CIRCUITS AND CIRCUIT DISORDERS

Cortical Synchronization in Isolated Dystonia vs Parkinson Disease 1244

Miocinovic and colleagues investigate the electrophysiologic characteristics of the sensorimotor cortex arm-related area using a temporary subdural electrode strip in patients with isolated dystonia and Parkinson disease (PD) undergoing deep brain stimulation (DBS) implantation in the awake state. They report that isolated dystonia and PD have physiologic overlap with respect to high levels of motor cortex synchronization and reduction of cortical synchronization by subthalamic DBS, providing an explanation for their similar therapeutic response to basal ganglia stimulation.

CIRCUITS AND CIRCUIT DISORDERS

Mapping the “Depression Switch” 1252

Choi and coauthors characterize the structural connectivity correlates of deep brain stimulation-evoked behavioral effects using probabilistic tractography in depression. They report that this analysis of transient behavior changes during intraoperative deep brain stimulation of the subcallosal cingulate and that the subsequent identification of unique connectivity patterns may provide a biomarker of a rapid-onset depression switch to guide surgical implantation and to refine and optimize algorithms for the selection of contacts in long-term stimulation for treatment-resistant depression.

Varicella-Zoster Virus and Clinically Suspected Giant Cell Arteritis 1281

Nagel et al analyze varicella-zoster virus (VZV) infection in temporal arteries (TAs) of patients with clinically suspected giant cell arteritis (GCA) whose TAs were histopathologically negative and in normal TAs removed post mortem from age-matched individuals. They find that, in patients with clinically suspected GCA, prevalence of VZV in their TAs is similar independent of whether biopsy results are negative or positive pathologically. Antiviral treatment may confer additional benefit to patients with biopsy-negative GCA treated with corticosteroids, although the optimal antiviral regimen remains to be determined.

Clinical Review & Education

Naturally Occurring Monoclonal Antibodies in Neurologic Disease 1346

Wootla and colleagues review the role of monoclonal, naturally occurring antibodies (NAbs) as novel therapeutic molecules for treatment of neurologic disorders. Their investigative group developed recombinant, autoreactive, natural human IgM antibodies directed against oligodendrocytes or neurons with therapeutic potential for central nervous system repair. They conclude that animal studies demonstrate that certain monoclonal NAbs are beneficial as therapeutic agents for neurologic diseases.