

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