

# The Coruscating Magnetic Resonance Imaging Features of Dumb Rabies

Sir,

Rabies is an acute progressive fulminating encephalitis. Human rabies mostly presented in encephalitic (furious) and paralytic (dumb) forms.<sup>[1]</sup> The paralytic rabies classically manifested as ascending type paraparesis with bladder involvement. The average time interval of death in furious type is 5.7 and in dumb rabies 11 days.<sup>[2]</sup> We report a case of probable rabies encephalomyelitis with characteristic magnetic resonance imaging (MRI) features.

A 50-year-old female presented with complaints of fever, severe right upper limb pain, and weakness for 03 days. History of category III dog bite presents 1 month ago. On examination, right upper limb hypotonia and areflexia were present. She developed respiratory failure with quadriparesis within 12 h of admission. MRI brain and spine showed T2/fluid-attenuated inversion recovery (FLAIR) hyperintense, T1 hypointense with mild diffusion restriction lesions involving bilateral symmetrical basal ganglia and thalami [Figure 1], and dorsal aspect of the brain stem and entire cross-section of the cervico-dorsal spinal. No evidence of blooming seen on susceptibility weighted imaging (SWI). The patient was diagnosed with probable rabies encephalomyelitis; based on the WHO case definition of human rabies and described MRI changes in the paralytic form of rabies.<sup>[1,3-5]</sup> The prodromal stage involves dorsal root ganglion (DRG), leading to DRG inflammation that causing severe pain. It was seen in our patient's presentation and followed by rapid deterioration due to retrograde axoplasmic spread of the virus to the central nervous system. The differential diagnoses of MRI changes include postvaccination encephalomyelitis (acute disseminated encephalomyelitis [ADEM]), acute necrotizing encephalopathy, Japanese B encephalitis, herpes encephalitis, rhombencephalitis, hypoxic-ischemic encephalopathy,

and mitochondrial disorders. The ADEM is more common in children, and case definition by Sejvar *et al.* and Brighton collaboration group says MRI finding of diffuse or multifocal white matter lesion on T2, FLAIR, diffusion weighted imaging  $\pm$  contrast enhancement, and lesion load  $>50\%$  of total white matter.<sup>[6,7]</sup> In our patient, there was no white matter involvement. The time interval to develop post-vaccination encephalomyelitis PVEM usually 1–3 weeks reported after rabies vaccinations<sup>[6]</sup> and our case presented after 1 month. Acute necrotizing encephalopathy has seen in influenza viral infection. It is recently seen in a subgroup of COVID-19 patients, possible due to intracranial cytokine storm leading to break in the blood–brain barrier. Characteristic MRI findings include symmetric, multifocal lesions with invariably thalamic involvement and also involves brain stem, cerebellum, and cerebral white matters, there is T2/FLAIR hyperintense lesion with blooming on SWI and contrast ring enhancement.<sup>[8]</sup> Jap B and Herpes encephalitis MRI show hemorrhagic changes. These subtle differences in MRI with a history could help to make a diagnosis.

## Declaration of patient consent

The authors certify that they have obtained all appropriate patient consent forms. In the form the patient has given her consent for her images and other clinical information to be reported in the journal. The patient understands that her name and initials will not be published and due efforts will be made to conceal her identity, but anonymity cannot be guaranteed.

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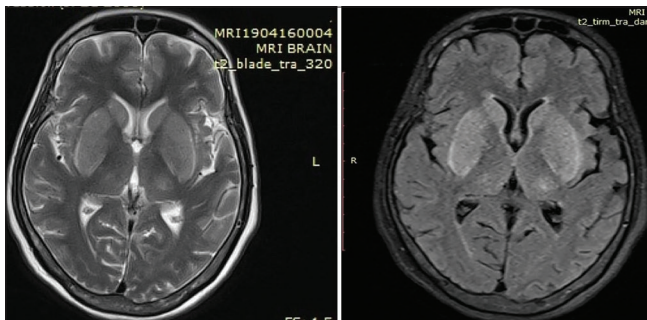
## Conflicts of interest

There are no conflicts of interest.

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**Figure 1:** (a and b) Axial T2/fluid attenuated inversion recovery magnetic resonance imaging images showing hyperintense lesions involving bilateral Basal Ganglia and Thalami

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