

## **DEVELOPMENTAL MALFORMATIONS**

### **FOCAL CORTICAL DYSPLASIA TYPE IIB AND HUMAN PAPILLOMAVIRUS**

Researchers at Temple University School of Medicine, Philadelphia, PA tested the hypothesis that human papillomavirus type 16 oncoprotein E6 (HPV16 E6) is present in human focal cortical dysplasia type IIB (FCDIIB) specimens. HPV was assayed by immunohistochemistry in FCDIIB specimens (n=50) and control brain specimens (n=36). HPV DNA was assayed by PCR and in situ hybridization. HPV16 E6 protein was expressed in all FCDIIB specimens in balloon cells (BC), but not in regions without BCs or control tissue including normal brain and cortical tubers. Transfection of E6 into fetal mouse brains caused a focal cortical malformation in association with enhanced mTORC1 signaling. (Chen J, Tsai V, Parker WE, et al. Detection of human papillomavirus in human focal cortical dysplasia type IIB. **Ann Neurol** 2012 Dec;72(6):881-92). (Response: Dr Crino. E-mail: [peter.crino@temple.edu](mailto:peter.crino@temple.edu)).

COMMENT. HPV16 E6 expression during fetal brain development is a novel etiology for FCDIIB, but the mechanism and relation of the HPV16 to the cause of epilepsy associated with focal cortical dysplasia is unexplained.

### **TORC1 ACTIVATION AND INFLAMMATION IN FETAL TSC LESIONS**

A current neuropathological publication from the University of Amsterdam; University of Calgary, Canada; and other centers reports that abnormal cells scattered through the cortex and white matter of fetal brain lesions in tuberous sclerosis complex (TSC) show activation of TORC1, similar to that observed in FCD/HPV. This finding supports the concept of increased TORC1 activity during embryonic brain development as a precursor and precipitant of brain malformations in tuberous sclerosis complex. (Prabowo AS, Anink JJ, Lammens M, et al. **Brain Pathology** 2013 Jan;23(1):45-59). This study also provides evidence for the immunogenicity of giant cells and the prenatal activation of inflammatory pathways in developing TSC brain lesions, a probable explanation for the epileptogenicity of TSC lesions and focal cortical dysplasias.

### **ICTAL LATERALIZING SIGN IN REFRACTORY EPILEPSY**

Researchers in Cuba and Columbia studied the frequency of ictal dorsiflexion of the great toe and its lateralizing value for the epileptogenic focus in seizures of patients consecutively evaluated at two tertiary centers for epilepsy surgery. Ictal dorsiflexion of the great toe occurred in 15 (9.1%) of 165 patients and in 25 (9.2%) of 272 seizures. The seizure localized to the temporal lobe in 22 (88%) of 25 seizures, > 50% associated with hippocampal sclerosis. Ictal toe dorsiflexion was contralateral to the epileptogenic zone in 72% of the patients with refractory partial epilepsy. (Machado RA, Mila RA, Astencio AG, Santos AS. Lateralizing value of ictal dorsiflexion of the great toe in refractory partial epilepsy. **Epilepsy Behav** 2013 Feb 7;27(1):102-106). (Response: Dr Machado. E-mail: [renemachado@infomed.sld.cu](mailto:renemachado@infomed.sld.cu)).