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

frontal lobes of the non-bypass group who underwent procedures such as EDAS. The reduction of CBF was less after hyperventilation, especially in the frontal lobes of the bypass group in which a much better collateral blood flow occurs.

POST-HAEMORRHAGIC HYDROCEPHALUS: OUTCOME OF SHUNTING

The neuromotor outcome of 33 survivors of grade 3 or 4 neonatal post-haemorrhagic hydrocephalus assessed at a mean age of 4.7 years is reported from the Department of Paediatric Neurology, The Royal Hospital for Sick Children, Edinburgh and the Western General Hospital, Edinburgh. Two-thirds of the children were moderately or severely impaired. Raised intracranial pressure was not significantly different between outcome groups. Of 27 shunted, those with 5 or more operations (10 children) had abnormal neurological outcomes. The rise in morbidity after the 4th shunt was associated with ventriculitis. Outcome was unrelated to the grade of intraventricular hemorrhage or parenchymal changes on ultrasound or CT scanning and was independent of antenatal and perinatal factors. (Lin JP et al. Neurological outcome following neonatal post-haemorrhagic hydrocephalus: the effects of maximum raised intracranial pressure and ventriculo-peritoneal shunting. Child's Nerv Syst June 1992; 8:190-197.) (Correspondence: J.P. Lin, M.D., Department of Paediatric Neurology, The Royal Hospital for Sick Children, Sciennes Road, Edinburgh, EH9 2EP, UK.)

COMMENT. This study shows that a rise in intracranial pressure in the acute stage of hydrocephalus does not carry a significant risk of further handicap or visual impairment. An adverse outcome was statistically related to more than 4 shunt procedures and ventriculitis. The authors' criteria for VP shunting were: 1) increasing ventriculomegaly, 2) raised ICP on monitoring, including during sleep, and 3) abnormal cerebral perfusion as shown by repeated Doppler ultrasonography studies of cerebral blood flow velocity.

The surgical management of post-haemorrhagic hydrocephalus is reported in 22 low birth weight infants from the Department of Neurosurgery, Eastern Virginia Medical School, Norfolk, VA (Gurtner P et al. Child's Nerv Syst June 1992; 8:198-202). The use of subcutaneous ventricular reservoirs and a low pressure neonatal shunt was associated with a significant reduction in the morbidity and mortality compared to the use of external ventricular drainage devices.

The use of SPECT for the measurement of cerebral blood flow changes in 4 children with hydrocephalus is reported from the Departments of Neurosurgery and Radiology, Tokai University School of Medicine, Bohsei-dai, Isehara, Kanagawa, Japan (Shinoda M et al. Child's Nerv Syst June 1992; 8:219-221). A positive reabsorption ratio of radioactivity counted in early and delayed images was correlated with a favorable outcome in 3 patients.