

CASE REPORT

**DENGUE FEVER OPTICAL NEUROPATHY WITH
EXPECTANT CONDUCT: CASE REPORT.**

What is expectant conduct?

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Suggested title: Dengue fever complicated by optic neuropathy: a case report.

ABSTRACT:

Dengue is a mosquito borne viral disease endemic in many parts of the world. It can manifest from a classic form, with fever, headache and myalgia, to more serious cases, such as dengue hemorrhagic fever, with high mortality rates. Ocular manifestations are relatively uncommon, but when present they have a wide variety of findings. Optic neuropathy is a rare manifestation and has a variable prognosis. In this article, we report a case of optic neuropathy secondary to dengue, adopting expectant conduct and evolving with a significant improvement of visual acuity.

Abstract should be structured into:

AIM, PRESENTATION OF CASE, DISCUSSION and CONCLUSION to conform with the requirements of the journal

Key words: dengue fever, optic neuritis, papillitis

Suggested Key Words: Dengue fever, optic neuropathy, visual outcome

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Introduction

Dengue fever is a viral infection very prevalent in the tropics. (1-3) ~~It is~~ This virus belongs to the family Flaviridae and has 4 serotypes identified as: DENV 1 - 4. (1) The

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infection usually generates symptoms such as fever, myalgia, headache, (1)

However, more severe forms may occur with thrombocytopenia and other blood

alterations that cause hemorrhagic conditions. (2)

Ocular manifestations are usually uncommon, but their reports in the literature have been growing over the years. (3) Other reported findings are: cotton wool spots

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~~exudates spots, and~~ retinal vasculitis, anterior uveitis, retinal vein occlusion, vitreous

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hemorrhage and optic neuropathy. (3)

UNDER PEER REVIEW

2726 _____ Optic neuropathy associated with dengue is a rare finding. Are you
certain of this statement? (4) It commonly

2827 _____ manifests as ~~papillary~~ optic disc edema, hyperemia, and optic disc hemorrhage. (1) The

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2928 prognosis is variable in the literature, with reports of ~~total~~ complete visual acuity recovery, to

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3029 cases ~~that have evolved into~~ of blindness. (1) In general, most patients have some

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3130 sequelae. (3)

3231 _____ The mechanisms of ocular manifestations, including optic neuropathy, are still

3332 unknown, but the clinical behavior of the disease ~~lesions~~ suggests an immunogenic cause to

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3433 the detrimental of the infective itself, since it is during the period of increase of the

3534 immunological response that the ocular manifestations usually arise. (5) Recast sentence to

3635 _____ The aim ~~objective~~ of this work is to ~~document~~ report a case of dengue fever complicated by optic

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3736 Neuropathy and, to discuss its the pathophysiological process ~~and the conduct of this~~

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3837 ~~disease~~ responsible for the optic neuropathy

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3938 Case report

4039 _____ A 32-year-old woman with a history of classic dengue fever of onea week duration ~~ago~~,

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4140 confirmed by serology, was seen at our clinic with a history of ~~appeared in the service referring to~~ sudden low vision ~~visual acuity~~

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4241 in the left eye. At ophthalmologic examination visual acuity was 20/400 in the

4342 ~~affected~~ left eye. e Extrinsic ocular motility, pupillary reflexes, biomicroscopy and

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4443 intraocular pressure ~~with no abnormalities~~ were normal in both eyes.

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4544 _____ In the indirect binocular ophthalmoscopy of the left eye, there was an increase

4645 in vascular tortuosity associated with disc edema, papilloedema, Note that papilledema is usually associated with elevated intracranial pressure which was not the case here. ~~presence of hemorrhages and~~

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4746 cotton wool spots in the perimacular region, characterizing unilateral optic

4847 neuropathy with probable peripapillary and retinal vasculitis that evolved with

4948 occlusion of the cilioretinal artery. The last part should come in under discussion. Does this patient have a visible

5049 _____ We opted for expectant conduct. Define please? After 30 days, the patient evolved with

UNDER PEER REVIEW

5150 significant clinical improvement (Figures 1) and ended on the day of discharge with
5251 visual acuity of 20/40 in the affected eye, but with paracentral residual **lesion in the**
5352 visual field **loss** (Figures 2), besides the decrease of the layer of nerve fibers in the

5453 papillomacular bundle and temporal atrophy of optic nerve demonstrated in optical
5554 coherence tomography (OCT). (Figure 3)

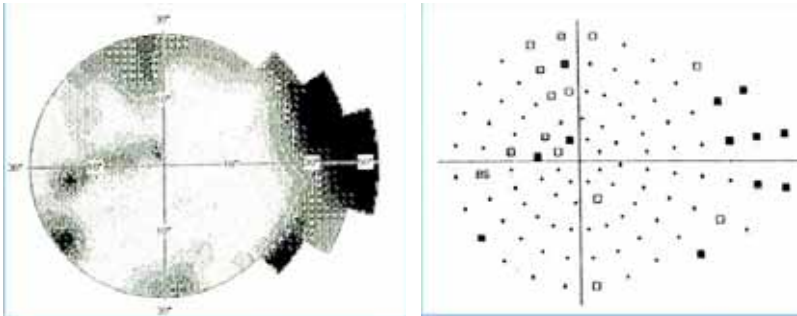
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Figure 1 - Retinography with 15 day intervals between them

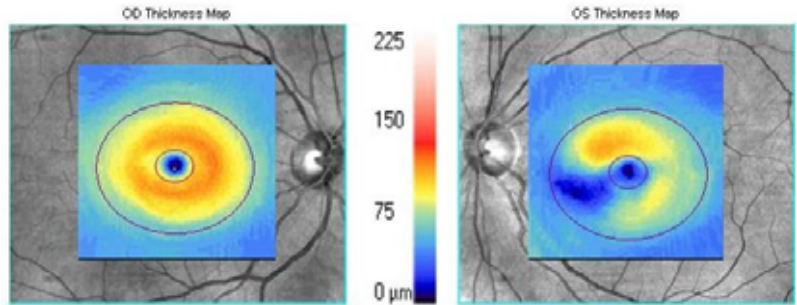


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Figure 2 - Visual field showing paracentral and nasal lesion in left eye after 30 days.

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**Figure 3 - Tomography of macular coherence showing comparatively the distribution of
64 ganglion cells between right and left eye.**

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67 Discussion

68 Dengue fever in recent years has become an important public health problem,
69 as it has spread to several continents and has evolved with new clinical
70 manifestations. The clinical picture associated with the visual alteration described in
71 this study is a rare and yet little discussed event in the medical literature. [This statement is not entirely correct because cases of optic neuropathy complicating dengue fever have been reported in the literature](#)

72 Visual changes usually occur at the end of the acute phase of the disease,
73 typically present on the seventh day ([interval between days](#) 5-8) after onset of fever.
(4) [And](#) [Visual](#)
74 impairment may be [either](#) unilateral or bilateral, (6) however, patients generally
75 complain of [blurring of vision](#) visual blurring, and, less commonly, of non-specific visual disturbances.

76 (5)

77 Most ocular complications are found in the posterior pole [-, such as](#) retinal
78 hemorrhage and macula, peridiscal bleeding, Roth spots, diffuse retinal edema,
79 vitreous cells, optic disc margin blurring, serous retinal detachment, choroidal
80 effusion and maculopathy does not specify. [Clarify this statement. It does not make sense in its present form](#)

81 Optic neuropathy is uncommon and results from an inflammatory, infectious or
82 demyelinating process of the optic nerve presenting as retrobulbar neuritis, papillitis
83 or neuroretinitis. (1,9) The mechanism of these manifestations is not well known, but
84 is indicative of an immune-mediated or of etiology for the affective (1,3)

85 The broad spectrum of ophthalmologic manifestations allows us to conclude
86 that several pathophysiological processes are involved. The thrombocytopenic state,
87 with its tendency to bleed, leads to an increase in the incidence of hemorrhage. The
88 release of cytokines with vasoactive and inflammatory properties, causing capillary
89 leakage, may explain neuritis with papillary edema [are you sure it is the capillary leakage that is responsible for the optic disc edema?](#) and perimacular cotton [wool](#) spot,
90 presented in this case.

Another possibility is a viral mutation, which has already been proven to have occurred in several serotypes, however, without studies of the biological consequences that it can cause. (4)

After recovery from optic neuritis, some patients persist with residual visual alteration, presenting central or paracentral (2) scotoma, due to the lesion in the layer of nerve fibers proved, in our case, by macular OCT. According to Teoh *et al*, this lesion becomes more evident after one month of the initial picture.(5)

The prognosis for ophthalmologic complications is generally good, with improvement in visual acuity and ocular signs and symptoms in most patients without any treatment. (1,8) Steroid use may be an option for patients with more severe or refractory eye involvement , for the possibility of being an immune-mediated process. However, it is still controversial and should be avoided in the acute viremia stage. (4,8)

Thus, further studies are needed to elucidate the mechanism of dengue fever ophthalmic complications. Randomized and controlled trials will help standardize the investigations and better determine the form of treatment for these patients. (1) [Clarify the last statement. The RCT.. is it for the drug treatment or what?](#)

Conclusion

Dengue fever is the mosquito-borne viral disease that spreads most rapidly in the world, being the most important arbovirose that affects the human being, being a serious problem of public health in the world. In Brazil since 1986 an epidemic has occurred annually causing great socioeconomic impact.

Prophylactic measures are needed to combat the transmission of dengue. The elimination of breeding foci, the use of protective screens and repellents are fundamental measures to prevent the access of the *Aedes* sp. The non-control

of the epidemic increases the cases of dengue and consequently there is a greater ocular and systemic affection thus raising the sequelae that the disease can leave.

Ophthalmologic evaluation with fundus examination in the most severe cases, especially in endemic areas, seeking early detection of involvement of the central nervous system could promote better monitoring and treatment.

The treatment in neuropathy is quite controversial and not yet defined, some authors advocate the use of systemic and endovenous corticosteroids in an attempt to improve the visual prognosis, but studies reveal a spontaneous resolution in most cases, even in that cited in the article.

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