Impact of Resecting Radiation Necrosis and Pseudoprogression on Survival of Patients with Glioblastoma.


Abstract

INTRODUCTION: Radiation necrosis (RN) and pseudoprogression are known as postradiation treatment effects and may simulate tumor progression. The disease course of glioblastoma patients who had developed RN and the impact of resecting RN on survival have not been evaluated. This study examines the clinical course of patients considered candidates for repeat surgery for a recurring brain mass proven to be RN and compared these with patients who had true tumor recurrence at surgery.

METHODS: Of 159 patients with glioblastoma who were reoperated on because of a presumed recurrent tumor requiring repeat surgery, 18 had RN as the major component of the resected mass. The characteristics and outcome of these 18 patients were retrospectively analyzed and compared with patients in whom active and bulky tumor was found during surgery.

RESULTS: Radiation necrosis occurred significantly earlier than true tumor recurrence. Patients with RN harbored larger lesions and were significantly more symptomatic before the second surgery. Most patients with RN who underwent GTR of the lesion in the second operation experienced faster resolution of the surrounding edema compared with patients who underwent STR or biopsy only. There was no significant difference in survival between the 2 groups.

CONCLUSIONS: These data provide an opportunity to examine the clinical course of a selected group of patients with histologically verified RN. Although RN is associated with more severe neurologic symptoms that improve after surgery, its occurrence or surgical removal carries no survival advantage compared with patients who undergo a repeat operation for true tumor recurrence.

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KEYWORDS: Craniotomy; Glioma; Outcome; Pseudoprogression; Radiation necrosis

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