



Stereotactic radiation treatment for recurrent nonbenign meningiomas

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ABSTRACT

The authors analyzed the results of stereotactic radiosurgery (SRS) and stereotactic radiotherapy (SRT) for the treatment of recurrent meningiomas that were described at initial resection as showing aggressive, atypical, or malignant features (nonbenign).

SUMMARY

Twenty-five patients who underwent SRS and/or SRT for nonbenign meningiomas between December 1992 and August 2004 were included. Thirteen of these patients underwent treatment for multiple primary or recurrent lesions. In all, 52 tumors were treated. All histological sections were reviewed and reclassified according to World Health Organization (WHO) 2000 guidelines as benign (Grade I), atypical (Grade II), or anaplastic (Grade III) meningiomas. The median follow-up period was 42 months. Seventeen (68%) of the cases were reclassified as follows: WHO Grade I (five cases), Grade II (11 cases), and Grade III (one case). Malignant progres-

sion occurred in eight cases (32%) during the follow-up period; these cases were considered as a separate group. The 3-year progression-free survival (PFS) rates for the Grades I, II, and III, and malignant progression groups were 100, 83, 0, and 11%, respectively ($p < 0.001$). In the Grade II group, the 3-year PFS rates for patients treated with SRS and SRT were 100 and 33%, respectively ($p = 0.1$). After initial treatment, 22 new tumors required treatment using SRS or SRT; 17 (77%) of them occurred inside the original resection cavity. Symptomatic edema developed in one patient (4%).

CONCLUSION

Stereotactic radiation treatment provided effective local control of "aggressive" Grade I and Grade II meningiomas, whereas Grade III lesions were associated with poor outcome. The outcome of cases in the malignant progression group was intermediate between that of the Grade II and Grade III groups, with the lesions showing a tendency toward malignancy.