MIGRAINE-RELATED STROKE

The diagnosis of migraine-related stroke is reviewed and case histories provided from the Center for Stroke Research, Department of Neurology, Henry Ford Hospital, Detroit, MI. The collaborative group for the study of stroke in young women defined the relative risk for thrombotic stroke as two-fold for women with migraine when compared with a neighbor but not with a hospital control. In 448 total stroke cases 4% were attributed to migraine. The classification of migraine-related stroke is in three categories: 1) Coexisting stroke and migraine, 2) stroke with clinical features of migraine, and 3) migraine-induced stroke. Several arteriovenous malformations frequently masquerade as migraine with aura, oral contraceptives increase stroke risk and may cause coexisting stroke and migraine and ergot therapy for migraine is sometimes complicated by stroke. The pathogenesis of migraine-induced stroke includes coagulation, hemodynamic and neuronal factors. The initiation of a migraine attack is a primary neuronal phenomenon with metabolic and cerebral hemodynamic consequences. A low cerebral blood flow combined with factors which predispose to coagulopathy may lead rarely to intravascular thrombosis and migraine-induced cerebral infarction. (Welch KMA, Levine SR. Migraine-related stroke in the context of the international headache society classification of head pain. Arch Neurol April 1990, 47:458-462).

> COMMENT. Stroke associated with migraine in children is rare and is an indication for exclusion of an underlying structural cerebral lesion, e.g. arteriovenous malformation, congenital cerebral arterial occlusion, and encephalomalacia. Classical migraine associated with intractable epilepsy and multiple strokes has been described with mitochondrial encephalopathies. (Dvorkin GS, Andermann F et al, 1987).

VISUAL EVOKED RESPONSES IN MIGRAINE

The visual evoked responses (VERs) to flash and pattern stimulation were examined in 44 children with migraine and 8 with periodic syndrome at the Birmingham and Midland Eye Hospital, Birmingham, England. Patients younger than 13 years had higher fast wave amplitude and lower fast wave frequency than controls in the same age groups. In older children the fast wave amplitude was higher in those with migraine than in controls but fast wave frequencies were not different. Children with periodic syndrome had similar fast wave amplitudes to the younger children with migraine. The high fast wave frequency with superimposed intermittent high amplitude sharp waves after flash stimulation seen in patients with periodic syndrome are similar to those seen in acephalgic migraine in adults. The finding of similar VERs in migraine and periodic syndrome supports the inclusion of periodic syndrome in the international classification of migraine. (Mortimer MJ et al. Visual evoked responses in children with migraine: a diagnostic test. Lancet January 13, 1990; 335:75-77).

COMMENT. The VER is proposed as a useful test in the diagnosis of migraine in children. The test may be especially valuable in the differentiation and diagnosis of cases of periodic or cyclical vomiting when a migrainous etiology is unclear. (Millichap JG. Arch Fr Pediatr 1987; 44:231; Pediatrics 1955; 15:705).

SEIZURE DISORDERS

CORTICAL DYSGENESIS AND INFANTILE SPASMS: PET STUDIES

The identification of focal cortical dysgenesis by positron emission tomography (PET) in 5 of 13 children with cryptogenic infantile spasms is reported from the Departments of Neurology and Pediatrics and Division of Neurosurgery, UCLA School of Medicine, Los Angeles, CA. There was unilateral hypometabolism of cerebral glucose involving the parieto-occipito-temporal region. Neuropathological examination of resected tissue in four infants showed microscopic cortical dysplasia. The CT was normal in all infants and the MRI showed a subtle abnormality only in one. The EEG showed hypsarrhythmia and at times, a localized abnormality corresponding to areas of PET hypometabolism. PET may identify unsuspected focal cortical dysplasia in infants with cryptogenic spasms and resective surgery offers improved prognosis. (Chugani HT, Shields WD et al. Infantile spasms: I. PET identifies focal cortical dysgenesis in cryptogenic cases for surgical treatment. Ann Neurol April 1990; 27:406-413).

COMMENT. Early studies showed that infantile spasms were cryptogenic in about 40% of patients (Millichap et al. Epilepsia 1962; 3:188) whereas more recent studies have demonstrated that this figure has diminished to 9-14%. The PET studies have uncovered further symptomatic cases previously not identified by CT and MRI. The same authors report lenticular nuclei hypermetabolism in 12 of 25 infants with spasms of cryptogenic or symptomatic types. They suggest that the lenticular nuclei may contribute to the pathogenesis of infantile spasms. (Chugani HT et al. Neurology April 1990; 40:suppl 1:407).

TUBEROUS SCLEROSIS AND INFANTILE SPASMS

The short- and long-term outcome of 24 children with infantile spasms and tuberous sclerosis was studied at the Department of Pediatrics, University of Turku, Finland and at the Children's Hospital, University of Helsinki. They comprised 10% of all cases of infantile spasms treated in the two hospitals between 1964 and 1985. CT showed brain calcifications in 20 patients examined at an early age. Three of 14 patients tested by renal ultrasound had large polycystic kidneys and severe arterial hypertension. Early diagnosis and the avoidance of ACTH therapy could have prevented hypertensive crises secondary to ACTH injections. One child developed severe myocardial hypertrophy during ACTH therapy and two had rhabdomyomas demonstrated by cardiac ultrasound and angiography at age one week. Short-term