**Drawing-induced epilepsy**

Kho et al. studied a patient in whom drawing, but not writing, selectively triggered seizures with a right frontal onset. Their findings in the patients with reflex epilepsy support current models in the neurocognition of drawing.

*see page 723*

**Figuring out drawing-induced epilepsy**

Commentary by Bruce L. Miller, MD

The mechanisms underlying reflex epilepsies remain uncertain. The simplistic notion is that those brain regions subserving specific functions that are also triggers for the seizure are hyperexcitable. While this may be an accurate description—and pharmacologic manipulations that decrease excitation (by interfering with glutamate neurotransmission) or increase inhibition (by increasing GABA neurotransmission\(^2,^3\)) suggest that this is plausible—it falls far short of explaining exactly how the normal physical structure or chemical connections of the brain are deranged. Further, it is unclear to what extent genetic models, in which these studies are performed—such as photic-induced seizures in the baboon, *Papio papio*—are analogous to reflex seizures in humans, even those induced by photic stimulation, a fairly common occurrence among the reflex epilepsies.

This case offers interesting insights into the cognitive processes involved with drawing, a relatively understudied topic. The dissociation between writing and drawing emphasizes the presence of anatomically distinct cognitive modules in the dominant and nondominant hemispheres. Inducing a system in the nondominant hemisphere involved with various components of creating a picture was enough to trigger a right frontoparietal seizure focus. In contrast, activating the dominant hemisphere with tasks like writing or calculating did not. This case helps to stimulate new work to determine the mechanisms associated with reflex epilepsy while challenging cognitive neurologists to think about the anatomic systems involved with the creation of a drawing.

**References**


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