Influence of Radiotherapy Treatment Concept on the Outcome of Patients With Localized Ependymomas

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Purpose

To assess the outcome of 57 patients with localized ependymomas treated with radiotherapy (RT).

Methods and Materials

Fifty-seven patients with localized ependymomas were treated with RT. Histology was myxopapillary ependymoma (n = 4), ependymoma (n = 23), and anaplastic ependymoma (n = 30). In 16 patients, irradiation of the craniospinal axis (CSI) was performed with a median dose of 20 Gy. Forty-one patients were treated with local RT, with a local dose of 45 Gy to the posterior fossa, including a boost to the tumor bed of 9 Gy. In 19 patients, the tumor bed was irradiated with a median dose of 54 Gy.

Results

Overall survival after primary diagnosis was 83% and 71% at 3 and 5 years. Five-year overall survival was 80% in low-grade and 79% in high-grade tumors. Survival from RT was 79% at 3 and 64% at 5 years. We could...
show a significant difference in overall survival between CSI and local RT only. Freedom of local failure was 67% at 5 years in patients treated with CSI and 60% at 5 years after local RT. A rate of 83% for distant failure-free survival could be observed in the CSI group as opposed to 93% in the group receiving local RT only.

**Conclusion**

Local RT in patients with localized tumors is equieffective to CSI. The radiation oncologist must keep in mind that patients with localized ependymomas benefit from local doses ≥45 Gy.

**Author Keywords:** Ependymoma; Radiation therapy; Dose escalation; Toxicity; Outcome

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