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Intracranial ependymomas treated with radiotherapy: long-term results from a single institution.

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Abstract

The purpose of the study is to report long-term outcomes following surgery and radiotherapy for intracranial ependymoma. We retrospectively reviewed the medical records of patients treated with radiotherapy for localized intracranial ependymomas from 1964 to 2006. Patients with subependymomas and ependymoblastomas, and those undergoing re-irradiation, were excluded. Our study population is 44 patients: 37 infratentorial lesions, 7 supratentorial. All patients had postoperative radiotherapy; most received sub-total resection and one-third received gross total resection. Most patients received local radiotherapy alone (median tumor dose 55 Gy); one-quarter received craniospinal irradiation (median dose 35 Gy). The 5- and 10-year local-control rates for all patients were 60 and 46%, respectively; 23% of local recurrences occurred after 5 years. Ninety-five percent of the patients recurred at the primary site; 5% had spinal seeding with no evidence of disease at the primary site. No patient who received craniospinal irradiation recurred in the spine. The 5- and 10-year disease-free survival and overall-survival rates for all patients were 60 and 42% and 57 and 43%, respectively. On multivariate analysis, age ≥ 18 years, gross total resection and infratentorial site were associated with improved local control. No patient with continuous local control had grade 4 or 5 toxicities; 27% of patients had grade 2 or 3 toxicities. One patient developed a radiation-induced meningioma >20 years after radiotherapy. Maximal safe resection followed by adjuvant radiotherapy provided local control in one-half of patients at 10 years. Age, extent of surgery, and location were identified as major independent prognostic factors in patients with intracranial ependymomas.

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