Drug-induced changes in dentate nuclei of cerebellum

Sir,

We read with great interest the article titled “Sequential MR imaging (with diffusion-weighted imaging) changes in metronidazole-induced encephalopathy” by Singh et al. in the April–June 2017 issue of the Indian Journal of Radiology and Imaging. The article is highly informative and describes signal changes in splenium and dentate nuclei following metronidazole ingestion. In this article, we describe a few drugs that cause similar signal changes in the cerebellar dentate nuclei [Table 1]:

Thus, we see that the dentate nuclei can be affected by many drugs with nonspecific magnetic resonance imaging findings. Hence, integration of clinical data is crucial for definitive diagnosis.

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Conflicts of interest
There are no conflicts of interest.

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References

Table 1: Drugs that cause signal change in dentate nuclei

<table>
<thead>
<tr>
<th>Drug</th>
<th>Use</th>
<th>Area of brain affected</th>
<th>T2/FLAIR hyperintense</th>
<th>Resolution upon discontinuation of drug</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>Metronidazole</td>
<td>Dentate nuclei, midbrain, inferior colliculus, dorsal pons and medulla, inferior olivary nucleus, splenium</td>
<td>Yes, shows diffusion restriction</td>
<td>Yes</td>
</tr>
<tr>
<td>B</td>
<td>Monohalothane Fumigative pesticide</td>
<td>Dentate nuclei, perivenous region of midbrain, inferior colliculus, splenium, globus pallidus, thalamus, lower cranial nerve nuclei</td>
<td>Yes, no diffusion restriction</td>
<td>Yes</td>
</tr>
<tr>
<td>C</td>
<td>Isoniazid</td>
<td>Dentate nuclei, yes, may show diffusion restriction</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>D</td>
<td>Cycloserine</td>
<td>Dentate nuclei, shows diffusion restriction</td>
<td>Yes</td>
<td>Yes</td>
</tr>
</tbody>
</table>

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