Malignancy of intracerebral lesions evaluated with 11C-methionine-PET

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摘要

Abstract

Positron emission tomography (PET) allows examination of a variety of physiological parameter, including blood flow, glucose, amino acid and oxygen metabolism. However, correlation of PET scan findings and the degree of malignancy of intracerebral tumors continues to be controversial. Nine patients with primarily diagnosed intraparenchymal brain tumors were included in this study. We performed 11C-methionine-PET (met-PET) prior to surgical treatment and the differential absorption ratio (DAR) was calculated. All patients underwent open or stereotactic surgery and specimens for pathological diagnosis were obtained. The biological activity of each tumor was determined by calculation of the proliferation index from MIB-1 immunohistochemistry. The DAR of met-PET for individual tumors correlated with the histological diagnosis and degree of malignancy and this was further confirmed by good correlation with the MIB-1 proliferation index. We conclude that met-PET may be a reliable and effective preoperative evaluation to determine the type and malignancy of intraparenchymal brain lesions.