SEIZURE DISORDERS

SIGNIFICANCE OF EYE OPENING OR CLOSURE IN NEONATAL SEIZURE DIAGNOSIS

All archived neonatal seizures in the video database, at University Children's Hospital, Zurich, Switzerland, were reviewed and classified according to eyes open or closed during the event. Electroclinical seizures only were assessed, and electrographic seizures and clinical seizures without ictal EEG change were excluded. A total of 131 electroclinical seizures in 46 neonates were examined. Seizures were clonic, focal and generalized tonic, tonic-clonic, generalized myoclonic, subtle and spasms. Eyes were open during 115 (88%) seizures in 40 neonates. The causes of the seizures were hypoxic-ischemic-encephalopathy (HIE) in 11, cerebral infarction in 5, developmental defects in 4, intracranial infection (3), intracranial hemorrhage (3), metabolic disorder (5), and unknown in 9. Eyes were closed in 6 newborns, persistently in 3, during 10 seizures, all clonic and caused by HIE or cerebral infarction. Seizures were treated with phenobarbital in 50% of those with eyes open and in all 6 with eyes closed. Other facial ictal signs present in 58% of seizures included oral-buccal-lingual movements such as yawning, chewing, and swallowing. Additional ocular signs including eyelid myoclonus, blinking, and staring occurred in 46% of seizures. Persistent eye closure during a neonatal seizure is unusual and makes a diagnosis of electroclinical seizure unlikely. (Bauder F, Wohlrab G, Schmitt B. Neonatal seizures: Eyes open or closed? **Epilepsia** February 2007;48:394-396). (Reprints: Dr B Schmitt, University Children's Hospital, Steinwiesstrasse 75, CH-8032, Zurich, Switzerland).

COMMENT. In a paper titled "Paroxysmal events in infants: persistent eye closure makes seizures unlikely, " Korff CM and Nordli DR Jr, at Children's Memorial Hospital, Chicago, reported (**Pediatrics** 2005;116:e485-e486) eyes were open sometime during a seizure in 93% of 91 seizures in 69 infants, examined by video EEG. Those with persistent eye closure had severe encephalopathy, CNS infection, or West syndrome. The findings in the present study are similar. When no simultaneous video EEG is available, persistent eye closure may be used to help distinguish nonepileptic from epileptic paroxysmal events in neonates with seizures, except in infants with HIE and those treated with phenobarbital.

SLEEP SPINDLE ABNORMALITIES WITH GENERALIZED SPIKE-WAVE DISCHARGES

Sleep and sleep spindle parameters were examined in 15 children with primary generalized spike-and-wave discharges at University Hospitals, Leuven, Belgium. Nine were untreated and 6 were treated. Compared to a nonepileptic control group, untreated epileptic patients had a significantly shorter stage 2 onset and less sleep spindles in stage 2. Less fast frequency spindles were observed in the last stage 2 period of the night. In the treated group of patients, sleep patterns were comparable to controls. Sleep architecture dysfunctions, common in generalized epilepsy, may be predicted by the sleep spindle abnormalities observed in the EEG. (Myatchin I, Lagae L. Sleep spindle abnormalities in children with generalized spike-wave discharges. **Pediatr Neurol** Feb 2007;36:106-111).