False ictal-appearing EEG from a frontal sinus pseudomeningocele

Figure 1 Head CT demonstrating left frontal pseudomeningocele

Left frontal pseudomeningocele (red arrow) and right frontal encephalocele (blue arrow).

A 71-year-old woman had 2 clusters of generalized convulsive seizures; a motor vehicle accident 21 years prior, resulting in a traumatic brain injury, was an epilepsy risk factor. Head CT showed extensive encephalomalacia and a pseudomeningocele extending within the left frontal sinus (figure 1). EEG showed rhythmic, heart rate time-locked pulsation artifact over the left frontopolar region with morphologic and amplitude

Figure 2 Longitudinal bipolar EEG demonstrating evolving pulsation artifact with superimposed ECG

Left frontopolar rhythmic pulse artifact with pseudo-evolution, and "spread" briefly to F7 (arrow).

pseudo-evolution (figure 2). Arterial pulsation was not palpable beneath the Fp1 electrode, and electrode repositioning did not alter its presence.¹ Pseudomeningocele CSF pulsation is a source of artifact that can confound EEG interpretation by mimicking an ictal EEG discharge.

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