

Teaching NeuroImages: MRI abnormalities in frontal lobe seizures due to nonketotic hyperglycemia

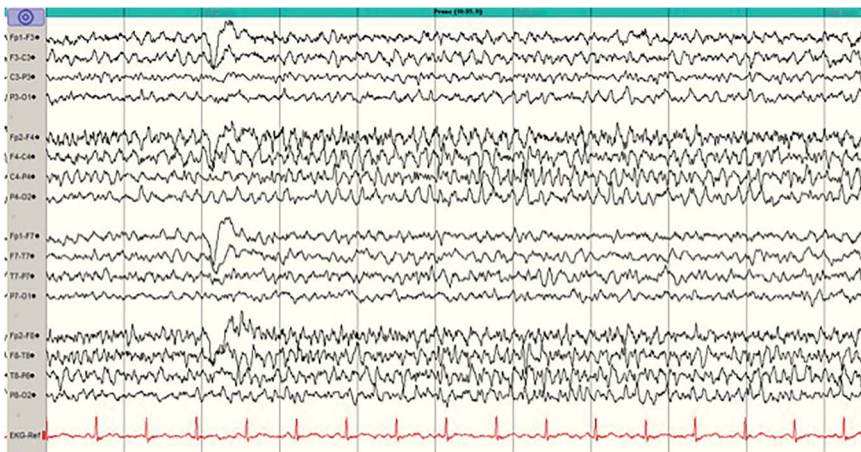
Hsin-Pin Lin, MD, PhD, Reordan O. DeJesus, MD, and Maria José Bruzzone, MD

Neurology® 2020;95:e941-e942. doi:10.1212/WNL.00000000000010109

Correspondence

Dr. Bruzzone
Maria.BruzzoneGiraldez@
neurology.ufl.edu

Figure 1 EEG



EEG shows a seizure arising from right frontotemporal area.

A 56-year-old woman presented with electroclinical focal seizures in the setting of hyperglycemia (808 mg/dL) and elevated HbA1c of 14.7%. She had varying seizure semiology, consisting of early forced head turn to the left, speech arrest, left facial twitching, and impaired awareness. Her seizures arose from the right frontotemporal area on EEG (figure 1). MRI showed hypointensities in the right prefrontal lobe that resolved after 6 months (figure 2).

Transient T2/fluid-attenuated inversion recovery white matter hypointensities usually involving the parieto-occipital lobe have been described in patients with hyperglycemic seizures.^{1,2} This underreported sign may point to the diagnosis of acute symptomatic seizures in hyperglycemic patients.

Study funding

No targeted funding reported.

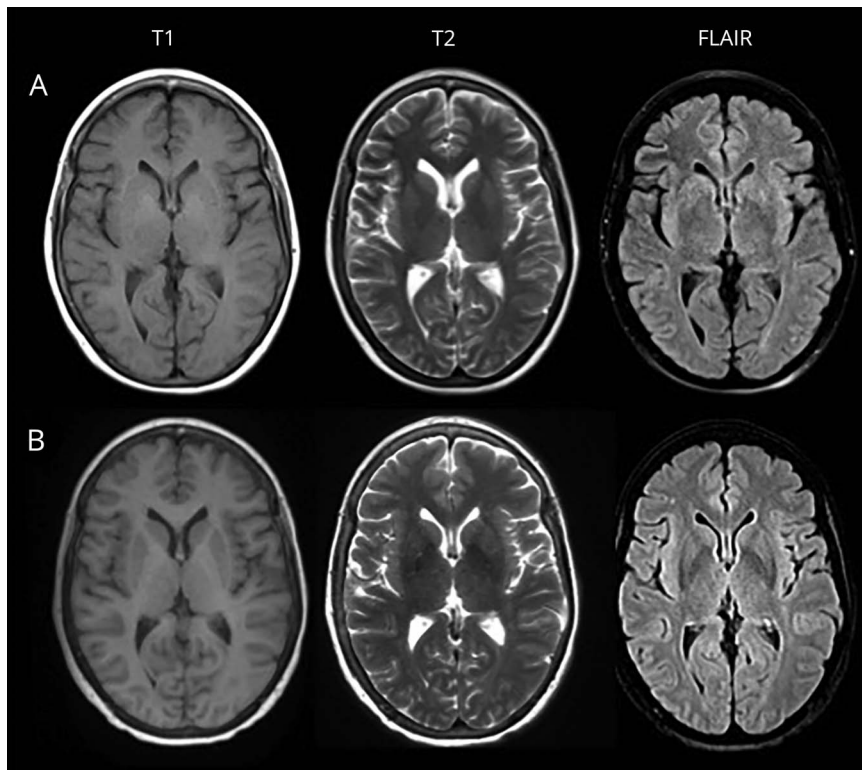
MORE ONLINE

→Teaching slides
links.lww.com/WNL/B151

From the Departments of Neurology (H.-P.L., M.J.B.) and Radiology (R.O.D.), College of Medicine, University of Florida, Gainesville.

Go to Neurology.org/N for full disclosures. Funding information and disclosures deemed relevant by the authors, if any, are provided at the end of the article.

Figure 2 MRI of the brain in nonketotic hyperglycemia-related frontal lobe seizures



(A) Axial T1/T2/fluid-attenuated inversion recovery (FLAIR) shows white matter hypointensities in the right frontotemporal/insular regions, most prominently in the prefrontal cortex. (B) Repeat MRI shows resolution of the hypointensities 6 months later.

Appendix Authors

Name	Location	Contribution
Hsin-Pin Lin, MD, PhD	University of Florida, Gainesville	Drafted the manuscript for intellectual content
Reordan O. DeJesus, MD	University of Florida, Gainesville	Interpreted the data
Maria José Bruzzone, MD	University of Florida, Gainesville	Interpreted the data, revised the manuscript for intellectual content

Disclosure

The authors report no disclosures relevant to the manuscript. Go to [Neurology.org/N](https://www.neurology.org/N) for full disclosures.

References

1. Nissa Z, Siddiqi SA, Abdool SA. Occipital seizures and persistent homonymous hemianopia with T2 hypointensity on MRI in nonketotic hyperglycemia. *Epilepsy Behav Case Rep* 2016;6:3–5.
2. Lee EJ, Kim KK, Lee EK, Lee JE. Characteristic MRI findings in hyperglycaemia-induced seizures: diagnostic value of contrast-enhanced fluid-attenuated inversion recovery imaging. *Clin Radiol* 2016;71:1240–1247.

Neurology®

Teaching NeuroImages: MRI abnormalities in frontal lobe seizures due to nonketotic hyperglycemia

Hsin-Pin Lin, Reordan O. DeJesus and Maria José Bruzzone
Neurology 2020;95:e941-e942 Published Online before print July 8, 2020
DOI 10.1212/WNL.0000000000010109

This information is current as of July 8, 2020

Updated Information & Services	including high resolution figures, can be found at: http://n.neurology.org/content/95/7/e941.full
References	This article cites 2 articles, 0 of which you can access for free at: http://n.neurology.org/content/95/7/e941.full#ref-list-1
Subspecialty Collections	This article, along with others on similar topics, appears in the following collection(s): All Epilepsy/Seizures http://n.neurology.org/cgi/collection/all_epilepsy_seizures Complex partial seizures http://n.neurology.org/cgi/collection/complex_partial_seizures EEG http://n.neurology.org/cgi/collection/eeg MRI http://n.neurology.org/cgi/collection/mri Partial seizures http://n.neurology.org/cgi/collection/partial_seizures
Permissions & Licensing	Information about reproducing this article in parts (figures, tables) or in its entirety can be found online at: http://www.neurology.org/about/about_the_journal#permissions
Reprints	Information about ordering reprints can be found online: http://n.neurology.org/subscribers/advertise

Neurology® is the official journal of the American Academy of Neurology. Published continuously since 1951, it is now a weekly with 48 issues per year. Copyright © 2020 American Academy of Neurology. All rights reserved. Print ISSN: 0028-3878. Online ISSN: 1526-632X.

