Paraneoplastic Neurologic Syndrome Associated with Small Breast Cancer: Diagnostic Value of FDG-PET for Detection of Underlying Malignancy

Key words: paraneoplastic syndrome, breast cancer, FDG-PET

Figure 1. (A) Fluid-attenuated inversion recovery (FLAIR) images of the brain MRI showing high-signal lesions in the dorsal pons and left temporal lobe (arrows). (B) An FDG-positron emission tomography (FDG-PET) demonstrating a hot spot mass on the left breast (arrow). (C) A chest CT showing a round mass with a diameter of approximately 15 mm in the lower outer quadrant of the left breast (arrow).

A 67-year-old female was admitted in June 2004 because of diplopia and progressive muscle weakness of the right upper and lower limbs with an ataxic gait for over a month. While the physical examination, laboratory tests and chest roentgenogram were normal, brain MRI showed high-signal lesions in the dorsal pons and left temporal lobe on FLAIR images (Fig. 1A). Cerebrospinal fluid studies showed a cell count of 5/mm³ and elevated total protein and IgG levels (48 mg/dl and 9.7 mg/dl). Paraneoplastic syndrome was strongly suspected because of her progressive clinical course and brain MRI findings. An FDG-PET scan was, therefore, performed and revealed a hot spot in the left breast (Fig. 1B), where a small mass was subsequently shown on a chest CT (Fig. 1C). Histopathological examination of the completely resected tumor demonstrated papillotubular adenocarcinoma. Afterward, anti-Ri antibody was detected in her serum and a definite diagnosis of paraneoplastic syndrome was made. The FDG-PET might be of great use in detecting an underlying malignancy in patients with paraneoplastic neurological disorders.

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