IRRADIATION & COGNITIVE OUTCOME IN MEDULLOBLASTOMA

The relation between supratentorial irradiation dose and intellectual outcome in 36 children (ages 5 to 15 years) treated for medulloblastoma was evaluated at the Gustave Roussy Institute, Villejuif, France. The standard dose of 35Gy was administered to 13 patients and the dose was reduced to 25Gy for 23 patients. Neuropsychological evaluation performed at a mean of 4.3 years after radiotherapy showed significantly lower scores in children irradiated at the standard dose compared to lower dose. Impaired intellectual functioning involved verbal fluency, word list recall, block design, and fine motor coordination of the dominant hand. (Kieffer-Renaux V, Bulteau C, Grill J, et al. Patterns of neuropsychological deficits in children with medulloblastoma according to craniospatial irradiation doses. <u>Dev Med Child Neurol</u> Nov 2000;42:741-745). (Respond: Dr Virginie Kieffer-Renaux, Departement d'Oncologie Pediatrique, Institute Gustave Roussy, 39 rue Camille Desmoulins, 94805 Villejuif Cedex, France).

COMMENT. The dose of cranial irradiation in the treatment of medulloblastoma is critical in terms of intellectual outcome. Both verbal and non-verbal skills are impaired with larger doses of irradiation, and performance IQ may be more impaired than verbal IQ. These deficits may have a major impact on school performance.

NEUROLOGIC SIGNS

VESTIBULAR TESTING TECHNIQUES

The Therapeutics and Technology Assessment Subcommittee of the American Academy of Neurology has issued a report on the assessment of vestibular testing techniques in adults and children. The evidence is based on a review of published articles obtained through the MEDLINE database. The majority of normal children demonstrate vestibular responses to caloric and rotational stimuli by age 2 months. The absence of a vestibulo-ocular reflex (VOR) by age 10 months is abnormal. Lack of a response to ice water and rotational vestibular responses in a child less than 6 months may be normal. Technical modifications of vestibular tests for children are discussed. Among clinical indications and contraindications, vestibular testing is not recommended in the diagnosis of dyslexia and learning disabilities. Testing is most commonly used in the evaluation of vertigo, imbalance, recurrent unexplained falling, acquired jerk nystagmus, or suspected malformation of the inner ear. Caloric (air or water) ENG and rotational chair testing are established tests. Rotational testing may be more convenient in small children 3 years of age or younger. (Fife TD, Tusa RI, Furman IM et al. Assessment: vestibular testing techniques in adults and children. Report of the Therapeutics and Technology Assessment Subcommittee of the American Academy of Neurology. Neurology Nov(2 of 2)2000;55:1431-1441). (Reprints: Therapeutics and Technology Subcommittee, American Academy of Neurology, 1080 Montreal Ave, St Paul, MN 55116).

COMMENT. Most vestibular tests used in adults can be applied to children. Caloric (ENG) and rotational chair tests are standard. VOR responses in neonates are poor, but normal results can be obtained as early as 2 months and no later than 10 months.