



LETTER TO THE EDITOR

Temporary Divergence Insufficiency in an Acquired Immunodeficiency Syndrome Patient with Cryptococcal Meningitis



A previously healthy 56-year-old man presented with the complaint of headache, neck stiffness and flu-like symptoms for 2 weeks. Diplopia at distance was also noted for 3 days. There was no history of recent head trauma and ocular surgery. Best-corrected visual acuity was 20/20 in each eye. Orthophoria at near fixation (30 cm) and concomitant esotropia of 10 prism diopters at distance fixation (6 m) were noted. Extraocular movement was normal with full abduction in each eye. Ophthalmoscopy

showed bilateral papilloedema (Figure 1A). Automated visual field test showed enlarged blind spot and nonspecific scotoma bilaterally (Figure 1B). Fluorescein angiography demonstrated diffuse disc leakage at late stage in each eye.

Brain magnetic resonance imaging showed no intracranial lesion but diffuse meningeal enhancement. Lumbar puncture showed a cerebrospinal fluid (CSF) opening pressure of 200 mmH₂O. India ink stain and culture of CSF was positive for *Cryptococcus neoformans*.

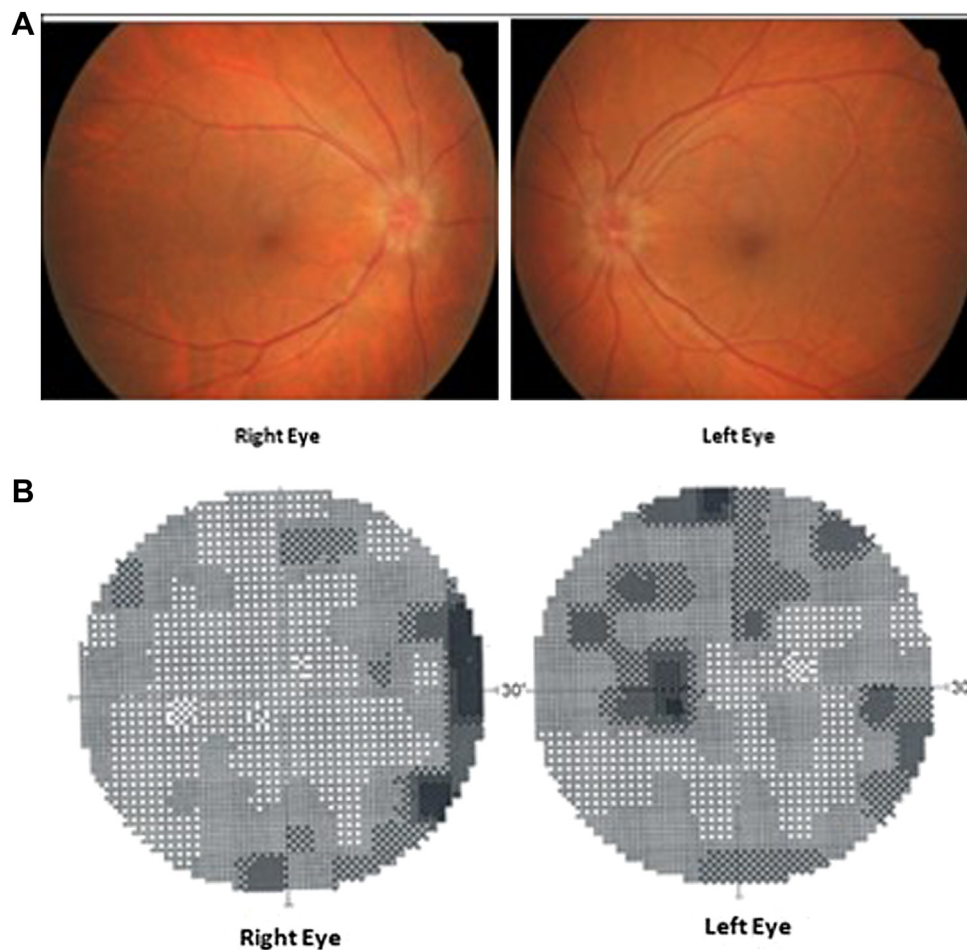


Figure 1 Ophthalmoscopy and automated visual field of a patient with AIDS infested by *Cryptococcus neoformans*. (A) Disc photographs of this AIDS patient shows disc elevation with hyperemia of bilateral eyes. (B) Automated visual field test (Humphrey 30-2) shows bilateral enlarged blind spots and some nonspecific visual field defects.

Peripheral blood sampling showed decreased CD4 T helper cells and anti-human immunodeficiency virus antibodies were confirmed positive. The patient initially presented with divergence insufficiency and was subsequently diagnosed as having cryptococcal meningitis and AIDS. Combined treatments of amphotericin B and fluconazole were given for managing cryptococcal meningitis. The diplopia disappeared immediately (seconds to minutes) after the first CSF drainage. There were no signs of esotropia at near or distance fixation at a 2-week follow up.

Unilateral or bilateral abducens palsy has been reported in about 9% of AIDS patients with cryptococcal infection,¹ but temporary divergence insufficiency has been reported in only two such patients. Divergence insufficiency refers to a clinically defined acquired disorder of ocular horizontal version, characterized by full-appearing ocular ductions and concomitant esotropia at distance.² A couple of similar terms, including divergence insufficiency, divergence paresis, divergence paralysis, and bilateral abducens palsy, are usually confusing. They may represent symptoms in different severity but are actually a continuum of a common condition.³ Bilateral abducens palsies following divergence insufficiency also has been reported.³ This case had normal ductions and normal saccadic velocity. Therefore, we used the term "divergence insufficiency" to describe this patient.

Primary divergence insufficiency has rarely been reported and is often spontaneously resolved.² Secondary divergence insufficiency has been reported to be associated with a number of neurologic diseases, including increased intracranial pressure,^{2,4} mass lesion in the midbrain,⁵ and ingestion of diazepam.⁶ Some investigators have suggested that there might be involvement of the sixth cranial nerve, probably nuclear or infranuclear, in patients with divergence insufficiency.^{7,8} When intracranial pressure (ICP) is raised to a critical point that the perfusion of the sixth nerve nuclei can be substantially affected, divergence paralysis suddenly appears. When ICP is normalized, the diplopia resolves.^{7,8} In this case, no recurrence of diplopia was noted when the CSF opening pressure increased to an even higher extent at 1 week and 2 weeks (600 mmH₂O and 300 mmH₂O, respectively) after treatment. The

sixth cranial nerve may develop some degree of tolerance of the further raised ICP.

In conclusion, divergence insufficiency is often associated with neurologic lesions. In cases secondary to raised ICP, control of ICP at an earlier stage can prevent the extent of damage to the sixth nerve and thus shorten the recovery time.

References

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