Teaching NeuroImages: Electroretinographic artifacts in EEG

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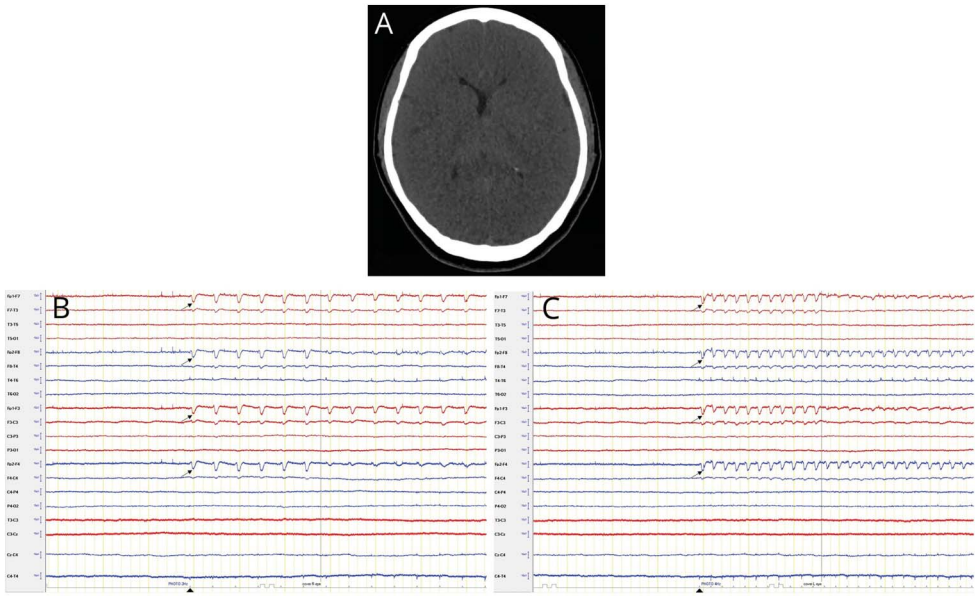
Figure CT brain and longitudinal bipolar montage



(A) CT brain shows diffuse cerebral edema and loss of normal gray–white differentiation. (B, C) Longitudinal bipolar montage (2 μV/mm sensitivity) shows electroretinographic (ERG) artifacts from retinal depolarization (arrows) induced by photic stimulus (arrowheads). Alternate covering of right and left eye blocked retinal stimulation, obliterating ERG discharges, first in Fp2 (B), then in Fp1 (C), confirming the ocular source of these waveforms.

A 47-year-old woman was admitted following an out-of-hospital cardiac arrest. On presentation, the patient's Glasgow Coma Scale was 3. CT brain showed inversion of gray–white densities and diffuse cerebral edema consistent with severe hypoxic ischemic injury and EEG showed electrocerebral inactivity throughout the recording with time-locked electroretinographic (ERG) discharges to photic stimulus (figure). Recognizing the discharges as ERG artifacts rather than cerebral reactivity to photic stimulus or photic blink reflex is of paramount importance to avoid misinformed neurologic prognostication.[1,2] The misrecognition of the latter 2 discharges may erroneously suggest a functionally intact thalamo-cortical network and brainstem, respectively.

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The authors report no disclosures relevant to the manuscript. Go to Neurology.org/N for full disclosures.

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Name	Location	Role	Contribution
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Ambihai Sivalingam, MBBS	National Neuroscience Institute, Singapore	Author	Concept and revisions of manuscript
Shermyn Neo, MBBS	National Neuroscience Institute, Singapore	Consulting neurologist for the patient, author	Acquisition of images and revisions of manuscript

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