Nerv & Ment Dis Proc 1954;33:325-345). Lennox not only found evidence for an "inherited epileptic predisposition" but he also demonstrated a "pattern-specific" genetic tendency, stronger in twins with generalized seizures (grand mal) than with partial seizures (psychomotor). "Grand mal appeared concordantly in 82% of monozygotic and in 15% of dizygotic twins." "Concordance of psychomotor attacks was 38% in monozygotic pairs and 5% in the dizygotic." In petit mal seizures, concordance was 75% among MZ twins and absent in DZ twins. Lennox also reported the concordance of 3 per sec spike-and-wave EEG dysrythmia in 16 of 19 MZ twin pairs and none of 14 DZ twin pairs.

Epilepsy phenotypes and genotypes of Angelman syndrome were compared in 20 patients at the University of California, Los Angeles, School of Medicine (Minassian BA, DeLorey TM, Olsen RW et al. Angelman syndrome: Correlations between epilepsy phenotypes and genotypes. Ann Neurol April 1998;43:485-493). Patients were selected on clinical cytogenetic and molecular diagnosis of AS and all had characteristic EEGs with bifrontal and diffuse 1-3 Hz slow waves or slow and sharp waves. Maternally inherited chromosome 15q11-13 deletions were associated with severe intractable epilepsy, whereas UBE3A gene mutations and uniparental disomy occurred with mild epilepsy.

MIGRAINE AND RELATED DISORDERS

PRECIPITANTS OF CYCLIC VOMITING

The precipitants and etiological factors in 32 patients aged 2 - 22 years (mean, 12 years) with cyclic vomiting syndrome (CVS) compared to 64 controls were evaluated by parental questionnaire at the Princess Margaret Hospital for Children, Perth, Australia. The most prevalent precipitants were stress (47%), infections (44%), and foods (28%). Accompanying features included headache (59%) and behavioral withdrawal (59%), lethargy (56%) and crying (34%). Migraine occurred more frequently in association with CVS than in controls (38% cf 9%). Other medical problems found more frequently in the CVS group were forceps delivery, developmental delay, coordination difficulties, and gastro-esophageal reflux. Antiemetic medications utilized in 28 were useful in only 7 (28%). Antihistamines, antimigraine drugs and anticonvulsants had been prescribed in too few patients to permit evaluation. CVS was considered a migraine variant. (Withers GD, Silburn SR, Forbes DA. Precipitants and aetiology of cyclic vomiting syndrome. Acta Paediatr March 1998;87:272-277). (Respond: Dr D Forbes, Department of Paediatrics, University of Western Australia, Princess Margaret Hospital for Children, GPO Box D184, Perth, WA 6001, Australia).

COMMENT. Migraine is one of the many proposed theories in etiology of cyclic vomiting. In this Australian series, migraine was diagnosed using parental questionnaires in 38% compared to 9% of controls. Recurrent abdominal pain, a common presenting symptom among children with migraine occurred in only 21%, a frequency not significantly different from the 16% in controls. Epilepsy was reported in only one patient, but the incidence of accompanying behavioral symptoms during attacks was remarkably high. Electroencephalograms might have uncovered cases of partial complex temporal lobe involvement and ictus emeticus.

In a report of 33 children with cyclic vomiting from the Children's Medical Center, Boston, 7 (21%) had a history of complex partial or generalized epilepsy, and 25 (76%) had epileptiform EEGs, some temporal in localization, compatible with a diagnosis of epilepsy (Millichap JG, Lombroso CT, Lennox WG. Cyclic

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, Kiinamyllynkatu 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).