

学位論文要約
Extended Summary in Lieu of the Full Text of a Doctoral Thesis

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学位論文題目： Cerebral Glucose Metabolism in Patients with Chronic Mental and
Thesis Title Cognitive Sequelae after a Single Blunt Mild Traumatic Brain Injury without
Visible Brain Lesions.

学位論文要約：
Summary of Thesis

The aim of this study is to investigate glucose uptake on 18F-fluorodeoxyglucose positron emission tomography positron emission tomography (FDG-PET) in patients with chronic mental and cognitive symptoms following a single blunt mild traumatic brain injury (TBI) and without visible brain lesions on computed tomography (CT)/magnetic resonance imaging (MRI). Eighty-nine consecutive patients (mean age 43.8 ± 10.75 years) who had a single blunt mild TBI from a traffic accident and suffering from chronic mental and cognitive symptoms without visible brain lesions on CT/MRI were enrolled in the study. Patients underwent FDG-PET imaging, and the mean interval between the TBI and FDG-PET was 50.0 months. The Wechsler Adult Intelligence Scale version III (WAIS-III) testing was performed within 1 month of the FDG-PET. A control group consisting of 93 healthy adult volunteers (mean age 42.2 ± 14.3 years) also underwent FDG-PET. The glucose uptake pattern from FDG-PET in the patient group was compared with that from normal controls using statistical parametric mapping. Glucose uptake was significantly decreased in the bilateral prefrontal area and significantly increased around the limbic system in the patient group compared with normal controls. This topographical pattern of glucose uptake is different from that reported previously in patients with diffuse axonal injury (DAI), but may be similar to that seen in patients with major depression disorder. These results suggest that the pathological mechanism causing chronic mental and cognitive symptoms in patients with a single blunt mild TBI and without visible brain lesions might be different from that due to primary axonopathy in patients with DAI.