

Paraneoplastic Limbic Encephalitis and Small-Cell Lung Carcinoma

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A 64-year-old female smoker presented with a prolonged history of altered behavior, personality changes, and seizures. Anti-HU and anti-RI antibodies were positive.

Magnetic resonance imaging demonstrated hyperintensity in the right hippocampal region (Fig. 1A) and corresponding increased radiotracer activity on positron emission tomography–computed tomography (PET-CT) (Fig. 1B, C).

This initial PET-CT was negative for malignancy. A follow-up PET-CT 6 months later showed increased uptake in a right hilar node (Fig. 2). This node was sampled with endobronchial ultrasound and fine needle aspirate confirmed small cell carcinoma.

Paraneoplastic limbic encephalitis is characterized by clinical presentation, presence of antineuronal antibodies, and imaging findings confirming involvement of the limbic system. Clinical symptoms and imaging abnormalities can predate the detection of malignancy by months to years.¹

Control and treatment of the primary tumor with chemotherapy or other antineoplastic treatments may result in a neurologic improvement. Immunosuppression with steroids, intravenous immune globulin, plasma exchange, and other immunotherapies may also be of value.²

Symptomatic treatment should include seizure control with antiepileptic medications and medications to improve autonomic symptoms.²

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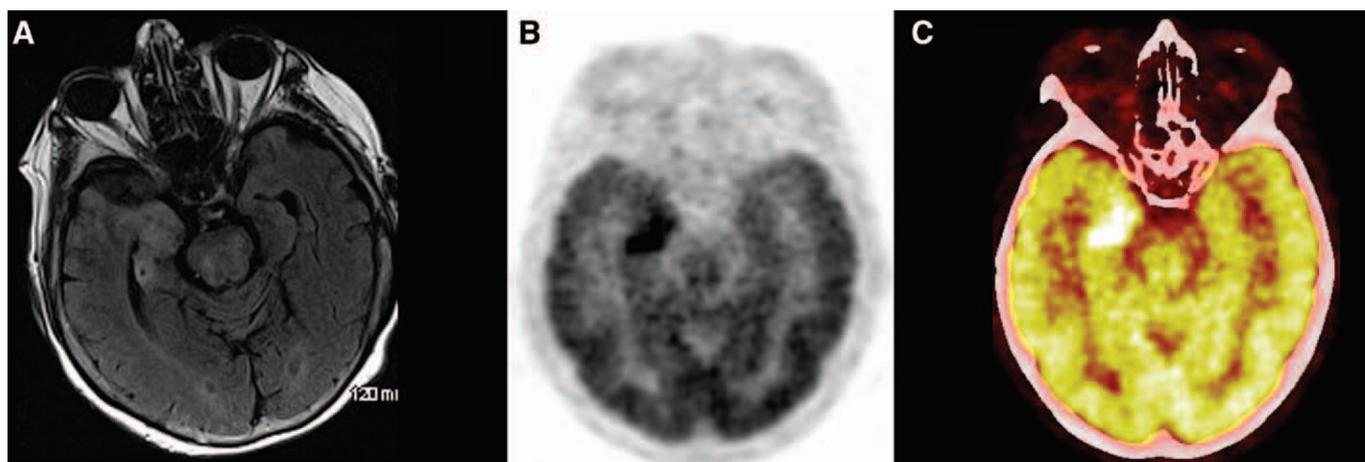


FIGURE 1. MRI brain (A) demonstrates FLAIR hyperintensity in the right hippocampal region. PET (B) and fused PET-CT (C) imaging showed corresponding increased radiotracer activity in the right hippocampal region—findings consistent with limbic encephalitis. MRI, magnetic resonance imaging; PET-CT, positron emission tomography–computed tomography.

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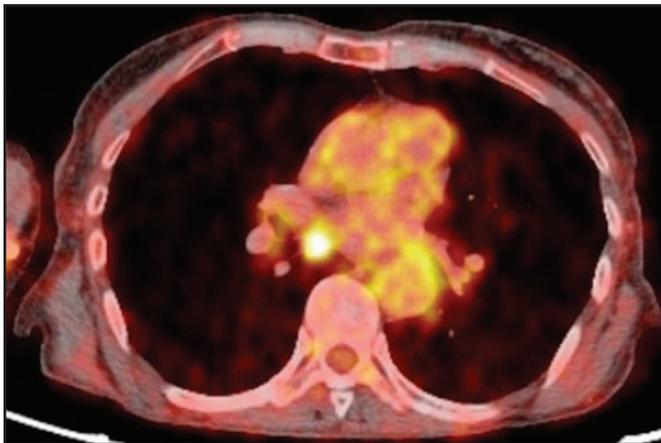


FIGURE 2. PET-CT demonstrates increased uptake in a single right hilar lymph node. This node was sampled with endobronchial ultrasound and cytology from a fine needle aspirate confirmed small-cell lung cancer. PET-CT, positron emission tomography–computed tomography.