

Isolated bilateral optic neuritis revealing a Lyme Disease : Case report

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ABSTRACT

Optic neuritis (ON) is an inflammation of the optic nerve and one of the most common manifestations of central nervous system involvement caused by various etiologies. Lyme optic neuritis is a rare ocular manifestation of Lyme Disease. We report a case of a 13-year-old male patient, previously healthy, with decreased central visual acuity on his both eyes . On examination, best-corrected visual acuity on both eyes was 0,3 LogMar. Anterior segment biomicroscopy showed no inflammatory signs and the intraocular pressure was normal. A fundus examination performed under mydriasis revealed a swollen optic disk on both eyes confirmed by fluorescein angiography. The cerebrospinal fluid examination and Lyme Disease blood findings were positive. The diagnosis of Lyme disease-related optic neuritis was made. Treated with Ceftriaxone and Doxycycline, there was a vision recovery. We can state that isolated bilateral optic neuritis is uncommon and exceptional especially in children during Lyme disease.

Keywords: Bilateral, children, isolated, Lyme Disease, Optic Neuritis.

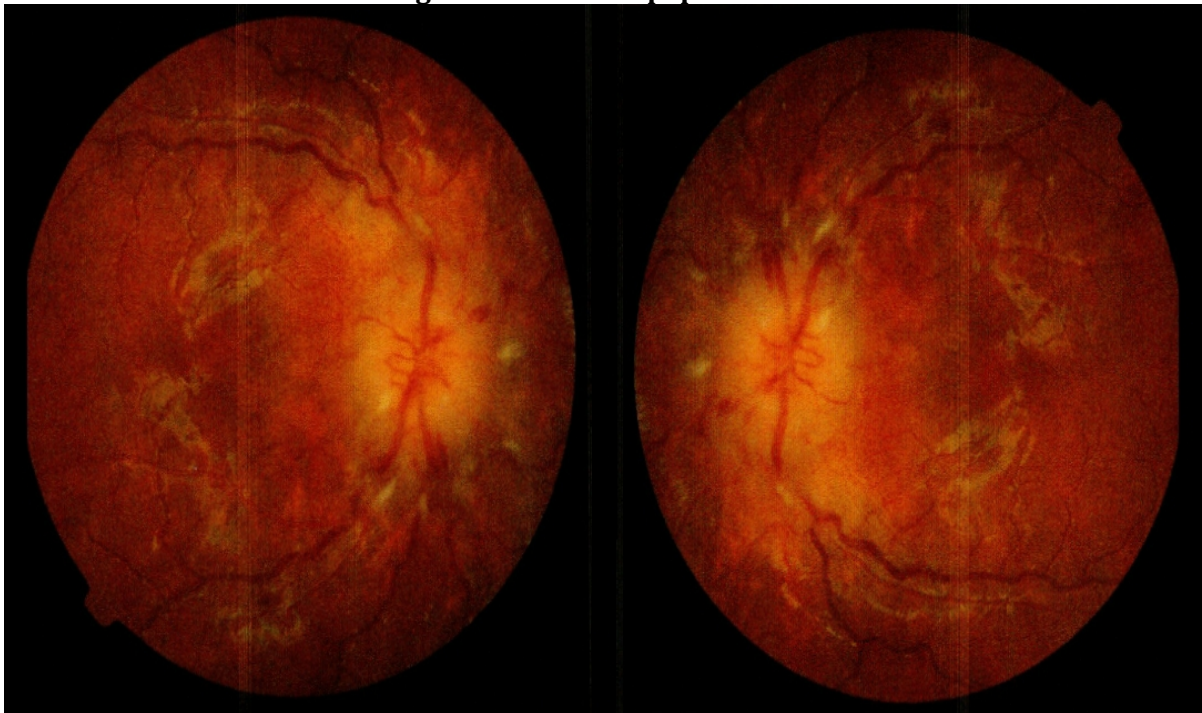
INTRODUCTION

Optic neuritis (ON) is an inflammation of the optic nerve and one of the most common manifestations of central nervous system involvement caused by various etiologies [1][2]. Lyme Disease-related ocular complications are uncommon, but various types of manifestations have been described including conjunctivitis, keratitis, and extra-ocular muscle palsies [3]. Lyme optic neuritis is a rare ocular manifestation of LD and only a few cases have been published in the literature. Here, the aim is to report a rare case of isolated bilateral optic neuritis caused by Lyme Disease (LD) in a teenager seen at University Hospital Center Emille Muller Mulhouse of Strasbourg and compare this case with the literature.

Case presentation

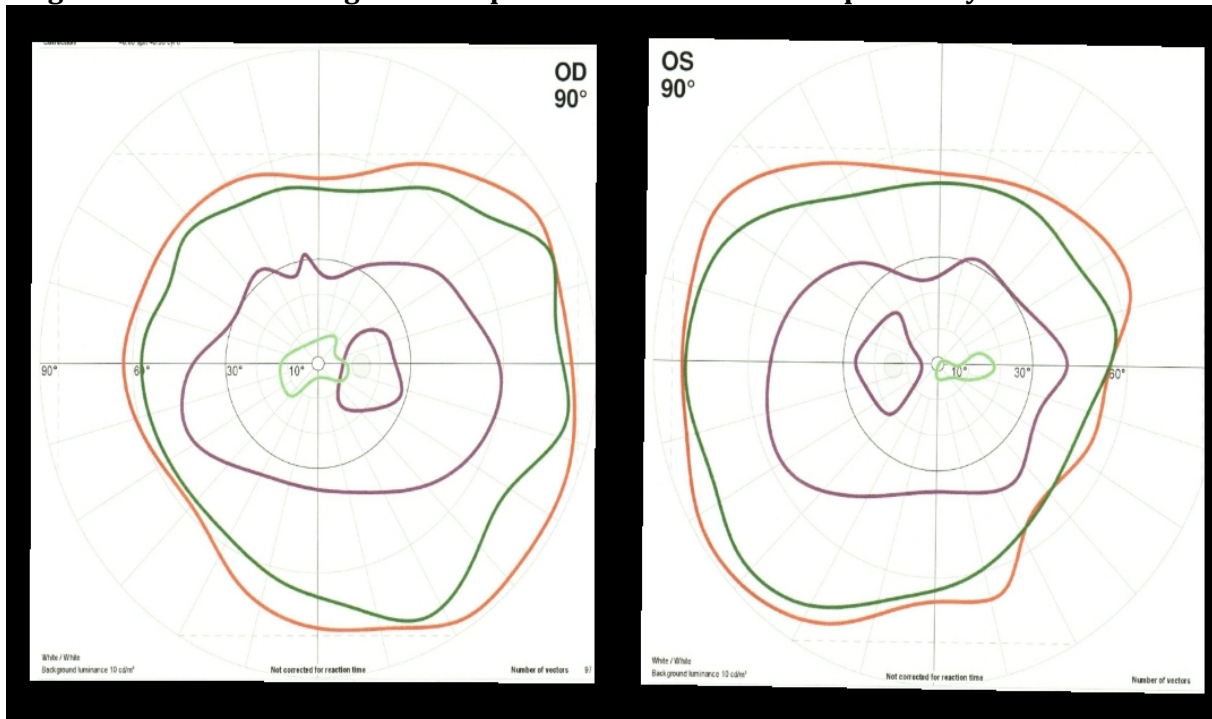
We report a case of a 13-year-old male patient, previously healthy, with decreased central visual acuity on his both eyes (OS), established 8 hours before his presentation. He did not recall any tick bite. He did not have any other medical diseases His family history was unremarkable. On examination, best-corrected visual acuity (BCVA) on his eyes was 0,3 LogMar. Anterior segment biomicroscopy showed no inflammatory signs and the intraocular pressure was 14 mmHg on OD and 15 mmHg on OS. Ocular movements were normal. There was no afferent pupil defect. A fundus examination performed under mydriasis revealed a swollen optic disk on both eyes (Figure 1).

Figure 1 : Bilateral papilledema



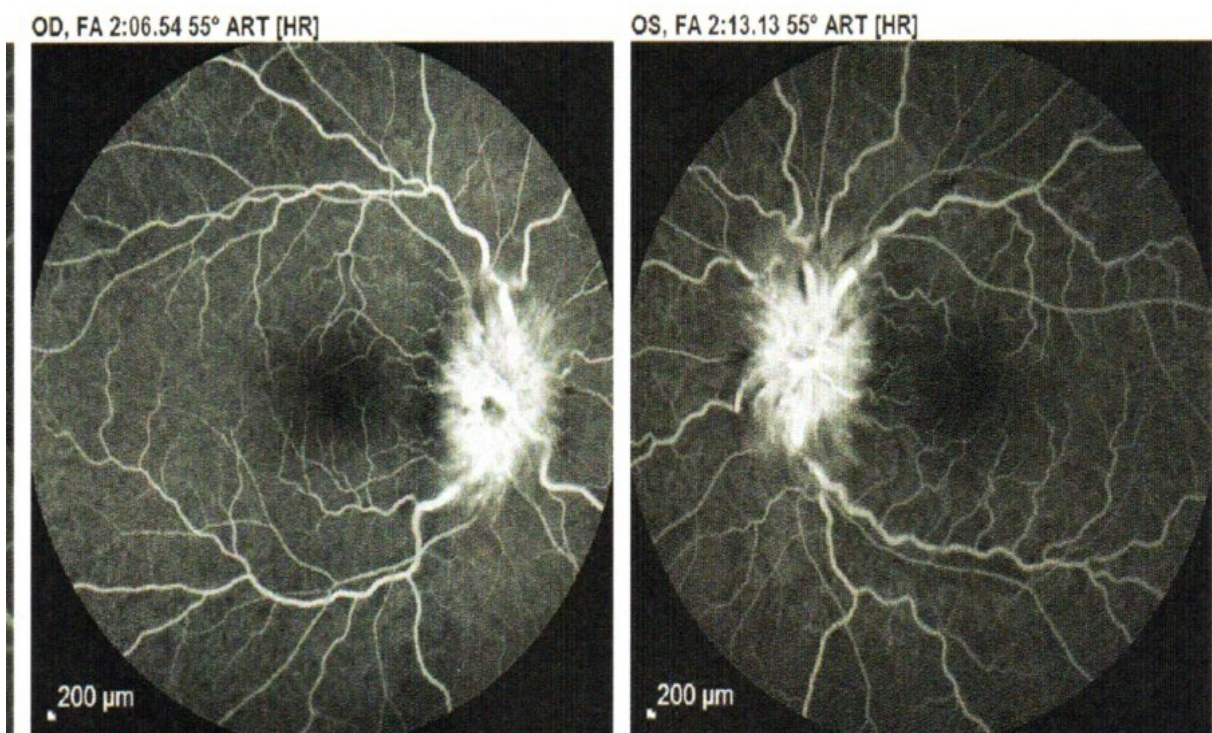
A Goldman perimetry visual field test found an enlarged blind spot defect (Figure 2).

Figure 2: Bilateral enlarged blind spot defect in 90° Goldman perimetry visual field test.



He underwent detailed investigation including magnetic resonance imaging (MRI) of brain, Visual Evoked Potentials (VEP) were all normal. The cerebrospinal fluid examination and Lyme Disease blood findings were positive. Fundus fluorescein angiography (FFA) confirmed the diagnosis of optic neuritis a bilateral by showing a diffusion which is the sign of papilledema (Figure 3).

Figure 3: Bilateral optic disc diffusion on Fundus fluorescein angiography



We made the final diagnosis of Lyme Disease-related bilateral optic neuritis then. The patient was treated with intravenous Ceftriaxon associated with Doxycycline. After 6 months of follow up, there was favorable evolution. His visual acuity raised back at 0 LogMar (20/20 on Snellen chart). The patient didn't see any central scotoma any more.

DISCUSSION

Optic neuritis (ON) is an inflammation of the optic nerve and one of the most common manifestations of central nervous system involvement caused by various etiologies [1][2]. Lyme optic neuritis is a rare ocular manifestation of LD and only a few cases have been published in the literature. We report a rare case of isolated bilateral optic neuritis caused by Lyme Disease (LD) in a of a 13-year-old male patient. The particularity of our case is the isolated affection of optic nerves which constitutes the first presentation of this infectious disease. Some cases of Lyme Disease were reported in literatures that were associated with other localisation. The same, *Jha et al* had a case of woman whose blurred vision occurred tardely after over 3 weeks period of the affection. In addition, the patient had upper respiratory tract symptoms, nausea, weakness, dizziness, and tingling/numbness in her lower extremities [4]. Similarly Burkhard *et al* reported a case of 58-year-old female developed facial paresis and six weeks after bilateral optic disc swelling [5]. Recently, Dabiri et al published a 56-year-old female presenting a simultaneous involvement of optic and abducens nerves by Lyme disease [6]. Likewise, During 10 years study conducted by Sibony et al in a region hyper-endemic for LD, indicates that optic neuritis is an exceedingly uncommon manifestation of LD [7]. The most common early neurologic manifestations of Lyme disease are cranial neuropathy (particularly facial palsy), lymphocytic meningitis, and radiculoneuritis, which often occur in combination [8]. Furthermore, facial palsy and lymphocytic meningitis account for nearly 90% of all cases with neuroborreliosis in children between 1-13 [9].

Having read the aforementioned literatures, most of cases of optic nerve involvement in Lyme Disease are accompanied with other tracts. we can state that isolated bilateral optic neuritis is uncommon and exceptional especially in children like our patient.

CONCLUSION

Lyme Disease-related ocular complications are uncommon, but various types of manifestations have been described including conjunctivitis, keratitis, and extra-ocular muscle palsies [3]. Lyme optic neuritis is a rare ocular manifestation of LD. We report an exceptional case of isolated bilateral optic neuritis caused by Lyme Disease (LD) in a teenager. In front of patient living in endemic region of LD who has recent blurred vision, Lyme disease should be investigated even though there is no history of bites.

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