Gamma Knife radiosurgery and non-functioning pituitary adenomas

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The publication of Lee et al. is a useful and well-written addition to the literature. They analyze, based on a review of previous studies and their own experience, the advantages and disadvantages of Gamma Knife radiosurgery (GKRS) in the treatment of patients with clinically nonfunctioning pituitary adenomas. The results of GKRS are also compared with those produced by conventional resection. Clinically nonfunctioning pituitary adenomas represent the most frequent pituitary adenoma type among pituitary tumors. Medical treatment is not available, and pituitary tumor irradiation has several significant disadvantages. Thus, the question is, Gamma Knife surgery or conventional resection? The authors conclude that in older patients (older than 70 years) and in patients with other comorbidities in whom surgical intervention is contraindicated, initial GKRS is an acceptable alternative. Obviously, as the authors emphasize, an experienced team is needed to decide which treatment to use and to undertake the GKRS.

One great disadvantage of GKRS is that the tumor is not investigated by pathologists. Morphological investigation is of crucial importance. Several diseases can mimic pituitary adenomas: for example, other primary intrasellar neoplasms, metastatic tumors, inflammatory diseases, and others. We have seen several metastatic carcinomas arising from the lung, colon, and other organs, which were misdiagnosed as pituitary adenomas!

Another reason morphological investigation is important is that it allows one to draw conclusions regarding the growth potential of tumor cells. We can assess the Ki 67 nuclear labeling index, a valuable method of revealing the cell proliferation rate. Maybe in the future new drugs will be developed, which will permit medical therapy. Advances in molecular/genetic methods may provide an alternative treatment option as well. Obviously, more studies are needed to decide whether one should use GKRS and in which patients.

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sis. Over the past 2 decades, careful patient selection and improvements in neuroimaging have led to the judicious use of radiosurgery without a histological diagnosis. In radiotherapy and radiosurgery series, misdiagnosis on the basis of imaging, clinical history, and patient examination is rare, likely occurring in 2%–11% of cases. More sophisticated neuroimaging, including MR perfusion, MR spectroscopy, and MRI- or CT-based positron emission tomography, are routinely used in lieu of histopathology to guide the treatment of patients with intracranial lesions. An epidemic of misdiagnosed intracranial pathology treated with radiosurgery has not occurred and seems unlikely.

Further studies will be required to validate this approach. However, initial management of selected NFAs with radiosurgery probably has a place in contemporary treatment paradigms.

References

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