J Neurosurg. 2010 Jun 4. [Epub ahead of print]

Outcome predictors of Gamma Knife surgery for melanoma brain metastases.

Liew DN, Kano H, Kondziolka D, Mathieu D, Niranjan A, Flickinger JC, Kirkwood JM, Tarhini A, Moschos S, Lunsford LD.

Departments of Neurological Surgery.

Abstract

Object To evaluate the role of stereotactic radiosurgery (SRS) in the management of brain metastases from melanoma, the authors assessed clinical outcomes and prognostic factors for survival and tumor control. Methods The authors reviewed 333 consecutive patients with melanoma who underwent SRS for 1570 brain metastases from cutaneous and mucosal/acral melanoma. The patient population consisted of 109 female and 224 male patients with a median age of 53 years. Two hundred eleven patients (63%) had multiple metastases. One hundred eighteen patients (35%) underwent whole-brain radiation therapy (WBRT). The target volume ranged from 0.1 cm(3) to 37.2 cm(3). The median marginal dose was 18 Gy. Results Actuarial survival rates were 70% at 3 months, 47% at 6 months, 25% at 12 months, and 10% at 24 months after radiosurgery. Factors associated with longer survival included controlled extracranial disease, better Karnofsky Performance Scale score, fewer brain metastases, no prior WBRT, no prior chemotherapy, administration of immunotherapy, and no intratumoral hemorrhage before radiosurgery. The median survival for patients with a solitary brain metastasis, controlled extracranial disease, and administration of immunotherapy after radiosurgery was 22 months. Sustained local tumor control was achieved in 73% of the patients. Sixty-four (25%) of 259 patients who had follow-up imaging after SRS had evidence of delayed intratumoral hemorrhage. Sixteen patients underwent a craniotomy due to intratumoral hemorrhage. Seventeen patients (6%) had asymptomatic and 21 patients (7%) had symptomatic radiation effects. Patients with </= 8 brain metastases, no prior WBRT, and the recursive partitioning analysis Class I had extended survivals (median 54.3 months). Conclusions Stereotactic radiosurgery is an especially valuable option for patients with controlled systemic disease even if they have multiple metastatic brain tumors.

PMID: 20524829 [PubMed - as supplied by publisher]