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Craniopharyngiomas in children: how radical should the surgeon be?

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Abstract

PURPOSE: Two main modes of management of craniopharyngiomas, namely, radical tumor removal and intentional incomplete removal followed by radiotherapy, are used. Recently, a half-way solution was added. Radical removal is reserved only for the tumors not involving hypothalamus. Such tumors, however, are not clearly defined. The goal of the study was to clarify the relationship of craniopharyngiomas with surrounding structures, especially hypothalamus, and to evaluate its clinical significance.

METHODS: Our policy of management of craniopharyngiomas was elaborated on the basis of the results of morphological studies of the topography and their correlation with magnetic resonance imaging (MRI) in 115 adults and children operated on since 1991. Suitability of the policy in children and adolescents was verified by long-term outcome analysis in 41 consecutive patients.

RESULTS: The rate of morbidity and mortality was higher in patients with craniopharyngiomas located inside the third ventricle either partially (intraventricular and extraventricular craniopharyngiomas, IEVCs, 16 patients) or completely (intraventricular, one patient) than in tumors located outside the ventricle (suprasellar extraventricular, SEVCs, five patients; intrasellar and suprasellar, 19 patients). Postsurgical hypothalamic signs and symptoms occurred most often in intraventricular tumors; there were no mental disorders or obesity caused by primary removal of SEVCs including those severely compressing hypothalamus.

CONCLUSIONS: Radical removal of SEVCs is safer than of IEVCs despite an apparent involvement of hypothalamus. In majority of cases, they may be distinguished by indirect MRI signs; in others only according to operation findings; final decision about the optimal extent of tumor removal should be made during surgery.

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