



OPHTHALMIC MANIFESTATIONS IN DENGUE FEVER

Ophthalmology

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ABSTRACT

Dengue infection is an acute infection which can manifest with ocular features in some patients. The aim of this study is to evaluate ophthalmic manifestations in dengue patients. Patients diagnosed with dengue fever were included in this study and the patients were evaluated for ophthalmic manifestations. Out of the 18 patients, 15 patients did not show any significant ophthalmic manifestation. 1 patient showed Macular edema, 1 patient had Sub-Conjunctival Haemorrhage and 1 patient showed Optic disc edema with macular edema. These complications suggest the importance of ophthalmic evaluation in dengue patients.

KEYWORDS

ophthalmic manifestations, dengue, macular edema, sub-conjunctival haemorrhage, optic disc edema

INTRODUCTION:

Dengue fever is caused by mosquito and the virus belongs to the group Flavivirus of the family flaviviridae. Dengue infection is an acute infection which manifests after an incubation period of 2-7 days and is characterised by high grade fever, malaise, joint pain, rhinitis, sore throat. A transient macular rash may be identified on the 1st or 2nd day of illness which disappears followed by the appearance of maculopapular rash on 3rd to 6th day of illness. This rash is seen on the trunks, limbs, and face sparing the palms and soles. Blood dyscrasias include thrombocytopenia and leukopenia. Typical Ocular manifestations includes retinal haemorrhages, Roth spots, macular edema, optic disc edema and capillary occlusion.^(1,2,3) Macular haemorrhages are the common finding. Early diagnosis of dengue infection and management can prevent ocular complications.

We report a case series of 18 patients who were diagnosed with dengue infection confirmed by positive dengue specific antibodies. Patients were then subjected to ophthalmic evaluation irrespective of complaints of blurred vision.

Case report 1:

A 26 yrs male presented with high grade fever associated with chills and rigor for 1 week and with h/o headache and defective vision in the right eye for 2 days. Others symptoms were joint pain mainly knee joint, 2 episodes of vomiting and voiding red coloured urine. Investigations revealed decreased platelet count (22,000/cumm) and positive dengue specific IgM antibodies.

Ophthalmic examination: RE: Vision: 6/36 NIP. Anterior segment was normal. Intra ocular pressure was 14 mmHg by applanation tonometer. Fundus Ophthalmoscopy showed clear media, normal disc, normal cup disc ratio with healthy neuro retinal rim, normal vessels with normal A:V ratio and macular edema [Figure 1]. LE: Vision: 6/9 improving to 6/6 with pin hole. Normal anterior segment. Intra ocular pressure was 12 mmHg by applanation tonometer and normal fundus.

The patient was started on dengue treatment with platelet transfusion and Nepafenac eye drops 3 times a day. The patient improved after 1 week and recovered his visual acuity to 6/9 improving to 6/6 with pin hole [Figure 2].

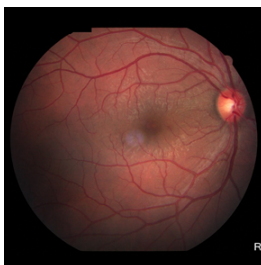


Figure 1

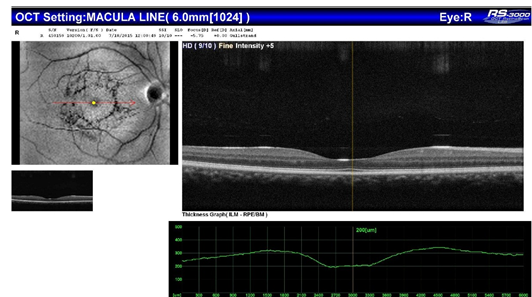


Figure 2

Case report 2:

A 30 years old male patient presented with high grade temperature for 5 days duration. There was no history of defective vision. Investigations showed decreased platelet count (19,000/cumm) and positive dengue specific IgM antibodies. The patient was subjected for ophthalmic evaluation.

Ophthalmic examination: BE: Vision: 6/6. Anterior segment showed sub-conjunctival haemorrhage in both the eyes [Figure 3 & 4]. Intra ocular pressure was 12 mmHg by applanation tonometer in both the eyes. Fundus Ophthalmoscopy showed clear media, normal disc with normal cup disc ratio and healthy neuro retinal rim, normal vessels and normal macula.

The patient was started on platelet transfusion. The sub-conjunctival haemorrhage resolved spontaneously.



Figure 3

Figure 4

Case report 3:

A 46 yrs female presented with high grade fever associated with chills and rigor before 20 days. There was history of blurring of vision in the left eye for 15 days and trauma to right eye 10 years back. Diagnosis of dengue was confirmed by positive dengue specific IgM antibodies and decreased platelet count (34,000/cumm).

Ophthalmic examination: RE: Vision: PL+. Anterior Segment showed total Leucomatous opacity. LE: Vision: 6/24 NIP. Anterior segment was normal. Intra ocular pressure was 12 mmHg by applanation tonometer. Fundus Ophthalmoscopy of left eye showed clear media,

disc with blurred margin, normal vessels and macular edema [Figure 5]. MRI done and was normal.

The patient was started on Systemic steroids. Oral Prednisolone 1mg/kg was prescribed and was tapered over 1 month. The optic disc edema and macular edema resolved and the patient visual acuity of left eye improved to 6/12 NIP over a period of 1 month.

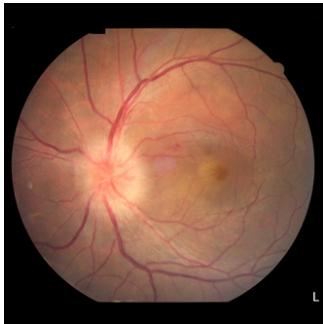


Figure5

OBSERVATION & RESULTS:

Out of the 18 patients with dengue fever, 15 patients did not show any significant ophthalmic manifestation. 1 patient showed Macular edema, 1 patient had Sub-conjunctival haemorrhage and 1 patient showed Optic disc edema with macular edema.

DISCUSSION:

According to Lim et al the 36.4% patients presented with retinal haemorrhages, 18.2% with intraretinal lesions and 54.2% with macular edema^[4].

According to Beral et al. 33.3% of dengue patients presented with nasal parapapillary haemorrhage and 83.3% with optic disc swelling^[5]. According to Teoh et al. 77% patients with dengue presented with macular edema, 69% with macular haemorrhage, 23% with retinal vasculitis, 7.7% with anterior uveitis, 12.3% with intermediate uveitis, 3.1% with optic disc swelling and 1.5% with optic neuritis^[6].

According to Mehta et al 10% of patients with dengue fever presented with roth spots, 60% with intraretinal haemorrhage and 40% with choroidal thickening^[7].

In our study, Patients presenting with fever were evaluated for dengue infection for a period of 6 months. Diagnosis of Dengue was confirmed by detection of dengue-specific IgM antibodies (IgM enzyme-linked immunoassay) in 18 patients. All the 18 patients were included in this study. The patients were evaluated for ophthalmic manifestation. All the patients underwent Anterior segment evaluation by slit lamp and detailed fundus examination after dilatation. The best corrected visual acuity ranged from 6/9 to 2/60. The patients with positive findings were subjected to Automated perimetry and optical coherence tomography. The patients were periodically followed up till there was significant improvement in platelet count.

Of the 18 patients, 15 patients did not have defective vision as well as ophthalmic manifestation. 1 patient had Sub conjunctival haemorrhage with no defective vision. 2 patients had defective vision and the recovery period ranged from 1 week to 1 month. Recovery of visual acuity was monitored using Snellen's chart and the best corrected visual acuity ranged from 6/6 to 6/12.

CONCLUSION:

Dengue being the most common mosquito borne viral disease among humans affects 2.5 billion people globally. Dengue infection can lead to several pathophysiologic processes. Thrombocytopenia results in bleeding tendency leading to haemorrhage. Macular edema may also manifest. Most of these features are missed routinely due to inadequate ophthalmic evaluation of dengue positive patients.

The disturbance in vision occurs in relation to serum platelet level. Visual recovery corresponds to improving platelet levels. Most of the patients report subtle visual impairment in the form of central or paracentral scotoma. Prognosis is good as the disease is often self-limiting and resolves spontaneously even without treatment. Steroids play a vital role in posterior segment pathology.

In conclusion, dengue related ophthalmic manifestations are not uncommon and every ophthalmologist should evaluate dengue patients for ophthalmic manifestations.

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