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A Case of Orbital Cellulitis in Dengue Haemmorhagic fever A Short Communication

Medical Science

KEYWORDS : orbital cellulitis, Dengue haemorrhagic fever, hyphaemia, evisceration.

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ABSTRACT

Purpose: To report a case of orbital cellulitis in dengue haemorrhagic fever. Methods: A complete ocular examination with Bscan ultrasonography, physical examination; blood tests were inclusive of haemogram for thrombocytopenia, LFT, electrolytes, urine analysis, brain and orbital MRI, chest x-ray, ultrasound abdomen and pelvis. Results: A 31 year old male patient presented to our OPD with RE visual acuity 20/20 and LE - perception of light negative. Further examination revealed periorbital oedema, ecchymosis, conjunctival chemosis with congestion, mucopurulent greenish discharge and total hyphaema, rest of the anterior segment details not visible, extraocular movements were restricted and painful in all positions of gaze. Conclusions: Dengue fever, borne by aedes aegypti mosquito, is one of the most common and most prevalent forms of flavivirus infections in humans. The incidence of ocular complications in dengue fever is increasing; hence all patients with dengue should be referred to an ophthalmologist to look for ocular morbidity and prevent any sight threatening complications.

Introduction:

Dengue is a febrile illness caused by a flavivirus transmitted by Aedes aegypti mosquitoes. It is endemic in Asia, the pacific, Africa and America. Aedes aegypti is the principal vector, which breeds in standing water, collection of water in containers, water based air coolers and tyre pumps. Dengue virus has four serotypes, all producing similar clinical syndrome. Dengue haemorrhagic fever occurs in individuals who are immune to one dengue virus serotype and are then infected with another. Clinical features of dengue include fever, backache, arthralgia, headache, generalised pain (break-bone fever), nausea, vomiting purpuric rash, and other bleeding manifestations secondary to thrombocytopenia [1, 2]. Ocular features include petechial subconjunctival haemorrhage, disc hyperaemia with oedema, fovealitis, maculopathy, periphlebitis, arteriolar sheathing, retinal pigment epithelium mottling and central scotoma. [2]

CASE REPORT

A thirty one year old male was admitted in our hospital with a chief complaint of fever since three days. He was diagnosed with dengue haemorrhagic fever by a general physician based on characteristic clinical signs and symptoms and confirmed by dengue serology IgM and IgG sero-conversion. On admission his platelet counts was 10000 cells/L and 5.6X109/L white cell count. The haematocrit - 60.6%; haemoglobin - 18.9g/dl. He had been treated with intravenous fluids and platelet concentrate. After three days the patient complained of headache and sudden decrease of vision in left eye associated with discharge and swelling of left eye. Hence was referred to ophthalmology opd. His platelet count had increased to 69000 cells/L. Assessment of visual acuity was 20/20 in right eye and no perception of light in left eye. Further ocular examination revealed periorbital oedema with ecchymosis and greenish discharge in the left eye. On slit lamp examination right eye was normal left eye had conjunctival chemosis with congestion and greenish discharge, diffuse corneal edema with total hyphema, rest of the details not seen. Dilated fundus examination on direct and indirect ophthalmoscopy showed right eye was normal, left eye no details seen. On Bscan ultrasonography (fig1) of left eye, multiple spots of low reflectivity were seen in vitreous cavity suggestive of vitreous haemorrhage. Brain and orbital MRI revealed left orbital swelling with mild exophthalmos and diffuse enhancement of the globe, cavernous sinus was normal. The right orbit was normal (fig2). Patient was immediately started on IV injection Augmentin 1.2gm BID, injection gentamicin 80mg TID, injection metronidazole 500mg TID, tablet acetazolamide 250mg BID, moxifloxacin eyedrops 0.5% half hourly, fortified cefazoline eyedrops 50mg/ml alternatively, fortified tobramycin eyedrops 15mg/ml, timolol maleate eyedrop 0.5% BID. Conjunctival swab sent for culture sensitivity was reported positive for pseudomonas aeruginosa in the left eye.

Within two days patient started showing signs of sloughing and bleed; by 36hours patient developed total corneal perforation (fig3). Since the eye was unsalvageable, it was

eviscerated under general anaesthesia. Materials eviscerated were sent for a repeat culture and sensitivity and confirmed the above report. The patient had a total of 7days of IV antibiotics with good postoperative recovery.

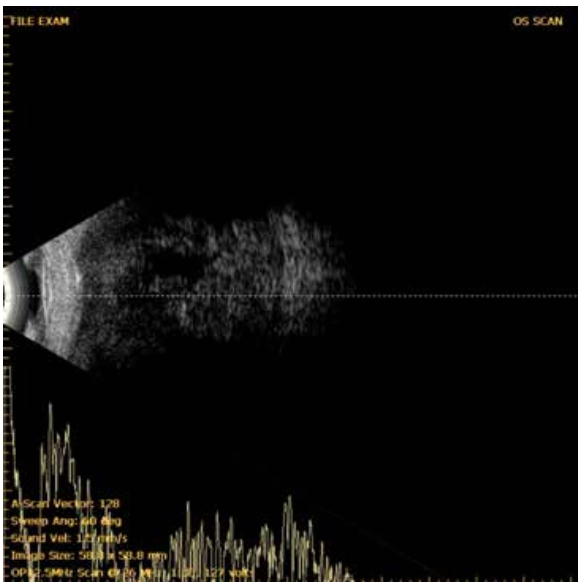

Fig1: Bscan ultrasonography showing vitreous haemorrhage.

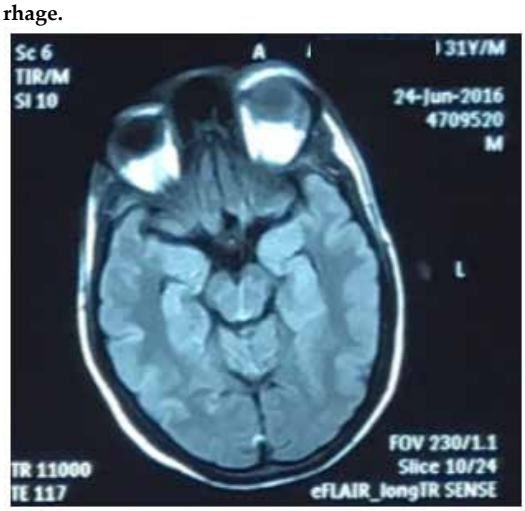

Fig2: Asymmetric hyper intense signal intensity noted in the posterior chamber of the left eye.

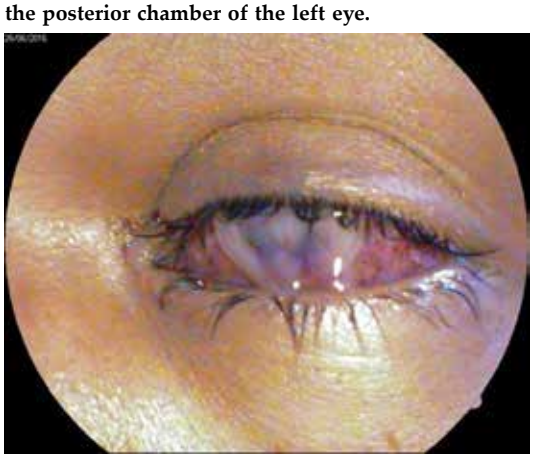

Fig3: corneal perforation associated with pseudomonas infection.

Discussion:

Dengue is the most significant arbovirus affecting humans, and one of the most serious febrile tropical diseases. Worldwide, it annually causes an estimated 100 Million cases, including 25,000 deaths [3]

Dengue virus is transmitted by the bite of Aedes mosquito. There are four types of dengue viruses (DEN-1, DEN-2, DEN-3, and DEN-4) [4]

Dengue haemorrhagic fever (DHF) is defined by the World Health Organisation as dengue fever associated with thrombocytopenia (< 100 × 109 cells/L) and haemoconcentration (haematocrit > 20% above baseline)[5]

DHF preferentially occurs among infants of immune mothers, children older than age 1 year and those with second and subsequent infections. It begins as classical dengue with fever and myalgia's. After 2 to 7 days as pyrexia improves, lassitude, fatigue, and shock develop with an ensuing mortality that is greater than 10 percent. Patients presents with haemorrhagic pleural effusions, bleeding diathesis, epistaxis, purpura, petechia, and thrombocytopenia with elevated haematocrit because of vascular permeability.[3] Common ocular feature include petechial subconjunctival haemorrhage. Other ophthalmic manifestations include maculopathy (73%), intraretinal hemorrhages with periphlebitis (45%), yellow sub retinal dots (28%), retinal pigment epithelium mottling (17%), fovealitis (16%), disc hyperemia (14%) and oedema (11 %), and arteriolar sheathing (4%). [2] If untreated, DHF can rapidly evolve into dengue septic shock (DSS) which is often fatal. [3] Ophthalmic complications usually coincide with the nadir of thrombocytopenia. [6]

Diagnosis of dengue, DHF and DSS is based on clinical findings, while serology is confirmatory. [3]

Ophthalmic complications in dengue are under-emphasized in medical texts and literature but are now seen in increasing frequency. The pathogenesis of these ocular complications following dengue fever is controversial and not fully understood. However the clinical presentation and behaviour are indicative of an immune mediated process and possibly infective aetiology. The onset of manifestations coinciding with the start of thrombocytopenia recovery correlates with increased immunological response. [6]

Dengue fever can result in varied ocular manifestations ranging from petechial subconjunctival haemorrhage to optic neuropathy. So, the treating physician should be aware and promptly refer any such cases to the ophthalmologist as early as possible to prevent sight and life threatening complications. We believe that there is a place for broad spectrum emperical antibiotics even in confirmed cases of dengue fever.

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