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## IN BRIEF

### EPILEPSY

#### Mapping epileptic foci with foramen ovale electrodes

Before resective surgery, epileptic foci are conventionally localized via surface EEG, but difficult cases require invasive assessment. Sheth and colleagues used foramen ovale electrodes (FOEs) to examine 42 patients who had epileptic foci that could not be conclusively mapped using EEG. FOEs are less invasive than depth electrodes, as they can be inserted through natural apertures in the skull, and they provided informative localization data in over 90% of cases. The authors resected foci in 18 of the FOE-assessed patients, and 13 were seizure-free after a mean follow-up of 22.5 months.

**Original article** Sheth, S. A. *et al.* Utility of foramen ovale electrodes in mesial temporal lobe epilepsy. *Epilepsia* doi:10.1111/epi.12571

### ALZHEIMER DISEASE

#### Comparable brain levels of amyloid- $\beta$ and tau in asymptomatic AD and mild cognitive impairment

Asymptomatic Alzheimer disease (AD) is the diagnosis given to people with clear AD pathology at autopsy despite typical cognitive function in life. Iacono *et al.* compared levels of amyloid- $\beta$  and phosphorylated tau in brain slices from recently deceased patients with asymptomatic AD or mild cognitive impairment. Comparable levels of both proteins were found in brain regions typically susceptible to AD, suggesting that amyloid and tau are not sufficient to predict cognitive impairment.

**Original article** Iacono, D. *et al.* Mild cognitive impairment and asymptomatic Alzheimer disease subjects: equivalent  $\beta$ -amyloid and tau loads with divergent cognitive outcomes. *J. Neuropathol. Exp. Neurol.* doi:10.1097/NEN.000000000000052

### MIGRAINE

#### Noninvasive vagus nerve stimulation to relieve migraine

Few effective options are available for the acute treatment of migraine. Goadsby *et al.* provided handheld, portable stimulation devices to 30 people who regularly experienced migraines, and taught them to self-administer transcutaneous vagus nerve stimulation when pain became severe. In a 6-week open-label trial, no major or unanticipated adverse effects were reported, and vagus nerve stimulation completely eliminated pain in 22% of attacks rated moderate to severe.

**Original article** Goadsby, P. J. *et al.* Effect of noninvasive vagus nerve stimulation on acute migraine: an open-label pilot study. *Cephalalgia* doi:10.1177/0333102414524494

### NEUROSURGERY

#### Ultrasound imaging of the brain during surgery

Contrast-enhanced ultrasound permits real-time imaging of tissue vascularization, but its use in neurosurgery has so far been limited. Prada *et al.* employed the technique in 71 patients undergoing surgery to remove brain neoplasms. The authors reported that in every case, contrast-enhanced ultrasound was effective for imaging afferent and efferent blood vessels around the surgical target, and could also highlight lesions and their perfusion patterns.

**Original article** Prada, F. *et al.* Intraoperative contrast enhanced ultra-sound (iCEUS) for brain surgery. *Neurosurgery* doi:10.1227/NEU.0000000000000301