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Hypoglycemic encephalopathy with hemichorea-hemiballismus and contralateral cortical fronto-parietal brain lesions: a case report

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Background: Severe hypoglycemia is associated with a broad range of neurological deficits and alterations on cerebral magnetic resonance imaging (MRI). Typically, hypoglycemic encephalopathy causes bilateral lesions in the neostriatum and diffuse cortical involvement, the latter being usually correlated with a poor functional outcome.

Methods (case description): A 71-year-old man was admitted to hospital for acute hypoglycemic coma in poorly controlled type 2 diabetes mellitus. He promptly regained consciousness after intravenous glucose administration but during hospitalization he developed prominent intermittent ballistic movements of his right limbs intermixed with rare distal choreic movements. The involuntary movements did not respond to anticonvulsants and subsided within 20 days since admission in parallel with the improvement of the patient's glycemic control. Four months later, his neurological examination was normal.

Results: Serial CT brain scans were normal. EEGs registered during the atypical movements failed to detect any epileptic activity. Brain MRI showed left fronto-parietal corticalsubcortical lesions, with cingulate gyrus involved. On DWI, T2 and T2-FLAIR sequences they were hyperintense, while ADC was reduced. Follow-up MRI imaging showed progressive regression of the abnormalities. After 80 days, cerebral MRI was normal.

Conclusions: This is the first evidence of hemichorea-hemiballismus syndrome associated with focal contralateral fronto-parietal lesions induced by an episode of severe hypoglycemia. This case suggests that patients with limited cortical involvement due to hypoglycemic encephalopathy may present a good clinical outcome if normal glycemic levels are promptly restored.