

those born prematurely. The prenatal injuries in both premature and term infants were characterized by cerebral white matter necrosis and gliosis without hemorrhage. Hydramnios was the only maternal condition that predicted prenatal damage. Apgar scores were low, seizures were rare, and acute intracranial hemorrhage occurred equally often in infants with and without prenatal injury. The causes of death were primarily cardiorespiratory. The findings support growing evidence for the prenatal onset of brain injury in many infants who survive and later develop cerebral palsy. (Ellis WG et al. Neuropathological documentation of prenatal brain damage. AJDC Aug 1988;142:858-866).

COMMENT. Cordocentesis has been employed to detect prenatal hypoxia (see Ped Neur Briefs, June 1987;1:1) but the test is attended by technical risks and cannot be used routinely. As the authors comment, neonatal care will increase survival for prenatally damaged infants and the incidence of cerebral palsy may rise unless fetal/maternal abnormalities in late gestation are identified and corrected. There is need for a non-invasive and repetitive test for prenatal diagnosis of fetal hypoxia.

#### PAROXYSMAL DISORDERS

##### TREATMENT OF STATUS EPILEPTICUS

Very-high-dose phenobarbital was used for refractory status epilepticus in 50 children treated in the Neurology Division, Children's Hospital, University of Southern California School of Medicine, Los Angeles, CA. Intravenous boluses of 5-20 mg/kg, in increments of 10 mg/kg at 30-60 min intervals, produced a linear increase in drug level of 9.7 mcg/ml over a 24- to 48-hour time span. All patients were intubated prior to treatment. Side-effects, principally depression of respiratory drive and cardiac suppression with hypotension, were influenced more by the severity of the underlying disease and the seizures than by the use of the drug. Phenobarbital controlled seizures in all cases where limits were not imposed on the maximum dose by uncontrollable hypotension. Seven patients died, none during a period of rising drug level. Maximum serum levels ranged from 70-344 mcg/ml. (Crawford TO et al. Very-high-dose phenobarbital for refractory status epilepticus in children. Neurology July 1988;38:1035-1040).

COMMENT. Phenobarbital in adequate amounts given intravenously is a relatively safe and effective treatment for status epilepticus, but in those cases not responding to initial doses of 10-20 mg/kg, further amounts should be used only after the patient has been intubated. Pressor agents may be required to treat hypotension and assisted ventilation for respiratory depression. When the intravenous administration of drugs is not possible or practical, rectal therapy with paraldehyde, diazepam, or valproic acid has been recommended (see Ped Neur Briefs, Jan 1988;2:7) for termination of prolonged or serial seizures. The treatment of status epilepticus in children with rectal sodium valproate was reported from the Children's

Hospital, Birmingham, Alabama (Snead OC, Miles MV. J Pediatr 1985;106:323). A loading dose of 20 mg/kg was effective but a marked rise in serum glutamic oxaloacetic transaminase activity occurred in 3 of 7 patients treated, requiring cessation of valproate therapy.

#### ICTAL VOMITING

Paroxysmal vomiting in 9 patients, 3 children (7, 8, and 11 years of age) and 6 young adults, is reported from the Section of Epilepsy and Clinical Neurophysiology, Cleveland Clinic, Cleveland, OH. Amnesia for the episodes occurred in 8 of the 9 patients. Other ictal phenomena prior to the vomiting included staring, automatisms, eye-blinking, grimacing, eye-rolling, chewing, and swallowing. After vomiting, only one patient regained normal alertness immediately. Four patients had temporal lobectomy, the pathology specimens showing mild inflammatory changes, gliosis, and neuronal heterotopia. (Kramer RE et al. Ictus emeticus: an electroclinical analysis. Neurology, July 1988;38:1048-1052).

**COMMENT.** The authors note that reports of ictal vomiting recorded electrographically are scarce and that 13 of 14 cases published have an onset or lateralization of EEG findings to the right hemisphere. In one case the vomiting was induced by photic stimulation. Another case may be added to this list from the French literature (Giroud M et al. Un symptome critique epileptique rare: le vomissement. Arch Fr Pediatr 1987;44:231-4). In this 9 year old boy, the paroxysmal episode of vomiting was synchronized with an epileptiform discharge in the left fronto-temporal area on the EEG. That cyclic vomiting may represent a form of epilepsy in children was proposed in a report of 33 patients, 7 (21%) having a history of grand mal or complex partial seizures in addition, and 25 (76%) with seizure discharges in the EEG, some focal and predominantly in the temporal lobe. (Millichap JG, Lombroso CT, Lennox WG. Pediatrics 1955;15:705). The EEG was not recorded at the time of the vomiting and, in retrospect, some of our cases may have been more correctly classified as migraine.

#### SEIZURE RECURRENCE AFTER MEDICATION WITHDRAWAL

The relapse rate after withdrawal of antiepileptic medication was investigated in 146 children with epilepsy seen at the Dept of Child Neurology, University Hospital, Rotterdam, and Research Unit for Clinical Neurophysiology, Westeinde Hospital, The Hague, The Netherlands. The cumulative probability of remaining seizure-free after a 2 year period of control and normalization of the EEG was 75%. Three-quarters of relapses occurred during the withdrawal period and in the following 2 years. A significantly higher relapse rate was present in girls and with seizures of known etiology. In patients with partial epilepsy, recurrence may be predicted by the presence of focal neurological signs and/or mental retardation, female sex, a positive family history for epilepsy, and polytherapy. In those with primary generalized epilepsy, no predictive factor was uncovered. The recurrence rate did not change between groups of children who were treated for 2, 3, 4, or 5 years before withdrawal was attempted and EEG epileptiform abnormalities had disappeared.