Tumors in the cerebellopontine angle in children: warning of a high probability of malignancy.

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Abstract
Cerebellopontine angle (CPA) tumors are uncommon in children, and the pathological spectrum is different from that of adults. In this study, we reviewed the pathological diagnosis of pediatric patients with a CPA tumor to determine the pattern in this age group. In a cohort of 267 patients with posterior fossa tumor, tumor locations were determined with preoperative magnetic resonance imaging (MRI). The pathological diagnosis, imaging characteristic, and treatment outcomes of patients with CPA tumors was reviewed and analyzed. Twenty-six patients (9.7%) had a tumor in the CPA. The pathological spectrum was wide, from malignant intrinsic brain tumors to benign extra-axial tumors and sarcomatous lesions. Eighteen patients (69%) had malignant tumors. The pathological nature was strongly linked to patient age. The mean age of malignant tumor group was significantly younger than that of benign tumor group.

MRI findings that favored malignant histology included a plastic feature of the tumor, multiple signal voids, encasement of major arteries, widening of lateral recess, focal cerebellar edema, and hydrocephalus. The presence of seeding in the neuraxis also indicated malignant pathology. Especially, increased density on precontrast computed tomography was a strong predictor of malignant pathology. Malignant CPA tumors showed high surgical morbidity rate and grim long-term prognosis. Patient age and tumor location are the two most important clues for the diagnosis of any brain tumor. Unlike in adult patients, clinicians should expect a high probability of malignant histology for pediatric CPA tumors, especially in infants and young children.

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