

A case of secondary syphilis presenting with optic neuropathy

Fadime KARAMAN ATASEVER*^{ORCID}, İnci GÜNGÖR^{ORCID}

Department of Ophthalmology, Faculty of Medicine, Ondokuz Mayıs University, Samsun, Türkiye

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Abstract

Syphilis is a chronic bacterial infection caused by *Treponema pallidum*. Syphilis is a significant individual and public health problem given the increased risk of HIV infection and lifelong morbidities in children born to infected mothers. Syphilis can be diagnosed at any stage and can affect multiple or a single organ, mimicking many diseases. It is known as the 'great imitator' as it manifests itself in various forms, often causing misdiagnosis with other conditions. Ocular findings can be seen in all stages of syphilis. In this case report, we have reported a patient with ocular syphilis diagnosed with the secondary syphilis stage. The patient has provided informed consent for publication of the case.

Keywords: syphilis, optic neuropathy, ocular, neurosyphilis

1. Introduction

The main clinical sign of primary syphilis is the presence of a painless, usually solitary, indurated, clear-based ulcerative lesion (chancre) that typically occurs approximately 2-3 weeks after direct contact with another person's infectious lesion (1). In secondary syphilis, more than 80% of patients have mucocutaneous lesions that may affect any body surface. The latent stage is characterized by positive serological tests in settings of the absence of clinical signs or symptoms and normal CSF findings (2). Tertiary syphilis can occur at any time after secondary syphilis, even years after latent syphilis (3). Transplacental spread of spirochete leads to congenital syphilis. Syphilis in pregnancy, if left untreated, has a teratogenic effect on the fetus (4).

2. Case Report

A 56-year-old male patient presented with the complaint of blurred vision in the left eye that had persisted for a week. He had a diagnosis of hypertension and a history of smoking. In the ocular examination, the best corrected visual acuity was 1.0 in the right eye and 0.7 in the left eye. Intraocular pressures were measured as 14 mmHg in the right eye and 12 mmHg in the left eye. Anterior segment examination was normal in both eyes. In the fundus examination, the right eye was normal, and the optic disc margins on the left were blurred and raised (Fig. 1). No limitation in eye movements was observed in both eyes. In the visual field examination, it was observed that there were normal right side, mild blind spot enlargement on the left and peripheral nonspecific defects (Fig 2). On admission, macular

optic coherence tomography was performed, and optic disc oedema was observed in the left eye; No macular oedema was observed in both eyes (Fig. 3). Fundus fluorescein angiography was performed, and optic disc staining was observed in the left eye (Fig. 1). In his neurological examination, no motor deficit was noted. However, deep tendon reflexes were bilaterally hyperactive, cerebellar tests and vibration sense were normal, and Babinski sign was negative.

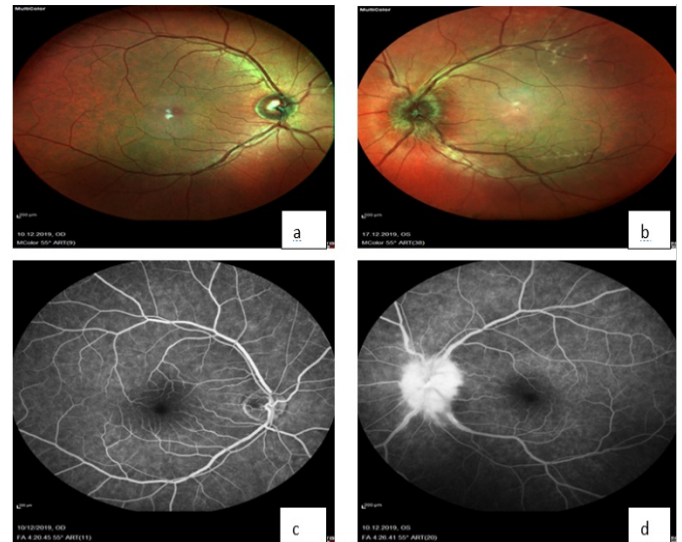


Fig. 1. Fundus photograph showing the right eye was normal (1a), in left eye blurred and elevated disc (1b); Fluorescein angiography of right and left eye: the right eye was normal (1c), optic disc staining was observed in the left eye (1d)

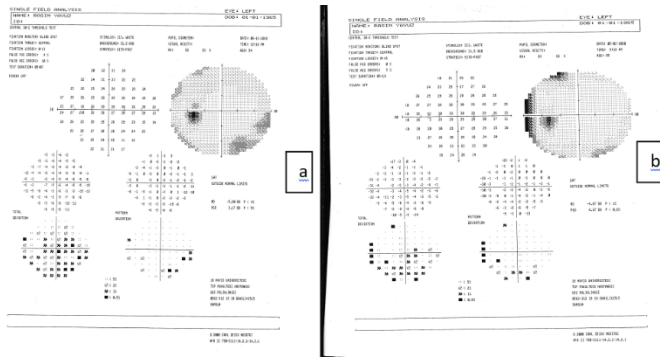


Fig. 2. Visual fields in both eyes, in the visual field examination, it was observed that there were normal right side (2a), mild blind spot enlargement on the left and peripheral nonspecific defects (2b)

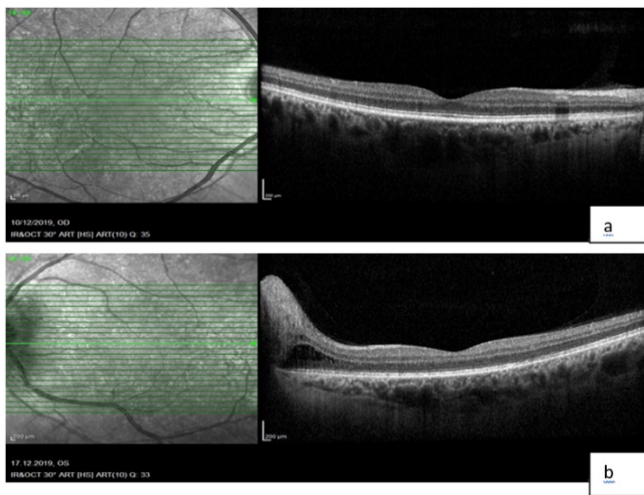


Fig. 3. Macular optic coherence tomography was performed and optic disc edema was observed in the left eye (3b); no macular edema was observed in both eyes (3a and 3b)

In the examination performed by the infectious diseases department, syphilis-specific lesions were observed on the palms of the hands, soles of the feet and inside the mouth. The patient reported that these rashes appeared on his hands and feet two weeks before the admission.

Blood biochemistry and hemogram were normal. Venereal Disease Research Laboratory (VDRL) positive and Treponema pallidum hemagglutination (TPHA) positive in serum. Tests for other infective agents were found negative.

Carotid artery Doppler examination and echocardiography were reported as normal. Cerebral magnetic resonance imaging (MRI) was normal. In orbital magnetic resonance imaging, there was a slight thickening at the optic disc level on the left, and a slight increase in contrast enhancement was observed at this level after contrast. It was reported as significant in terms of optic disc neuropathy/papillopathy.

Lumbar puncture was performed and cerebrospinal fluid (CSF) analysis showed glucose 74 mg/dL, lactate dehydrogenase (LDH) 43 U/L, sodium 147 mmol/L, potassium 2.9 mEq/L, chlorine 125.3 mEq/L, protein 24 mg/Dl. In the CSF culture examination (in a sterile tube), no microorganism

could be seen as a result of direct microscopy staining, and there was no growth in its culture.

In the light of current examination findings and tests, the patient was diagnosed with secondary syphilis with central nervous system involvement and was treated with penicillin G 4x4 million units for 14 days. No complications were observed during the treatment. On the sixth day of treatment, visual acuity improved in the left eye. On the tenth day of treatment, visual acuities were at 1.0 in both eyes, and optic disc borders began to become evident in the left eye.

The patient has provided informed consent for publication of the case in December 2019.

3. Discussion

Syphilis can affect all ocular structures; the most common findings are posterior uveitis and panuveitis. Ocular manifestations may be associated with neurosyphilis, and if left untreated, ocular syphilis can lead to blindness (4).

In a recently published meta-analysis study by Furtado JM et al., previous literature on retrospective ocular syphilis was assessed and showed that the majority of patients with ocular syphilis were male (ranging from 58% to 100% of the total cases). Only one study reported a third gender category (transgender). Only four articles reported more cases in women than in men. Most studies report being diagnosed with ocular syphilis in the fifth decade of their life. Seven studies reported cases over 80 years of age, and all described cases were diagnosed within the past two decades. Published articles were in consensus that ocular syphilis is more common in men than women in HIV-positive individuals (ranging from 85.7% to 100% of cases combined). Of the 52-case series for which gender-related information was available, only 4 reported more cases in women than in men (5). Chorioretinitis, necrotizing retinitis, retinal vasculitis, neuroretinitis, retinal vascular occlusions, and exudative retinal detachment are among the posterior segment findings in ocular syphilis. Although it is a rare cause of scleritis and episcleritis, syphilis should be considered in the differential diagnosis (5). In a retrospective study by Akpek et al., assessing 134 patients with scleral inflammation, only 7.5% of the subjects had an associated infectious disease, and no treponemal infection was reported (6). The optic disc involvement may be alone or as well as together with other posterior segment manifestations. In a study by Fonollosa et al., papillitis was found to be the most common finding of ocular syphilis, followed by vitritis (7). In a meta-analysis study by Zhank et al., papillitis emerged as the most common finding of syphilitic uveitis (8).

Latent and tertiary syphilis, including neurosyphilis, is treated with aqueous crystalline penicillin G, 3 to 4 million units intravenous every 4 hours for 10 to 14 days, or benzathine penicillin G, 2.4 million units intramuscularly weekly for 3 weeks. Patients receiving treatment should be monitored for Jarisch-Herxheimer reaction (4).

In conclusion, ocular syphilis can present with different clinical pictures. For this reason, syphilis should be considered when investigating the etiology in a case with optic disc involvement. Patients with syphilis with eye involvement should also be evaluated for possible central system involvement and concomitant HIV infection.

Conflict of interest

The authors declared no conflict of interest.

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None to declare.

Authors' contributions

Concept: K.A.F., G.İ., Design: K.A.F., G.İ., Data Collection or Processing: K.A.F., G.İ., Analysis or Interpretation: K.A.F., G.İ., Literature Search: K.A.F., G.İ., Writing: K.A.F., G.İ.

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