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September 2008, 63:3 &gt; PREDICTORS OF PERITUMORAL EDEMA...

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## ARTICLE LINKS:

[Fulltext](#) | [PDF \(295 K\)](#)**PREDICTORS OF PERITUMORAL EDEMA AFTER STEREOTACTIC RADIOSURGERY OF SUPRATENTORIAL MENINGIOMAS.****CLINICAL STUDIES**

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**Abstract:**

**OBJECTIVE:** Anecdotal evidence suggests that radiosurgical ablation of parasagittal meningiomas may be associated with increased risk of subsequent edema. Potential predictors of postradiosurgical peritumoral edema, including parasagittal tumor location, tumor size, and treatment dose, were evaluated.

**METHODS:** We retrospectively reviewed records of 102 patients with 111 supratentorial meningiomas treated with CyberKnife (Accuray, Inc., Sunnyvale, CA) stereotactic radiosurgery (SRS). A median marginal dose of 18.0 Gy (range, 11.3-25.0 Gy) was delivered in 1 to 5 sessions (fractions). Potential predictors of posttreatment symptomatic edema were evaluated using Fisher's exact test.

**RESULTS:** Of the 102 patients followed for a mean of 20.9 months (range, 6-77 mo), 15 (14.7%) developed symptomatic edema after SRS. Nine of 31 with parasagittal meningiomas (29.0%) and 6 of 80 with nonparasagittal supratentorial meningiomas (7.5%) developed symptomatic edema ( $P = 0.0053$ ). Compared with patients with meningiomas in nonmidline supratentorial locations, patients with parasagittal meningiomas were more than 4 times as likely to develop symptomatic edema after SRS (odds ratio, 4.1; 95% confidence interval, 1.5-11.5). The 6-, 12-, and 18-month actuarial rates of symptomatic edema development were significantly greater for patients with parasagittal meningiomas than for patients with nonparasagittal meningiomas (17.8 versus 1.3%, 25.4 versus 5.8%, and 35.2 versus 7.8%, respectively).

**CONCLUSION:** Patients with parasagittal meningiomas are at greater risk of developing peritumoral symptomatic edema after SRS. Close follow-up after SRS may be particularly important in such patients. These results highlight the need to pursue strategies that could decrease the incidence of postradiosurgical edema in patients with parasagittal meningioma.

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