Case report

Dengue encephalitis - a case report

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Abstract

Encephalitis is an uncommon manifestation of dengue fever. Here we present a 4 years old female child from Northeast Region of India who suffered from dengue encephalitis. To our knowledge, this is probably the first diagnosed case of dengue fever from this region.

Keywords: Encephalitis; Dengue fever

INTRODUCTION

Dengue fever has variable clinical spectrum ranging from asymptomatic infection to life threatening haemorrhagic fever and dengue shock syndrome[1]. Dengue is an increasingly prevalent arboviral infection common in tropical countries including South and Southeast Asia. Fever, arthralgia, headache, petechial spots, rash and haemorrhagic manifestations are common features. However, neurologic manifestations in general are unusual[2]. In this case report we present a case of dengue shock syndrome with encephalitis.

CASE REPORT

A previously healthy and asymptomatic 4 years old female child from Arunachal Pradesh presented to down town hospital ltd., Guwahati, Assam, India in November 2005 with history of high grade fever for 8 days associated with vomiting, headache, one episode of generalized tonic clonic convulsion and altered sensorium for one day. Fever was continuous in type and was not associated with chills, rigor and jaundice. The clinical examination on admission revealed pulse 140/min, respiratory rate 43/min, blood pressure (BP) - 90/60 mmHg, temperature - 103 ℉ and few petechial spots over the trunk and thigh. There was mild pallor but skin rash, icterus, lymphadenopathy, clubbing and oedema were absent. Rest of the general physical examination was unremarkable. Neurological examination revealed coma grade 1 with absence of neck rigidity & kernig ś sign. Tone was normal in all the four limbs with brisk tendon reflexes in upper and lower limbs. Planters were extensor bilaterally. There was decreased breath sound on right side of chest. Other systems were normal.

Investigations revealed, a hemoglobin (Hb) level of 8 g/dL on admission but later showed increased haemoconcentration. Initial platelet count was 26 000/cu. mm, white blood cell (WBC) was 4 200/cu. mm with normal differential count and normal WBC morphology. Serum sodium was 128 meq/L. serum glutamic-pyruvic transaminase (SGPT) was 280 IU/L, serum glutamic-oxaloacetic transaminase (SGOT) 150 IU/L, serum bilirubin was 0.8 mg/dL, serum albumin was 2.5gm/dL, diffuse intravascular clotting (DIC) profile was mildly deranged and blood urea & serum creatinine were normal. Cerebrospinal fluid (CSF) revealed normal

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pressure, protein 70 mg/dL and all 30 cells/cumm were lympthocytes. Gram staining, ZN & fungal staining were negative. CSF Adenosine deaminase (ADA) was normal and Elisa for Japanese & herpes encephalitis were also negative. Paired sera for dengue serology were positive for IgM antibody along with positive dengue IgM antibody in CSF. Blood culture, urine culture and CSF culture were negative. Elisa for leptospirosis was negative. Chest X-ray showed right sided pleural effusion. Ultrasonography showed minimal fluid in peritoneal cavity. CT brain was normal. Widal test, rapid slide test for malaria (optimal) & for typhoid (typhidot) were negative. Virus isolation and typing was not done due to lack of facility.

During hospitalization patient started bleeding from mouth, rectum & vagina and developed shock. A diagnosis of dengue shock syndrome with encephalitis was made and patient was treated in intensive care unit with intravenous fluid, fresh frozen plasma, packed cell, anticonvulsant and other supportive measures. Intravenously antibiotics were given initially but after confirmation of diagnosis antibiotics were stopped. Patient was discharged after 2 weeks and on subsequent follow up she was found normal.

DISCUSSION

Most of the dengue cases have been reported to have occurred in an epidemic form but sporadic cases are reported from different parts of the world including India. Neurovirulent property of dengue virus are not well known but there are some reports of nervous system involvement in both children and adults from various parts of the world[1,3-5]. But encephalitis in dengue fever is a rare entity[1,4,5]. The various nervous system manifestations reported are altered level of consciousness, seizures, pyramidal tract signs, meningeal signs, headache, encephalitis, myelitis, and Gullain Barre syndrome[6,7].

The exact pathogenesis of nervous system involved is not clear. Since in dengue fever the virus mainly replicates in cells of macrophage lineage, it seems that infiltration of virus infected macrophages into the brain is one of the pathway of entry of virus into the brain in dengue encephalitis[1]. Dengue virus type 2 has been demonstrated in CSF of dengue encephalitis patient[2].

Probably this is the first reported case of dengue encephalitis from this region of country. This documentation is presented not only because of a rare presentation of a common disease but also to emphasize upon the similarities of clinical features of dengue encephalitis with that of cerebral malaria, meningitis, Japanese encephalitis etc. which should be ruled out before diagnosis of dengue encephalitis is made. A high index of clinical suspicion is important to arrive at the correct diagnosis.

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REFERENCES

1 **Koley T K**, Jain S, Sharma H, Kumar S, Mishra S, Gupta M D, et al. Dengue Encephalitis. *JAPI*. 2003; 51:422-3.
2 **Ramos C**, Sánchez G, Pando RH, Baquera J, Hernández D, Mota J. Dengue virus in the brain of a fatal case of haemorrhagic dengue fever. *J Neurovirology*. 1998; 4:465-8.
3 **Mehendale SM**, Rodringues FM, Pinto BD. A Sporadic case of denue encephalopathy. *JAPI*. 1989;37(5):346.
4 **Witayathawornwong P**. Fatal dengue encephalitis. *Southeast Asian J Trop Med Public Health*. 2005; 36(1): 200-2.
5 **Chotmonqkol V**, Sawanyawisuth K. Case report: Dengue hamorrhaegic fever with encephalopathy in an adult. *Southeast Asian T trop Med Public Health*. 2004; 35(1): 160-1.
6 **Thisyakorn U**, Thisyakorn C, Limpikul W. Dengue infection with cerebral nervous system manifestation. *South Asian J Trop Med Public Health*. 1999;30:504-6.
7 **Soares CN**, Faria LC, Peralta JM, Defreitas MR, Puccioni-Sohler M. Dengue infection: neurological manifestation cerebrospinal fluid (CSF) analysis. *J Neurol Sci*. 2006; 249(1): 19-24.