A Case of ADEM Following Chikungunya Fever

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Abstract
Chikungunya most often is a self-limiting febrile illness with polyarthritis¹ and the virus is not known to be neurotropic. We are reporting a case of chikungunya fever presenting as acute demyelinating encephalomyelitis(ADEM) which is very rare.

Introduction
Chikungunya virus was first isolated in Kolkata in 1963.² Fever, rash and arthralgia are usual manifestation. Few neurological complications like meningoencephalitis, myelopathy, neuropathy, retinopathy and optic neuritis have been reported.³ Our case of ADEM following chikungunya is an atypical presentation.

Case Report
A 26 year old female from Kolkata, having fever with polyarthralgia for 5 days presented with rapidly progressing quadriplegia, neck pain, painful retention of urine with overflow incontinence. There was no alteration of sensorium or seizure, rashes. She had no past history of similar episode. Examination revealed asymmetrical spastic quadriplegia, sensory loss in lower extremities, trunk up to upper chest, patchy areas over both upper limbs as well. There was positive Babinski’s sign, brisk ankle and knee jerks and full urinary bladder. Rest of the examination was normal.

Investigation showed normal haemogram except high ESR (90). CSF examination showed lymphocyte predominant pleocytosis (350 cells/ mm³, 70% lymphocytes and 30% neutrophil), elevation of protein (4.2 gm/dl), normal sugar (50 mg/dl) level. MRI brain with screening of cervical spine was done. It revealed few altered signal intensity (Hyper intense in T2 and FLAIR) lesions at right frontoparietal, white matter regions (Figure 1). Similar lesions were also seen in left cerebellar peduncle, adjacent white matter in medulla suggestive of ADEM (Figure 2). MRI of spine showed bulky edematous spinal cord with patchy non-enhancing T2 hyper intesities throughout the cervical and dorsal spinal cord, medulla and cervico-medullary junction suggesting long segment myelitis (Figure 3).

Her visual evoked potential was normal. An arboviral screen for Dengue, Chikungunya and West Nile virus was done along with HSV (by ELISA capture assay). It turned out to be positive for IgM anti-Chikungunya antibody. A rising titer of the antibody was documented by repeating after two weeks. Her Antinuclear antibody and anti-phospholipid antibody were negative. She was treated with intravenous methyl prednisolone for three days followed by oral Prednisolone and physiotherapy. There was significant improvement in power as well as urinary continence and patient became ambulatory within four weeks. On follow up after six months repeat MRI of brain with cervical screening reported to be normal (Figure 4).

Discussion
ADEM is classically described as a uniphasic syndrome occurring in association with an immunisation or vaccination (post vaccination encephalomyelitis) or systemic
viral infection (parainfectious encephalomyelitis). An ADEM like life-threatening presentation is quite uncommon following Chikungunya infection, though the outbreak is not infrequent in India. Only a few cases are reported in literature till date from India and the Reunion Islands.4,5

So during evaluation of patients with ADEM in India we may consider for Chikungunya infection as a possible aetiology when the common causes are excluded especially during an outbreak.

References
