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Teaching NeuroImages: Basal Ganglia T1 Hyperintensity and SWI Signal Diabetic Striatopathy in an 18-Year-Old Man With Type 1 Diabetes Mellitus

Author(s):

Jaclyn Tencer, MD¹; Sabrina Yum, MD¹

Corresponding Author:

Jaclyn Tencer
jstencer@gmail.com

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Affiliation Information for All Authors: 1. Department of Pediatrics, Division of Neurology, The Children's Hospital of Philadelphia, Philadelphia, PA

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Jaclyn Tencer: Drafting/revision of the manuscript for content, including medical writing for content; Study concept or design

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An 18-year-old male with Type I diabetes presented with acute bilateral arm and leg ballismus and oral-buccal dyskinesia. Glucose was 394 and HgbA1c >14. Imaging revealed T1-hyperintensity and susceptibility effect within the basal ganglia (figure). Symptoms resolved over 48 hours with glucose control. A diagnosis of diabetic striatopathy was made. Diabetic striatopathy, also called hyperglycemic hemiballism/hemichorea, is most often described in older individuals with Type 2 diabetes. Clinical symptoms often resolve with glycemic control however many patients require pharmacologic treatments. Deep brain stimulation may be beneficial in cases with disabling involuntary movements. Hyperglycemia-induced vasculopathy may contribute to microhemorrhages on imaging.^{1,2}

Figure

(A) Axial T1-weighted MRI showing hyperintensity in the caudate and putamen
(B) Axial Susceptibility Weighted Imaging showing abnormal signal in the corresponding region possibly reflecting microhemorrhages. Imaging changes can be differentiated from hypertensive hemorrhage by the absence of surrounding mass effect.

Teaching Slides -- <http://links.lww.com/WNL/B467>

References

1. Chua CB, Sun CK, Hsu CW, Tai YC, Liang CY, Tsai IT. "Diabetic striatopathy": clinical presentations, controversy, pathogenesis, treatments, and outcomes. *Sci Rep*. 2020;10(1):1594.
2. Cherian A, Thomas B, Baheti NN, Chemmanam T, Kesavadas C. Concepts and controversies in nonketotic hyperglycemia-induced hemichorea: further evidence from susceptibility-weighted MR imaging. *J Magn Reson Imaging*. 2009;29(3):699-703.

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