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Multiple craniotomies in the management of multifocal and multicentric glioblastoma.

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Abstract

Object Multiple craniotomies have been performed for resection of multiple brain metastases in the same surgical session with satisfactory outcomes, but the role of this procedure in the management of multifocal and multicentric glioblastomas is undetermined, although it is not the standard approach at most centers. Methods The authors performed a retrospective analysis of data prospectively collected between 1993 and 2008 in 20 patients with multifocal or multicentric glioblastomas (Group A) who underwent resection of all lesions via multiple craniotomies during a single surgical session. Twenty patients who underwent resection of solitary glioblastoma (Group B) were selected to match Group A with respect to the preoperative Karnofsky Performance Scale (KPS) score, tumor functional grade, extent of resection, age at time of surgery, and year of surgery. Clinical and neurosurgical outcomes were evaluated. Results In Group A, the median age was 52 years (range 32-78 years); 70% of patients were male; the median preoperative KPS score was 80 (range 50-100); and 9 patients had multicentric glioblastomas and 11 had multifocal glioblastomas. Aggressive resection of all lesions in Group A was achieved via multiple craniotomies in the same session, with a median extent of resection of 100%. Groups A and B were comparable with respect to all the matching variables as well as the amount of tumor necrosis, number of cysts, and the use of intraoperative navigation. The overall median survival duration was 9.7 months in Group A and 10.5 months in Group B (p = 0.34). Group A and Group B (single craniotomy) had complication rates of 30% and 35% and 30-day mortality rates of 5% (1 patient) and 0%, respectively. Conclusions Aggressive resection of all lesions in selected patients with multifocal or multicentric glioblastomas resulted in a survival duration comparable with that of patients undergoing surgery for a single lesion, without an associated increase in postoperative morbidity. This finding may indicate that conventional wisdom of a minimal role for surgical treatment in glioblastoma should at least be questioned.

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