# A Case of Ocular Syphilis

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## Background

- Syphilis, a chronic infectious disease caused by the bacterium *Treponema pallidum*, can affect many parts of the body, including the eyes.
- Ocular manifestations can occur during any stage of syphilis. While nearly all ocular structures can be affected, the most common presentations are posterior uveitis and panuveitis. Diagnosis is often difficult due to the wide range and degree of presenting findings, warranting its nickname as "the great masquerader."
- There are two types of syphilitic chorioretinitis: punctate inner retinitis and outer retinopathy. Outer retinopathy is less common and can have a variety of presentations. The choroid is often involved in the inflammatory process that leads to the formation of these lesions, which can cause damage to the photoreceptor cells and affect visual function.
- Multimodal imaging techniques, including ultra-wide-field fundus autofluorescence (FAF) and spectral-domain ocular coherence tomography (OCT), are important in the diagnosis and evaluation of ocular syphilis.

## Case Report

- 56-year-old male with past medical history of HTN, HLD, Thyroid Disease.
- Presented with 1-2 weeks of gradually worsening vision, described as blurring and a central/cecocentral "cloudy spot" in his right eye. Reported associated floaters as well.

## Pertinent Exam Findings

- BCVA: 20/50 (PHNI) OD, 20/20 OS
- IOP: 23 OD, 19 OS

Anterior Exam
- Normal OU, no cell/flare

Posterior Exam
- Vitreous: Trace cells OU
- Retinal Vessels: Diffusely attenuated OU
- Macula: Central RPE changes OD
  Temporal RPE changes OS
- Periphery: Attached OU. Small sup nevus OS

## Ophthalmic Imaging

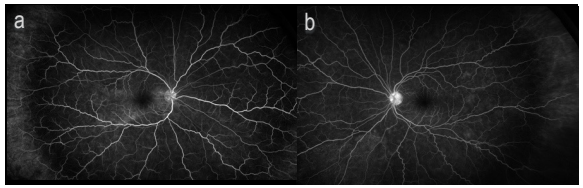
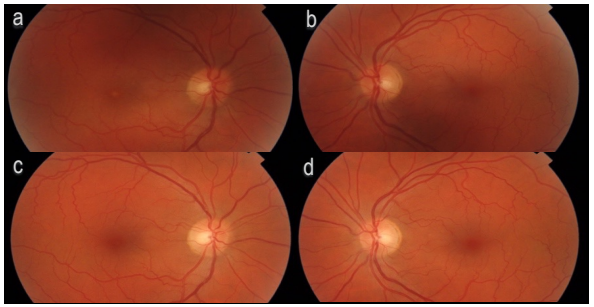



**Figure 1:**
Pre-treatment Fluorescein Angiography (IVFA) of the right (a) and left (b) eyes demonstrating late leakage of optic nerve consistent with active vasculitis.

**Figure 2:**
Pre-treatment fundus photography of the right (a) and left (b) eyes demonstrating RPE changes. Post-treatment fundus photography of the right (*c*) and left (d) eyes demonstrating resolution of RPE changes.



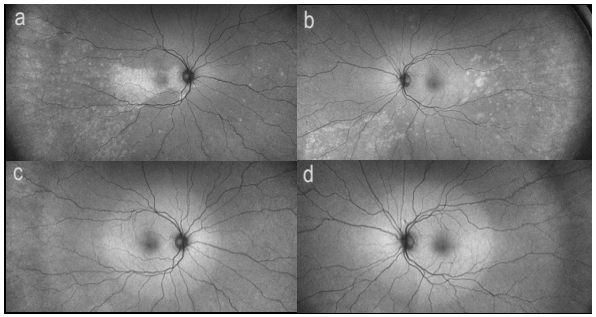
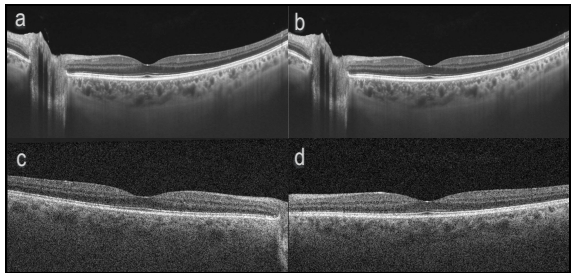




**Figure 3:**
Pre-treatment Fundus Autofluorescence (FAF) demonstrating hyper-autofluorescence in the right (a) and left (b) eyes. Post-treatment FAF demonstrating resolution of abnormal hyper-autofluorescence in the right (c) and left (d) eyes.

**Figure 4:**
Optical Coherence Tomography (OCT) macula demonstrating ellipsoid zone disruption and thickened choroid in the right (a) and left (b) eyes pre-treatment, and the right (c) and left (d) eyes show improvement post-treatment.




## Discussion

- Ocular syphilis is a marker of neurosyphilis, necessitating intravenous (IV) penicillin therapy.
- Patient diagnosed with neurosyphilis and admitted for IV penicillin and full neurology workup, including neuroimaging and CSF analysis. At one month, patient had improved BCVA to 20/20 OU and improved symptoms. At three months patient had a resolution of presenting symptoms.
- IVFA, Fundus Photography, FAF, and OCT imaging are useful and necessary in the diagnosis and monitoring of ocular syphilis.
- In this case, FAF revealed hyper-autofluorescence associated with RPE loss and ellipsoid zone disruption on OCT macula. The resolution following treatment suggests an inflammatory process underlying the infection may contribute to disruption of the RPE-photoreceptor complex.
- Early on, a low threshold should exist for suspecting ocular syphilis in cases of uveitis, especially in cases of chorioretinitis.

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