

rated as severe in the majority, and the mean duration of an attack was 17 min. Cranial autonomic features, at least one required by IHS classification, involved lacrimation in 87%, conjunctival injection in 68%, rhinorrhea in 58%, and ptosis in 54%. Agitation or restlessness occurred in 80%. All patients responded to indomethacin, a *sine qua non* for paroxysmal hemicrania. MRI or CT scan obtained in 25 (80%) patients was normal in 16 (64%) and showed abnormalities in 9 (36%). Abnormal scans included vascular loop compressing the trigeminal nerve, ophthalmic A-V malformation, sphenoid wing meningioma, and ischemic lesions in basal ganglia and pons. The authors suggest that the IHS revise the diagnostic criteria for paroxysmal hemicrania to include a wider location for pain, and a more inclusive range of autonomic features. An indomethacin test should be given to any patient with lateralized discrete attacks of head pain with associated cranial autonomic symptoms. **Brain** April 2008;131:1142-1155). (Respond: Professor Peter J Goadsby, Headache Group, Department of Neurology, University of California, San Francisco, Box 0114, 505 Parnassus Avenue, San Francisco, CA 94143-0114, USA).

**COMMENT.** Paroxysmal hemicrania is classified as a trigeminal autonomic cephalgia and is defined by the IHS (2004) as a severe unilateral orbital, supraorbital or temporal pain, lasting 2-30 min, accompanied by ptosis, eyelid edema, conjunctival injection, lacrimation, nasal blockage or rhinorrhea. Attacks usually occur >5 times a day and respond to indomethacin. Both chronic and episodic variants are described. The disorder is rare, with estimated prevalence of 1 in 50,000. In one third of cases, a cranial structural cause may be defined, some responding to surgery. The cohort reported above comprised 4% of trigeminal autonomic cephalgia cases seen in the same time period. The female preponderance usually reported was not seen in this series. In differential diagnosis, cluster headache differs from PH in affecting 3 males to 1 female, attacks last longer (30-180 min), and no response to indomethacin. PH is reported in association with migraine, cluster headache, trigeminal neuralgia and cough headaches. The authors link pathogenesis to posterior hypothalamic activation, similar to cluster headache. A correct diagnosis of PH and its differentiation from other autonomic cephalgias are important because of the dramatic and rewarding response of PH to indomethacin.

## SEIZURE DISORDERS

### **EFFECT OF SEIZURE CLUSTERING ON EPILEPSY OUTCOME**

A prospective, long-term population-based study was performed to determine whether seizure clustering (3 or more afebrile seizures during a 24 hour period) is associated with drug resistance and increased mortality in childhood-onset epilepsy, in a study at University of Turku, Finland, and the Epilepsy Research Group, Berlin, Germany. At an average 37 years follow-up, 26 (22%) of 120 childhood-onset epilepsy patients had recorded clusters of seizures. Patients with clusters had at least one seizure per week at the initial stage in 63% vs 32% of those without clusters ( $P=0.0178$ ) and during follow-up. During drug therapy, patients with clusters were (1) more likely to have drug resistant epilepsy compared to those without (42% vs 13%,  $P=0.01$ ); (2) less likely to enter 5-year remission ( $P=0.0230$ ); and (3) had a higher risk of death (42% vs 14%,  $P=0.0299$ ). In contrast, patients with seizure clustering before but not during treatment showed no difference in seizure outcome or

mortality risk. The causes of death included dissection of the aorta and pneumonia (non-epilepsy related), and accidental drowning, and SUDEP. Five of the patients with clusters during treatment died, whereas none with pre-treatment clusters died. (Sillanpaa M, Schmidt D. Seizure clustering during drug treatment affects seizure outcome and mortality of childhood-onset epilepsy. **Brain** April 2008;131:938-944). (Respond: Prof Dr Dieter Schmidt, Epilepsy Research Group, Goethestr 5, D-14163 Berlin, Germany, E-mail: [dbschmidt@t-online.de](mailto:dbschmidt@t-online.de)).

COMMENT. Clustering of seizures during treatment is associated with a less favorable long-term outcome compared to clustering prior to treatment. Patients with seizure clustering during treatment compared to those without are four times more likely to have drug resistant epilepsy and an increased risk of mortality. Patients with clustering before beginning treatment is not associated with a poor prognosis. Clustering was not associated with status epilepticus in this study. The authors favor trials of aggressive treatment of seizure clustering.

## SCREENING TEST FOR DRAVET SYNDROME BEFORE ONE YEAR

Risk factors for Dravet syndrome were determined in 96 children who experienced febrile seizures before age one year, in a retrospective study at Okayama University and other centers in Japan. Clinical characteristics were compared in 46 patients who had developed Dravet syndrome and 50 without the syndrome. Significant risk factors included an age of onset of febrile seizure <7 months, a total of >5 seizures, and prolonged seizures >10 min. Other highly predictive factors were hemiconvulsions, partial seizures, myoclonic seizures, and hot water-induced seizures. A total clinical score of 6 or above was the cut-off value for a high risk of Dravet syndrome. (Each risk factor was assigned a score of 0-3, based on the p-value; >5 seizures [3], hemiconvulsion [3], prolonged seizure [3], onset <7 mos [2], hot water-induced seizure [2], focal or myoclonic seizure [1]). SCN1A mutations were detected significantly more often in the Dravet group (41-43%) than in the non-Dravet syndrome group (0-12%) of patients. (Hattori J, Ouchida M, Ono J et al. A screening test for the prediction of Dravet syndrome before one year of age. **Epilepsia** 2008;49(4):626-633). (Respond: Dr Iori Ohmori, Department of Cellular Physiology, Graduate School of Medicine, Okayama University, 5-1 Shikata-cho, 2-chome, Okayama 700-8558, Japan. E-mail: [iori@md.okayama-u.ac.jp](mailto:iori@md.okayama-u.ac.jp)).

COMMENT. In this practical screening test for the differentiation of Dravet syndrome from febrile seizures, if the patient has a clinical risk score of 6 or more, there is a high risk of Dravet syndrome. SCN1A mutation analysis is recommended if available in infants with a risk score of  $\geq 6$ . Dravet syndrome or SMEI (severe myoclonic epilepsy of infancy), an intractable form of epilepsy, is difficult to differentiate from a febrile seizure disorder before the first birthday. Seizures are febrile hemiconic or generalized tonic-clonic, frequently recurrent and prolonged, and are complicated by status epilepticus during infancy. Myoclonic, focal, absence and atonic seizures evolve between 1 and 4 years, and are accompanied by slow development and regression. Neurologic abnormalities include spasticity, ataxia and cognitive impairment. SMEI is one of a spectrum of infantile epileptic encephalopathies with SCN1A mutations. (see **Ped Neur Briefs** April 2007;21:25-26). Early