

SURGERY FOR INTRACTABLE EPILEPSY

The outcome and implications of early surgery for epilepsy are reviewed from the literature by the Comprehensive Epilepsy Center, Miami Children's Hospital, Miami, FA. Focal resection, corpus callostomy, and hemispherectomy are the three major neurosurgical procedures for epilepsy. In 40 children less than 15 years of age treated by removal of the anterior temporal lobe 23 were completely free of seizures postoperatively, eight almost seizure free and five improved significantly. (Davidson, Falconer. *Lancet* 1975; 1:1260). Subsequent studies have confirmed these early results and freedom or near freedom from seizures is usually achieved in 50-90% of selected cases. The indications for focal resection are 1) intractable partial seizures, 2) localized structural lesion, 3) behavioral and academic deterioration, and 4) localized seizure focus. The contraindications are 1) medication noncompliance, 2) neurodegenerative disorder, and 3) multifocal seizure origin. Complication risks include quadrantanopic visual field deficit, transient dysphasia, third nerve palsy, cerebrovascular accident, and infection. Corpus callostomy is indicated for primary generalized seizures - atonic, tonic, clonic; partial seizures with secondary generalization; Lennox Gastaut syndrome; bilateral synchronous seizure discharges; multifocal seizure foci. Atonic seizures are particularly benefitted by corpus callostomy with 80% relief or reduction; tonic, clonic and partial seizures are improved in only 25-75% of cases. Hemispherectomy is indicated for partial seizures with hemiparesis, hemianopic visual field deficit, behavioral and cognitive disorder, and lateralized electroencephalographic focus. The lateralized (partial) seizures may be reduced by 80-90% and behavioral and cognitive status improved. The risks of hemispherectomy include hemosiderosis, hydrocephalus, and greater cognitive deficit. (Duchowny MS. Surgery for intractable epilepsy: Issues and outcome. *Pediatrics* November 1989; 84:886-894).

COMMENT. The author comments that the psychosocial benefits constitute the most important argument in favor of early surgical intervention for intractable epilepsy in children. Relatively little is known about neural reorganization after early focal resection of hemispheric disconnection. The benefits of hemispherectomy for childhood epilepsy were described in a 36 year study (Lindsay J et al. See *Ped Neur Briefs* 1987; 1:24 and 45). It has been used successfully in some children with intractable neonatal onset seizures with hemispherectomy performed as early as 1½ to five years of age. (See *Ped Neur Briefs* 1988; 2:62).

RELAPSE AFTER ANTI-EPILEPTIC DRUG WITHDRAWAL

The recurrence risks and predictive factors of relapse after anti-epileptic drug (AED) discontinuation in a prospective analysis of 425 children with epilepsy are reported from the Istituto di Neuropsichiatria Infantile, Università La Sapienza, Via dei Sabelli, Rome, Italy. AEDs were discontinued in children who had not had seizures for at least two years and the follow-up after withdrawal was 1.6 to 12 years, mean 8 years. The relapse rate after drug withdrawal was 12% and

the risk was greatest in the first year. Factors related by multivariate analysis to relapse were neurologic abnormalities and organic etiology, mental retardation, seizure type (infantile spasms, absence seizures), and appearance or persistence of EEG abnormalities during the course of the illness and before discontinuation of the drugs. (Matricardi M et al. Outcome after discontinuation of antiepileptic drug therapy in children with epilepsy. Epilepsia October 1989; 30:582-589).

COMMENT. The authors believe that drug withdrawal can be attempted in patients with well controlled idiopathic epilepsy, without signs of brain damage and without persistent EEG abnormalities. They stress that predictive factors must be considered to individualize the risk of relapse for each patient.

METHYSERGIDE AND INFANTILE SPASMS

A trial of antiadrenergic and antiserotonergic drugs in the treatment of 24 newly diagnosed and previously untreated infantile spasm patients is reported from the Epilepsy Research Center, Section of Neurophysiology, Department of Neurology, Baylor College of Medicine; the Methodist Hospital; and Texas Children's Hospital; Houston, TX. Response to therapy was determined with 24 hour polygraphic/video monitoring techniques and was defined as complete control of spasms and disappearance of the hypsarrhythmic EEG pattern. Two of 12 patients treated with alpha-methylparatyrase and one of 12 treated with methysergide showed a response. (Hrachovy RA et al. Treatment of infantile spasms with methysergide and alpha-methylparatyrase. Epilepsia October 1989; 30:607-610).

COMMENT. The hypothesis that infantile spasms may result from a dysfunction of monoaminergic neurotransmitter systems is not exactly confirmed by the results of this study. However, the authors were impressed that the patients responding to treatment were not in spontaneous remission. Methysergide cannot displace ACTH as the treatment of choice in infantile spasms.

NUTRITIONAL DEFICIENCIES AND SEIZURES

BIOTIN RESPONSIVE ENCEPHALOPATHY

A case of biotin responsive infantile encephalopathy is reported from the Department of Pediatrics and Child Neuropsychiatry, University of Verona, Italy; and Hcpital des Enfants Malades, Paris, France. At one month of age the infant developed dermatitis of the ears. At two months she began to have tonic clonic seizures occurring several times a day and refractory to treatment with carbamazepine, phenobarbital, phenytoin, clonazepam, nitrazepam, ACTH, and hydrocortisone. Seizure frequency increased up to ten per day. At three months, she became hypotonic and a CT scan showed enlargement of cortical sulci and lateral ventricles. At four months she was very lethargic and floppy, reflexes were hyperactive, and plantar responses were extensor. Her behavior was autistic-like and her scalp hair was sparse. The urine examination