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Radiosurgery for Craniopharyngioma.

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PURPOSE: To analyze the outcomes of gamma knife stereotactic radiosurgery (SRS) for residual or recurrent craniopharyngiomas and evaluate the factors that optimized the tumor control rates. **METHODS AND MATERIALS:** A total of 46 patients with craniopharyngiomas underwent 51 SRS procedures at University of Pittsburgh between 1988 and 2007. The median tumor volume was 1.0 cm³ (range, 0.07-8.0). The median prescription dose delivered to the tumor margin was 13.0 Gy (range, 9-20). The median maximal dose was 26.0 Gy (range, 20-50). The mean follow-up time was 62.2 months (range, 12-232). **RESULTS:** The overall survival rate after SRS was 97.1% at 5 years. The 3- and 5-year progression-free survival rates (solid tumor control) were both 91.6%. The overall local control rate (for both solid tumor and cyst control) was 91%, 81%, and 68% at 1, 3, and 5 years, respectively. No patients with normal pituitary function developed hypopituitarism after SRS. Two patients developed homonymous hemianopsia owing to tumor progression after SRS. Among the factors examined, complete radiosurgical coverage was a significant favorable prognostic factor. **CONCLUSION:** SRS is a safe and effective minimally invasive option for the management of residual or recurrent craniopharyngiomas. Complete radiosurgical coverage of the tumor was associated with better tumor control.

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