

# **PEDIATRIC NEUROLOGY BRIEFS**

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### **TRAUMATIC DISORDERS**

#### **HEAD INJURY IN VERY YOUNG CHILDREN**

A prospective study of 100 children aged 24 months or younger who were admitted with a diagnosis of head injury is reported from the Children's Hospital of Philadelphia and Rhode Island Hospital, Providence. Falls accounted for the majority of injuries (73) and motor vehicle accidents occurred in 9, the child being unrestrained in 6. Thirty-two children had a soft tissue injury and/or concussion only. Twenty-seven had a linear skull fracture with or without loss of consciousness. There were 8 depressed fractures, 3 children had epidural hematomas and 22 had intradural hemorrhages. Twenty-four children had inflicted injuries and an additional 32 had child maltreatment consults because of social problems and suspicion of neglect. Most household falls were neurologically benign. Intradural hemorrhage was more likely to occur from motor vehicle accidents and inflicted injury. Retinal hemorrhages found in 10 patients were related to inflicted injuries in 9 and all had subdural hemorrhage, the majority complicated by seizures. Of 4 deaths in the series, 1 was accidental and 3 were inflicted; all had subdural hemorrhage. These more serious injuries were related to rotational rather than translational forces. (Duhaime, AC et al. Head injury in very young children: mechanisms, injury types, and ophthalmologic findings in 100 hospitalized patients younger than 2 years of age. *Pediatrics* Aug 1992; 90:179-185.) (Reprints: A.C. Duhaime, M.D., Department of Neurosurgery, Children's Hospital, 34th and Civic Center Blvd., Philadelphia, PA 19104.)

**COMMENT.** Accidental head injuries in very young children are common and inflicted injury accounts for nearly 1/4 of admissions. The occurrence of retinal hemorrhages and more severe brain damage should arouse suspicion of an inflicted injury. Social or family problems are a major risk factor for the occurrence of severe head injuries in the very young.

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Serial head circumference determinations may help in the diagnosis of subdural hemorrhage following head injury in young children. A study which limits the value of the head circumference test is reported from the Bnai Zion Medical Center, Haifa, Israel (Jaffe M et al. Variability in head circumference growth rate during the first 2 years of life. Pediatrics Aug 1992; 90:190-192). Of 415 healthy children studied, 51% demonstrated variable HC tracking of which 19% showed acceleration in head growth. This so-called "physiological variability" in HC can involve more than 2 centile lines and the fluctuations stabilized usually by the age of 13 months. The authors suggest a period of clinical observation rather than imaging procedures in a baby whose HC crosses centile curves but whose general health, psychomotor development and neurological status are all within normal limits.

## **VASCULAR DISORDERS**

### **MOYAMOYA DISEASE: RESULTS OF SURGERY**

An angiographic study of the effects of encephalo-duro-arterio-synangiosis (EDAS) in 27 children with moyamoya disease is reported from the Departments of Radiology and Neurosurgery, Tokyo Medical and Dental University, Tokyo, Japan. Comparing pre- and post-operative angiograms, the development of collaterals from the external carotid arterial system into the middle cerebral artery territory was excellent in 16 of 54 cerebral hemispheres after EDAS, good in 25 and poor in 13. The development of collateral vessels from the ECA to the MCA territory increased with the severity of the stenosis of the ICA on preoperative angiograms, but in most advanced stages the development of collateral supply was less marked. The development of collateral vessels was associated with a decrease of abnormal net-like vessels. Stenosis in the ICA had progressed on 12 of the 54 cerebral hemispheres as compared with preoperative angiograms. (Yamada I, Matsushima Y, Suzuki S. Childhood moyamoya disease before and after encephalo-duro-arterio-synangiosis: an angiographic study. Neuroradiology Aug 1992; 34:318-322.) (Correspondence: Dr. Yamada or Dr. Matsushima, Departments of Radiology and Neurosurgery, School of Medicine, Tokyo Medical and Dental University, Tokyo, Japan.)

**COMMENT.** This study suggests that EDAS for childhood moyamoya disease should be performed as early as possible so that the development of irreversible ischaemia and permanent neurological defects may possibly be prevented.

Cerebral blood flow reactivity to hyperventilation in children with moyamoya disease was studied at the Department of Neurosurgery, Hokkaido University School of Medicine, Sapporo, Japan (Isobe M et al. Neurol Surg April 1992; 20:407). CBF was measured by single photon emission CT (SPECT) in 11 children divided into bypass and non-bypass groups. There was some hemodynamic insufficiency in the