TUMOR BED RADIOSURGERY AFTER RESECTION OF CEREBRAL METASTASES.

CLINICAL STUDIES


Abstract:
OBJECTIVE: Adjuvant irradiation after resection of brain metastases reduces the risk of local recurrence. Whole-brain radiation therapy can be associated with significant neurotoxicity in long-term survivors of brain metastases. This retrospective study evaluates the role of tumor bed stereotactic radiosurgery as an alternative method of irradiation after initial resection of brain metastases to prevent local recurrence.

METHODS: Forty patients underwent tumor bed radiosurgery after resection of brain metastases at two separate academic medical centers. The median age was 59.5 years. Twenty patients (67.5%) had single metastases. Resection was complete in 80% and partial in 20% of the patients. At the time of radiosurgery, systemic disease was active in 57.5%, inactive in 32.5%, and in remission in 10% of the patients. The median Karnofsky Performance Scale score was 80% (range, 60-100%). Radiosurgery was performed a median of 4 weeks after tumor resection. The median cavity radiosurgery volume was 9.1 ml (range, 0.6-39.9 ml). The median margin and maximum radiation dose were 16 and 32 Gy, respectively.

RESULTS: Local control at the resection site was achieved in 73% of patients at a median follow-up period of 13 months. No variable significantly affected local control. New remote brain metastases occurred in 54% of the patients. Symptomatic radiation effect was seen in 5.4% of the patients. The median survival was 13 months after radiosurgery (range, 2-56 mo).

CONCLUSION: Tumor bed radiosurgery provides effective local control of the tumor after resection in most patients. These preliminary data support radiosurgery after resection rather than traditional radiation therapy.