

CASE REPORT

MANAGEMENT OCULAR SYPHILIS IN HUMAN IMMUNODEFICIENCY VIRUS (HIV) PATIENTS

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ABSTRACT

Introduction: Ocular syphilis is a rare manifestation of syphilis. Ocular syphilis manifestations vary and can occur at all stages of the disease. Syphilis can affect all eye structures, the main complaint is blurred vision, accompanied by non-specific symptoms such as pain in the eye, and does not respond to steroids.

Case: The male patient, 54 years old, presents with complaints of both eyes slowly getting worse with a history of sexual multi-partners. Visual acuity in both eyes were light perception bad projection, ophthalmological examination showed cloudy lens, cloudy vitreous, cell (+) flare (+) right eye optic nerve, hyperemia, and left eye optic nerve, pale at temporal. VDRL results: reactive > 1: 512 and TPHA: reactive > 1: 5120. The patient was diagnosed with late latent syphilis and neurosyphilis observation from the Dermatology and Venereology Department and received benzathine penicillin injection therapy. From the Neurology Department the patient was diagnosed with neuro-syphilis and was consulted to VCT department with pre-HAART Stage IV HIV infection (WHO). After receiving penicillin therapy and topical steroids, the patient was experienced improvement in visual acuity.

Conclusion: In HIV patients without antiretroviral therapy, *Treponema pallidum* infection is more common and has manifestations such as ocular syphilis and neurosyphilis. Treatment of ocular syphilis using topical steroids to reduce inflammation and penicillin as the main antibiotic.

Keywords: Posterior Uveitis, Syphilis, HIV, neurosyphilis

INTRODUCTION

Uveitis is the most common manifestation of syphilis infection in the eye.¹ Syphilis patients with human immunodeficiency virus (HIV) coinfection are more likely to have neurosyphilis and syphilitic uveitis.^{2,3} As many as 20-30% of cases of uveitis are idiopathic. The most common cause of uveitis is infection. A total of 771 uveitis patients at Dr Cipto Mangunkusumo General Hospital on 2006-2010 were caused by toxoplasmosis infection 219 (28.4%), cytomegalovirus retinitis 112 (14.5%), Tuberculosis (TBC) 45 (5.8%), herpes simplex 20 (2.6%), and syphilis 5 (0.6%).⁴ It was estimated that 3% of patients with syphilis have ocular uveitis globally. The number of uveitis patients at Sanglah Hospital, Denpasar for the period March-December 2016 was 22 patients, the mean age was 43.8 years and more common in men

than the woman (54.5%).⁵

Ocular syphilis is a rare manifestation of syphilis.^{1,6} Syphilis can affect all structures of the eye, including the conjunctiva, sclera, cornea, lens, uvea, retina, and optic nerve.⁶ The main complaint is blurred vision, accompanied by non-specific symptoms such as pain in the eyes, skin lesions, and no response to steroids. Failure to make a diagnosis and delay in treatment lead to possible transmission of infection, poor visual prognosis (blindness), and neurological deficits leading to neurosyphilis.⁷

Syphilitic uveitis is diagnosed through a complete history taking (56%) and increased to 73% after physical examination of the eye. Laboratory tests only increase the diagnosis by 5% but are costly, so they should be selected according to the condition of each patient.⁸ Syphilis serological testing should be performed especially if the ocular inflammation has unusual characteristics and had a poor response to steroids. HIV test is recommended because there is a close relationship between syphilis and HIV and an increased risk of neurosyphilis progression.⁹ We report a case of ocular syphilis in an HIV-positive patient. This case report aimed to improve knowledge about the management of syphilitic uveitis in HIV patients to provide the best therapeutic results.^{8,9} The principle of uveitis treatment is to suppress the inflammatory response, prevent and repair structural damage, improve visual function, and relieve pain and photophobia.⁹

CASE ILLUSTRATION

A 54-year-old man came to the Ophthalmology clinic of Sanglah General Hospital, with complaints of blurred vision in both eyes in the last 2 months, which slowly and progressively worsened. The patient denied a history of headache, double vision, and pain in moving the eyeballs. The patient had no history of diabetes, hypertension, high cholesterol, allergies, half body weakness, and a history of wearing glasses. The patient had suffered from herpes on the neck 1 year ago and went to a dermatologist. The patient had a history of multiple sexual partners.

Physical examination revealed visual acuity in both eyes with light perception good projection (LPGP), the anterior segment was within normal limits in both eyes, the lens of both eyes was cloudy (Figure 1). There was vitreous opacity of the vitreous body in both eyes and cells (+) flare (+) in both eyes. Fundoscopic examination on right eye revealed optic nerve hyperemia, difficult to evaluate cup-disc-ratio (cdr), aa/vv 2/3, good retina, positive RM. Fundoscopic examination on left eye revealed optic nerve pale in temporal quadrant, aa/vv 2/3, good retina, positive Macular Retina. Intraocular pressure (IOP) in the right eye was 10 mmHg

and the left eye was 16 mmHg. Ishihara and contrast examinations could not be evaluated in both eyes. Movement of the eyeballs in all directions and there is no tenderness in both eyes.

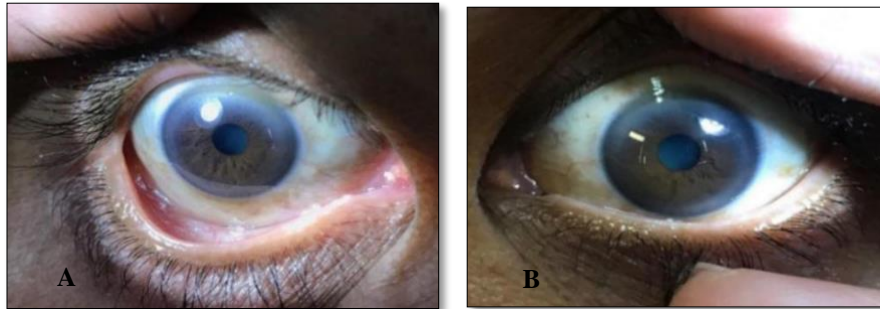


Figure 1. cloudy lens (A) right eye, (B) left eye

The ultrasound examination on both eyes was echogenic vitreous cavity, moderate reflexivity, moderate-high mobility, intact retina, choroid, and sclera with the conclusion was vitreous opacity on both eyes (Figure 2). The patient was diagnosed with posterior uveitis on the left and right eyes. Patient was given P-pred (prednisolone) eye drops, one drop every 4 hour The results of the laboratory examination showed erythrocyte sedimentation rate (ESR) = 93 mm/hour (height), fasting blood glucose =117 mg/dl (height), triglyceride (TG) = 320 mg/dl (height). The patient was consulted to the Internal Medicine Department on the same day and was diagnosed with dyslipidemia. The patient was given simvastatin 200 mg once daily and a low cholesterol diet.

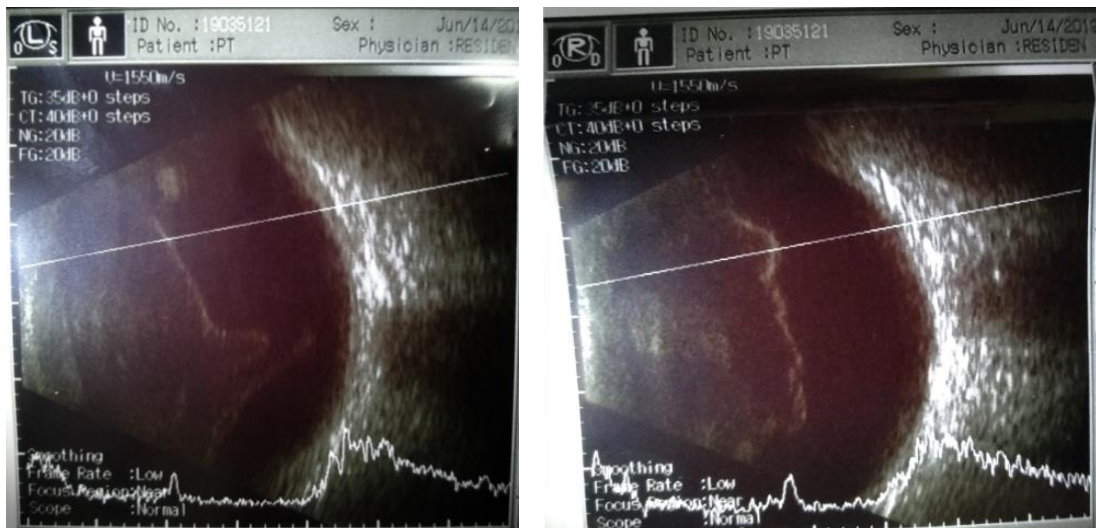


Figure 2. Ultrasound of both eyes shows the vitreous opacity

Diagnostic workup on infection markers (Toxoplasma IgG and IgM, Cytomegalovirus (CMV) IgG and IgM, CD4, Treponema pallidum hemagglutination (TPHA) was performed. Anti-CMV IgM infection marker was 0.05 (non-reactive); Anti-CMV IgG was 106 (reactive);

Anti-Toxoplasma IgM was 0.02 (non-reactive); Anti-Toxoplasma IgG 1 (reactive); TPHA positive; Venereal Disease Research Laboratory (VDRL) positive; absolute CD4 was 131 (low); CD4% was 9.1 (low); CD8 absolute was 131 (low); CD8% was 60.4 (high); Ratio CD4:CD8 was 0.15 (low). The patient was then consulted by the Dermatology and Venereology Department to evaluate the results of TPHA. The test results showed VDRL reactive >1:512 and TPHA reactive >1:5120. The patient was treated by injection of benzathine penicillin 2,400,000 IU once a week three times intramuscularly.

The patient was consulted to the Neurology Department on August 16, 2019, the patient was diagnosed with binocular vision loss et causa suspected of optic neurosyphilis differential diagnosis of optic neuritis. CT scan, Visual Evoked Potential (VEP) examination, Provider Initiated Testing and counseling (PITC), and lumbar function test were recommended. CT scan examination of the head of the coronal and sagittal reformat axial slices, without and with contrast. The conclusions were no signs of bleeding, infarction, intracerebral or intracerebellar space-occupying lesion, no significant mass or infection, no abnormalities in the right and left orbit, and right and left sphenoid sinusitis (Figure 3). The result PITC examination was reactive and there was an optic nerve lesion from the VEP examination. The patient was diagnosed with optic neurosyphilis and received vitamin B complex one tablet a day. The patient was consulted to the Voluntary Counseling and Testing (VCT) Section and diagnosed with HIV Stage IV (WHO) pre- Highly active antiretroviral therapy (HAART), late latent syphilis, and cytomegalovirus. The patient was given cotrimoxazole 460 mg once daily and consulted to the Internal Medicine Department for initiation of Antiretroviral (ARV) therapy.

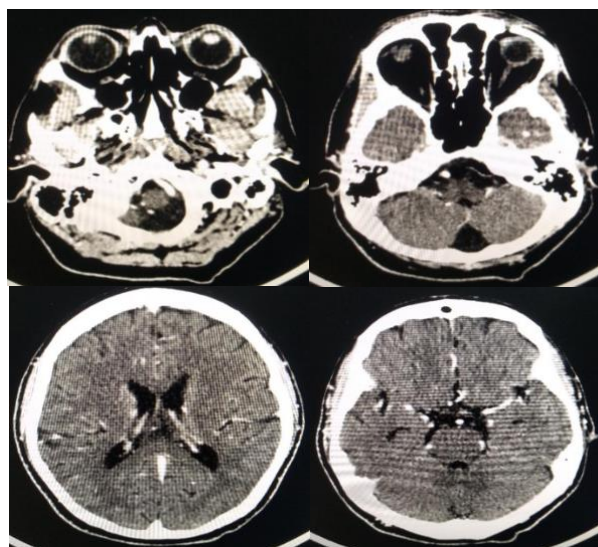


Figure 3. CT scan of the head within normal limits

A month later, the patient visited the ophthalmology department for regular control. The visual acuity on both eyes was improved, 6/24 Pin Hole non-Improved (PHNI) on the right eye and 6/12 PHNI on the left eye. Both corneas were clear, but the lens and vitreous were still cloudy, with positive cells and flare. Optic nerve on both eyes was round and well defined. The patient got prednisone eye drop with tapering-off dose (four times daily). Tapering off the dose of steroid drops is done periodically and discontinued after three months of use. Six months later, the patient underwent an optical coherence tomography (OCT) macular examination, which concluded that the picture was within normal limits.

DISCUSSION

Uveitis is an inflammation that occurs in the uvea that can cause blindness. In developed countries, 10% of blindness in the productive age population is due to uveitis. The etiologies of uveitis are abnormalities in the eye alone or as part of a systemic disorder, trauma, iatrogenic, and infection, but as many as 20-30% of cases of uveitis are idiopathic. Anatomically, uveitis is divided into anterior, intermediate, posterior, and panuveitis.^{1,6,10}

Posterior uveitis is the fifth leading cause of blindness in developing countries due to the high prevalence of infectious diseases, especially toxoplasmosis, tuberculosis, HIV, and syphilis. Posterior uveitis is an inflammation of the choroidal layer that often involves surrounding tissues such as the vitreous, retina, and optic nerve. Patient complains of blurred vision that is not accompanied by pain, red eyes, and photophobia.^{1,5,6,7,10}

Syphilis is caused by *Treponema pallidum* which is transmitted through abrasion of the skin or mucosa during sexual intercourse. Syphilis can cause abnormalities in all organs including the eye with symptoms of uveitis, keratitis, chorioretinitis, retinitis, retinal vasculitis, and optic neuropathy. Ocular syphilis should be suspected as part of a systemic infection. Uveitis can occur six weeks after primary infection but can appear several years after primary infection.^{1,5,6,11} In this case, there were no complaints of sores and redness on the genitals, but there were risk factors for changing sexual partners and there was a history of itching on the skin 1 year before.

Syphilis serologic testing should be performed especially if the ocular inflammation has unusual characteristics, such as severe inflammation, which contributes to structural damage, intraocular granuloma, or retinal inflammation if treatment was delayed. Patients are also advised to do an HIV test because of the same risk factors of syphilis and HIV and the increased risk of neurosyphilis progression.^{1,6,7,9} In this case, the patient was tested for the results of a reactive for VDRL, TPHA, anti-CMV IgG, and anti-Toxoplasma IgG, low absolute CD4, low

CD4%, low absolute CD8, high CD 8%, and low CD4:CD8 ratio. The patient was also diagnosed with HIV Stage IV (WHO) pre-HAART.

The principle of management of uveitis is to suppress the inflammatory reaction, prevent and repair structural damage, improve visual function and relieve pain and photophobia. Topical corticosteroids are the choice to reduce inflammation, including prednisolone 0.5%, prednisolone acetate 1%, betamethasone 1%, dexamethasone 0.1%, and fluorometholone 0.1%. Corticosteroid use should be monitored because it increases intraocular pressure, causes cataracts, glaucoma, and increases the risk of bacterial and fungal infections when used long-term.^{1,5,6} In this case, the patient received topical corticosteroid eye drops six times a day in both eyes without oral corticosteroids and intraocular pressure was evaluated regularly, in every visit, with results of IOP was normal.

Non-steroidal analgetic drugs are given to reduce pain and inflammation while cycloplegics prevent posterior synechiae. The patient, in this case, did not complain of pain and there was no sign of inflammation in the anterior segment and risk of synechiae, so analgesics and cycloplegic were not prescribed.

Antibiotics are given for 2-3 days in bacterial-caused uveitis, then corticosteroids can be prescribed to suppress inflammation. Penicillin is the first-line antibiotic for the treatment of syphilis and is given every 4 hours for 10-21 days with corticosteroids to reduce inflammation. Benzathine penicillin, a total of 7.2 million IU with a divided dose of 2.4 million IU was injected intramuscularly at 1-week intervals for 3 weeks is recommended for primary, secondary, and latent syphilis. The Centers for Disease Control and Prevention (CDC) recommends the same treatment for ocular syphilis as for neurosyphilis, which is the administration of crystalline penicillin G 18-24 million IU intravenously, in divided doses of 3-4 million IU every 4 hours daily for 10-14 days. Alternative regimens include procaine penicillin G 2.4 million IU intramuscularly daily and probenecid 500 mg intraorally every 6 hours for 10-14 days. It was recommended to give benzathine penicillin a total of 7.2 million IU, with a divided dose of 2.4 million IU intramuscularly at 1-week intervals in cases of ocular syphilis without CSF abnormalities, in cases of ocular syphilis with CSF abnormalities, therapy is recommended according to neurosyphilis.¹³⁻¹⁵ In this case, the patient was given benzathine penicillin 2,400,000 IU once a week, intramuscularly, three times and after evaluation, there was a significant improvement in the patient's visual acuity.

CONCLUSION

Syphilis can affect all structures of the eye and ocular syphilis can mimic various eye diseases. The patient in this case report was examined and searched for the etiology of the infection. Treatment ocular syphilis with prednisone eye drop and injection of benzathine penicillin 2,400,000 IU once a week three times intramuscularly. The outcome was very good according to the improvement of the patient's visual acuity from initial light perception to 6/15.

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