

## Longitudinally Extensive Transverse Myelitis with Dengue Virus Infection

Khichar Shubhakaran<sup>1\*</sup>, Amita Bhargava<sup>2</sup>, Nitti Kapoor Kaushal<sup>3</sup>, Pankaj Awasthi<sup>3</sup> and Dhawal Modi<sup>3</sup>

<sup>1</sup>Professor, Department of Neurology, Dr. S. N Medical College, Jodhpur, India

<sup>2</sup>Senior Professor and Head of Neurology Department, Dr. S. N Medical College, Jodhpur, India

<sup>3</sup>Department of Neurology, Dr. S. N Medical College, Jodhpur, India

**\*Corresponding Author:** Khichar Shubhakaran, Professor, Department of Neurology, Dr. S. N Medical College, Jodhpur, India.

**Received:** April 05, 2018; **Published:** June 20, 2018

### Abstract

Longitudinally extensive transverse myelitis (LETM) is associated with various infections like, human immunodeficiency virus (HIV), Japanese B encephalitis, hepatitis B and C etc. and very rarely with Dengue infection. We describe an 80 year old female with LETM who on workup was found to be infected with Dengue infection. Patient recovered very well with steroids and supportive treatment. The case is being reported in view of very rare case reports earlier.

**Keywords:** Dengue; Longitudinally Extensive Transverse Myelitis (LETM); Neuromyelitis Optica (NMO)

### Introduction

Transverse myelitis which are longitudinally extensive that is LETM is of course less common but clinically more important as early diagnosis and adequate and optimum treatment may prevent many patient from significant morbidities. LETM as such or as a part of neuromyelitis optica (NMO) may be triggered by various viral agents besides other infectious causes. The various viruses implicated are varicella zoster, cytomegalovirus, Epstein Barr virus, HIV, dengue, hepatitis A, and B etc [1]. Dengue virus associated central nervous system complications have been reported [2] but only a few case reports of myelitis [3-5] and a couple of case reports of LETM [4,5].

### Case Report

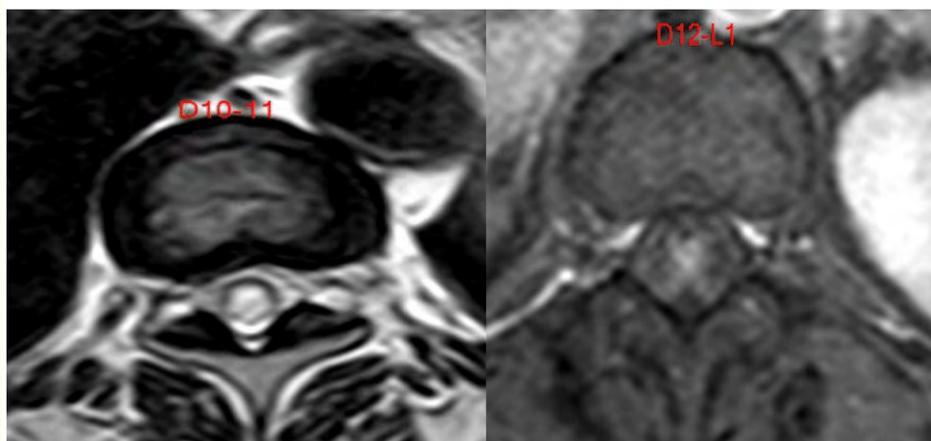
An 80 year old right handed female presented with 15 days history of progressive difficulty in walking to an extent that she was bed bound two days before admission, had no sensory symptoms but had urinary retention because of which she was catheterized. There was no history of upper limb weakness or numbness, paraesthesia, dysaesthesia etc. There was no history of visual disturbances, ophthalmoplegia, ataxia, trauma, recent infection, features suggestive of connective tissue disorder, vaccination, tuberculosis, weight loss or constitutional symptoms.

On examination the blood pressure including postural fall, pulse rate, respiratory rate and body temperature were normal. On neurological examination both upper limbs were normal. In lower limbs the bulk was normal, tone was hypertonic and power was 2/5 (Medical Research Council grading), at bilateral hip knee and ankle joints. There was sensory level at D6 spinal level with involvement of both spinothalamic tract and posterior column. Deep tendon reflexes were brisk in bilateral lower limbs with bilateral extensor planter response. The rest of neurological examination was normal. There was no deformity of skull and spine.

On investigations hemogram, biochemistry including renal function tests, liver function tests, blood sugar levels, HIV 1 and 2, HBsAg, anti HCV antibodies were normal. Immunological workup including antibody against Aquaporin 4 (AQP4), and antinuclear antibodies (ANA) were normal. Vitamin B12 (658) and folic acid were normal but quite low levels of vitamin D (< 4IU). Because high prevalence of arbo-viral infections during the season in which patient was admitted routine testing of dengue serology and chikungunya serology was

also got done and the patient was found to have NS1 antigen and dengue IgM positive. Magnetic resonance imaging (MRI) scan of dorsal spine showed longitudinally extensive central intramedullary signals which were hypointense in T weighted imaging and hyperintense in T2 weighted imaging from D4 vertebral level up to conus medullaris with post contrast enhancement. MRI Brain visual evoked potential (VEP) and contrast enhanced computerized tomogram of chest and abdomen was within normal limits.

Patients was treated with intravenous methylprednisolone pulse 1 gm infusion for 5 days. The patient showed improvement in 2 grade power in proximal joints hip and knee and grade 1 power distally at ankle joint. In follow up visits patient was almost asymptomatic for another 6 months, there after the patient was lost to follow up.



**Figure 1:** (A) Axial image of dorsal spine showing central cord involvement with relative peripheral sparing.(B) On post contrast image enhancement seen.



**Figure 2:** (A) MRI Dorsal spine on T2W image sagittal view shows intramedullary hyperintense signal from D4 to Conus medullaris. (B) Appearing isointense on T1W Image.

### Discussion

Dengue virus associated central nervous system complications have been reported [2] but only a couple of case reports of myelitis [3-5] and two-three case reports of LETM [4,5]. Myelitis associated with dengue virus antigen without classical presentation of dengue is usually not reported till now to the best of our references and knowledge. Our case is possibly the first one who was diagnosed as dengue associated LETM without classical features of dengue virus fever. The patient showed good response to intravenous steroids.

### Conclusion

The take home message is that clinicians should be aware of such uncommon etiology of a common disorder like LETM and should perform dengue serology in appropriate settings i.e. in endemic areas and persons of nonendemic area with history of travelling to endemic areas.

### Bibliography

1. Sellner J, *et al.* "The clinical spectrum and immunobiology of parainfectious neuromyelitis optica (Devic) syndromes". *Journal of Autoimmunity* 34.4 (2010): 371-379.
2. Sil A, *et al.* "Neurological manifestations in children with dengue fever: an Indian perspective". *Tropical Doctor* 47.2 (2017): 145-149.
3. Mota MT, *et al.* "Transverse Myelitis as an Unusual Complication of Dengue Fever". *American Journal of Tropical Medicine and Hygiene* 96.2 (2017): 380-381.
4. Malik S, *et al.* "Longitudinally extensive transverse myelitis following dengue virus infection: A rare entity". *Annals of African Medicine* 17.2 (2018): 86-89.
5. Lana- Peixoto MA, *et al.* "Myelitis and cauda equina involvement following dengue fever. A case report and review of the literature". *Multiple Sclerosis and Related Disorders* 20 (2018): 48-50.

**Volume 10 Issue 7 July 2018**

**©All rights reserved by Khichar Shubhakaran, *et al.***