

Low-grade Gliomas: a Case for Adjuvant Radiotherapy After Subtotal Resection

by > John Breneman, MD and Ronald Warnick, MD

Clinical problem

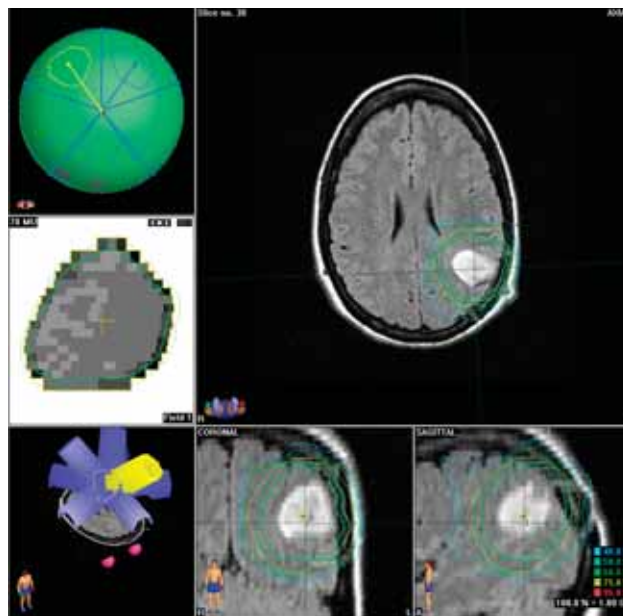
This is a 28-year-old right-handed woman with a long-standing history of headaches of increasing severity. An MR scan was performed showing a non-enhancing lesion in the left parietal lobe. The patient underwent an excisional biopsy of the lesion in August 2003. At the time of surgery, there was difficulty distinguishing between normal and tumor tissue, and with the patient's desire to not risk a neurologic deficit, an aggressive resection was not attempted. Pathology showed a grade II astrocytoma.

Treatment options

Adjuvant radiotherapy of low-grade gliomas remains controversial. There is little evidence to suggest a benefit for radiotherapy after complete resection of tumors. However, in the setting of an incomplete resection, several retrospective series have reported improvement in survival after adjuvant radiation. Recently, a prospective randomized study has been completed addressing this issue and early results have been reported (1). Though there is no difference in overall survival at 5 years between patients who did and did not receive radiotherapy, failure free survival was significantly improved in the treated group. Additionally, the authors expressed concern that quality of life in the untreated group might be inferior due to complications of recurrent tumor. Long-term results from this study will be required to definitively answer this question, but this study together with data from several retrospective studies supports the use of radiotherapy when a complete resection cannot be performed.

Comments

The patient was treated with 5040 cGy in 28 fractions using the Novalis stereotactic intensity modulated radiotherapy unit. With the ability to precisely localize and conform the radiation beams, side effects of fatigue and hair loss were minimal. Follow-up imaging is pending, but at the completion of treatment the patient had near-complete resolution of her headaches.



Stereotactic intensity modulated radiotherapy delivers highly conformal radiation to the target, minimizing side effects of treatment.

References

1. Karim AB, Afra D, Cornu P, Bleehan N, Schraub S, De Witte O, Darcel F, Stenning S, Pierart M, Van Glabbeke M. Randomized trial on the efficacy of radiotherapy for cerebral low-grade glioma in the adult: European Organization for Research and Treatment of Cancer Study 22845 with the Medical Research Council study BRO4: an interim analysis. *Int J Radiat Oncol Biol Phys* 52(2): 316-24, 2002.

How to refer

Because of the specific nature and complexity of the services we provide, patients must have a consultation with one of our physicians prior to being referred to the center. To schedule an appointment with one of our physicians, please contact Precision Radiotherapy at 513-475-7777. Additional information is available on the web at www.precisionradiotherapy.com.



The Precision Radiotherapy Center

The Precision Radiotherapy Center provides an option for patients with tumors or other neurological disorders. Developed by the Mayfield Clinic and University Radiology Associates, two nationally recognized neuroscience programs affiliated with the University of Cincinnati College of Medicine, Precision Radiotherapy is the region's first center to offer high-precision radiotherapy/radiosurgery for tumors and other abnormalities both inside and outside the brain. We can target benign and malignant tumors of the brain, head and neck, as well as tumors elsewhere in the body, such as the prostate, spine, liver and lung. Patients also come to us for treatment of vascular malformations, trigeminal neuralgia, acoustic neuromas and pituitary adenomas.

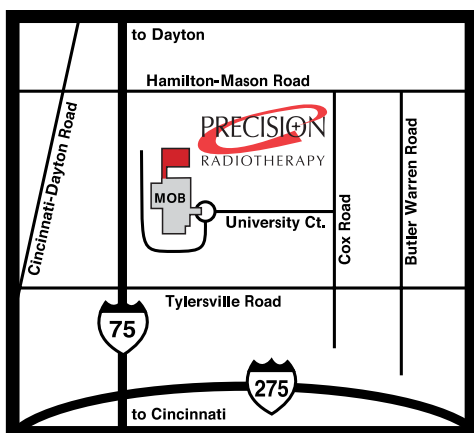
Hours of Operation

Monday-Friday, 8:00 a.m. - 5:00 p.m.

Directions

The Precision Radiotherapy Center is conveniently located on I-75, just north of Cincinnati at University Pointe, 7710 University Court, in West Chester, Ohio. For detailed directions, visit our website:

www.precisionradiotherapy.com



The Precision Radiotherapy Team

Precision Radiotherapy is one of the most progressive treatment centers in the Midwest, featuring a team of internationally recognized specialists and highly skilled staff:

Radiation Oncology

Radiation oncologists of University Radiology Associates are board-certified physicians with specialized training in treating tumors and other lesions with various forms of radiation.

William Barrett, MD
John Breneman, MD
Kevin Redmond, MD

Neurosurgery

Neurosurgeons of the Mayfield Clinic provide initial patient evaluation, treatment planning and follow-up for all neurosurgical patients treated.

William Tobler, MD
John M. Tew, Jr., MD
Ronald Warnick, MD

Radiology

Radiologists from University Radiology Associates work with the team to precisely identify the target area for radiation treatment.

Robert Lukin, MD
Mary Gaskill-Shiple, MD
Gavin Udstuen, MD

Radiation Therapy

Radiation therapists of Precision Radiotherapy are state-licensed, highly trained health professionals who deliver radiation treatment according to specific protocols. They are registered by the American Registry of Radiologic Technologists (ARRT).

Medical Physics

Medical physicists of Precision Radiotherapy are health professionals with special training in radiation physics, are responsible for maintaining and calibrating the equipment used to deliver radiation.