Time perception in children treated for a cerebellar medulloblastoma.


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Abstract

The aim of the present study was to investigate temporal abilities in children treated by surgery for a malignant tumor in the cerebellum. Children with a diagnosed medulloblastoma and age-paired control children were given a temporal discrimination task (bisection task) and a temporal reproduction task with two duration ranges, one shorter than 1s and the other longer than 4s. The motor and cognitive capacities of these children were also assessed by a battery of age-adapted neuropsychological tests. The results did not show any significant difference in performance between the children with or without cerebellar lesions in the temporal discrimination task. It was only in the temporal reproduction task that the children with cerebellar lesions reproduced longer and more variable durations than the other children, but only for the short stimulus durations (≤1s). In addition, a hierarchical regression analysis revealed that the best predictor of variance in temporal performance was a significantly lower processing speed in children with cerebellar lesions in comparison to their controls. These results indicated that the major cause of deficits in temporal judgments in children with cerebellar lesions was due to their inability to reproduce accurately short temporal intervals in association with low processing speed, rather than to a specific deficit in the perception of time.

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