Radiotherapy for meningiomas

Moshe H. Maor
The University of Texas M. D. Anderson Cancer Center, Department of Radiotherapy, Houston, TX, USA

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Abstract

Because of a substantial overall recurrence rate of meningiomas, the role of surgery as the sole treatment for every case must be evaluated. Also, occasionally, the patient’s age and/or the location of the tumor precludes considering him/her as a candidate for surgery. In these instances, radiotherapy or radiosurgery may be advisable. The article presents two cases treated at M. D. Anderson Cancer Center, those of a 65-year-old male with a tumor in the left temporal lobe and 74-year-old female with a tumor in the right petroclival region. It also reviews the roles that radiotherapy plays in treating patients with meningiomas. Retrospective analyses of outcomes provide ample evidence that conventional radiation after incomplete resection reduces the incidence of progression of tumor over a long period. Information on patients who have had only external radiation is meager, since most patients have at least a partial resection. Complete resection for benign meningiomas is sufficient. For malignant meningiomas, adjuvant radiation should be administered, regardless of the extent of surgical excision. When surgery poses a high risk of morbidity or mortality, radiation therapy and radiosurgery are promising alternatives.

Introduction

Patients with meningiomas are potentially curable by surgery, and, therefore, should always be consulted by a neurosurgeon. Nevertheless, because of a substantial recurrence rate overall, the role of surgery as the sole treatment for every case of meningioma must be evaluated. Occasionally, the patient’s age and/or the location of the tumor precludes considering him or her as a candidate for surgery. In these instances, another modality such as radiotherapy may be advisable. This article presents two cases treated at the University of Texas M. D. Anderson Cancer Center and a discussion of the roles that radiotherapy plays in treating meningiomas.

Case studies

The following are case studies of patients treated with radiotherapy for meningioma at MDACC.

Case 1

A 65-year-old male patient presented in November, 1989, with a tumor in the left temporal lobe (Fig. 1a). A craniotomy and complete resection were performed. The pathology was consistent with malignant meningioma, showing mitoses and brain invasion. Eighteen months later, the patient developed a recurrence in the same region (Fig. 1b). He underwent a second resection, and the same malignant features of the tumor were apparent. In addition, the tumor also had invaded the petrous bone, which was curetted. A postoperative radiation dose of 57 Gy was delivered through a left lateral (Fig. 1c) and
Fig. 1(a) Axial gadolinium-enhanced, T₁-weighted MRI. A left anterior temporal and sphenoid wing malignant meningioma is present.

Fig. 1(b) Axial, gadolinium-enhanced, T₁-weighted MRI. This study was performed 18 months following gross total resection of the tumor seen in Fig. 1. Recurrence of the malignant meningioma is identified.

Fig. 1(c) Treatment planning lateral skull radiograph. 57 Gy was delivered through a left lateral and vertex fields using wedges.

Fig. 1(d) Axial, gadolinium-enhanced, T₁-weighted MRI. Three years following treatment the patient is free of disease.