

## PubMed

U.S. National Library of Medicine  
National Institutes of Health



Display Settings:  Abstract

[J Neurosurg.](#) 2011 Feb 11. [Epub ahead of print]

# Gamma Knife surgery for parasellar meningiomas: long-term results including complications, predictive factors, and progression-free survival.

Williams BJ, Yen CP, Starke RM, Basina B, Nguyen J, Rainey J, Sherman JH, Schlesinger D, Sheehan JP.

Department of Neurological Surgery, University of Virginia Health System, Charlottesville, Virginia.

### Abstract

Object Stereotactic radiosurgery serves as an important primary and adjuvant treatment option for patients with many types of intracranial meningiomas. This is particularly true for patients with parasellar meningiomas. In this study, the authors evaluated the outcomes of Gamma Knife surgery (GKS) used to treat parasellar meningiomas. Methods The study is a retrospective review of the outcomes in 138 patients with meningiomas treated at the University of Virginia from 1989 to 2006; all patients had a minimum follow-up of 24 months. There were 31 men and 107 women whose mean age was 54 years (range 19-85 years). Eighty-four patients had previously undergone resection. The mean pre-GKS tumor volume was 7.5 ml (range 0.2-54.8 ml). Clinical and radiographic evaluations were performed, and factors related to favorable outcomes in each case were assessed. Results The mean follow-up duration was 84 months (median 75.5 months, range 24-216 months). In 118 patients (86%), the tumor volume was unchanged or had decreased at last follow-up. Kaplan-Meier analysis demonstrated radiographic progression-free survival at 5 and 10 years to be 95.4% and 69%, respectively. Fourteen patients (10%) developed new cranial nerve palsies following GKS. Factors associated with tumor control included younger age, a higher isodose, and smaller tumor volume. A longer follow-up duration was associated with either a decrease or increase in tumor volume. Fourteen patients (10%) experienced new or worsening cranial nerve deficits after treatment. Factors associated with this occurrence were larger pretreatment tumor volume, lower peripheral radiation dose, lower maximum dose, tumor progression, and longer follow-up. Conclusions Gamma Knife surgery offers an acceptable rate of tumor control for parasellar meningiomas and accomplishes this with a low incidence of neurological deficits. Radiological control after radiosurgery is more likely in those patients with a smaller tumor volume and a higher prescription dose.

PMID: 21314269 [PubMed - as supplied by publisher]

[LinkOut - more resources](#)