Evaluation of Contributive Factors on Recurrence of Intracranial Meningioma

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Abstract

Background: Meningiomas are common benign tumors of the central nervous system. Patients with meningiomas achieve postoperative optimal functional recovery, but there is a probability of tumor recurrence months or years after surgical resection. This study aims to evaluate the prevalence of recurrent meningioma and the correlation between tumor recurrence and certain factors.

Materials and Methods: We performed a retrospective descriptive-analytical study of patients with meningiomas who underwent surgical treatment in hospitals affiliated with Shiraz University of Medical Sciences during a 20-year period (1988 to 2008). Factors including sex, age, bone changes, peritumoral edema, histological subtypes, tumor size, shape, location and resection degree, and recurrence time were evaluated in each patient.

Results: The recurrence rate of intracranial meningioma in a total of 644 patients included in the study was 10%. Statistical analysis of data showed a correlation between edema, bone changes, tumor size and shape, and histological subtypes. No relationship was found between age, sex and tumor location. This study has shown a statistical correlation between radiotherapy and a reduced probability of tumor recurrence or growth after surgical resection.

Conclusion: Although the majority of meningiomas are benign, they can have malignant presentations. Recurrence occurs after a shorter period of time in patients with malignant and atypical meningiomas than in patients with benign meningiomas. Edema, bone changes, large size, special tumor shape and malignant histological subtypes are important prognostic factors that predict the probability of tumor recurrence or growth. Findings show a statistical correlation between the degree of tumor resection and its recurrence. This study recommends a more complete tumor resection along with adjuvant therapy and closer follow-up to decrease the risk of tumor recurrence.