



A RARE CASE REPORT OF NEUROSYPHILIS

Cemile Handan Mısırlı, Tamer Bayram, Neşe Erdoğan,
Sevda Gökçeer and Duygu Özkan
Turkey

ABSTRACT

Introduction: Neurosyphilis is still an important medical problem in developing countries and syphilitic ocular manifestations are often not diagnosed easily. We present a case with neurosyphilis with clinical findings and investigation.

Case report: We describe the case of a 43-year-old taxi driver man with a 6 month history of decreased visual acuity and color perception in both eyes, but mainly in his right eye. The patient also had vertiginous complaint and nystagmus with toward every ways of eye movements for 3 months. Fundus examinations revealed pale optic disc with blurred margin in both eyes. There were multiple hyperintense lesions and minimal atrophy at cranial MRI. Blood analysis showed positive VDRL and TPHA titer of >1/40.960. Cerebrospinal fluid evaluation for syphilis showed lymphocytic pleocytosis and increased protein content and VDRL titer of 1/16 and RPR (+). The patient was diagnosed with neurosyphilis and received ceftriaxone 1gr flacon 1x2 iv/day for 14 days. He felt himself better after treatment and vertigo disappeared but his optic atrophy continued.

Conclusions: Neurosyphilis should be thought and investigated in the differential diagnosis of optic atrophy.

1. INTRODUCTION

Neurosyphilis refers to the infection of the brain and spinal cord by the syphilis bacteria. This can lead to destruction in many areas of the nervous system, causing loss of function of the extremities, loss of vision and altered mental abilities [1]. There is currently a resurgence of the disease all over the world because of the interaction of syphilis and HIV infections. Neurosyphilis is still an important medical problem in developing countries and syphilitic ocular manifestations are often misdiagnosed [2]. We present the rare case of neurosyphilis with clinical findings, investigation and the treatment.

2. CASE REPORT

We describe the case of a 43-year-old taxi driver man with a 6-month history of decreased visual acuity and color perception in both eyes, but mainly beginning in his right eye and then continuing to his left eye 4 months later. The



patient also had vertiginous complaint and dizziness for 3 months and couldn't drive for 1 month. There were no lateralizing signs in the neurologic examination in muscles. The patient was a little bit apathic and had a decrease in concentration. His past medical history was unremarkable, only smoking was positive. He had no systemic diseases, especially diabetes mellitus and hypertension as well as drug usage or toxic exposure and HIV serology was negative. His family history was negative for vision loss and other diseases.

Neurological examination showed vision loss in his both eyes, especially in right eye and nystagmus in the horizontal and vertical gazes. Ophthalmologic examination disclosed a visual acuity of 1/10 in the right eye, 4/10 in the left eye, and a right relative afferent pupillary defect. At fundoscopy, pale optic disc with blurred margin in both eyes and in visual field tests, absolute vascular attenuation, scotoma in superior temporal quadrant, superior arcuate defect and visual field defect in the inferior temporal and nasal quadrant were present. Fundus imaging and visual field test are shown [Fig 1 and 2]. Visual evoked potential showed delayed cortical response [P 100]. Optic atrophy belonging to syphilis were thought.

Cranial MRI revealed minimal atrophy and small cortical and periventricular foci of increased high-T2 signal. No contrast enhancement was seen [Fig 3]. Baseline blood tests were normal, but serological evaluation for syphilis showed seroconversion with positive VDRL test and RPR 1/16 titration [+], TPHA titer of $> 1/40.960$. Cerebrospinal fluid [CSF] analysis showed lymphocytic pleocytosis [24 cell/mm³] and increased protein content [0.91 g/dl]. CSF glucose was normal. CSF RPR [+] with a titer of $1/2$. CSF VDRL[+] with a titer of 1/16. Tests were repeated twice for confirmation. Digital subtraction angiography was normal. Carotid ultrasound and echocardiography were normal. There was evidence of intrathecal immunoglobulin G synthesis with oligoclonal bands.

The patient was diagnosed with neurosyphilis and received ceftriaxone 1 gr flacon 1x2 iv/day for 14 days. After 2 weeks of therapy, visual acuity improved to 3/10 in the right eye and 6/10 in the left eye. Vertigo and dizziness stopped completely. After discharge from our unit, the patient was regularly seen as an outpatient both at neurological and infectious diseases department. At 3-month visit, the patient was clinically stable, with a dramatic improvement of his right eye visual acuity to 3/10.

3. DISCUSSION

Case reports related to neurosyphilis are rare in our country [3]. Instead of classical forms, atypical cases started to occur more frequently in the antibiotic era, so the diagnosis of the disease became more difficult and the patients could be skipped easily by the doctors [4,5]. Our patient admitted to many hospitals for his complaints and didn't get the correct diagnosis for about 1 or 2 months.

Syphilis is seen mostly in men sexually active with other gender or homosexual relationship. Rates of infection are increasing among men aged 55-64 years [6]. The reason is uncertain although using condoms in older men may be less likely. Another cause is older patients consider themselves to be at low risk for getting ill.

The central nervous system can be involved at any stage of syphilis. Neurosyphilis affects meninges and arteries at early phases and the brain itself or the spinal cord later. Meningovascular syphilis can occur within the first few months to several years after infection and have the symptoms like hemiparesis, aphasia, visual loss or confusion [7]. This form of the disease goes with small hyperintense foci in MRI as in our patient also. Negative neuroimaging and previous treatment with benzathine penicillin cannot be used to exclude a diagnosis of neurosyphilis [8].

It is still controversial whether ophthalmic lesions are typical of early or late stages of neurosyphilis. Optic nerve involvement in neurosyphilis may be as perineuritis, anterior or retrobulbar optic neuritis or optic disc swelling in one or both eyes [1,9]. Ocular manifestations are more common than previously assumed and may be the first presenting symptom of the disease, as happened in our patient. Syphilis can mimic almost any form of ophthalmological pathology,



in fact there are no pathognomic features of ocular syphilis. Therefore, a reasonably high suspicion and an awareness of the manifestation of this disease can allow neurologists and ophthalmologists diagnose and treat the disease. In a study, it was found that optic disk swelling is seen about 13% of patients with neurosyphilis [10]. When the defects in optic nerve functions appear, it can be resolved with the treatment. On the other hand, when the optic atrophy begins as the result of longterm optic swelling, decrease in visual acuity doesn't get back completely but the patient feels himself better as it happens in our case. Optic neuropathy and secondary optic atrophy can occur as the result of direct meningeal inflammation due to small vessel arteritis [11]. It occurs mostly within 2 years of the beginning of syphilis with an incidence as low as 0.3-2.4 %. Recurrences can be seen sometimes after the treatment are completed [12].

Syphilis findings can be complicated by HIV infection and it is always recommended to consider this infection in subjects with syphilis. It has been thought a more aggressive progression of ocular syphilis in HIV patients due to their immunosuppressive therapy [13]. Our patient didn't have HIV infection.

As a result, we can say that it is important to diagnose neurosyphilis as early as possible especially with the ocular findings in order to treat properly and avoid blindness.

4. REFERENCES

- [1] Poggio MB, Primavera A, Capello E, Bandini F, Mazzarello G, Viscoli C, Schenone A. A case of secondary syphilis presenting as optic neuritis. *Neurol Sci* [2010] 31:365-367
- [2] Walsh FB, Hoyt WF. Infections and parasitic invasions of the nervous system. In: *Clinical neuro-ophthalmology*. 3rd ed. Baltimore: Williams and Wilkins. 1969;1581-1591.
- [3] Telci Ş, Dankı D, Dilbaz N, Uz E, Bayam G., Psikotik özelliklerle seyreden bir nörosifiliz olgusu. *Yeni Sempozyum Dergisi* 2006;44:34-36
- [4] Timmermans M, Carr J. Neurosyphilis in the modern era. *J Neurol Neurosurg Psychiatry* 2004;75:1727:1730
- [5] Acarel EE, Aslan IK, Karagöz N, Altın Ü, Örnek İ, Kırbaş D. HIV negatif Nörosifiliz olgu sunumu. *Demans Dergisi* 2002:27-31.
- [6] Smith GT, Goldmeier D, Migdal C. Neurosyphilis with optic neuritis: an update. *Postgrad Med J*.2006 1;82:36-39.
- [7] Arisoy Ö, Altunrende B, Boztaş MH, Gürel S, Sırmatel F, Sercan M. Kognitif bozukluk, epileptik nöbetler, sol amigdala hipokampal bölgede sinyal artışı ve belirgin atrofi ile seyreden bir nörosifiliz olgusu. *TJN* 20;2:2014.57-61.
- [8] Alam F, Yasutomi H, Fukuda H. Diffuse cerebral white matter T2-weighted hyperintensity: a new finding of general paresis. *Acta Radiol* Jul 2006;47[6]:609-11.
- [9] Margo CE, Hamed LM. Ocular syphilis. *Surv Ophthalmol* 1992;37[203]:220.



GLOBAL JOURNAL OF ADVANCED RESEARCH
(Scholarly Peer Review Publishing System)

- [10] Browning DJ. Posterior segment manifestations of active ocular syphilis, their response to a neurosyphilis regimen of penicillin therapy and the influence of human immunodeficiency virus status on response . *Ophthalmology* 2000;107: 2015-2023.
- [11] Aldave AJ, King JA, Cunningham ET. Ocular syphilis. *Curr Opin Ophthalmol* 2001;12:433-441.
- [12] Tichonova L, Borisenko K, Ward H. Epidemics of syphilis in the Russian Federation: trends, origins, and priorities for control. *Lancet* 1997;350:210:213.
- [13] Zetola NM, Klausner JD. Syphilis and HIV infection:an update. *Clin Infect Dis* 2007 May 1;44[9]:1222-8.



Fig 1. Fundoscopy in the case

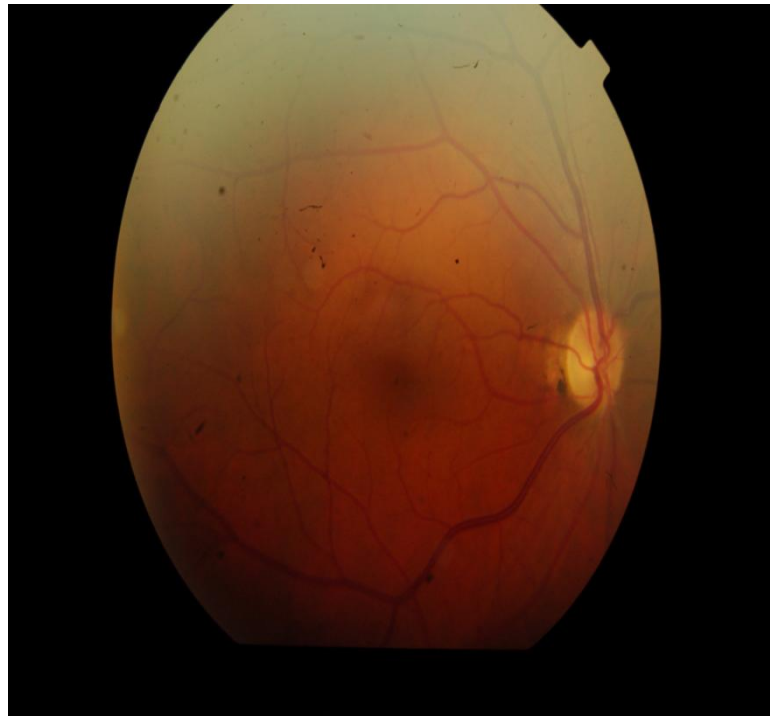




Fig 3. MRI sign of neurosyphilis

