PEDIATRIC NEUROLOGY BRIEFS
A MONTHLY JOURNAL REVIEW

J. GORDON MILLICHAP, M.D., F.R.C.P., EDITOR

Vol. 14, No. 6 June 2000

VASCULAR DISORDERS

PROGNOSIS OF ISCHEMIC STROKE

Physical sequelae, cognitive functioning, and quality of life in 37 children with a history of ischemic stroke were examined in a follow-up study at the University Medical Center, Utrecht, The Netherlands. The mean age at the time of stroke was 4.6 years (range, 3 months to 14 years), and the age at the time of follow-up was 11.6 years (range, 3 to 25 years). Clinical manifestations at onset of stroke were hemiparesis in 32 patients, of whom 4 had a seizure. The cause was unknown in 20, it was associated with trauma in 5, Moyamoya syndrome was present in 7, and cerebral vasculitis was a factor in 3. At follow-up, 4 had died, 2 had suffered a second cerebral infarct, 8 had transient ischemic attacks, and 9 suffered from seizures. None had cardiac complications. Of 27 patients examined, 11 had no functional impairment, and 15 had a hemiparesis. Cognitive functioning on a Progressive Matrices test showed a slight but significant impairment, especially in children with epilepsy. Remedial education was required in 17, 12 repeated a class, and 9 were in special education. Social behavior was changed in 18, but 21 of 28 considered themselves as healthy as other children, and the majority were happy. (De Schryver ELLM, Kappelle LJ, Jennekens-Schinkel A, Peters ACB. Prognosis of ischemic stroke in childhood: a long-term follow-up study. Dev Med Child Neurol May 2000;42:313-318). (Respond: Els LLM De Schryver MD, Department of Child Neurology, University Medical Centre, H.02.128 Heidelberglaan 100, 3584 CX Utrecht, The Netherlands).

COMMENT. The physical outcome of childhood ischemic stroke is good, especially in patients with no known cause and no seizures. The mortality is 11%, and 25% of patients may develop epilepsy. Transient ischemic attacks in 20% are a risk factor, particularly in patients with radiographic evidence of Moyamoya. Cognitive functioning is frequently but mildly impaired, and remedial education may be required in more than two thirds.

Heat shock protein 70 and cerebral ischemic infarcts. HSP70 can protect the brain against ischemic damage, according to a study in mice that

PEDIATRIC NEUROLOGY BRIEFS (ISSN 1043-3155) © 2000 covers selected articles from the world literature and is published monthly. Send subscription requests ($63 US; $65 Canada; $73 airmail outside N America) to **Pediatric Neurology Briefs - J. Gordon Millichap, M.D., F.R.C.P.-Editor,** P.O. Box 11391, Chicago, Illinois, 60611, USA.
The editor is Pediatric Neurologist at Children's Memorial Hospital and Northwestern University Medical School, Chicago, Illinois. PNB is a continuing education service designed to expedite and facilitate review of current scientific information for physicians and other health professionals. Fax: 312-943-0123. Visit our web site: www.pnbpublishers.com

overexpress the heat shock protein. Approaches aimed at inducing HSP70 may lead to new therapeutic interventions in stroke. (Rajdev S et al. Ann Neurol June 2000;47:782-791).

HEMORRHAGES WITH VEIN OF GALEN MALFORMATIONS

Spontaneous intracranial hemorrhages associated with vein of Galen aneurysmal malformations (VGAMs) are reported in 3 children treated at the University of California at San Francisco, CA. Of 34 patients followed with VGAM, 8 (24%) had the mural-type of malformation, and 26 (76%) the choroidal type. Hemorrhages occurred in 2 (25%) of mural lesions and 1 (4%) of the choroidal malformations. Ages were 1 day, 4 weeks, and 5 months at the time of acute hemorrhage and referral for treatment. Endovascular surgery resulted in complete occlusion of the malformation and a satisfactory outcome. Post-surgical follow-up is recommended to identify patients who may develop intracranial venous hypertension. (Meyers PM, Halbach VV, Phatouros CP et al. Hemorrhagic complications in vein of Galen malformations. Ann Neurol June 2000;47:748-755). (Respond: Philip M Meyers MD, Neurovascular Medical Group, UCSF Medical Center, 505 Parnassus Ave, Room L352, San Francisco, CA 94123).

COMMENT. Vein of Galen aneurysmal malformation presents at birth or in infancy with congestive heart failure, seizures, macrocephaly, and developmental delay. Spontaneous intracranial hemorrhage may occur as an acute complication and should be treated by endovascular surgery and occlusion of the arterio-venous shunt.

CONGENITAL RECURRENT ARTERY OF HEUBNER INFARCTION

A newborn infant with congenital left upper-extremity athetosis, referred to the Montreal Children's Hospital, was diagnosed with infarction in the territory of the contralateral recurrent artery of Heubner. Cranial CT scan and MRI demonstrated involvement of the right caudate and lentiform (globus pallidus and putamen) nuclei. EEG showed a nonspecific dysrhythmia over the right hemisphere. Hematological studies were normal. Follow-up at 13 months showed athetosis of the left hand, minimal facial weakness, and a right hand preference. (Miller SP, O'Gorman AM, Shevell MI. Recurrent artery of Heubner infarction in infancy. Dev Med Child Neurol May 2000;42:344-346). (Respond: Michael I Shevell MD, Montreal Children's Hospital, Room A514, 2300 Tupper Street, Montreal, Quebec, H3H 1P3, Canada).

COMMENT. As originally described by Critchley M (1930) in adults, occlusion of the recurrent artery of Heubner (RAH) results in hemiparesis with faciobrachial predominance. In infants, athetotic monoplegia and minimal facial involvement may represent a specific stroke syndrome related to congenital infarction in the territory of the RAH. The prognosis of basal ganglia infarctions in childhood is generally favorable, except for the risk of persisting contralateral athetosis or dystonia. The RAH arises from the anterior cerebral artery, at the level of the anterior communicating artery. It supplies the head of the caudate, the anterior limb of the internal capsule, the anterior thalamus, the olfactory region, and hypothalamus.