Teaching NeuroImage: Hyperglycemia-Induced Occipital Lobe Seizures

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A 64-year-old man was admitted with right-sided headache and confusion. He experienced episodes of left-sided flashing lights evolving to left-beating nystagmus with impaired awareness, suggesting right occipital lobe-onset seizures for which levetiracetam was prescribed. Between episodes, he had left homonymous hemianopia. Brain MRI showed right occipital lobe swelling with cortical T2-FLAIR hyperintensity and diffusion restriction (Figure). Blood glucose on admission was 21.8 mmol/L (normal: 3.4-11 mmol/L) and HbA1C was 12.8%, indicating a new diagnosis of diabetes mellitus and raising concern for hyperglycemia-induced occipital lobe seizures [1, 2]. Testing for alternative etiologies including CSF bacterial culture, viral PCRs, cytology and autoimmune encephalitis antibodies, as well as serum anti-MOG, were negative. Following blood glucose normalization, his symptoms resolved. Repeat brain MRI eight weeks later was unremarkable (Figure). Occipital lobe seizures are a rare but characteristic manifestation of hyperglycemia. Glycemic control generally results in their resolution, emphasizing the importance of prompt diagnosis[1, 2].

http://links.lww.com/WNL/C785
References:


Figure:

**Brain MRI in hyperglycemia-induced occipital lobe seizures:** Axial T2-FLAIR shows right occipital lobe swelling with cortical hyperintensity (A.a). Axial DWI shows corresponding hyperintensity (A.b) with hypointensity on ADC (A.c), indicating true diffusion restriction. Resolution of abnormalities is observed on repeat imaging eight weeks later (B.a-B.c).
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