Abstract

Skull Base Approaches in the Pediatric Population

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Object: This study aimed to examine the surgical, oncological and developmental results of infants and children undergoing extirpation of skull base tumors.

Methods: Seventy-seven children aged 0.5-18 years (mean 11 years) who were operated on during a 8-year period comprised the study cohort. Twenty four cases (31%) involved malignant tumors and 53 (69%) involved benign tumors. The most common benign tumors were craniopharyngioma (n=10) and juvenile nasopharyngeal angiofibroma (n=9). The most common malignant tumor was sarcoma (n=14). Forty two tumors (55%) involved the anterior skull base, and the rest involved the lateral (n=28) and posterior (n=7) skull base. Subcranial, transfacial and subfrontal approaches were used for extirpation of anterior skull base tumors. Voluminous or malignant tumors were excised using combined approaches (subcranial-transfacial, subcranial-degloving or pterional-degloving). Twenty-two children underwent adjuvant therapy (chemotherapy, radiation or both). Postoperative follow-up was 3-60 months.

Results: There were no severe postoperative complications (i.e., meningitis, CSF leak, tension pneumocephalus) and no mortality. Four and a half years later, 61 of the children (80%) are alive and well. Seven children, two with optic glioma, two with sarcoma and one each with esthesioneuroblastoma, ependymoma and germinoma, have died of their disease. The subcranial approach had no cosmetic impact on the craniofacial development of the patients.

Conclusion: The extirpation of skull base tumors using conventional surgical techniques is feasible and safe among infants and children. The complication and mortality rates are lower than those in adults. The long term cosmetic effect of the subcranial approach is negligible.

Keys words: Skull Base, Approaches, Children