Case Report

A Case Report of Ischemic Stroke in an Adult Patient of Dengue Fever with Thrombocytopenia

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Neurological complications in Dengue patients are extremely rare with 0.5-6% incidence including encephalopathy, Guillain Barre Syndrome, Brachial neuritis, Myelitis, Encephalomyelitis. Stroke as a neurological complication is extremely rare with very few cases reported previously. We present the case of a 69-year-old male with Dengue fever where the patient presented with persistent hiccups was found to have pontine infarct.

[*J Indian Med Assoc* 2023; **121(1):** 48-9]

Key words **: Dengue fever, Neurological complications, Ischemic stroke, Pontine infarct.**

Dengue fever, a Vector-borne disease transmitted by the bite of Aedes aegypti mosquito is endemic in Tropical Countries. Common manifestations include high-grade fever, headache, myalgia and retro-orbital pain. Encephalitis, Myocarditis, Hepatitis and Cholecystitis are atypical manifestations. Although rare, common neurological manifestations include encephalitis, Guillain Barre Syndrome, Myelitis, and Brachial neuritis. Stroke is rarely reported neurological complication with very few reported cases. We report a case of pontine infarct in a 69-year-old patient with Dengue fever.

Editor's Comment :

- Although rare, we emphasize that Dengue could be an important cause of stroke in epidemic areas when patients present with fever, focal neurological deficit, and encephalopathy.
- Early diagnosis and supportive therapy will help in improving the clinical outcome.

Case Report

A 69-year-old male, Hypertensive, Non-diabetic patient was admitted with complaints of fever with chills and rigor since 5 days associated with hiccups from the last 2 days. On general examination, he was conscious, cooperative and oriented to time, place, and person. His Pulse rate was 96/min, Blood Pressure 110/70 mmHg, Oxygen Saturation 97% on room air. Systemic examination revealed mild tenderness in right hypochondrium. Neurological examination showed exaggerated deep tendon reflexes with positive Babinski sign on right side. Routine blood investigation revealed Leucopenia (TLC 2.06 x 109/L) and thrombocytopenia (90 x 109/L). Liver Function Test revealed Transaminitis (SGOT 98 U/L, SGPT 70 U/L, GGT 109 U/L, ALP 111 U/L). Renal profile was normal. Dengue NS1 was positive. Serial monitoring of hematocrit and Platelet Count was done along with supportive management and IV fluids, however, he continued to have hiccups for which he received symptomatic treatment but without benefit. He gradually became drowsy and was arousable by painful stimuli. In view of worsening sensorium, MRI brain was done, which revealed acute infarct in the left half of Pons with minimal extension into the left brachium pontis (Figs 1&2). Aspirin 75 mg and atorvastatin 40mg were initiated, however, he worsened and had to be intubated and given Ventilator support and was later tracheostomized. Chest and Limb physiotherapy was continued and was discharged in stable condition after 21 days of admission.

Discussion

Dengue fever, an arboviral disease caused by Flavivirus transmitted by the bite of mosquito Aedes aegypti, caused by four serotypes DENV 1-4,[1] is characterized by acute febrile illness with frontal headache, retro-ocular, muscle and joint pain, nausea, vomiting, and rash for 5-7 days[2]. Dengue virus has been considered a non-neurotropic virus, however, there are cases reporting neurological complications[3].

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Received on : 31/01/2022

Accepted on : 17/06/2022

Neurological complications in Dengue infection include Brachial neuritis, Encephalopathy, Guillain Barre Syndrome, Myositis, Myelitis, Acute Disseminated Encephalomyelitis and opsoclonus myoclonus with 0.5%-6% incidence[4,5]. Hypothesized mechanism of pathogenesis of neurological complication includes (i) Neurotropism leading to Encephalitis, Meningitis, Myositis and Myelitis (ii) systemic complication causing Encephalopathy, Stroke and Hypokalemic paralysis (iii) Immune-mediated mechanism leading to Guillain Barre syndrome, optic neuritis and acute disseminated encephalomyelitis[6]. Stroke is a rare complication in dengue patients and the incidence of ischemic stroke is even less.Meningovasculitis and transient hypercoagulable state are the possible hypothesized mechanism of Stroke in Dengue patients[7,8].

Site of infarct along with age and investigation modality used for diagnosis in previously reported casesare enumerated in Table 1.

Apart from old age and Hypertension, our case doesn't have any other predisposing vascular risk factors for Ischemic Stroke. Patient's presenting with fever and focal neurological deficits should be evaluated and the common causes are Tuberculous Meningitis, Pyogenic Meningitis and infective Endocarditis and rarely, Ischemic Stroke can present in similar manner.

Table 1 — *previously reported cases of stroke*

Year		Patient age	Radiological investigation	Ischemic site
2006	Wei-His Chen[9]	61	MRI	Right corona radiata
2007	Seet and Lim[10]	43	MRI	Right corona radiata, Putamen, External capsule
2008	Li-Min Liou[8]	59	CT	Left Thalamus
2010	Stephen Mathew[11]	70	MRI	Right Parietal Lobe
2013	Rajesh verma[7]	68	MRI	Right Parietal Lobe
2015	Robin George Manappallil[12]	86	CT	Lacunar infarct

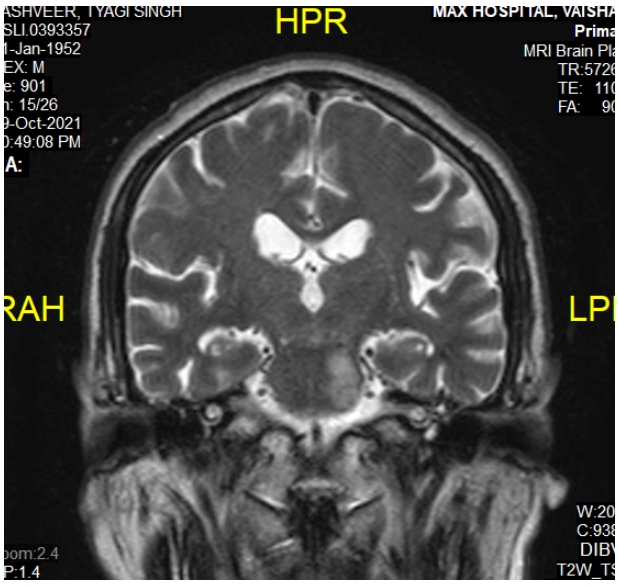

Fig 1 — Acute left pontine infarct

Conclusion

Although rare, we emphasize that Dengue could be an important cause of Stroke in epidemic areas when patients present with fever, focal neurological deficit, and encephalopathy. Early diagnosis and supportive therapy will help in improving the clinical outcome.

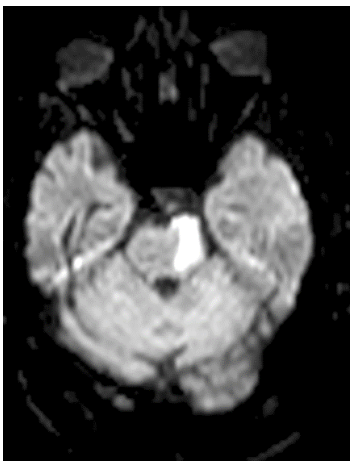

Fig 2 — Axial DW images: Acute infarct in left half of pons

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