were born prematurely. MRI was normal in 2, showed hypoplasia of the corpus callosum in 1, and a flattened sella turcica in 1. The EEG was normal, except for EMG contamination during attacks in 2. The EMG records had the same frequency as essential tremor. One had a positive family history of epilepsy. (Kanazawa O. Shuddering attacks-report of four children. Pediatr Neurol Nov 2000;23:421-424). (Respond: Dr Osamu Kanazawa MD PhD, Department of Pediatrics, Epilepsy Center, Nishi-Niigata Central National Hospital, I-14-I Masago, Niigata 950-2085, Japan).

COMMENT. Shuddering attacks (SA) are an uncommon benign disorder of infants and young children, with movements resembling shivering and straining, without impaired consciousness or epileptiform EEG, and showing resolution or improvement by 2 or 3 years of age. One previous report considered SAs an early manifestation of essential tremor (Vanasse M et al. Neurology 1976;26:1027-30). They may be misdiagnosed as epilepsy.

Infantile tremor syndrome due to magnesium nutritional deficiency (Meningoencephalitic syndrome) should also be considered in differential diagnosis. This syndrome occurs in Indian infants between ages 6 months and 2 and 1/2 years and is associated with severe malnutrition. The tremor is rapid and disappears in sleep. Serum, CSF, and urine magnesium levels are decreased. Tremors respond to magnesium, but a complicating delay in psychomotor development is not corrected. (Chaparwal BC et al. Dev Med Child Neurol 1980;22:252; Menkes JH, 1980).

PURPLE GLOVE SYNDROME WITH ORAL PHENYTOIN OVERDOSE

The occurrence of purple glove syndrome following the inadvertent oral administration of 1000 mg phenytoin/day is reported in a 10-year-old 18 kg handicapped boy who was admitted in coma to the Niigata City General Hospital, Japan. Within a few hours of the initial overdose, the boy was drowsy and he had nystagmus and vomiting. Several hours later, he developed dark purple discoloration and marked swelling of his hands and feet. After 4 days of the continued treatment, the boy became comatose, and his mother discontinued the drug. On admission, and 2 days after discontinuing treatment, the blood phenytoin level was 78 mcg/ml. The discoloration and swelling of the extremities gradually subsided and resolved completely after 11 days, without sequelae. (Yoshikawa H. Purple glove syndrome caused by oral administration of phenytoin. J Child Neurol Nov 2000;15:762). (Respond: Dr Hideto Yoshikawa, Department of Pediatrics, Niigata City General Hospital, 2-6-1 Shichikuyama, Niigata 950-8739, Japan).

COMMENT. Purple glove syndrome is a rare complication of intravenous administration of phenytoin. This appears to be the first report of the syndrome associated with oral phenytoin, administered in an overdose (55 mg/kg/d). Both hands and feet were affected in a glove and sock distribution. Recovery was complete without sequelae.

FAILED SURGERY FOR EPILEPSY

Persistent or recurrent seizures occurring at least monthly are reported in 51 (18%) of a series of 282 consecutive temporal resections for medically intractable epilepsy performed at Kings College Hospital, London, UK. Mean age at original surgery was 26 years (range 4 to 59 years), and the mean follow-up interval to reassessment was 6 years (range 3-17 yrs). Detailed assessment of postoperative seizures showed that of 20 with mesial temporal sclerosis (MTS), 14 (70%) had seizures arising in the hemisphere of the resection, and 35% from the contralateral hemisphere. Of 10 patients with dysembryoplastic neuroepithelial

tumor (DNT), 70% had postoperative partial seizures arising in the ipsilateral hemisphere, but 60% had additional generalized seizures, cognitive, and behavioral disturbance, with multifocal and generalized EEG abnormalities. Nine (20%) patients had immediate seizure-free periods of at least 1 year, and 7 of these had MTS. On relapse of the 7, 4 had ipsilateral and 3 had contralateral temporal seizures. After postoperative MRI, only one missed structural lesion was uncovered, and reoperations were possible in a minority of cases. The majority of seizures with MTS were extrahippocampal. In the majority of surgical failures, the epileptogenic lesion was either extrahippocampal or extratemporal. Acoustic auras and EEG evidence of neocortical seizure origin in some might have indicated a preoperative poor outcome. Emerging improved MRI may demonstrate subtle cortical abnormalities responsible for operative failures. Patients should be counselled concerning the unpredictable nature of postoperative relapse. (Hennessy MJ, Elwes RDC, Binnie CD, Polkey CE. Failed surgery for epilepsy. A study of persistence and recurrence of seizures following temporal resection. Brain December 2000;123:2445-2466). (Respond: Robert DC Elwes, Department of Clinical Neurophysiology, Kings College Hospital, Mapother House, de Crespigny Park, London SE5 9RS, UK).

COMMENT. Despite extensive electroclinical and neuroimaging evaluation of temporal lobe epilepsy, approximately 20% relapse with persistent and recurrent seizures postoperatively, either immediately or after a 12 month seizure-free interval. Until more sophisticated MRI techniques are developed, patients should be aware of the unpredictable outcome.

DEVELOPMENTAL DISORDERS

PET STUDIES OF LISSENCEPHALY

The functional activity of lissencephalic cortex was studied using FD Glucose positron emission tomography in 8 patients, mean age 7.5 years, at Children's Hospital of Michigan, Detroit, MI. Two layers of cerebral cortex were differentiated by metabolic activity: an inner layer with 8 to 63% higher glucose utilization rate than the outer layer. Patients with a higher metabolic ratio between the inner/outer layers had greater delays in communication (p=.007) and socialization (p=.03). No difference was found with respect to motor skills. PET studies should provide a more complete analysis of gyral anomalies and clinical outcome in lissencephaly compared to neuroimaging alone. (Pfund Z, Chugani HT, Juhasz C et al. Lissencephaly. Fetal pattern of glucose metabolism on positron emission tomography. Neurology December (1 of 2) 2000;55:1683-1688). (Reprints: Dr Harry T Chugani, Division of Pediatric Neurology/PET Center, Children's Hospital of Michigan, 3901 Beaubien Blvd, Detroit, MI 48201).

COMMENT. PET studies in lissencephaly show that larger metabolic differences between inner and outer cortical layers are associated with greater delays in communicative skills and socialization. The degree of gyral anomaly in lissencephaly is directly correlated with the degree of developmental delay. The majority of patients with type 1 lissencephaly develop epilepsy before age 6 months, and one-third have infantile spasms.

SURGICAL MANAGEMENT OF CHIARI TYPE 1 ANOMALIES

A minimally invasive, posterior fossa bony decompression in the management of symptomatic Chiari type 1 anomalies in children was evaluated at