Multiple metastases

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Authors from the University of Virginia provide their analysis of clinical outcomes following stereotactic radiosurgery in patients with 5–15 metastases. Their study included 96 patients managed over a 10-year period. It excluded patients with more than 15 tumors, but it was unclear if they did indeed provide radiosurgery to selected patients with more than 15 tumors who were excluded from their report. Clinical outcomes focused on an evaluation of some of the standard features used in the brain metastasis literature. These include patient age, patient sex, Karnofsky Performance Status score, recursive and graded partitioning analysis scores, control of the primary tumor, prior chemotherapy or resection, prior whole-brain radiation therapy, tumor histology, and subsequent treatment. They found that the Recursive Partitioning Analysis (RPA) class correlated with outcome in this patient population. That classification includes the features of age and extracranial disease status and thus logically would correlate with outcome.

In the last decade, the concept of treating more and more tumors using radiosurgery has been explored. What was once considered heresy 20 years ago when a “focused procedure” was used for an “unfocused disease,” radiosurgery has been shown in initial randomized trials to provide local tumor control benefits in patients with 2, 3, or 4 tumors. In an analysis in patients with more than 4, we found that it was not the number of tumors that was important but the total tumor volume of all brain metastases. If that volume was less than 7.5 cm³, the median survival was similar to that typically expected with 1 tumor (12 months). Thus, volume is a much clearer surrogate for cancer burden than tumor number. This is why Salvetti and colleagues found that patients who had between 5 and 9 tumors fared similarly to those with more than 9.

There is a growing body of literature on the value of radiosurgery in properly selected patients with multiple brain metastases who are being actively managed for their extracranial cancer. In prior years, such patients would simply have been left on a palliative path with little more than whole-brain radiation therapy. In many such patients, whole-brain radiation may have already been delivered, and no further active brain tumor treatment was offered.

Based on the study by Salvetti and colleagues, for patients in RPA Class 1 or 2 in whom improved survival can be expected, stereotactic radiosurgery can play an important role in those with more than 5 tumors. Because current payment paradigms limit reimbursement at 5 tumors, payment for more tumors should be reevaluated.

Disclosure

Dr. Kondziolka is a consultant for Elekta.

Reference

As regards Dr. Kondziolka’s question of whether patients with more than 15 lesions were excluded, we did, in fact, exclude patients with more than 15 lesions. However, our institution has treated patients with more than 15 lesions. We will look at these patients in a future study.

It is likely that selected patients with 5 or more metastases at the time of presentation would benefit from stereotactic radiosurgery. In our series, many of the patients were able to avoid or delay the delivery of whole-brain radiotherapy. Given the adverse neurocognitive deficits and additional sequelae that can occur with whole-brain radiation therapy but are seldom seen with radiosurgery, the latter approach could translate into a clinical benefit for patients. Economically, we must consider the added cost to the health care system with expanding indications for radiosurgery in this patient population. Similarly, we must establish fair reimbursement to neurosurgeons performing the additional work and to hospitals for the longer and more intensive use of high-technology radiosurgery devices required to treat a patient with 5 or more metastatic lesions at one time. It does seem safe to say that neurosurgeons performing radiosurgery will play an expanded role in the treatment of patients with 5 or more brain metastases.

References


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