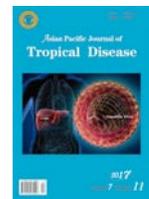


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Early treatment of dengue foveolitis resulting in good visual outcome

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ABSTRACT

A 34-year-old lady presented with sudden onset of central blurring of vision of left eye on Day 7 of dengue fever confirmed by positive IgM serology. Visual acuity was 6/6 OD (right eye) and 6/18 OS (left eye). Relative afferent pupillary defect was absent. Anterior segment was unremarkable bilaterally. Fundus examination revealed an area of preretinal haemorrhage with surrounding cotton wool spot and exudation at the macula OS and a single dot hemorrhage at the superotemporal arcade OD. Optical coherence tomography showed bilateral macular oedema with extensive central foveal involvement of intraretinal and subretinal fluid OS. The central macular thickness was 408 μm . Fluorescein angiography showed late leakage at the macula with no capillary fall out OS. No obvious leak was seen OD. She was immediately treated with oral prednisolone 1 mg/kg/day with weekly tapering dose. Subsequently, her left eye showed remarkable improvement in visual acuity to 6/9 and reduction in central macular thickness to 207 μm . In conclusion, dengue foveolitis, although rare, can lead to vision-threatening complication if left untreated. Prompt diagnosis and treatment may result in promising visual outcome, as this case.

1. Introduction

Dengue fever is the commonest vector-borne viral disease in Malaysia and the reported cases are increasing each year[1]. However, there are limited reported cases on ocular manifestations of dengue fever. Ocular complications may involve the posterior and anterior segments[2]. The onset of ocular manifestations usually coincided with nadir of thrombocytopenia, around Day 5 to 7 of dengue fever. This may suggest an immune-mediated response rather than infective one[3]. However, the exact mechanism remains unclear.

In the present case report, we reported a case of dengue fever complicated by foveolitis resulting in visual impairment. Prompt diagnosis and treatment resulted in good visual and anatomical outcome.

2. Case history

A 34-year-old lady, with no known medical illness, presented with sudden onset of central blurring of vision OS (left eye) at Day 7 of dengue fever which was confirmed by positive IgM dengue serology. Visual acuity was 6/6 OD (right eye) and 6/18 OS. Relative afferent pupillary defect was absent. Result of anterior segment examination

was unremarkable bilaterally. Fundus examination revealed an area of preretinal haemorrhage with surrounding cotton wool spot and exudation at the macula OS (Figure 1A). Right fundus showed a single dot haemorrhage at the superotemporal arcade (Figure 1B).

Optical coherence tomography (OCT) showed macular oedema with extensive intraretinal and subretinal fluid at the fovea and the central macular thickness was 408 μm OS (Figure 2A). OCT of the right eye also showed macular oedema with central macular thickness of 228 μm (Figure 2B). Fluorescein angiography showed late leakage at the macula with no capillary fall out OS (Figure 2C) and no obvious leak OD (Figure 2D).

In view of the extensive intraretinal and subretinal fluid OS and significant drop in visual acuity, the patient was immediately treated with oral prednisolone 1 mg/kg/day with weekly tapering dose. After three days of treatment, her left eye showed remarkable reduction in the intraretinal and subretinal fluid (Figure 3A). There was also improvement in right eye subclinical macular oedema (Figure 3B), although visual acuity maintained at 6/18 OS. Improvement in visual acuity to 6/9 OS was only seen three weeks later. The OCT showed marked improvement with central macular thickness of 222 μm (Figure 3C).

3. Discussion

Dengue fever is one of the most prevalent arthropod-borne viral diseases in terms of human morbidity and mortality. The incidence rate shows an escalating trend each year in Malaysia[1]. Ocular complications associated with dengue fever are rarely reported in the literature. However, since the year 2000, dengue-related ocular

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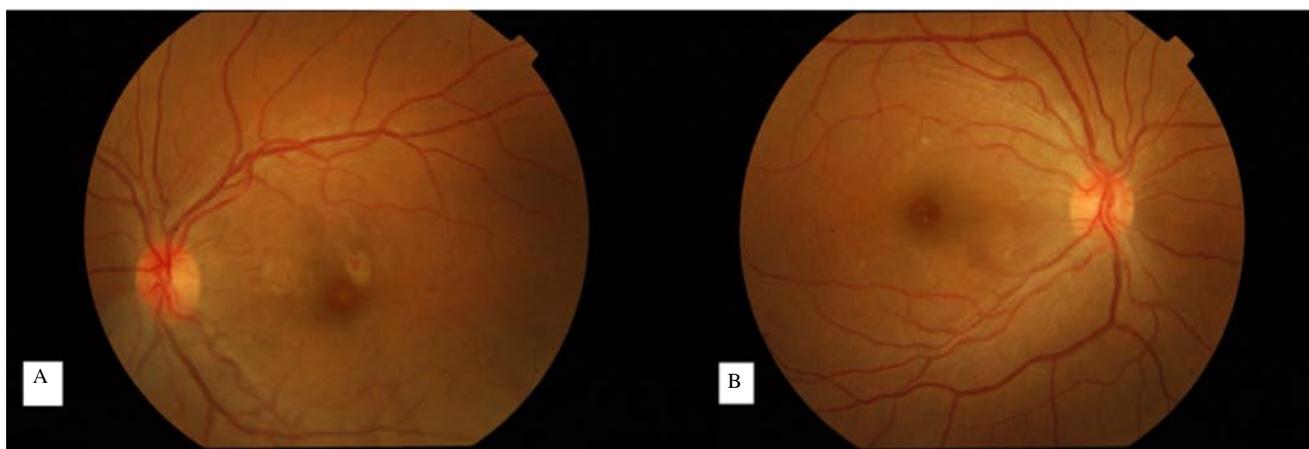


Figure 1. An area of preretinal haemorrhage with surrounding cotton wool spot and exudation at the macula OS (A) and a single dot haemorrhage at the superotemporal arcade (B).

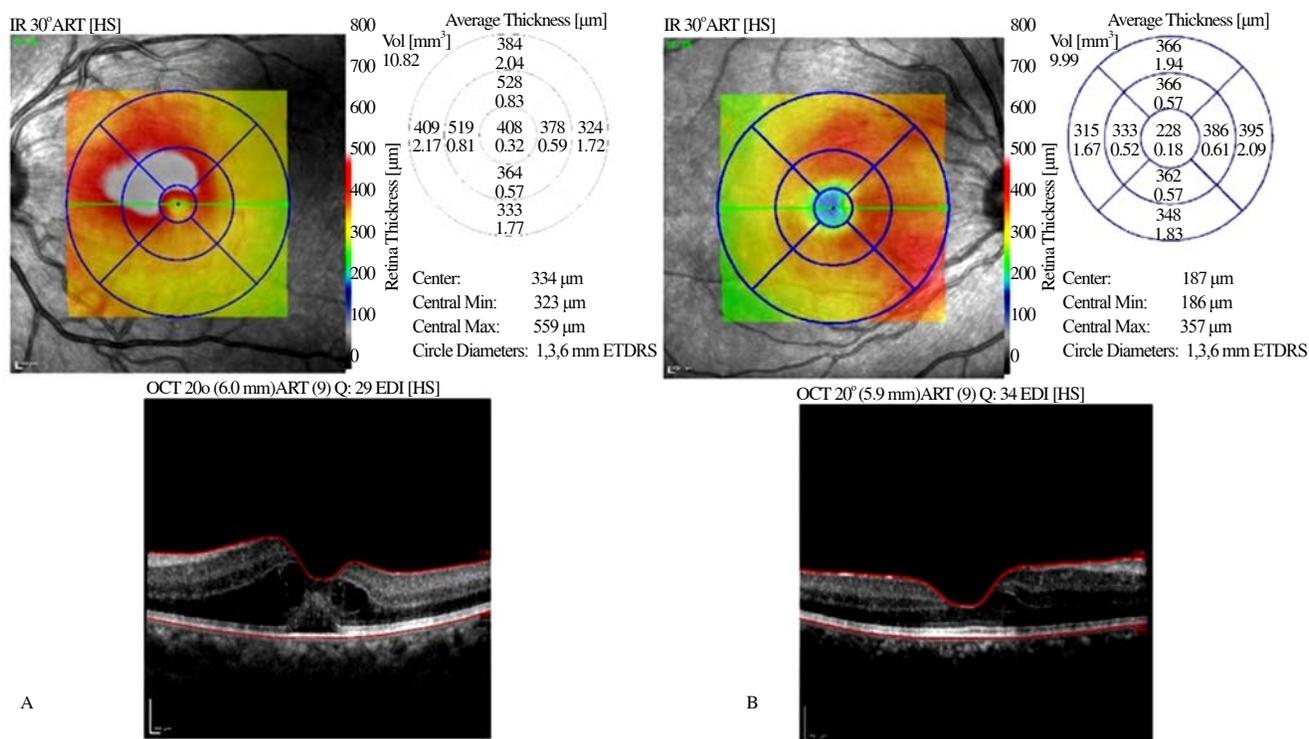


Figure 2. Macular edema with extensive intraretinal and subretinal fluid at the fovea and the central macular thickness of 408 μm OS (A) and macular oedema with central macular thickness of 228 μm OD (B).

complications have been increasingly reported especially from Southeast Asian region[3]. Ocular manifestations of dengue fever are likely to mirror the sharp rise in cases of dengue fever.

There is no specific treatment for systemic dengue fever and usually supportive therapy is evolved. Most of the time, the course of the ocular complications, like systemic dengue fever, is generally self-limiting and resolves spontaneously even without treatment[4-6]. The improvement in visual signs and symptoms usually corresponds to improvement of platelet levels[7].

Despite being rare and self-limiting, there have been reported cases of ocular complications resulting in permanent visual impairment[8]. To date, there is no established treatment for ocular complications of dengue fever[8]. Because the underlying mechanism is likely to be an immune-mediated response, some researchers advocated the use of systemic steroid therapy, if not contraindicated, to patients with extensive involvement of retina, retinal pigmented epithelium and choroid[3,6,9]. Treatment is especially imperative in patients with poor initial visual acuity[9].

The reported use of systemic steroids is administered either orally

or intravenously[6,7]. The dose suggested for oral prednisolone is 1 mg/kg/day for one week and slowly tapered over two months[7]. On the other hand, intravenous methylprednisolone dosage is given 1 g per day in divided doses for three days, followed by oral prednisolone at 1 mg/kg/day for one week and the dosage is tailed off over the next two months in a similar manner[7]. To date, there is no evidence as to which is the more superior mode of administration. However, the outcome of treatment with systemic steroids in vision in both forms has been favourable[6,7].

We commenced treatment with oral prednisolone in our patient due to the extensive involvement of the retina on OCT and also significant reduction in the initial visual acuity. The dosage of the oral prednisolone started was in accordance to the recommendations suggested by most researchers. We saw a dramatic improvement on OCT within three days of treatment. However, visual acuity was slowly improved over the course of three weeks while on treatment.

It is unclear whether visual recovery was the result of treatment or part of the natural course of the disease. Hence, it is imperative that the effect of treatment on rate and amount of recovery be

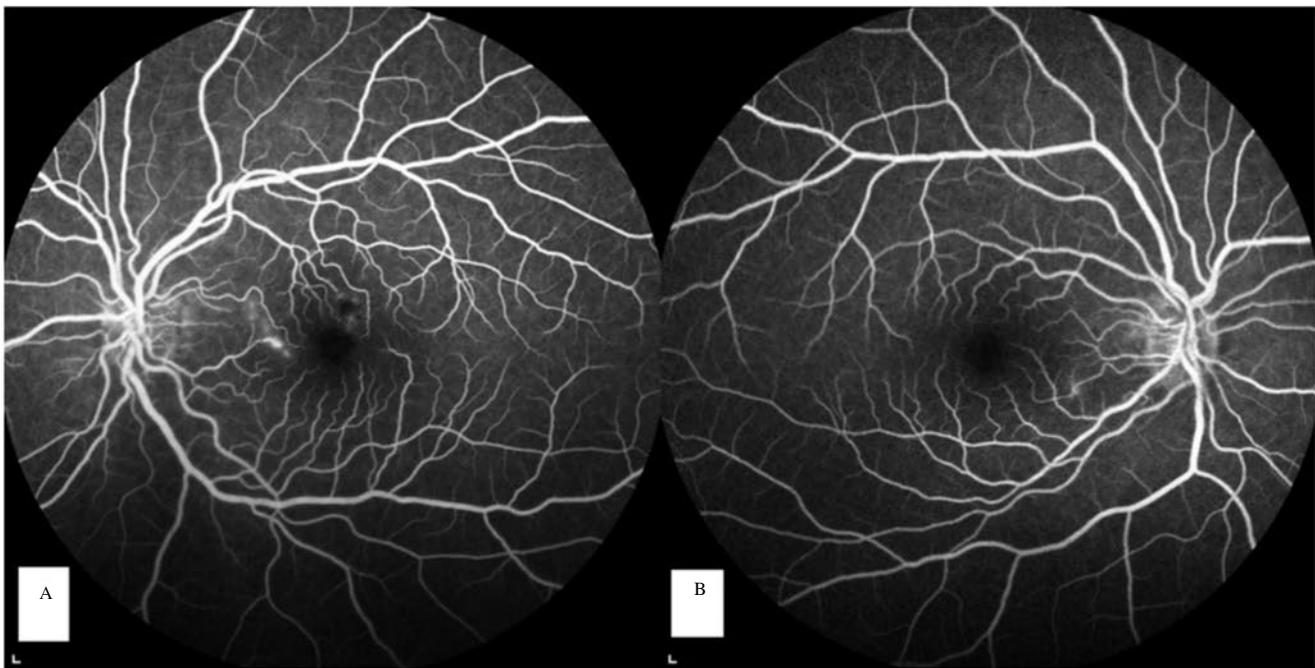


Figure 3. Late leakage at the macula with no capillary fall out OS (A) and no obvious leak OD (B).

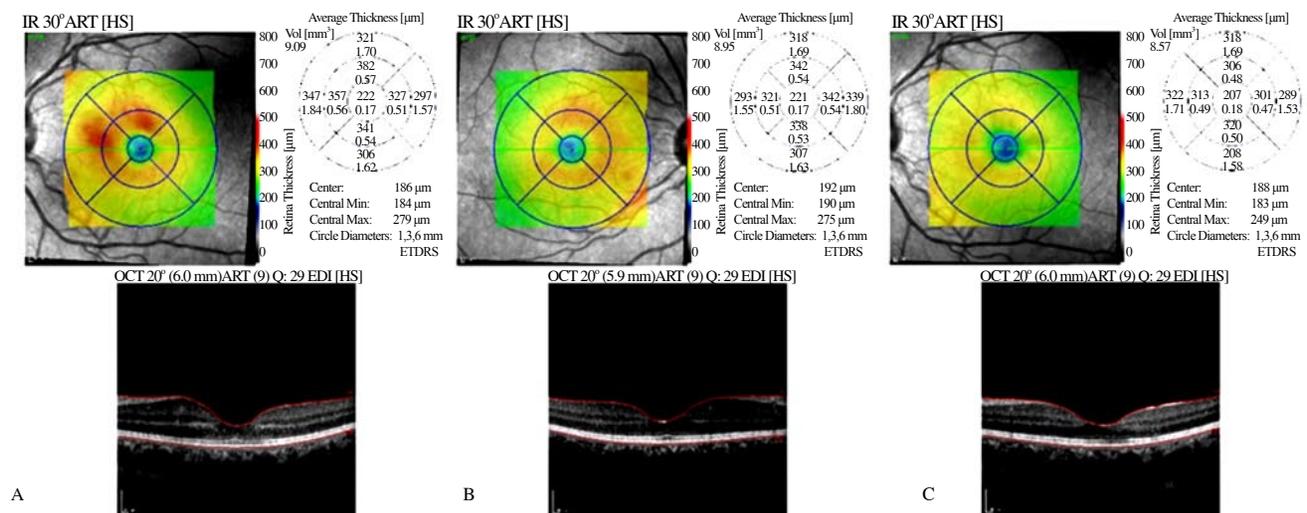


Figure 4. Remarkable reduction of the intraretinal and subretinal fluid as well as central macular thickness OS after three days of treatment (A), improvement in subclinical macular oedema OD after three days of treatment (B), and further improvement with central macular thickness of 222 μm OS after three weeks of treatment (C).

addressed in future studies, since dengue maculopathy is a potentially disabling disease, particularly in patients with severe involvement[9], as in this case. Furthermore, randomized control trials are needed to determine the best form of treatment for these patients.

In conclusion, it is crucial for early detection and treatment of dengue-related maculopathy for prevention of permanent visual impairment, as in this case.

Conflict of interest statement

We declare that we have no conflict of interest.

References

- [1] Ministry of Health. Clinical practice guidelines. Malaysia: Ministry of Health; 2015. [Online] Available from: <http://www.acadmed.org.my/index.cfm?&menuid=67> [Accessed on 25th May, 2017]
- [2] Sujatha R, Nousheen S, Nazlin A, Prakash S. Ocular manifestations of dengue fever. *Int J Med Sci Public Health* 2015; **4**: 690-3.
- [3] Lim WK, Marthur R, Koh A, Yeoh R, Chee SP. Ocular manifestations of dengue fever. *Ophthalmology* 2004; **111**: 2057-64.
- [4] Koh YT, Sanjay S. Characteristics and ophthalmic manifestations of the classic dengue fever epidemic in Singapore (2005-2006). *Asia Pac J Ophthalmol* 2013; **2**: 99-103.
- [5] Juanarita J, Azmi MNR, Azhany Y, Liza-Sharmini AT. Dengue related maculopathy and foveolitis. *Asian Pac J Trop Biomed* 2012; **2**(9): 755-6.
- [6] Yip VC, Sanjay S, Koh YT. Ophthalmic complications of dengue fever: a systemic review. *Ophthalmol Ther* 2012; **1**: 2.
- [7] Chan DP, Teoh SC, Tan CS, Nah GK, Rajagopalan R, Prabhakaragupta MK, et al. Eye institute dengue-related ophthalmic complications workgroup. Ophthalmic complications of dengue. *Emerg Infect Dis* 2006; **12**: 285-9.
- [8] Ng AW, Teoh SC. Dengue eye disease. *Surv Ophthalmol* 2015; **60**(2): 106-14.
- [9] Bascal KE, Chee SP, Cheng CL, Flores JV. Dengue-associated maculopathy. *Arch Ophthalmol* 2007; **125**(4): 501-10.