

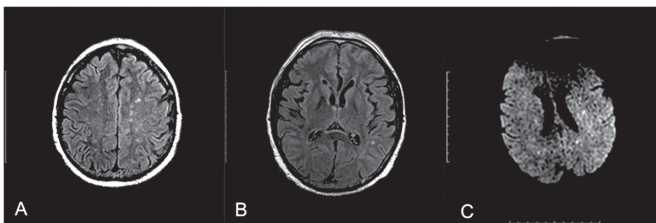
# Encephalitis and transverse myelitis in dengue and chikungunya coinfection

Luis Arthur Brasil Gadelha Farias<sup>[1]</sup>, Juliana Mandato Ferragut<sup>[2]</sup>  
and Roberto da Justa Pires Neto<sup>[1],[3]</sup>

[1]. Faculdade de Medicina, Universidade Federal do Ceará, Fortaleza, CE, Brasil.

[2]. Unidade de Terapia Intensiva, Hospital São Carlos, Fortaleza, CE, Brasil.

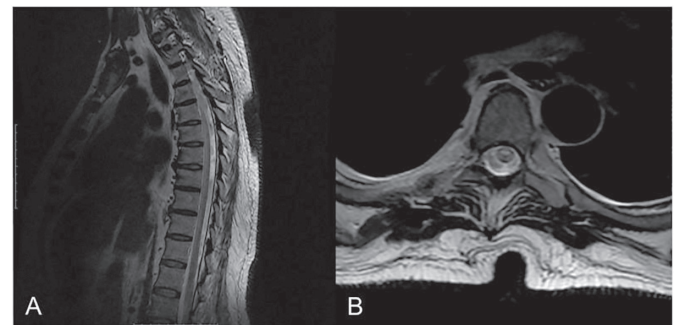
[3]. Hospital São José de Doenças Infecciosas, Secretaria de Saúde do Estado do Ceará, Fortaleza, CE, Brasil.



**FIGURE 1:** Brain MRI with punctiform areas with hyperintensity in T2w-FLAIR on the deep white matter of the semioval center and parietal and frontal lobes (A), in the left temporal deep white matter (B), and in the parietal white matter and left radiated crown (C). **MRI:** magnetic resonance imaging; **T2w-FLAIR:** T2-weighted fluid-attenuated inversion recovery.

A 53-year-old man from Northeastern Brazil was admitted to the emergency room due to mental confusion and diffuse myalgia, adynamia, fever, and oliguria for 2 days. He had history of type 2 diabetes mellitus with nephropathy and peripheral neuropathy. Dengue immunoglobulin M (IgM) and immunoglobulin G (IgG) and chikungunya IgM serology were positive. Magnetic resonance imaging (MRI) of the brain revealed diffuse accentuation of grooves, which is unusual for this age group, and numerous punctiform areas with hyperintensity in T2-weighted fluid-attenuated inversion recovery (T2w-FLAIR) sequences in the supratentorial white matter, especially within the oval center, indicating encephalitis (**Figure 1**). MRI of the spinal cord revealed areas with hyperintensity in T2w-FLAIR sequences in the anterior portion in all segments, indicating transverse myelitis (**Figure 2**). Cerebrospinal fluid (CSF) analysis showed glycorraquia of 103mg/dL, proteinorraquia of 121mg/dL, and non-reactant VDRL. On the 58<sup>th</sup> day of hospitalization, the patient was discharged.

Dengue and chikungunya coinfection may have a myriad of neurological presentations such as encephalopathy, myelopathy,



**FIGURE 2:** Spinal cord MRI with extensive T2w-FLAIR hypersignal change in the anterior compartment (sagittal T2) (A). T2w-FLAIR axial acquisition confirming the involvement of the anterior horns of the spinal cord (motor neuron) (B). **MRI:** magnetic resonance imaging; **T2w-FLAIR:** T2-weighted fluid-attenuated inversion recovery.

Guillain-Barré syndrome, cranial neuropathy, cognitive, and psychiatric disorders<sup>1,2</sup>. Transverse myelitis is commonly caused by autoimmune diseases, although certain viral pathologies may also be involved<sup>3</sup>. The diagnosis of neurological manifestations associated with dengue virus/chikungunya virus coinfection may be determined by specific IgM antibodies and increasing IgG antibody titers. However, other methods such as polymerase chain reaction (PCR) in CSF samples may be necessary for the differential diagnosis<sup>2</sup>.

### Conflicts of interest

The authors declare that there is no conflict of interest.

### REFERENCES

1. Brizzi K. Neurologic manifestation of chikungunya virus. *Curr Infect Dis Rep.* 2017;19(2):6.
2. Puccioni-Sohler M, Roveroni N, Rosadas C, Ferry F, Peralta JM, Tanuri A. Dengue infection in the nervous system: lessons learned for Zika and Chikungunya. *Arq Neuropsiquiatr.* 2017;75(2):123-6.
3. Flanagan EP, Pittock SJ. Diagnosis and management of spinal cord emergencies. *Handb Clin Neurol.* 2017;140:319-35.

**Corresponding author:** Roberto da Justa Pires Neto

**e-mail:** robertojusta@ufc.br

**Received** 24 June 2017

**Accepted** 25 August 2017

