

## BILATERAL OPTIC NEURITIS AS INITIAL MANIFESTATION OF NEUROSYPHILIS IN A HIV-POSITIVE PATIENT

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**SUMMARY** – Syphilis, a disease which used to be terminal up to the 1950s, has become curable with the discovery of penicillin. In the last few years, an increase in its incidence has been recorded in the world as well as in Croatia, primarily with the human immunodeficiency virus (HIV) co-infection. We present a 40-year-old male patient who complained of a sudden decrease of visual acuity on both eyes, accompanied by dizziness. Clinical examination revealed low visual acuity and blurred edges of the optical nerve head without prominence. Pulse corticosteroid therapy failed to produce any recovery of visual acuity. Additional tests were done including *Treponema pallidum* hemagglutination assay (TPHA), which confirmed the infection with *Treponema pallidum*. The patient was administered Extencillin therapy. As a reaction to the therapy administered, the patient's visual acuity gradually fully recovered. In the medical literature available, there is no report of optic neuritis as the first and only manifestation of HIV and syphilis co-infection.

**Key words:** *Optic neuritis – diagnosis; Optic neuritis – drug therapy; HIV infections – complications; Syphilis – complications; Case report*

### Introduction

No case of optic neuritis as the first and only manifestation of human immunodeficiency virus (HIV) and *Treponema pallidum* co-infection has been described in the medical literature available. Syphilis is a sexually transmitted disease caused by a spiral-shaped bacterium *Treponema pallidum*. Tertiary stage with involvement of the central nervous system, i.e. neurosyphilis, with changes on the eye may develop during the latency period. Syphilis infection is confirmed by treponemic and non-treponemic assays, and treatment includes high doses of penicillin. Syphilis-related changes on the eye affect all eye structures and it is, therefore, often referred to as “the big imitator of different clinical conditions”. In patients with syphilis and HIV co-infection

who have not received antiretroviral therapy changes are most often bilateral and more frequently affect structures of the posterior eye segment.

### Case Report

A 40-year-old man, divorced, childless, a war veteran, presented to ophthalmology department during duty hours because of a sudden bilateral decrease of visual acuity in the two previous days, accompanied by dizziness and headache. The patient had been undergoing psychiatric treatment due to post-traumatic stress disorder. The rest of his history data were normal. Ophthalmologic examination revealed visual acuity of 0.0125 on his right eye and 0.15 on the left eye, whereas the edges of the optic nerve head appeared blurred and without prominence. Retinal vessels showed normal course and caliber. Fundus examination showed no signs of edema or bleeding, and macular area was normal with visual central reflex. The relative afferent papillary defect was

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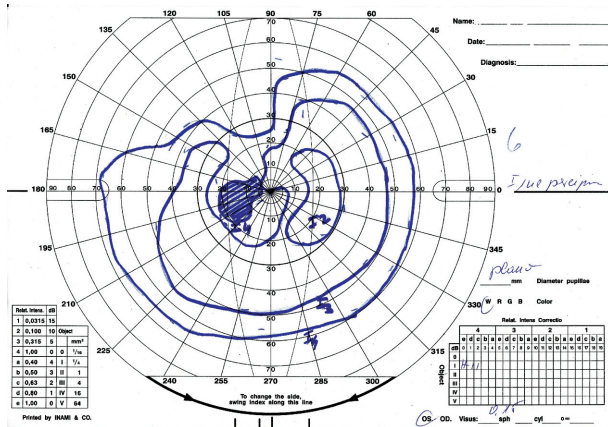


Fig. 1. Disk edema on the right eye.

negative. The patient underwent color saturation test<sup>1</sup>, and he said that he could see the red object as grey with his right eye and as pale red-orange with his left eye. Computed tomography (CT) of the brain and orbits produced normal finding. Visual field according to Goldman showed optic disk edema on the right eye and sector depression of all isopters in temporal quadrant with optic disk edema on the left eye (Figs. 1 and 2). A working diagnosis of optic neuritis was established and pulse corticosteroid therapy according to the protocol for optic neuritis, i.e. 1000 mg methylprednisolone in 1000 mL of Ringer's solution was administered for 3 days, followed by *per os* administration of 1 mg of prednisone *per kg* for 11 days<sup>2</sup>. This therapy failed to produce the expected recovery. On day 7, magnetic resonance imaging (MRI) of the brain and orbits was performed to reveal multifocal bilateral punctiform subcortical hyper-

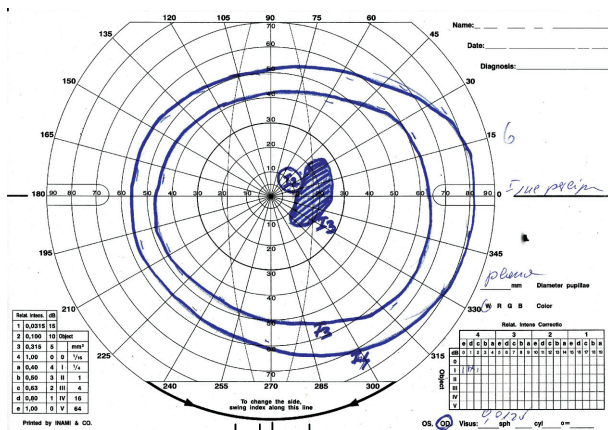


Fig. 2. Sector depression of all isopters in temporal quadrant with optic disk edema on the left eye.

tensive lesions of 1-2 mm in diameter, not typical of demyelination, on sagittal and coronary slices. The patient was discharged with recommendation for neurological treatment for brain lesions. In the meantime, it was found that his partner had got infected with syphilis. The patient underwent additional testing, including *Treponema pallidum* hemagglutination (TPHA) reactivity test which proved highly reactive. He was referred to the University Hospital for Infectious Diseases, where he was found to be HIV positive, but with no signs of immunodeficiency. Since the patient showed no signs of immunodeficiency, there was no indication for antiretroviral therapy and only Extencillin therapy was administered over three weeks. Extencillin therapy resulted in full recovery of his visual acuity and optic nerve test findings were normal.

### Discussion

The number of new syphilis patients in the world increases by 12 million each year, whereas the annual rate has increased by 28% since 2004. Men account for 84% of syphilis patients. Until 2004, only sporadic cases of patients with syphilis were registered in Croatia. In the period from June 2004 to December 2005, a total of 49 cases were registered in Zagreb, which is more than in the ten previous years. Ninety percent of patients agreed to HIV, hepatitis B- and C testing. One HIV+ patient was found among them<sup>3</sup>. The disease is con-

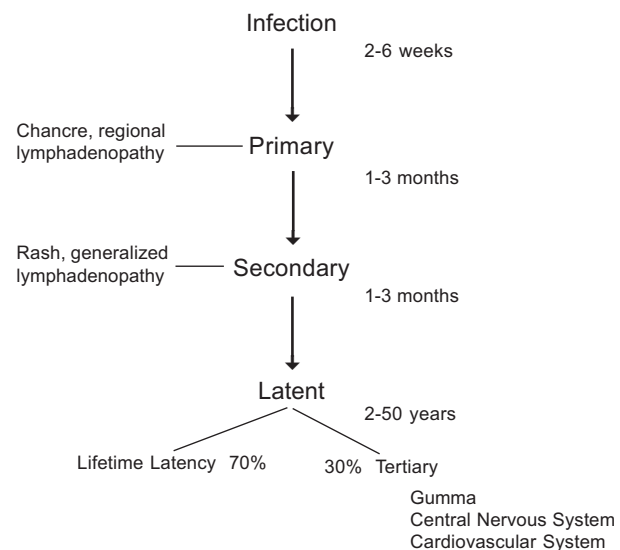


Fig. 3. The course of the disease.

firmed by microscopic examination of the primary chancre swab or blood tests which can be either treponemic, i.e. fluorescent treponemal antibody absorption (FTA-ABS) test, hemagglutination test for the detection of *Treponema pallidum*, immobilization test for *Treponema pallidum* and complement fixation test; or non-treponemic, i.e. flocculation tests (VDRL) and complement fixation test according to Wassermann and Kolmer. In the 1950s, with the discovery of penicillin, syphilis turned from terminal into a curable disease<sup>4</sup>. The course of the disease is illustrated in Figure 3.

Syphilis-related changes on the eye affect all its structures and it is, therefore, often referred to as “the big imitator of different clinical conditions”, e.g., red eye, eye pain, brisk inflammation, stromal keratitis, scleritis and episcleritis, angle-closure glaucoma (peripheral anterior synechiae), anterior and posterior uveitis, acute syphilitic placoid maculopathy, serous retinal detachment, central serous chorioretinopathy, tabes optica, and retinal vascular involvement. It is common for these changes occurring on the eye to manifest in tertiary stage of the disease and no case of optic neuritis as the first and only manifestation of syphilis has been described so far. However, co-infection with HIV increases involvement of the central nervous system. Ocular involvement in syphilis patients with HIV infection who are not receiving antiretroviral therapy is more frequently bilateral and posterior segment is more commonly involved<sup>5-8</sup>. Neither primary nor secondary stage of syphilis infection, nor any symptoms of HIV infection were recorded in our patient. The tertiary stage of syphilis, i.e. neurosyphilis, manifested with a sudden decrease of visual acuity and blurred edges of the optic nerve head without prominence, dizziness and headache, with positive test of color saturation. History data did not sug-

gest risky sexual behavior. As the patient had some mental difficulties, testing for sexually transmitted diseases was not performed. Upon information that his partner (female) suffered from syphilis, the patient underwent respective testing that proved both syphilis and HIV infections. Therapy with Extencillin resulted in full recovery of visual acuity and normal optic nerve head findings. To our knowledge, there is no case report on optic neuritis as the first and only manifestation of HIV and syphilis co-infection in the literature available.

In conclusion, it is only full patient cooperation and physician to patient relationship based on confidence that can result in complete case history, thus enabling a working diagnosis of sexually transmitted disease to establish and appropriate treatment to administer.

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## Sažetak

## OBOSTRANI NEURITIS OČNOGA ŽIVCA KAO POČETNA POJAVNOST NEUROSIFILISA KOD BOLESNIKA POZITIVNOG NA HIV

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Sifilis, bolest koja je do pedesetih godina prošloga stoljeća bila smrtonosna, otkrićem penicilina postala je izlječivom. U posljednjih nekoliko godina bilježi se porast incidencije kako u svijetu tako i kod nas, osobito uz suinfekciju virusom humane imunodeficijencije (HIV). Prikazujemo slučaj 40-godišnjeg muškarca koji se javio zbog naglog pada vidne oštrine na oba oka praćenog vrtoglavicom. Pri kliničkom pregledu utvrđena je niska vidna oštrina te glava vidnog živca nejasnih brisanih granica bez prominencije. Propisana pulsna kortikosteroidna terapija nije dovela do očekivanog oporavka vidne oštrine, pa su učinjene dodatne pretrage, među kojima i test hemaglutinacijske reaktivnosti *Treponema pallidum* (TPHA), kojim se dokazala infekcija bakterijom *Treponema pallidum*. Bolesniku je propisana terapija Extencillinom. Ova terapija je dovela do potpunog oporavka vidne oštrine. U dostupnoj medicinskoj literaturi, prema našim saznanjima, dosad nije opisan slučaj optičkog neuritisa kao prve i jedine manifestacije suinfekcije HIV i sifilisa.

Ključne riječi: *Očni neuritis – dijagnostika; Očni neuritis – terapija lijekovima; Infekcije HIV – komplikacije; Sifilis – komplikacije; Prikaz slučaja*