weeks, those requiring tube feeding for more than 14 days being handicapped at follow up.

SURGERY FOR NEONATAL-ONSET SEIZURES

Four children with intractable neonatal-onset seizures treated successfully by hemispherectomy at 1 1/2-5 years of age are reported from UCLA School of Medicine, Los Angeles, California. Positron emission tomography (PET) with fluoro-D-glucose provided accurate localization of seizure foci whereas CT and MRI were either normal or showed mild generalized cerebral atrophy. The report illustrates the important role of PET in the evaluation of children with intractable epilepsy of neonatal onset. (Chugani HT et al. Surgical treatment of intractable neonatal-onset seizures: The role of positron emission tomography Neurology August 1988;38:1178-88).

COMMENT. The criteria for hemispherectomy were as follows: 1. Intractable unilateral seizures with diffuse epileptic activity in the affected hemisphere. 2. Persistent neurologic deficit on the contralateral side. 3. Malfunction of the affected hemisphere and intact function of the opposite hemisphere as tested by interictal EEGs, evoked potentials, thiopental test, and PET. At UCLA the results of surgery are impressive: the patients were seizure-free for periods up to 1 1/2 years and 3 patients were off all anticonvulsants. The surgical approach to treatment of refractory seizures appears superior to the conservative method with potentially toxic anticonvulsant drugs. The authors are to be complemented for their aggressive approach and search for alternate forms of early treatment.

NEONATAL CEREBRAL HEMORRHAGE AND ISCHEMIC LESIONS

SHUNTS FOR POST-HEMORRHAGIC HYDROCEPHALUS

The outcome of 19 infants who underwent cerebrospinal shunting for post-hemorrhagic ventricular dilatation is reported from the Department of Pediatrics and Neonatal Medicine, Hammersmith Hospital, London W12. Periventricular hemorrhages were diagnosed by ultrasound scanning, and surgery was considered necessary if the hydrocephalus could not be controlled by intermittent lumbar or ventricular tapping and the CSF pressure was above 6mmHg. Complications of ventriculo-peritoneal shunts included seizures at the time of the surgery in 8 infants, postoperative infection in 12 of 58 (20%) procedures and blockage of 29 shunts. Shunt infection with Staphylococcal epidermidis occurred in almost half the patients in spite of prophylactic antibiotics. Shunt blockage occurring in 70% of infants was less frequent in those over 2.5kg and with CSF protein below 1g/l. Long-term outcome was poor: 3 died, 4 were quadriplegic and mentally retarded, and only 4 (20%) were developmentally normal. Outcome was correlated with pre-operative parenchymal brain lesions diagnosed by ultrasound scans. (Hislop JE et al. Outcome of infants

shunted for post-haemorrhagic ventricular dilation. Dev Med Child Neurol August 1988;30:451-456).

COMMENT. Assessment and therapeutic management of neonatal posthemorrhagic hydrocephalus is also reported from the Universitats-Kinderklinik Mannheim (Arnold D et al. Klin Padiatr July-August 1988;200:299-306). In this series, 40 of 135 neonates with intraventricular hemorrhage developed hydrocephalus. Treatment was by serial lumbar puncture in 70% and only 40% required a shunt. Acetazolamide and furosemide were used in 10%. At follow up in 25 children, 40% were normal or had mild developmental delay, and 60% were seriously handicapped. As in the study from Hammersmith, poor outcome was related to severe hemorrhage and pre-operative brain damage. Cerebral damage may occur without an increase in intracranial pressure, and normal fontanelle and head circumference do not rule out the development of hydrocephalus.

PERIVENTRICULAR LEUKOMALACIA AND BILIRUBIN TOXICITY

The role of bilirubin toxicity and other factors in the etiology of extensive periventricular leukomalacia of 5 preterm infants was investigated in the Department of Paediatrics, Tampere University Central Hospital, Tampere, Finland. Diagnosis was made by routine ultrasound screening, and the perinatal courses and later development of affected infants was compared with 12 normal controls. Infants with leukomalacia were delivered more often by the vaginal route, their mean highest serum total bilirubin and blood pH were significantly higher than the controls. The authors speculate that bilirubin toxicity may play an important role in addition to ischemia in the severe cases of periventricular leukomalacia. (Ikonen RS et al. Possible etiological factors in extensive periventricular leukomalacia of preterm infants. Acta Paediatr Scand July 1988;77:489-495).

COMMENT. The periventricular white matter in preterm infants is susceptible to ischemia and factors leading to hypotension can cause leukomalacia. Vaginal delivery and compression of the head of the preterm infant caused by uterine contractions during labor may lead to cerebral ischemia, but other causes include birth asphyxia, hypoxia, and hypocarbia. Although the basic cause of periventricular leukomalacia is ischemia, bilirubin toxicity may occur when the blood brain barrier is damaged by anoxia, permitting bilirubin to enter the brain even when bound to albumin.

NEONATAL STROKE

The prevalence of left middle cerebral artery involvement in 15 patients with neonatal stroke has been investigated at the Department of Neurology and Pediatrics, Strich School of Medicine, Loyola University of Chicago, Maywood, Illinois. Of 15 patients reviewed retrospectively, 12 had left middle cerebral artery infarction, and this preponderance was the same as that observed in 36 previously