The magnetic apraxia of Denny-Brown

Motor apraxia is traditionally defined as a disorder compromising the production of skilled movements. Magnetic apraxia represents a specific subtype, originally described by Denny-Brown. It is characterized by prominent and persistent instinctive grasping of hand, mouth, or foot, whenever they make contact or are close to an object. Object manipulation in daily activities is therefore impaired. We report right hand magnetic apraxia in a 58-year-old man with adult-onset Rasmussen encephalitis presenting as corticobasal syndrome (video on the Neurology® Web site at Neurology.org). Magnetic apraxia is related to parietal lobe dysfunction and, as other forms of motor apraxia, seems associated with corticobasal syndromes.

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LETTER RE: THE MAGNETIC APRAXIA OF DENNY-BROWN

Anhar Hassan, Rochester, MN: In their Video NeuroImage, Peluso et al.1 reported a patient with right hand magnetic apraxia attributed to parietal lobe dysfunction.2 Magnetic apraxia is a variant of alien hand syndrome caused by lesions in the frontal lobe.3 It typically manifests with unilateral grasping and groping of the dominant (usually right) hand. In contrast, alien hand syndrome due to parietal lobe lesions, most commonly corticobasal syndrome or stroke, tends to manifest with limb levitation and noncomplex movements accompanied by other parietal deficits.4 The video shown is consistent with magnetic apraxia, but would thus need to be attributed to the patient’s frontal lobe lesion. If attributed to the parietal lobe, by definition it is not the magnetic apraxia of Denny-Brown.

is because of medications, such as barbiturates, taken at an early age, which induced state-dependent learning and, with their current medication, they cannot recall episodic autobiographic memories.

In future studies, investigators may want to examine the influence of state-dependent memory in patients with early-onset epilepsy.


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AUTHOR RESPONSE: MECHANISMS OF MEMORY IMPAIRMENT IN EPILEPSY DEPEND ON AGE AT DISEASE ONSET
Genevieve Rayner, Graeme D. Jackson, Sarah J. Wilson, Melbourne, Australia: We thank Dr. Heilman for the comment on our article, which showed that antecedents of autobiographic memory impairments common to patients with focal epilepsy differ as a function of age at seizure onset. Impairments in those with childhood-onset epilepsy were predicted by young age at onset, frequent seizures, and reduced working memory, whereas in adult-onset epilepsy, depression was the major factor.

We agree the concept of state-dependent retrieval dysfunction stemming from changes in anticonvulsant medication would offer a fascinating extension of these findings. This would likely require a prospective longitudinal design, as it would be problematic to reliably collect a lifetime history of medications from a cohort with documented memory deficits. Better success with a retrospective design may come from countries with well-established prescription databases.

While state-dependent medication effects cannot be discounted as a contributory factor in the early-onset group, the study was able to reject the effect of current pharmacotherapy intensity. In particular, there was no effect of polytherapy vs monotherapy in either early- or late-onset epilepsy.

While power issues precluded statistical analyses based on specific classes of anticonvulsants, from a qualitative perspective, no medication seemed particularly linked to poor autobiographic memory, including barbiturates.

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CORRECTION
The magnetic apraxia of Denny-Brown
In the Video NeuroImage “The magnetic apraxia of Denny-Brown” by S. Peluso et al., magnetic apraxia should be attributed to a frontal lobe dysfunction rather than a parietal lobe dysfunction. The authors regret the error.

REFERENCE

Author disclosures are available upon request (journal@neurology.org).