To the Editor

Brown and colleagues’ reported the results of a systematic review of the literature aimed in determining whether greater extent of resection (EOR) is associated with improved 1- and 2-year overall survival and 6-month and 1-year progression-free survival in patients affected by glioblastoma multiforme. The analysis revealed 37 studies suitable for inclusion. The authors found that gross total resection (GTR) for glioblastoma multiforme reduces 1- and 2-year mortality, thus supporting GTR over subtotal resection and biopsy.

Although the authors are to be commended for their study, the information provided is not new because the preponderance of evidence accumulated in the past decade has suggested that EOR is a significant predictor of overall and progression-free survival in high-grade glioma. In this regard, the results from a multivariate analysis conducted more than 10 years ago in 416 patients with glioblastoma multiforme have shown that GTR (>98%) is associated with longer survival in patients with glioblastoma multiforme, especially when other predictive variables (ie, age and preoperative Karnofsky performance status) are favorable.2

Brown and colleagues1 correctly state that one of the main limitations of their study is the estimation of the EOR. In the studies included in the analysis reported, EOR was defined almost arbitrarily, with ambiguous or unproven methodolo-
gies. Also, most of the studies considered were carried out without the current technological armamentarium. Nowadays, techniques such as intraoperative brain mapping, functional neuronavigation, intraoperative magnetic resonance imaging, and fluorescence-guided surgery have expanded our ability to remove maximal amounts of tumor while preserving essential functions and giving a more precise knowledge of the volume of the residual tumor.

Additional issues with prognostic relevance are the molecular markers. We do know that the most important prognostic factors affecting outcome and increasing survival in patients with high-grade gliomas are younger age, better performance status, histologic tumor type, and several molecular factors, most of which are still under clinical investigation (MGMT methylation status, 1p19q co-deletion, and mutation of IDH1 or IDH2). Taken collectively, the impact of the extent of resection on survival is likely to be favorable but remains under debate.

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Published Online: September 29, 2016. doi:10.1001/jamaonc.2016.3806

Conflict of Interest Disclosures: None reported.
