Letter to the Editor

Definition of Primary and Secondary Glioblastoma—Letter

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We read with great interest the article by Ohgaki and Kleihues (1) in which the molecular genetic concept of primary and secondary glioblastoma was reviewed. In response to this most interesting article, we want to present the first case in which the occurrence of an IDH1-negative glioblastoma was monitored over time by combined [11C]methionine (MET) amino acid transport PET/MRI (Fig. 1).

This case underlines that the uncertainty in differential diagnosis between primary and secondary glioblastoma, despite the clinical definition and advanced imaging, can be overcome with molecular genetics; although in this case, there was evidence of a less malignant precursor lesion in positron emission tomography (PET), a secondary glioblastoma could be ruled out on the basis of the IDH1 profile.

Ohgaki and Kleihues outline the high clinical importance of predicting malignant transformation in primary brain tumors. We would like to expand the molecular genetic perspective of their article by that of molecular imaging. In the present case, the 47% increase in amino acid transport observed over 6 weeks allowed ruling out a low-grade tumor. This is in keeping with other literature reporting high accuracy of amino acid brain tumor imaging for grading astrocytomas and evaluating their malignant transformation (2, 3). For the future, an incremental diagnostic value in the assessment of astrocytomas can even be expected from multiparametric analyses of different imaging information as they are now for the first time obtainable within one session by combined PET/MRI (4, 5).

Disclosure of Potential Conflicts of Interest

M. Bauer, W. Krupp, and K.-T. Hoffmann have received speakers bureau honoraria for Bracco Imaging and Bayer Healthcare. O. Sabri and H. Barthel have received speakers bureau honoraria from Bayer Healthcare and Siemens Healthcare, and are consultant/advisory board members for Bayer Healthcare and Piramal Imaging. No potential conflicts of interest were disclosed by the other authors.

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References

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