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Return of the Great Mimicker

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Abstract

HIV and syphilis are sexually transmitted infections that can present with significant ocular manifestations. We present the case of a 54-year-old male with untreated HIV who presented with ocular syphilis manifesting with both the rare presentation of retinal detachment, as well as panuveitis. The goal of this case report is to provide a diagnostic framework for approaching new visual changes in HIV patients. In addition, we will provide an overview of the risk factors, manifestations, and treatment recommended for ocular syphilis.

Keywords: HIV; Syphilis; Panuveitis; Ocular syphilis

Introduction

Ocular complaints are an uncommon but important chief concern encountered by internists and other primary care providers. Patients with diagnosed HIV and/or syphilis are at risk for specific ocular manifestations that, if left unrecognized and untreated, can lead to permanent vision loss [1,2]. Studies estimate that 75% of patients living with HIV will develop some form of ocular disease. In addition, ocular syphilis is a commonly overlooked cause of vision loss with a rising incidence in the United States [3]. Despite an initial decline in rates of syphilis in the 1990's, data suggests cases of syphilis have increased since the early 2000's [1,2]. Patients most at risk of syphilis include those living with HIV and men who have sex with men (MSM), with higher rates seen in blacks than other races [4]. As such, we believe this case study provides valuable information to the general internist in approaching ocular symptoms in patients living with HIV and/or syphilis.

Case Report

A 54-year-old male with a history of longstanding untreated HIV was admitted to our tertiary care center from an outside hospital (OSH) for bilateral vision loss. The patient was in his baseline state of health until six months prior to admission (PTA) when he developed sudden, complete loss of vision in his right eye. He was seen by an outside physician who diagnosed him with a retinal detachment in his right eye; the patient did not seek further treatment at that time due to lack of insurance. The patient retained monocular vision until ten days PTA, when he began experiencing new onset vision loss in his left eye. Symptoms began spontaneously with a "pop-like" sensation in his left eye. The patient then developed blurry vision, described as "looking out of a screen door", that progressed until he could only delineate light from dark. He denied any significant eye pain but endorsed a pressure-like sensation behind both eyes. Review of systems was otherwise negative for neurological, respiratory, GI, GU, pulmonary, cardiac, or skin complaints. Due to his bilateral vision changes, the patient presented to a local OSH, where CT scan of the orbits demonstrated bilateral intraocular inflammatory changes. The patient was transferred to our academic medical center for specialty care.

The patient's past medical history was notable for HIV that was diagnosed ten years prior to admission, but for which the patient never received anti-retroviral treatment. He also had a history of a prior syphilis infection reportedly treated with penicillin of unknown duration. Social history was notable for a prior history of sexual relationships with multiple men. He denied any illicit drugs, excessive alcohol, or tobacco use.

On the admission physical exam, the patient had normal cardiac, pulmonary, abdominal, neurological, and skin exams. Ophthalmological exam was notable for the right eye lacking light perception, an irregularly shaped and minimally reactive pupil, 2+ scleral injection, clear anterior chamber, 360 iris posterior synechiae, lens with dense white cataract, and no view of the vitreous periphery on dilated fundoscopic exam. The left eye exam was notable for intact light perception, round but sluggishly reactive pupil, 2+ scleral injection, anterior chamber with layering hyphema, iris with posterior synechiae, lens with 2+ nuclear sclerotic cataract, and a limited dilated fundoscopic exam showing a red reflex but no gross whitening. Given limitations of the bedside dilated fundoscopic exam, the patient underwent a subsequent dilated exam in the operating room that revealed bilateral panuveitis with a right total retinal detachment and a

completely attached left retina.

Laboratory analysis on admission revealed a complete blood count with mild leukopenia (3.4 x 109/L) and thrombocytopenia (124 x 109/L). Basic metabolic panel was within normal limits. Infectious workup revealed a CD4 count of 234, an HIV RNA viral load of 30,600 copies, positive serum treponemal antibodies, and serum RPR titer of 1:16 (reportedly 1:2 with his prior syphilis infection). Given concern for ocular neurosyphilis, the patient underwent a lumbar puncture which displayed a CSF profile of no red blood cells, 17 x 106/L white blood cells with a lymphocytic predominance, glucose of 36 mg/dl, and total protein of 119 mg/dl. The suspected diagnosis of neurological and ocular syphilis was confirmed when the CSF VDRL returned positive at a titer of 1:4.

Given the initial high pre-test concerns for CMV retinitis, the patient was empirically treated with intravenous ganciclovir, which was discontinued after serum and anterior chamber tap studies were negative for PCRs for CMV, HSV, and VZV.

Based upon serological CSF studies and exam findings, a diagnosis of concurrent ocular syphilis and neurosyphilis was confirmed and the patient was started on treatment with intravenous aqueous penicillin G 18 million units daily for fourteen days. He underwent operative management with a left eye pars plana vitrectomy, lensectomy, and cryotherapy as well as intraocular steroids. Given the delay in seeking care months prior for right visual loss, his right eye retinal detachment was deemed untreatable, resulted in permanent blindness, and was managed with comfort measures only.

The patient responded well to treatments for his left eye outlined above. At post-hospital follow up two weeks following discharge, he had significant improvement in his left eye visual acuity (20/100) (**Figures 1 and 2**).

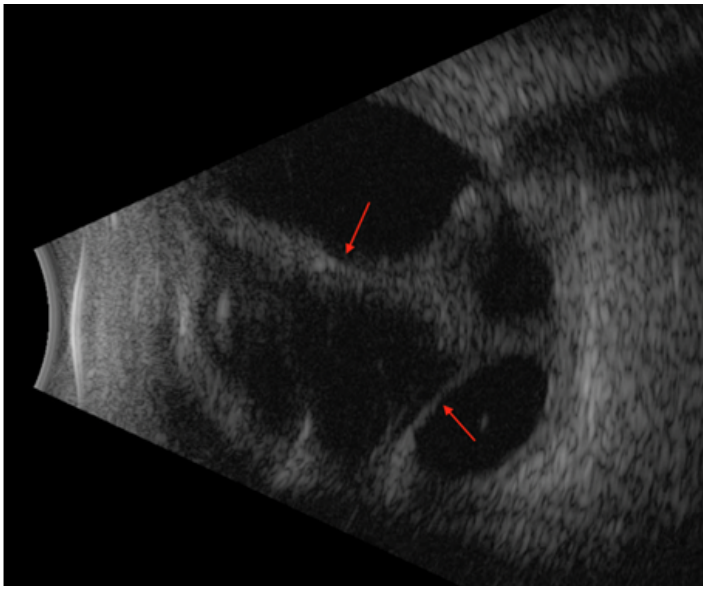

Figure 1 Posterior B Scan. Right eye demonstrating total retinal detachment (red arrows).

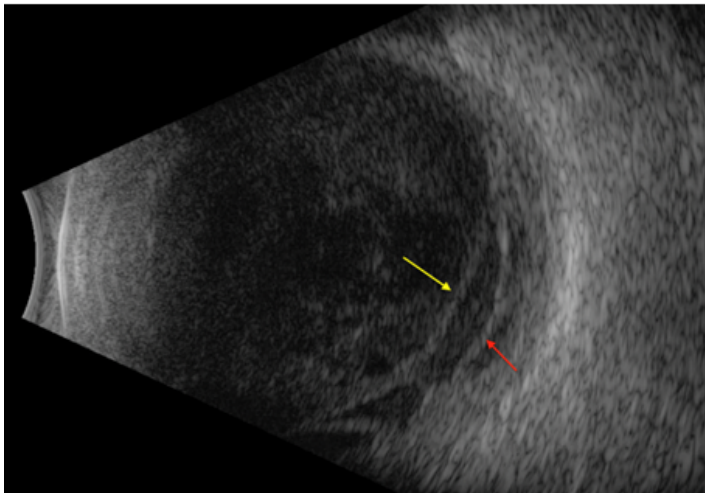

Figure 2 Left eye demonstrating vitreous schisis (yellow arrow), moderate vitreous opacities, and possible retinal detachment (red arrow).

Discussion

Ocular disease in Persons Living with HIV (PLWH)

Our patient demonstrated a classic example of untreated HIV with related comorbidities leading to ocular disease through a concomitant infection with syphilis [5]. It is important to recognize that HIV can contribute to various ocular conditions via numerous mechanisms. HIV-associated ocular disease can largely be classified as follows: HIV-induced vascular abnormalities; opportunistic infections; neoplasm; or drug toxicities. HIV alone can cause micro vascular retinopathy, which is the most common cause of ocular disease in PLWH [6,7]. Common infectious causes of ophthalmological disease include cytomegalovirus retinitis, toxoplasmosis, tuberculosis, herpes simplex virus, varicella zoster virus, syphilis, and pneumocystis and Cryptococci infections. Risk of these eye conditions vary based on CD4 count [8]. HIV-associated malignancies that can cause vision changes include CNS lymphoma, Kaposi sarcoma, and human papilloma virus induced squamous cell carcinoma. Finally, some medications used to treat HIV have been associated with ocular toxicities. In addition, initiating ART can also induce a phenomenon known as immune recovery uveitis [6,9].

Ocular syphilis

As implied by its monomer “the great mimicker”, ocular syphilis can present in numerous ways, affect one or both eyes, and involve nearly every structure within the eye. The most common manifestation of ocular syphilis is uveitis. Other less common, but well described, manifestations includes keratitis, scleritis, iridocyclitis, necrotizing retinitis, retinal vasculitis, optic neuritis, and exudative retinal detachment [1-5]. In our case, our patient’s ocular syphilis presented with a bilateral panuveitis as well as a rare manifestation of right retinal detachment.

The diagnosis of ocular syphilis is primarily clinical and is supported by a combination of history, exam, serological test, and CSF studies. Exam findings are highly variable and depend

upon which structures are affected. As in other stages and manifestations of syphilis, diagnostic testing is limited because Treponemal pallidum is unsuitable for culturing in vitro, is not visible on light microscopy, and is not seen on gram stain (10). Diagnostic testing is thus primarily via serological tests and should include both treponemal and nontreponemal tests, such as the rapid plasma reagin (RPR) [1,2,5]. CSF studies demonstrating elevated protein, more than 5 white blood cells, and a positive VDRL support a diagnosis of neurosyphilis. It should be noted that CSF VDRL is a highly specific but not highly sensitive test; thus a negative result does not rule out disease (1,5). While it is not yet standard of care, experimental data suggests there may be some utility in sampling intraocular fluid for treponemal PCR [10,11].

Ocular syphilis should be treated like neurosyphilis with a regimen of intravenous aqueous penicillin G 18 million units daily for ten to fourteen days [1,2,5]. Steroids can be utilized and are recommended for syphilitic uveitis, keratitis, scleritis, and neuritis. Of note, there are some reports that using steroids before administering antibiotics may prevent a Jarish Herxheimer reaction [1,5]. Response to treatment should be assessed in all patients through a combination of clinical improvement, declining serological nontreponemal titers, and declining CSF titers when appropriate. [1,5]. Some experts recommend using CSF FTA-Abs, which is less specific but highly sensitive, for monitoring response [5].

Conclusion

In conclusion, ocular symptoms can be overlooked manifestations of either HIV and/or syphilis, and it is important for internists to be familiar with these presentations. Ocular disease in patients living with HIV can be due to vascular changes, infections, neoplasms, or drug toxicities. Our case demonstrates an example of untreated HIV predisposing a patient to ocular syphilis, resulting in significant vision loss due to retinal detachment and uveitis. Ocular syphilis can cause inflammation in many ocular structures and present in various ways, most commonly as a uveitis. The diagnosis of ocular syphilis is dependent upon a high clinical suspicion and is made via supporting history and physical exam, serum treponemal/nontreponemal tests, and CSF studies. Treatment of ocular syphilis is with IV penicillin G with some data for concomitant use of steroids. Patients with ocular syphilis should be monitored for treatment response both clinically and with serial CSF and serum RPR titers.

Data Availability

All data supporting the findings of this report are available within the article.

Conflict of Interest

The author declares they have no conflicts of interest to this publication.

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