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Faciobrachial dystonic seizures secondary to basal ganglia involvement in anti-LGI1 encephalitis

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A 60-year-old man presented with a three-month history of memory disturbances and sudden, paroxysmal, involuntary movements of the face and right upper limb, associated with a tendency to fall. He had multiple such events during the day, each lasting for 1-2 seconds. Examination did not reveal any lateralizing neurological deficits. The sudden-onset, short-lasting, paroxysmal events were suggestive of faciobrachial dystonic seizures. A possibility of autoimmune encephalitis was considered and a serum autoimmune panel was positive for anti-LGI1 (leucine-rich-glioma inactivated) antibody at high titre. The routine EEG was normal and we could not capture any "epileptic phenomenon". Brain MRI showed T2/FLAIR hyperintensity in the right putamen, without diffusion restriction (*figures 1 and 2*). Initially, the patient was treated with levetiracetam and phenytoin, without much benefit. Later, intravenous immunoglobulins (IVIG) were added and the patient showed significant improvement within a few weeks. Follow-up MRI after three months showed resolution of previous changes. Faciobrachial dystonic seizures are pathognomonic of anti-LGI1 encephalitis and are considered an overlap between epileptic spasm and movement disorders. While some authors consider the frontal-temporal lobe as the source of epileptic phenomena, others have reported a peculiar cortical-subcortical interaction, generated at the basal ganglia (d'Orsi *et al*., 2018; Iyer *et al*., 2017). Our patient had neuroimaging changes in the right putamen (basal ganglia), which were reversible after treatment with IVIG and correlated with decreased seizure frequency. Hence, the origin of faciobrachial dystonic seizures is presumably localized to basal ganglia, specifically the putamen. □

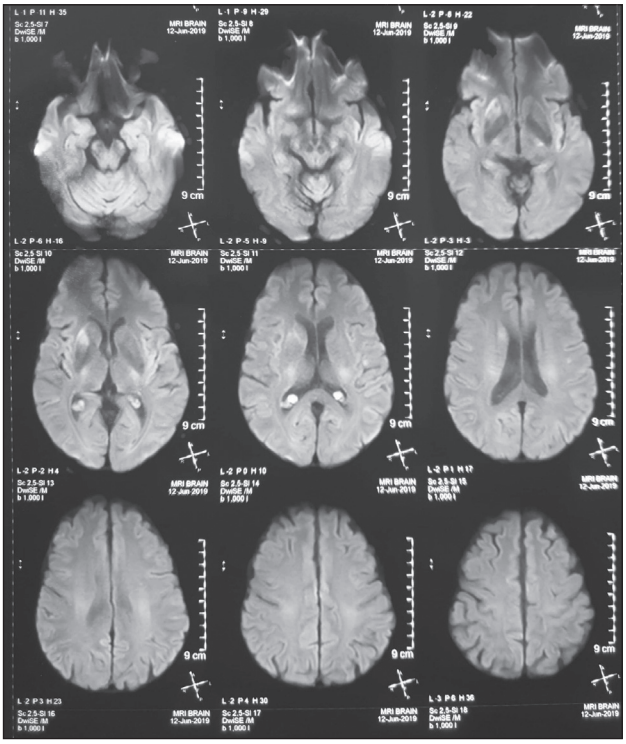

Figure 1. Brain MRI (T2/FLAIR, axial plane) showing hyperintensity in the region of the right basal ganglia/ putamen.

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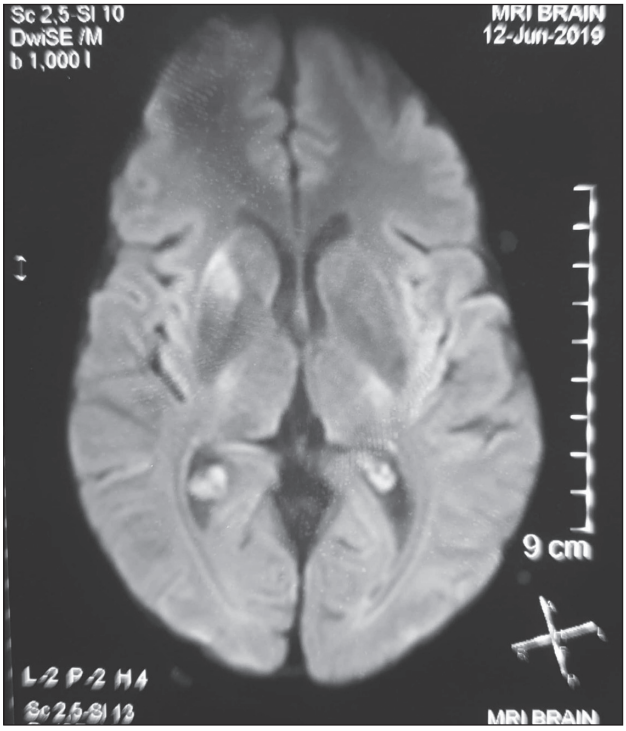

Figure 2. Enlarged view of right putaminal hyperintensity.

Supplementary data.
Summary didactic slides are available on the www.epilepticdisorders.com website.

Disclosures.
None of the authors have any conflit of interest to declare.

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TEST YOURSELF

(1) What are faciobrachial dystonic seizures (FBDS)?

(2) What is the pathophysiology of FBDS?

(3) What is the treatment for FBDS?

Note: Reading the manuscript provides an answer to all questions. Correct answers may be accessed on the website, www.epilepticdisorders.com, under the section "The EpiCentre".