

Bilateral Lateral Rectus Palsy Following Dengue Fever: A Rare Case Report

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Abstract

A 25 year old male was diagnosed with bilateral lateral rectus palsy following dengue fever. The patient was managed accordingly, and full ocular recovery was observed. However, abducens nerve involvement, manifesting with lateral rectus palsy following is so rare. Cases with unilateral lateral rectus palsy with dengue has been documented but bilateral lateral rectus palsy following dengue fever were never documented in previous literature.

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Keywords: Abducens nerve, dengue fever, lateral rectus palsy, platelet counts.

Introduction

Dengue is one of the fastest transmitting arbovirus diseases; no longer confined to just one region, it has expanded from country to country and region to region, taking a significant number of lives every year. It is estimated that every year there are 390 million new infections and 29000 deaths due to dengue in over 128 countries.¹ More than 50% of the people at risk of getting infected are living in the South East Asian Region (SEAR) of the World Health Organization (WHO). Its clinical presentation is such that differentiating it from other fever causing diseases is difficult thus delaying the diagnosis.

Ocular symptoms of dengue have been documented with the most common to least in that order being blurring of vision, scotoma, ocular pain, metamorphopsia, other symptoms of maculopathy and optic neuropathy.^{2,3} The onset of ocular symptoms can occur anywhere from 1 to 28 days after the onset of fever. Other manifestations include subconjunctival hemorrhage, uveitis, choroidal effusion, macular edema and retinal hemorrhages. Cranial neuropathies have been reported in a few case reports only.^{4,5} This case report aims at documenting bilateral lateral rectus palsy, a rare ocular presentation of dengue fever.

Case History

A 25 year old male patient was referred to our department for blurring of vision in both eyes for two days. The patient gave a history of fever for 7 days. He had been diagnosed with dengue after obtaining a positive result for dengue IgM antibodies by enzyme- linked immunosorbent assay (MAC-ELISA) test. At the time of admission, his pulse was 90/min and it was regular but low in volume. Blood pressure was 100/70 mm Hg. Temperature was 102.2 degree F and his respiratory rate was 20/min. His random blood sugar level was 88g/dl. Complete blood count revealed haemoglobin to be 11.2g/dl, total leukocyte count of 7000/mm³ with 60% neutrophils and 12% lymphocytes, PCV 42%, and platelet count of 72,000/mm³. His liver function tests showed elevated aspartate transaminase 106 IU/L and alanine transaminase 65 IU/L. Renal function test parameters were within normal limits. His chest radiograph was normal. On the 4th day of

fever, his platelet counts had dropped to 30,000/mm³ with no sign of plasma leakage, shock, or bleeding disorders. So, he was managed with intravenous fluids according to the recent WHO dengue guidelines.

On ocular examination his visual acuity was 20/20 in both the eyes. Primary ocular direction was straight. Ocular movements of both the eyes were restricted in respective lateral gazes. Ocular movements in all other gazes were full.



Figure 1: Eyes in primary gaze



Figure 2: Unable to move his right eye in extreme lateral gaze



Figure 3: Unable to move his left eye in extreme lateral gaze

Forced duction test was negative. It was done to rule out any restrictive component of squint. Anterior and posterior segment examination of both the eyes was unremarkable. Hess screen charting was done. It confirmed bilateral lateral rectus palsy. He was further investigated with optical coherence tomography (OCT), visual field analysis (VFA) to detect any other ophthalmic manifestations of dengue fever, however they too were normal. MRI brain did not reveal any intraocular mass. There was no evidence of raised intracranial pressure.

Three days later, the fever had resolved. His platelet counts had risen to normal limits. Ocular examination at 4 weeks follow up revealed complete resolution of bilateral lateral rectus palsy.

Discussion

Dengue is an emerging threat to community health with the rising incidence rates in recent years.⁶ Its clinical spectrum includes both severe and non-severe clinical manifestations. Encephalopathy and Guillain- Barre syndrome are the most common neurological manifestation in dengue fever but these are not found in our case. This inflammatory process often causes visual impairment when the platelet count have fallen to the lowest levels. Another myriad of ocular complications involve and are confined to the macula. The mechanism behind dengue infection and ocular involvement is unknown, but speculated to be related to an immune-mediated process.⁷ The prognosis for ophthalmic complications is good with improved visual acuity and resolution of ocular signs in most patients without any treatment. A proportion of patients with more severe ocular impairment require steroid treatment with most patients achieving reasonable improvement in vision and resolution of signs.

Our patient presented with blurring of vision in both eyes 2 days after the onset of dengue fever, and this was consistent with delayed presentation of ocular manifestation reported previously.

Lesions that cause raised intracranial pressure with false localising signs such as tumour and intracranial haemorrhage, demyelinating diseases such as multiple sclerosis, infections such as meningitis and encephalitis, trauma and stroke need to be excluded accordingly.

The management of previously reported dengue related cranial nerve palsies were also mainly conservative with good prognosis.^{4,5} Our patient also had improved with conservative management alone. The overall prognosis for dengue-related ocular complications was good, and complete recovery coincided with improved platelet counts.

Conclusion

It is very important for clinicians to ask history of existing or pre-existing fever in patients with sixth nerve palsy. Getting a complete blood count analysis before labelling a patient as idiopathic 6th nerve palsy will be a prudent approach. Sixth nerve palsy can be unilateral or bilateral. We also recommend dilated fundus evaluation in every patient diagnosed with dengue fever.

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