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ELSEVIER
FULL-TEXT ARTICLE

Resection followed by stereotactic radiosurgery to resection cavity for intracranial metastases.

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PURPOSE: In patients who undergo resection of central nervous system metastases, whole brain radiotherapy (WBRT) is added to reduce the rates of recurrence and neurologic death. However, the risk of late neurotoxicity has led many patients to decline WBRT. We offered adjuvant stereotactic radiosurgery (SRS) or stereotactic radiotherapy (SRT) as an alternative to select patients with resected brain metastases. **METHODS AND MATERIALS:** We performed a retrospective review of patients who underwent brain metastasis resection followed by SRS/SRT. WBRT was administered only as salvage treatment. Patients had one to four brain metastases. The dose was 15-18 Gy for SRS and 22-27.5 Gy in four to six fractions for SRT. Target margins were typically expanded by 1 mm for rigid immobilization and 3 mm for mask immobilization. SRS/SRT involved the use of linear accelerator radiosurgery using the IMRT 21EX or Helical Tomotherapy unit. **RESULTS:** Between December 1999 and January 2007, 30 patients diagnosed with intracranial metastases were treated with resection followed by SRS or SRT to the resection cavity. Of the 30 patients, 4 (13.3%) developed recurrence in the resection cavity, and 19 (63%) developed recurrences in new intracranial sites. The actuarial 12-month survival rate was 82% for local recurrence-free survival, 31% for freedom from new brain metastases, 67% for neurologic deficit-free survival, and 51% for overall survival. Salvage WBRT was performed in 14 (47%) of the 30 patients. **CONCLUSION:** Our results suggest that for patients with newly diagnosed brain metastases treated with surgical resection, postoperative SRS/SRT to the resection cavity is a feasible option. WBRT can be reserved as salvage treatment with acceptable neurologic deficit-free survival.

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