIDS (Auckland, NZ)* **10** 145
- [9] Yang PZ, Zhang N, Li FZ, Chen Y, and Kijlstra A 2012 Ocular manifestations of syphilitic uveitis in Chinese patients *Retina* **32** 1906-1914
- [10] Ho EL and Lukehart SA 2011 Syphilis: using modern approaches to understand an old disease *Journal of Clinical Invertigations* **121** 4584-4592
- [11] Lefebvre M, Biron C, and Guillouzouic A 2013 Syphilis in Nantes tertiary care hospital between 2000 and 2010: a case series of 36 hospitalized patients *Rev Med Interne* **34** 522-527
- [12] Center for Disease Control 2011 STDs in men who have sex with men *Sexually Transmitted Disease Surveillance* **13** 25-28
- [13] Sellati TJ, Wilkinson DA, Sheffield JS, Koup RA, Radolf JD, and Norgard MV 2000 Virulent *Treponema pallidum*, lipoprotein and synthetic lipopeptides induce CCR5 on human monocytes and enhance their susceptibility to infection by human immunodeficiency virus type 1 *Journal of Infectious Diseases* **181**(1) 283-293
- [14] Gaudio PA 2006 Update on ocular syphilis *Current Opinion in Ophthalmology* **17** 562-566

- [15] Balba GP, Kumar PN, and James AN 2006 Ocular syphilis in HIV-positive patients receiving highly active antiretroviral therapy *The American Journal of Medicine* **119**(5) 448e21-448e25
- [16] Sahin O and Ziaei A 2015 Clinical and laboratory characteristics of ocular syphilis, co-infection, and therapy response *Clinical Ophthalmology* **10** 13-28
- [17] Tsan GL, Amin P, and Sullivan-Mee M 2016 Nongranulomatous uveitis as the first manifestation of syphilis *Optom Vis Sci.* **93** 647-651
- [18] Munoz-Fernandez S and Martin-Mola E 2013 Uveitis *Best Practice and Research Clinical Rheumatology* **20**(3) 487-505
- [19] Center for Disease Control 2010 Sexually transmitted diseases treatment guidelines *Morbidity and Mortality Weekly Report* **59** article RR-12
- [20] Doris JP, Saha K, Jones NP, and Sukthankar A 2006 Ocular syphilis: the new epidemic *Eye* **20** 703-705