

vomiting as a form of epilepsy in children. Pediatrics June 1955;15:705-714). In reviewing my paper, I find that 39% of the patients had a family history of migraine and while phenytoin was effective in prevention of cyclic vomiting, suppositories of ergotamine tartrate with caffeine helped in their alleviation. In this group of patients seen at an epilepsy center, the diagnosis of ictus emeticus was firm in 21%, and suggestive in the remainder. The nondominant temporal lobe is involved in the epileptic discharge in some reports of ictus emeticus. I concede that migraine is a possible alternative explanation for some of the cases and others I have encountered more recently are entirely idiopathic. This sometimes most distressing and protracted cyclic vomiting requires further study, both neurological and metabolic. (See Progress in Pediatric Neurology III, (PPN III) 1997;pp51-54, for further articles on ictus emeticus and autonomic epilepsy).

STRESS FACTORS IN MIGRAINE AND OTHER HEADACHES

Factors associated with migraine and nonmigrainous headache in a group of 3580 children aged 8 - 9 years were evaluated by mail questionnaire at the Turku University, Finland. Migraine was diagnosed in 95 (2.7%) and nonmigrainous headache in 977 (27%). Children with migraine at 8 - 9 years had headaches by 5 years of age in 34%. Reports of bullying, stress at school, and poor peer relationships occurred more frequently in children with migraine and other headaches than in a group of controls without headache. Stress in school was strongest among girls with migraine, despite the absence of learning difficulties. Boys with migraine were particularly plagued by poor peer relationships. (Metsahonkala L, Sillanpaa M, Tuominen J. Social environment and headache in 8- to 9-year-old children: A follow-up study. Headache March 1998;38:222-228). (Respond: Dr Liisa Metsahonkala, Department of Child Neurology, Turku University Hospital, Kiinamylynkatu 4-8, 20520 Turku, Finland).

COMMENT. Bullying, stress, and problems in relating to other children at school are associated with migraine and nonmigrainous headaches in children. Girls are particularly affected by stress at school whereas boys have more trouble with peer relationships. In this study, parents of children with migraine had a lower level of education than parents of children without migraine. Psychosocial intervention and relaxation/biofeedback training are important in treatment. Biofeedback treatment of migraine is reviewed in PPN III, 1997;p191-194.

DEVELOPMENTAL MALFORMATIONS

NEURONAL METABOLISM IN CORTICAL MALFORMATIONS

Proton magnetic resonance spectroscopic imaging was used to study 23 patients (mean age 28 years (range, 9 to 47)) with cortical developmental malformations and refractory epilepsy examined at the Montreal Neurological Institute, Canada. Lesions included cortical dysplasia (5), heterotopia (12), polymicrogyria (4), and tuberous sclerosis (2). Most focal cortical dysplasias and one half the heterotopias had N-acetylaspartate/creatine (NAA/Cr) signal intensities more than 2 SD below the normal means. The maximal NAA/Cr decrease indicating metabolic dysfunction was localized in the MRI identified malformation and spread to surrounding normal appearing tissue. (Li LM, Cendes F, Bastos AC et al. Neuronal metabolic dysfunction in patients with cortical developmental malformations. A proton magnetic resonance spectroscopic imaging study. Neurology March 1998;50:755-759). (Reprints: Dr D L Arnold, Montreal Neurological Hospital, 3801 University Street, Montreal, Quebec, Canada H3A 2B4).

COMMENT. Proton MR spectroscopic imaging (MRSI) will detect neuronal metabolic dysfunction in areas of focal cortical dysplasia defined by MRI and may also demonstrate involvement of surrounding tissue. Different types of cortical developmental malformation, resulting from insults at various stages of cell differentiation and migration, show different degrees of metabolic dysfunction. Imaging techniques that define the structure and metabolism (PET, MRSI) or function (fMRI, EEG) of cortical lesions are important in future investigation of epileptic foci and in studies of the neuroanatomical basis of learning disabilities (See PPN III, 1997;pp 212, 269-276).

Role of transcription factors in the development of the cerebral cortex is reviewed from the Child Study Center, Yale University School of Medicine, New Haven, CT (Leckman JF, Lombroso PJ. J Am Acad Child Adolesc Psychiatry April 1998;37:451-452). Regulatory proteins that recognize and bind with DNA stretches within a promoter region are called transcription factors. These factors are themselves regulated by neurotransmitter signals, initiating the transcription of specific target genes. Mutations within these regulatory proteins can affect a number of organ systems, leading to multiple developmental abnormalities.

MRI ANALYSIS OF NEUROFIBROMATOSIS TYPE 1

Serial MRI scans of 30 patients (mean age, 12 years) with neurofibromatosis Type 1 (NF-1) showed the evolution of high-signal brain lesions in a prospective study at the University of Connecticut Health Center, Farmington, and Children's Medical Center, Hartford, CT. At initial examination, 19 patients had brain lesions identified by MRI, located in the hemispheres in 19, the brainstem in 10, and cerebellum in 10. Over a mean follow-up interval of 2 to 3 years, a decrease in total number and size of lesions in the hemispheres and cerebellum was noted, whereas brainstem lesions increased in number and size. Mass effect was associated with lesions in the brainstem, thalamus and cerebellar peduncles. Surgery or radiotherapy was required for mass lesions in 3 patients. (DiMario FJ Jr, Ramsby G. Magnetic resonance imaging lesion analysis in neurofibromatosis type 1. Arch Neurol April 1998;55:500-505). (Respond: Francis J DiMario Jr, MD, Department of Pediatrics, Division of Neurology, Connecticut Children's Medical Center, 282 Washington St, Hartford, CT 06106).

COMMENT. High-signal MRI lesions in NF-1 evolve over time. They either increase or decrease in size or number, dependent on the location. Brainstem lesions are likely to increase whereas hemisphere and cerebellar lesions may regress. Correlations between T2-weighted hyperintensities (UBOs) and lower IQs in children with NF-1 have been reported by Denckla MB and others. (See PPN III, 1997;pp 291-294).

ATTENTION DEFICIT AND LEARNING DISORDERS

LONG-TERM OUTCOME OF ADHD

The adult outcome of hyperactive boys with attention deficit hyperactivity disorder was evaluated by prospective follow-up and direct psychiatric interviews of 85 probands and 73 comparison subjects at the Child and Adolescent Behavior Center, Long Island Jewish Medical Center, New Hyde Park, NY. The patients had been referred at an average age of 7 years, and they were interviewed at a mean age of 24 years. ADHD had resolved, occurring in only 4% of probands and none of