

Dengue without Warning Sign Associated with Unilateral Maculopathy :AnUnusual case

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ABSTRACT

As we all know dengue is viral infection caused by RNA virus of genus flavivirus which is transmitted by Aedes aegypti mosquito. Dengue maculopathy is a rare cause of visual morbidity. We have a 30 years old male presented with gradual painless diminution of vision in his left eye for 20 days. At the time of presentation his vision was hand movement close to face. He was diagnosed case of dengue fever for which he was treated outside one month back. Fundoscopy of left eye shows multiple yellowish deposits at the fovea. Optical coherence tomography and optical coherence tomography angiography was done to rule out Dengue maculopathy. The diagnosis is unusual and most cases will recover without treatment however to prevent from permanent visual damage frequent follow ups would be recommended.

Keywords: Dengue, flavivirus, foveolitis, maculopathy, optical coherence tomography angiography

INTRODUCTION

Dengue fever is common viral infections caused by flavivirus and transmitted to humans by the bite of an infected female Aedes aegypti mosquito.¹The first case of ophthalmic findings secondary to dengue fever was reported in 1980. The complications following dengue fever which consist blurring of vision to severe visual morbidity.² Retinal hemorrhage, cotton wool spot, retinal edema, retinal, vasculitis/sheathing, optic neuritis and uveitis are some of the ophthalmic manifestations of dengue fever.^{3,4} Other ophthalmic symptoms are blurring of vision, followed by positive scotoma, eyeache, micropsia and metamorphopsia. The prevalence rate of dengue maculopathy was 10% among hospitalized patients.²

An ocular involvement in dengue fever is self-limiting but management with corticosteroids may improve prompt vision and prevent from severe permanent visual damage.

Case report: A 30 years old male presented with chief complaints of gradual painless blurring of vision in his left eye for 20 days which was preceded by fever, malaise, arthralgia and was diagnosed as a case of dengue fever based on clinical and laboratory finding (positive serological test and low platelets count) one month back. The diminution of vision was not accompanying by metamorphopsia or micropsia. He didn't give history of redness or discharge. There was no history of ocular pain associated with eye movement. Anterior segment finding was normal in both eyes. Fundus of the left eye showed multiple yellowish deposits at fovea whereas it was unremarkable in the right eye. (Fig 1) Optical coherence tomography (OCT) revealed intraretinal cystoid spaces along with disruption of external limiting membrane and photoreceptors zone (Fig 2). Similarly, OCT angiography (OCTA) of the left eye showed disruption of normal flow pattern both in superficial and deep plexus leading to enlargement of foveal avascular zone.(Fig 3) On the basis of above finding, diagnosis of dengue maculopathy (foveolitis) was made. Patient was treated with oral corticosteroids in tapering dose along

with proton pump inhibitors and asked him to follow up after 3 weeks.

DISCUSSION

Dengue fever, an arthropod borne disease is one of the most common viral infections caused by flavivirus.⁵ Systemic involvements including eye had also been affected by dengue fever.^{2,6} Ocular involvements following dengue fever are unusual. Previous literatures found that blurring of vision being the common symptom in dengue fever.⁴ Posterior segment is the commonest site where ocular changes secondary to dengue fever occur. The posterior segment ophthalmic features include retinal hemorrhage, cotton wool spot, retinal edema, retinal, vasculitis/sheathing and optic neuritis.⁴ ⁶The pathophysiology of ophthalmic manifestations following dengue infection would be immune mediated rather than direct viral infection.⁴ In our case there was few yellows to orange deposits at the fovea suggestive of dengue associated foveolitis which was confirmed by OCT and OCTA. Ophthalmic involvement due to dengue fever resolves without treated. Till now there is no updated treatment for dengue maculopathy. Depending upon status of visual acuity, modality of treatment varies from conservative to immunosuppression therapy.⁷ Bascal KE et al found improvement in visual acuity in those patients treated with oral corticosteroids having dengue associated maculopathy.⁶ Improvement in visual acuity in patients with foveolitis treated with immunosuppression was found in a retrospective study done by Lim WK et al.⁴ Our patient was also treated with oral steroids in tapering dose and asked him to review after 3 weeks.

CONCLUSION

Dengue maculopathy is an unusual ocular manifestation which varies from moderate blurring of vision to severe visual impairment. It is recommended to do complete ophthalmic examination in all dengue patients. Till now there is no approved therapy for dengue fever and its complications but immunosuppression drugs have some role.

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Figures:

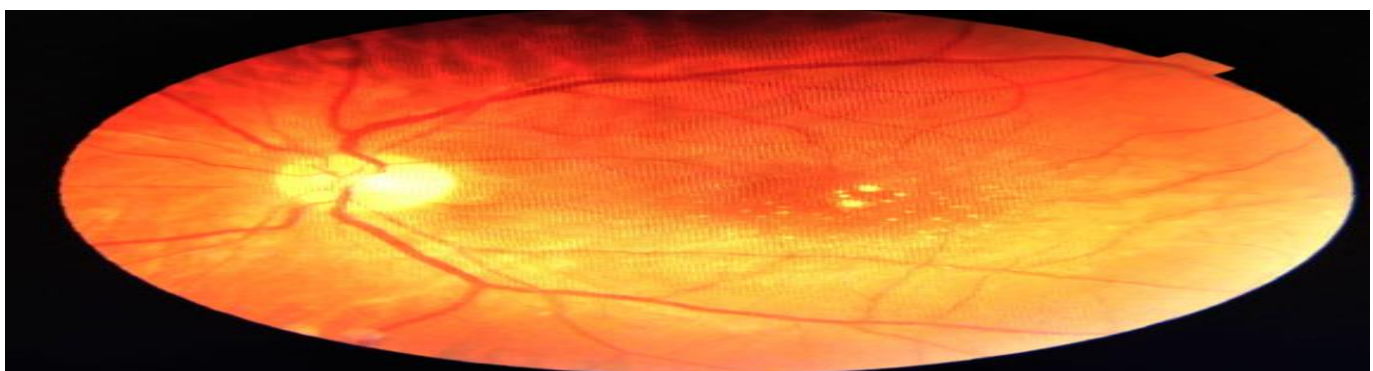


Fig 1: Fundus of the left eye showed multiple yellowish deposits at fovea

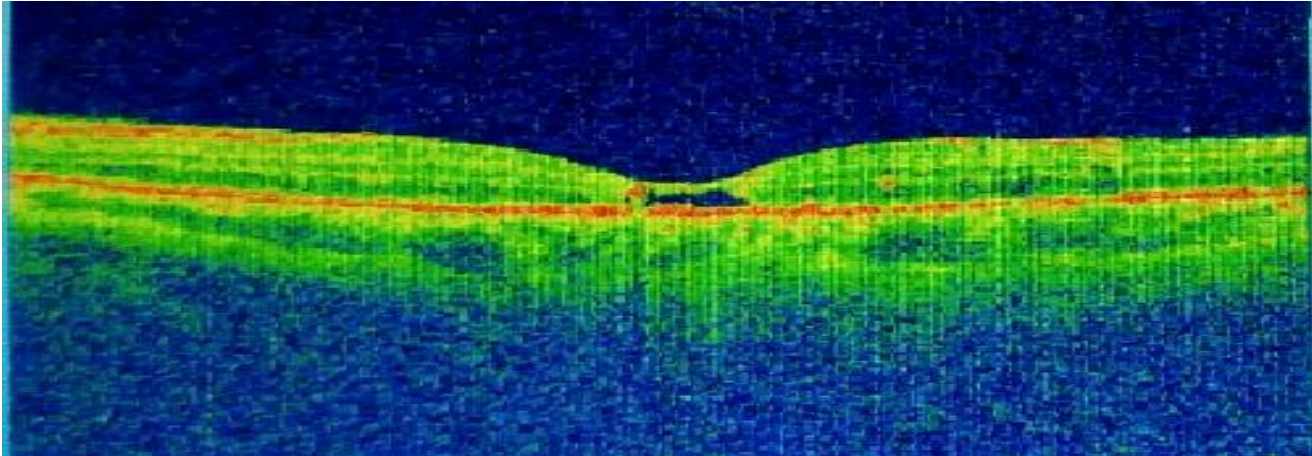


Fig 2: OCT of the left eye revealed intraretinal cystoid spaces along with disruption of external limiting membrane and photoreceptors zone

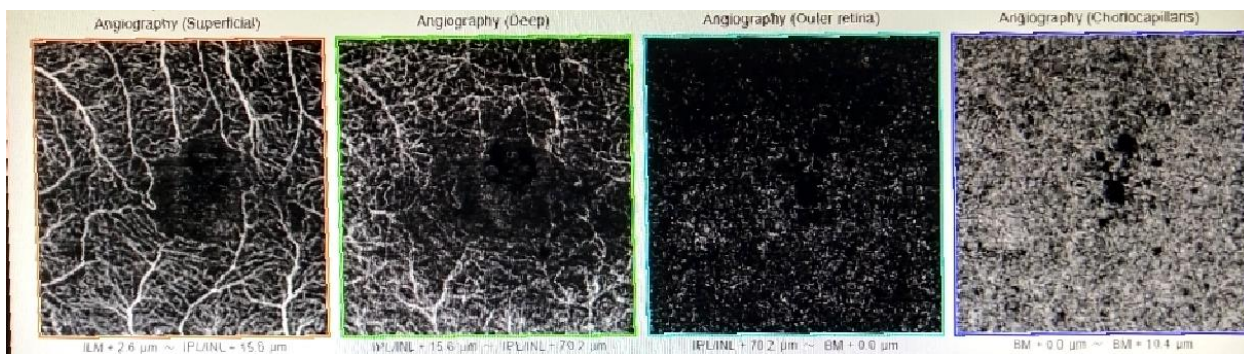


Fig 3: OCT angiography (OCTA) of the left eye showed disruption of normal flow pattern both in superficial and deep plexus leading to enlargement of foveal avascular zone.