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Cognitive consequences of the treatment of medulloblastoma among children.

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Abstract

Progress in the treatment of medulloblastoma has resulted in increased survival among children. However, effective treatment, especially radiation therapy, produces negative consequences in the cognitive development of children, in terms of decreased intelligence quotients. Determining the factors underlying this decrease may influence the types of rehabilitation needed by children who undergo treatment for medulloblastoma. We review recent research on the impact of some factors that may underlie the cognitive deficits of pediatric and adolescent survivors, i.e., verbal comprehension, perceptual organization, attention, and processing speed. We assess eight pediatric survivors of medulloblastoma treatment with surgery, radiation, and chemotherapy. Children were assessed twice after diagnosis, using the Wechsler Intelligence Scale for Children-Third Edition. A large decrease in cognitive capacity was evident, as measured by intelligence quotients and factor indices. A raw score analysis of 12 subtests was performed, indicating a slower acquisition of functions and knowledge in the domains of verbal comprehension, perceptual organization, social perception, and psychomotor skills. We discuss issues of social reintegration, and propose that the rehabilitation of pediatric patients must include a program for social reinsertion, in addition to psychoeducational support.

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