MULTIFOCAL INDEPENDENT SPIKE SYNDROME

The relationship of the syndrome of multifocal independent spikes (MIS) to hypsarrhythmia and the slow spike-wave (Lennox-Gastaut) syndrome was studied in 64 children with MIS examined during a 3-year period at the Cleveland Clinic, Ohio. Fifteen additional patients had hypsarrhythmia, 17 had generalized slow spike-wave complexes (SSWC), and 22 had MIS and SSWC in the same recording. Transitions occurred from one pattern to another in 25/40 patients with 2 or more serial EEGs at least 5 months apart. All 25 patients showed the following transition sequence: Hypsarrhythmia ---> MIS -- > MIS and generalized spikes -- > SSWC. None of 8 patients with SSWC showed transitions, showing that SSWC is a stable pattern.

In another group of 20 patients with MIS, hypsarrhythmia, and SSWC examined prospectively over a 6 month period, sleep activated additional spike foci, increased the frequency of generalized spike discharges, and produced synchronization of bitemporal and bifrontal spike-wave discharges at 1.5-2.5 Hz, the same as SSWC. The MIS pattern lies between hypsarrhythmia and SSWC ontogenetically; it is unstable and evolves to other EEG patterns. It should be regarded as a distinct syndrome, not as a variant of the Lennox-Gastaut syndrome. (Kotagal P. Multifocal independent spike syndrome: Relationship to hypsarrhythmia and the slow spike-wave (Lennox-Gastaut) syndrome. Clin Electroencephalogr January 1995;26:23-29). (Reprints: Prakash Kotagal MD, Section of Pediatric Epilepsy, Desk S-51, Cleveland Clinic Foundation, 9500 Euclid Avenue, Cleveland, OH 44195).

COMMENT. The multifocal independent spikes EEG record is defined as three or more independent foci of spikes or sharp waves occurring in multiple locations in both hemispheres. The voltage of the background activity does not show the high voltage of hypsarrhythmia (ie. it is less than 200 mcV). Well developed slow spike-wave complexes are absent, but occasional generalized spike discharges occur. The author believes that children with MIS syndrome and those with Lennox-Gastaut should not be lumped together. In the slow spike-wave syndrome (Lennox-Gastaut), generalized slow spike and slow-wave complexes at 1.5-2.5 Hz occur in a burst of three or more spike-waves in a row. The SSWC are the dominant discharges, but multifocal spikes may be seen in the same record. The Cleveland Clinic finds the MIS syndrome to be 3-4 times as common as the Lennox Gastaut syndrome and a distinct type of symptomatic generalized epilepsy in childhood.

ASYMMETRIC HYPsARRHYTHMIA

The clinical, EEG, and radiological findings in 6 patients with the asymmetric variant of hypsarrhythmia among 26 children with infantile spasms are reported from the University of Michigan EEG Laboratory, Ann Arbor, MI. The spasms were symptomatic of cerebral dysplasia in 4, porencephaly in 1, and hypoxic-ischemic encephalopathy in 1. Focal abnormalities on neurologic exam or imaging study were found in 5 children. The abnormal EEG activity was ipsilateral to the lesion in 4 and contralateral in 1. Of hypsarrhythmia EEGs seen in this lab, 23% were asymmetric. The EEG may show focal abnormalities that are not detected by clinical exam or imaging study. (Drury I, Beydoun A, Garofalo EA, Henry TR. Asymmetric hypsarrhythmia: Clinical electroencephalographic and radiological findings. Epilepsia Jan 1995;36:41-47). (Reprints: Dr I Drury, EEG Laboratory, University