MEGA JOURNAL OF CASE REPORTS

OPEN ACCESS

Case Presentation

Compiled Date: November 13, 2024

Optic Neuritis Secondary to Neurocryptococcosis: Case Report in an Immunocompetent Male Patient Neuritis

Lucas Magno Goedert[1], Ana Elisa Carvalho Pugliese[1], Rafael Torres dos Santos[1], Marina Fadanelli Pian[1], Victor Marchesan Dias[1], Arthur Onofre Beltran Filho[1], Matheus Nichele Buschle[1], Isabela Kim Lai[1], Isabela Barros Araujo[1], Joicyleide Sousa Barros[1], Isadora Michelon Andresevski Pitta[1], Ian Caldeira Ruppen[2*], Fernanda Romagnole Pugliese[4], Vitor Augusto Olivari do Carmo[2], Leandro Hideki Otani[3], Felicia Satie Ibuki Otani[3], Gabriel Petermann[5], Guilherme Enzo Giovanelli Mansano[2], Lara Beatriz Dallaqua Bitiati[2] and Mariana Mayumi Itikawa[6]

[1]Hospital de Olhos Noroeste do Paraná (Honorp), Cianorte, Paraná, Brazil

[2]Centro Universitário Ingá – Uningá, Maringá, PR, Brazil

[3]Instituto Maringá de Imagem, Maringá, PR, Brazil

[4]Faculdade Cesumar – Unicesumar, Maringá, PR, Brazil

[5]Universidade Anhanguera Uniderp, Brazil

[6]Universidade Estadual de Maringá - UEM, PR, Brazil

[*]**Corresponding author:** Ian Caldeira Ruppen, Centro Universitário Ingá-UNINGÁ, Maringá, PR, Brazil, E-mail: Ian2ruppen@gmail.com; ORCID: https://orcid.org/0000-0003-1706-1662

Abstract

To describe a rare case of optic neuritis secondary to neurocryptococcosis in an immunocompetent patient. Case report with clinical analysis and complementary exams. The patient showed significant bilateral visual loss after a generalized fungal infection. The importance of differential diagnosis and a multidisciplinary approach in managing fungal infections with neurological complications is emphasized.

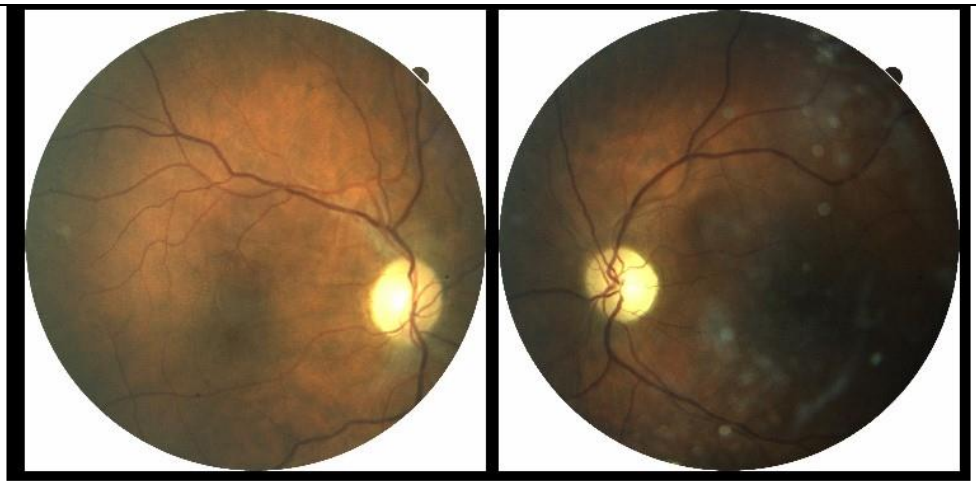
Keywords: Optic neuritis; Neurocryptococcosis; Fungal infection; Immunocompetent

Introduction

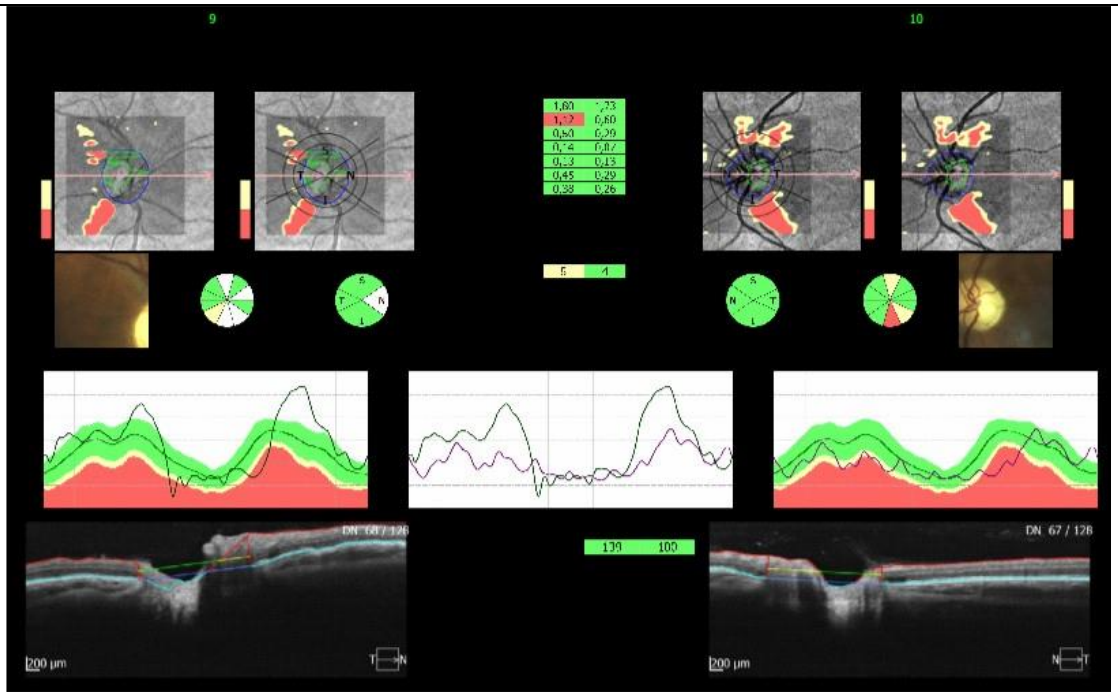
Neurocryptococcosis is a severe central nervous system infection caused by the fungus Cryptococcus neoformans, commonly found in immunocompromised patients but also occurring in immunocompetent individuals. The infection can lead to severe neurological and visual complications, including optic neuritis, which may result in significant visual loss.

Case Presentation

A 47-year-old male patient presented to the ophthalmology service with complaints of reduced visual acuity for both near and distance vision in both eyes. In July 2023, he developed intense holocranial headache that persisted for 15 days, unrelieved by strong analgesics like tramadol and morphine. After being hospitalized for 90 days, he was diagnosed with neurocryptococcosis through a lumbar puncture performed one month after the onset of neurological symptoms, which included mental confusion, amnesia, and loss of motor strength. Following hospital discharge, the patient began treatment with Itraconazole (200 mg every 12 hours) and vitamin B12. A cranial Magnetic Resonance Imaging (MRI) showed T2/FLAIR signal alterations with small interspersed cystic formations located in the caudate and lentiform nuclei bilaterally. These findings are nonspecific but may represent sequelae of the neuroinfection (given the clinical context). Rare supra-tentorial white matter signal changes, likely associated with microangiopathy (Fazekas II), and signs of an empty sella were also noted. On ophthalmologic examination, he presented with exotropia in the right eye, which began after the infection. Intraocular Pressure (IOP): Right Eye (RE): 24 mmHg, Left Eye (LE): 18 mmHg. Biomicroscopy: Both Eyes (BE): eyelids and eyelashes without alterations, clear conjunctiva, transparent cornea with convex shape, formed anterior chamber, photoreactive pupil, transparent lens. Fundoscopy: RE: pale optic nerve, attached retina. LE: pale optic nerve, perimacular pallor, attached retina. Retinography and fluorescein angiography showed no optic nerve leakage, with peridiscal hyperfluorescent areas compatible with peripapillary atrophy in both eyes. The optic discs had regular borders, peripapillary atrophy, and physiological cupping. The macula showed a loss of brightness **(Figure 1-3)**.



(Figures 1 and 2): Retinography and Fluorescein Angiography: Optic nerve without leakage, peridiscal hyperfluorescent areas compatible with peripapillary atrophy in both eyes. Optic discs with regular borders, peripapillary atrophy, and physiological cupping. Macula with loss of brightness. **Retinal Mapping:** BE: significant optic disc pallor.



(Figure 3): Optic Nerve OCT: RE: borderline nasal nerve fiber layer. LE: within normal limits.

Discussion

Neurocryptococcosis is an infection that can result in severe complications, including optic neuritis. The case presented highlights the importance of differential diagnosis in patients with a history of systemic fungal infection who exhibit neurological and visual symptoms. Early identification and appropriate treatment are crucial to prevent permanent damage. This report underscores the need for vigilance and an integrated approach in managing fungal infections with potential for neurological and ophthalmological complications. Coordination between neurologists and ophthalmologists is essential to optimize the visual and neurological prognosis for these patients **[1-6]**.

References

1. Doering TL. How sweet it is! Cryptococcus neoformans utilizes the mammalian sugarcoated for home invasion. PLoS Pathogens. 2009;5(2):e1000413.
2. Perfect JR, Bicanic T. Cryptococcosis diagnosis and treatment: What do we know now. Fungal Genet Biol. 2015:78:49-54.
3. Plant GT, Plant GT. Optic neuritis and multiple sclerosis. Curr Opin Neurol. 2008;21(1):16-21.
4. Molloy SF, et al. Antifungal combinations for treatment of cryptococcal meningitis in Africa. N Engl J Med. 2018;378(11):1004-17.
5. Bicanic T, Harrison TS. Cryptococcal meningitis. Br Med Bull. 2005:72:99-118.
6. Boulware DR, et al. Multidisciplinary management of central nervous system infections in the era of HIV/AIDS. Curr Opin HIV AIDS. 2014;9(6):555-62.

Citation of this Article

Goedert LM, Carvalho Pugliese AE, dos Santos RT, Pian MF, Dias VM, Beltran Filho AO, Buschle MN, Lai IK, Araujo IB, Barros JS, Andresevski Pitta IM, Ruppen IC, Pugliese FR, Olivari do Carmo VA, Otani LH, Ibuki Otani FS, Petermann G, Giovanelli Mansano GE, Dallaqua Bitiati LB and Itikawa MM. Optic Neuritis Secondary to Neurocryptococcosis: Case Report in an Immunocompetent Male Patient Neuritis. Mega J Case Rep. 2024;7(11):2001-2060.

Copyright