Newly described additional sites of extrapontine myelinolysis along with typical pontine and extrapontine myelinolysis

Sir,

Osmotic pontine and extrapontine myelinolysis is a rare demyelinating disease affecting various white matter tracts. Involvement of multiple extrapontine sites adversely affects the prognosis of such patients. We describe a case with typical central pontine and extrapontine myelinolysis along with the involvement of additional extrapontine sites that have not been described as yet, namely bilateral uncus, the geniculate body and the motor cortex.

A 50-year-old male patient, with a history of multiple episodes of vomiting, was admitted at a local hospital. He was diagnosed to be having hyponatremia, which was corrected. The patient was discharged after 3 days. He presented to our hospital after 10 days of the initial symptoms with the presentation of severe drowsiness, reduced speech, and altered sensorium. On examination, he had weakness of all four limbs, severe rigidity, and brisk deep tendon reflexes. His previous magnetic resonance imaging (MRI) done at an outside hospital showed diffusion restriction in bilateral caudate nuclei and putamen with a normal appearing pons (these images are not available). His MRI was repeated in our hospital which showed T2/fluid-attenuated inversion recovery (FLAIR) hyperintensity in bilateral putamen and caudate nuclei, as well as cerebellar white matter [Figure 1]. Diffusion facilitation in the right putamen and caudate nuclei, anterior portion of left putamen and caudate nuclei, and mild diffusion restriction in the posterior portion of left putamen [Figure 2b, c and e, arrow head] was noted. Diffusion restricting lesions were also seen in the central pons [Figure 2a and d], bilateral lateral thalami [Figure 2b and d, black arrows], and bilateral motor cortical areas [Figure 2c and f, white marrows]. T2/FLAIR hyperintensity with diffusion facilitation was noted in bilateral uncus, whereas a diffusion restricting lesion was seen in the left geniculate body [Figure 3]. He was treated symptomatically; at the end of 1-month follow-up, he had a modified Rankin score of 5.

Comparing the 3rd-day MRI pictures with the 10th -day MRI images, the probable temporal evolution of myelinolysis would been in the following sequence, with the predominant initial involvement of extrapontine locations: —i) bilateral caudate nucleus and putamen, ii) uncus, and iii) bilateral

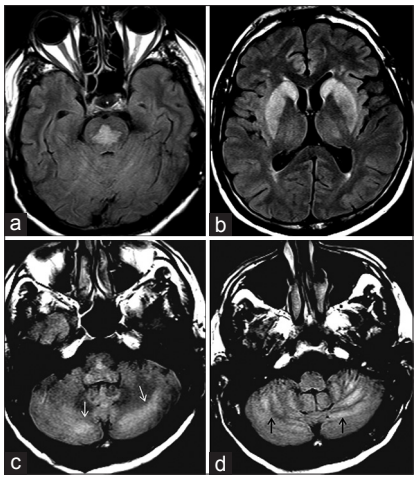

Figure 1: Axial FLAIR MR images of brain showing hyperintensity in (a) central pons, (b) bilateral putamen and caudate nuclei, and (c and d) cerebellar hemispheric white matter

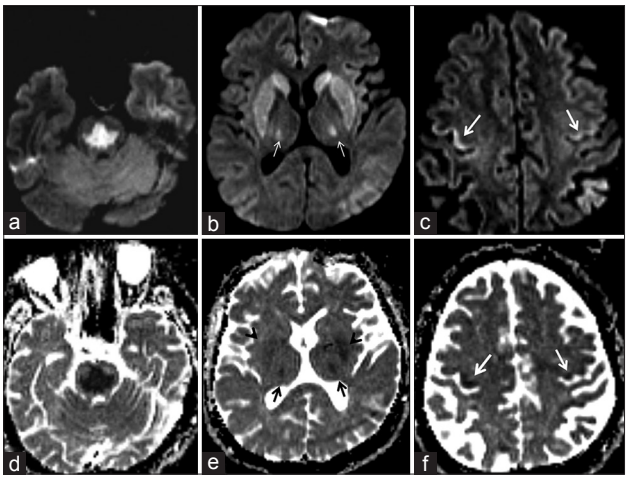

Figure 2: Axial diffusion weighted imaging (DWI) and apparent diffusion coefficient (ADC) images demonstrating diffusion restriction noted in (a) central pons, (b) posterior portion of left putamen (arrow heads)and lateral thalami (black arrows), and, (c-f) bilateral motor cortex (white arrows)

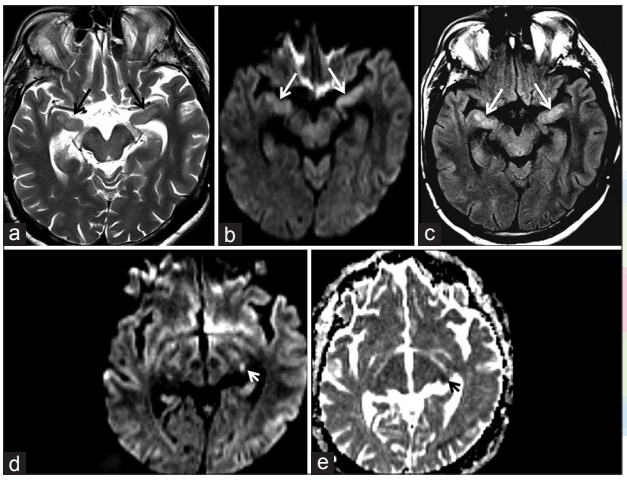

Figure 3: (a-c) Axial T2, DWI, FLAIR showing a hyperintensity in bilateral uncus (arrows). (d and e) diffusion restriction is seen in the left geniculate ganglion (arrows)

cerebellar white matter, followed by involvement of i) bilateral lateral thalami, ii) bilateral motor cortex, and iii) central pons. This pattern of involvement is suggestive of an initial extrapontine myelinolysis at some locations, followed by central pontine myelinolysis accompanied by a few new sites where extrapontine myelinolysis was exhibited. This temporal progression is in partial favour of the hypothesis proposed by Babanrao SA *et al*.,[1] supporting that extrapontine myelinolysis precedes the occurrence of pontine myelinolysis. Previously described sites of extrapontine myelinolysis included the basal ganglia, hippocampus,[2] thalamus, midbrain, deep periventricular white matter, and cerebellum. To the best of our knowledge, involvement of motor cortex, uncus, and geniculate body has not been described previously.

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Conflicts of interest

There are no conflicts of interest.

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