A critical evaluation of cystic features in primary glioblastoma as a prognostic factor for survival.

Department of Neurological Surgery, University of California, San Francisco, California.

Abstract
Object The presence of cystic features in glioblastoma (GBM) has been described as a favorable prognostic factor. The aim of this study was to determine the survival outcome in patients undergoing surgery for newly diagnosed primary GBM with a large cystic component as compared with a large cohort of patients with noncystic GBM, while controlling for well-characterized prognostic factors. Methods A retrospective review of 354 consecutive patients treated with resection of primary GBM was performed using medical records and imaging information obtained at the University of California, San Francisco from 2005 to 2009. Within this cohort, 37 patients with large cysts (≥ 50% of tumor) were identified. Clinical presentations and surgical outcomes were statistically compared between the cystic and noncystic patients. Results There were no statistically significant differences in clinical presentation between groups, including differences in age, sex, presenting symptoms, tumor location, or preoperative functional status, with the exception of tumor size, which was marginally larger in the cystic group. Surgical outcomes, including extent of resection and postoperative functional status, were equivalent. The median actuarial survival for the patients with cystic GBM was 17.0 months (95% CI 12.6-21.3 months), and the median survival for patients with noncystic GBM was 15.9 months (95% CI 14.6-17.2 months). There was no significant between-groups difference in survival (p = 0.99, log-rank test). A Cox multivariate regression model was constructed, which identified only age and extent of resection as independent predictors of survival. The presence of a cyst was not a statistically significant prognostic factor. Conclusions This study, comprising the largest series of cases of primary cystic GBM reported in the literature to date, demonstrates that the presence of a large cyst in patients with GBM does not significantly affect overall survival as compared with survival in patients without a cyst. Preoperative discussions with patients with GBM should focus on validated prognostic factors. The presence of cystic features does not confer a survival advantage.

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