The role of radiotherapy following gross-total resection of atypical meningiomas.


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Abstract

Object Atypical (WHO Grade II) meningiomas comprise a heterogeneous group of tumors, with histopathology delineated under the guidance of the WHO and a spectrum of clinical outcomes. The role of postoperative radiotherapy for patients with atypical meningiomas who have undergone gross-total resection (GTR) remains unclear. In this paper, the authors sought to clarify this role by reviewing their experience over the past 2 decades. Methods The authors retrospectively analyzed all patients at their institution who underwent GTR between 1992 and 2011 with a final histology demonstrating atypical meningioma. Information regarding patients, tumor characteristics, and postoperative adjuvant therapy was gleaned from medical records. Time to recurrence and overall survival were analyzed using univariate, multivariate, and Kaplan-Meier survival analyses. Results Forty-five patients who met the inclusion criteria underwent GTR for atypical meningiomas. By a median follow-up of 44.1 months, 22% of atypical meningiomas had recurred. There was no recurrence in 12 (92%) of 13 patients who received postoperative radiotherapy or in 19 (59%) of 32 patients who did not undergo postoperative radiotherapy (p = 0.085), demonstrating a strong trend toward improved local control with postoperative radiotherapy. No other factors were significantly associated with recurrence in univariate or multivariate analyses. Conclusions This retrospective series supports the observation that postoperative radiotherapy likely results in lower recurrence rates of gross totally resected atypical meningiomas. Although a multicenter prospective trial will ultimately be needed to fully define the role of radiotherapy in managing gross totally resected atypical meningiomas, the authors' results contribute to a growing number of series that support routine postoperative radiotherapy as an adjuvant treatment for these lesions.

PMID: 22920955 [PubMed - as supplied by publisher]