

Triple trouble: A case of retinochoroiditis in a patient with syphilis, tuberculosis, and human immunodeficiency virus infection

Neethu Latif, M K Janani¹, Sudharshan, Poongulali Selvamuthu², Parthopratim Dutta Majumder

A 31-year-old male patient presented with sudden onset loss of vision in the left eye. Ocular examination revealed significant vitritis with chorioretinitis lesion in the posterior pole. Subsequent investigations revealed positive human immunodeficiency virus (HIV) and syphilis serology; chest imaging revealed active pulmonary tuberculosis. Polymerase chain reaction from aqueous aspirate was positive for *Mycobacterium tuberculosis*. There was complete resolution of the lesions following antisyphilitic medications, antitubercular

therapy along with highly active antiretroviral therapy. Syphilis and tuberculosis coinfection in a previously unknown HIV patient is rare but can occur. It is worthwhile to look for multiple coinfections in HIV patients.

Key words: Antituberculosis drugs, chorioretinitis, HIV, ocular tuberculosis, syphilis

Ocular manifestation of human immunodeficiency virus (HIV) infection can be varied and may have a plethora of presentations. Syphilis and tuberculosis are significant comorbidities in such patients, which can pose a challenge in diagnosis and management of the conditions. Patients infected with HIV have a much higher risk of tuberculosis and extrapulmonary manifestations are more common in these patients.^[1] Syphilis is believed to increase the transmission of HIV and HIV in turn, is known to alter the natural history of syphilis, making the diagnosis of syphilis difficult.^[2] The past few years have seen an upsurge in syphilis in HIV patients.^[3] Herein, we describe an interesting case of chorioretinitis with syphilis, tuberculosis coinfection in a previously unknown HIV patient.

Case Report

A 31-year-old male presented to our outpatient department with complaints of sudden diminution of vision in his left eye for the last one week. He was previously diagnosed as pulmonary tuberculosis 4 years back when he was treated

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Medical and Vision Research Foundations, ¹Sankara Nethralaya Referral Laboratory, Sankara Nethralaya, ²VHS Infectious Diseases Medical Center, Chennai, Tamil Nadu, India

Correspondence to: Dr. Parthopratim Dutta Majumder, Senior Consultant, Department of Uvea, Sankara Nethralaya, 18, College Road, Nungambakkam, Chennai - 600 006, Tamil Nadu, India. E-mail: drparthopratim@gmail.com

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with antitubercular therapy (ATT) for 9 months. Best-corrected visual acuity (BCVA) in the right eye was 20/20 and 20/63 in the left eye. Slit-lamp and fundus examination of the right eye was normal. Examination of the left eye revealed diffuse congestion, cells 2+, flare 2+ in the anterior chamber and cells in anterior vitreous [Fig. 1a]. Fundus examination of the left eye showed vitritis grade 1, extensive areas of chorioretinitis with scattered hemorrhages, retinal vasculitis with dilatation, and tortuosity of the retinal vessels inferiorly [Fig. 1b]. His Mantoux test was negative and serology for antitoxoplasma antibodies was negative. A rapid enzyme-linked immune sorbent assay (ELISA) for HIV infection was positive. Both rapid plasma reagin (RPR) and treponema pallidum hemagglutination (TPHA) test were positive. CD4 count at the time of diagnosis was 348 cells/uL. High-resolution computerized tomography (HRCT) of the chest revealed active pulmonary tuberculosis. An anterior chamber paracentesis was done and polymerase chain reaction (PCR) from aqueous was positive for MPB 64 genome, negative for IS6110 genome of *Mycobacterium tuberculosis*, Herpes viruses, and *Toxoplasma gondii*. The patient was seen by an infectious disease specialist and a chest physician who started him on ATT along with (Crystalline penicillin 20 lakh unit twice a day for 14 days). In view of the multiple coinfections and risk of probable immune reconstitution and reasonably good CD4 count, antiretroviral therapy was deferred. Subsequently, he was also started on oral corticosteroid in tapering doses. At 1-month follow-up, his BCVA in the left eye improved to 20/20. Slit-lamp examination revealed a quiet anterior chamber in the left eye and fundus examination showed resolving retinitis patches. The patient was started on antiretroviral therapy by the infectious disease specialist.

At his 3-month return visit, his BCVA in the left eye was stable. Examination of the left eye revealed a quiet anterior chamber and a complete resolution of the fundus lesions [Fig. 2]. The repeat CD4 count was 684 cells/uL. He was advised to continue ATT and highly active antiretroviral therapy (HAART). The patient is under follow-up with us. Recently he was seen at a 6-month follow-up. His BCVA remained stable and a repeat HRCT chest revealed resolution of pulmonary lesions. He was advised to continue ATT and HAART.

Discussion

The present case posed a diagnostic and treatment challenge since laboratory investigations were pointing towards multiple

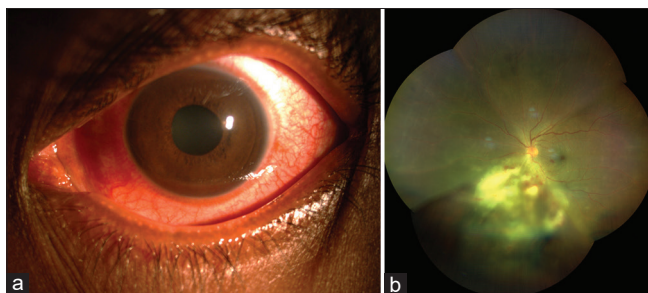


Figure 1: (a) Slit-lamp photograph of the left eye showing a diffuse circumferential congestion. (b) Fundus photograph of the left eye showing vitreous haze, extensive areas of chorioretinitis with scattered hemorrhages, retinal vasculitis and dilatation and tortuosity of the retinal vessels inferiorly

infections. Intraocular inflammation with HIV, *Treponema pallidum*, and *Mycobacterium tuberculosis* infection in the same eye simultaneously has not been reported before to our knowledge. Ocular syphilis remains the most common cause of bacterial infection in HIV-positive patients.^[4] Known as a great masquerader, ocular syphilis can mimic various inflammatory lesions. Posterior manifestations of ocular syphilis include vitreous inflammation, chorioretinitis, retinal vasculitis, branch vein occlusion, serous detachment, and rarely, necrotizing retinitis. In our practice, we always keep syphilis in differential diagnosis and syphilis serology is included in laboratory work-up of uveitis patients. The most common manifestation of ocular syphilis is chorioretinitis, which typically involves posterior pole or mid-periphery, presents as initially small and coalesce to become large confluent lesions.^[5] However, syphilitic uveitis can also manifest as retinitis without choroidal involvement and mimic viral retinitis.^[6] To add further dilemma, sometimes patches of retinitis may become confluent and present with vasculitis or vascular occlusion like the index case.^[7] Unlike viral retinitis, syphilitic retinitis progresses slowly and responds dramatically to intravenous penicillin.^[6] Ocular tuberculosis remains one of the most common opportunistic infections in patients with HIV infection in India.^[8,9] Presumed ocular tuberculosis has increasingly been recognized in patients with HIV and multidrug resistance tuberculosis. Concurrent HIV and tuberculosis coinfection, needs early treatment to avoid irreversible damage to the eye. Ocular tuberculosis has protean manifestations which include choroiditis, choroidal granulomas, chorioretinitis, endophthalmitis, subretinal abscess, and panophthalmitis. However, ocular tuberculosis in patients with HIV may have a slightly different presentation and run a different course.^[8,9] Retinal involvement in ocular tuberculosis is rare but has been reported in literature.^[10] Reactivation of pulmonary tuberculosis and the presence of mycobacterial genome in aqueous aspirate were a major concern in our case, which made us consider ocular tuberculosis as one of the probable etiologies in our case. Our patient was treated with both penicillin and



Figure 2: Fundus photograph of the left eye showing resolution of the lesion with scarring and retinal pigment perturbation at his 3-month return visit

ATT along with tapering doses of corticosteroid and HAART was instituted subsequently.^[11] Thus, it will be difficult to conclude the role of a particular therapy in our case. The main limitation of this case report is that we could not provide a detailed overview of multimodal imaging, which would have added more insight into the case.

Conclusion

The index case emphasizes the risk of multiple opportunistic infections in an HIV patient. A multidisciplinary approach in the management is of utmost significance to control inflammation and achieve a substantial recovery in visual acuity.

Declaration of patient consent

The authors certify that they have obtained all appropriate patient consent forms. In the form the patient(s) has/have given his/her/their consent for his/her/their images and other clinical information to be reported in the journal. The patients understand that their names and initials will not be published and due efforts will be made to conceal their identity, but anonymity cannot be guaranteed.

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Conflicts of interest

There are no conflicts of interest.

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