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### **Gamma Knife surgery for optic glioma. Report of 2 cases.**

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#### **Abstract**

Optic pathway/hypothalamic gliomas represent approximately 2%-5% of brain tumors in children. Total excision, subtotal excision, subtotal excision followed by irradiation, radiation therapy alone, chemotherapy, and no treatment at all have been reported. In this article the authors discuss the results of Gamma Knife surgery (GKS) for optic gliomas in 2 children. Two pediatric patients, a boy and a girl, underwent GKS for optic gliomas at our hospital between March 2005 and August 2005. The children's ages were 10 and 16 years at presentation. The histological diagnosis was confirmed to be pilocytic astrocytoma in both cases. The tumor involved the optic chiasm in 1 patient and the right optic nerve in the other patient. Treatments were planned with the prescription of 11 Gy to the 50% isodose line for the optic chiasm glioma and 15 Gy to the 50% isodose line for the optic nerve glioma. In both patients, GKS was well tolerated. The follow-up periods were 60 and 55 months. Complete response with near-total disappearance of the tumors was observed in both patients. During the follow-up period, neither of the patients developed any endocrine dysfunction. Gamma Knife surgery permits treatment of optic glioma with good tumor control and no clinically relevant morbidity. With the ability to deliver a high dose to the tumor while sparing normal brain tissue, especially the optic nerve, optic chiasm, and pituitary gland, GKS should be the choice of treatment for optic gliomas. A larger number of patients and long-term follow-up are required for further evaluation of the efficacy and potential side effects of GKS.

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