

Mosaic rarefaction of the parietal and occipital bones, a characteristic finding in OI in infancy, may persist throughout childhood, and these strips and linear streaks of diminished density of the calvarium must be distinguished from multiple skull fractures, a common complication of OI. (Caffey J. Pediatric X-Ray Diagnosis, Chicago, Year Book Publ, 1956).

INTELLIGENCE OUTCOME IN SHUNTED HYDROCEPHALUS

The intelligence outcome of 44 children, tested between 2 and 17 years, and having a shunted hydrocephalus without tumor and with normal ventricular size, was evaluated at the Departments of Child Neurology and Neurosurgery, Istituto Nazionale Neurologico, Milan, Italy. IQ scores ranged from normal to highly defective. Verbal IQs were always higher than performance IQs. Variables without effect on IQ were: 1) site of obstruction; 2) number of shunt revisions; and 3) history of seizures. Verbal IQ was influenced negatively by antiepileptic therapy and motor deficits, and positively by an older age at time of shunting. Non-verbal, performance IQ was lower in patients with cerebral hemisphere malformations, those with more than one shunt, pre- and perinatal problems, and antiepileptic therapy. The side of shunt placement was significantly correlated with non-verbal IQ, insertion on the right ensuring a better outcome. Posterior fossa malformations were not correlated with IQ (Riva D et al. Intelligence outcome in children with shunted hydrocephalus of different etiology. Child's Nerv Syst Jan 1994;10:70-73). (Respond: Dr Daria Riva, Dept of Child Neurology, Istituto Nazionale Neurologico "C Besta", Via Celoria, 11, I-20133 Milan, Italy).

COMMENT. Shunted hydrocephalic children have a preferential loss of non-verbal IQ. Verbal and Performance IQs are influenced by different factors. Verbal IQ is correlated mainly with antiepileptic therapy, while non-verbal IQ was dependent on several surgical and medical variables.

A study of long-term outcome of hydrocephalus at the Service de Neurochirurgie Pédiatrique, Hôpital Necker-Enfants Malades, Paris, France, showed that IQ was related more to etiology than to ventricular dilatation, and to time of treatment. IQs are higher in patients with meningocele than in those with brain parenchymal lesions, toxoplasmosis, hemorrhage, or meningitis. IQs were above 80 in 60% of those shunted before 2 months of age and in only 29% treated after 2 years. (Hirsch J-F. Consensus: long-term outcome in hydrocephalus. Child's Nerv Syst Jan 1994;10:64-69).

A unifying theory for the definition and classification of hydrocephalus is proposed by Raimondi AJ, University of Rome. (Child's Nerv Syst Jan 1994;10:2-12). Hydrocephalus is a pathological increase in intracranial CSF volume, either 1) intraparenchymal (cerebral edema), or 2) extraparenchymal (subarachnoid, cisternal, or intraventricular), and independent of hydrostatic or barometric pressure. Ventricular or subarachnoid dilatation occurs as a result of intermittent increases in extraparenchymal CSF volume. Hydrocephalus may be present in a child who does not yet have dilated ventricles but in whom both CSF volume and pressure are increased. Cerebral edema may cause the same volumetric changes as increases in intraventricular fluid volume, and the term internal hydrocephalus is of little significance.