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.[1] 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.

Yashant Aswani, Nishant Aswani¹, Rohit Sharma²
Department of Radiology, PMCH, Udaipur, ¹Department of Neurology, GB Pant Hospital, New Delhi, India, ²Department of Internal Medicine, Hamad Medical Corporation, Doha, Qatar.
E-mail: nishant_udr@yahoo.co.in

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>A¹,² Metronidazole</td>
<td>Antibiotic, amebicide, antiprotozoal agent</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>B² Monohalothane</td>
<td>Fumigative pesticide</td>
<td>Dentate nuclei, yes, no periaqueductal diffusion 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>C¹ Isoniazid</td>
<td>First line antitubercular therapy</td>
<td>Dentate nuclei</td>
<td>Yes, may show diffusion restriction</td>
<td>Yes</td>
</tr>
<tr>
<td>D² Cycloserine</td>
<td>Second line antitubercular therapy</td>
<td>Dentate nuclei</td>
<td>Yes, shows diffusion restriction</td>
<td>Yes</td>
</tr>
</tbody>
</table>

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