


Journal Article



The role of Gamma Knife Radiosurgery in the management of unresectable gross disease or gross residual disease after surgery in ependymoma

| | |
|-------------|--------------------------------------|
| Journal | Journal of Neuro-Oncology |
| Publisher | Springer Netherlands |
| ISSN | 0167-594X (Print) 1573-7373 (Online) |
| Subject | Medicine |
| Issue | Volume 79, Number 1 / August, 2006 |
| Category | Clinical-patient studies |
| DOI | 10.1007/s11060-005-9112-y |
| Pages | 51-56 |
| Online Date | Tuesday, March 28, 2006 |

Simon S. Lo^{1, 4, 5} , Ramzi Abdulrahman^{1, 4}, Paul M. DesRosiers^{1, 4}, Achilles J. Fakiris^{1, 4}, Thomas C. Witt^{2, 4}, Robert M. Worth^{2, 4}, Phil H. Dittmer^{1, 4}, Colleen M. DesRosiers^{1, 4}, Stephanie Frost^{1, 4} and Robert D. Timmerman³

- (1) Department of Radiation Oncology, Indiana University Medical Center, 535 Barnhill Drive, RT 041, Indianapolis, IN 46202, USA
- (2) Department of Neurosurgery, Indiana University Medical Center, Indianapolis, IN, USA
- (3) Department of Radiation Oncology, Univ. of Texas Southwestern Medical School, Dallas, TX, USA
- (4) Indiana Lions Gamma Knife Center, Indianapolis, IN, USA
- (5) Department of Radiation Oncology, Indiana University Medical Center, 535 Barnhill Drive, RT 041, Indianapolis, IN 46202, USA

Received: 9 November 2005 **Accepted:** 23 December 2005 **Published online:** 24 March 2006

Summary

Purpose/Objective To evaluate the efficacy and the toxicity of Gamma Knife (GK)-based stereotactic radiosurgery (SRS) in the management of gross disease in ependymoma. **Materials and methods** Eight patients with 13 ependymomas were treated with GK-based SRS in our institution for gross disease. Five patients were treated for recurrent disease that developed after surgery and external beam radiotherapy (EBRT), two received SRS to the gross disease after surgery and EBRT, and one received SRS alone (in a 1.3 year old child). Median EBRT dose was 54.4 Gy (range 50–55.8 Gy). Median SRS dose was 14 Gy (range 12–20 Gy). Seven of eight (87.5%) patients had SRS to a single lesion and one of eight (12.5%) patients had treatment to six tumors in three different sessions.

Results The median follow up was 30.2 months (range 8–65.4 months). Out of the eight patients treated with SRS, six (75%) were alive, four (50%) were alive with no recurrence, two (25%) were alive with recurrence, and two (25%) died of recurrent disease. Both patients treated with SRS as a boost were alive and without recurrence. Out of the five patients who received SRS as salvage treatment, three (60%) were alive,

two (40%) were alive without recurrence, two (40%) developed distant failure, and three (60%) had in-field control. Two patients who received SRS to their brainstem lesions developed symptoms related to radionecrosis and were successfully treated with steroid with good control of symptoms.

Conclusions GK-based SRS appears to be a feasible and safe treatment modality for patients with ependymoma with unresectable gross disease or gross residual disease after surgery. SRS provides reasonable local control but out-of-field tumor progression remains an issue. For patients who receive SRS as a boost, the local control appears to be excellent.

Ependymoma - gross disease - radiosurgery

This paper has been presented in the American Society for Therapeutic Radiology and Oncology Meeting in Denver, CO in October 2005.

✉ **Simon S. Lo**

Email: slo@iupui.edu

Phone: +317-2742524

Fax: +317-2742486

References secured to subscribers.

Copyright ©2006, Springer. All Rights Reserved.