Multiple Brain Metastases

Topic Editors: Bruce E. Pollock, M.D., and Robert L. Foote, M.D.

Metastatic brain disease represents a significant oncological problem. It is estimated that of the more than 1,000,000 people in whom cancer is diagnosed each year in the United States, approximately 20 to 40% will develop metastatic disease to the brain. Thus, more patients are diagnosed annually with brain metastases than gliomas, meningiomas, pituitary adenomas, and schwannomas combined. Because the approach to patients with brain metastases is frequently palliative in nature, neurosurgeons are usually consulted only when a tumor is large and causing symptoms from mass effect or when tumors progress despite whole-brain radiation therapy (WBRT). As a result, most patients with brain metastasis receive palliative WBRT alone. The average survival length for patients managed in this fashion ranges from 3 to 6 months. A confounding factor in all studies on brain metastases treatment is the extent of the patient's systemic disease. In all published reports, patients in whom there is either no evidence of or controlled systemic disease have longer survival times, independent of how the brain lesions are treated.

Recently, the authors of several papers have demonstrated that the addition of either tumor resection or stereotactic radiosurgery to radiation therapy significantly improves survival in patients with a solitary brain metastasis. Unfortunately, fewer than half of the patients harboring brain metastasis present with a solitary tumor, and few reports demonstrate any survival benefit after neurosurgical intervention (either resection or radiosurgery) in patients with multiple brain metastases. Consequently, patients with multiple brain metastases are generally treated with WBRT alone and their prognosis remains poor. In this edition of **Neurosurgical Focus**, the results of treatment for this difficult patient group will be discussed and treatment algorithms used in managing patients with multiple brain metastases will be presented. Based on our current information, it does appear that neurosurgical intervention improves both overall survival as well as freedom from neurological disease progression for a subgroup of patients with multiple brain metastases for whom there is a favorable prognosis.