FDG-PET in paraneoplastic neuropathy

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A 54-year-old man presented with a 16-month history of progressive pure sensory neuropathy, ataxia, and weight loss. Neurophysiologic studies revealed normal compound muscle action potentials and motor conduction velocities. Tumor markers and anti-Hu antibodies were not detected, and chest/abdomen CT and bronchoscopy were normal. A whole-body [18F]fluorodeoxyglucose (FDG) PET scan demonstrated a solitary glucose-avid lesion in the right paratracheal lymph node region consistent with a high-grade tumor (figure). PET-guided mediastinoscopy and lymph node biopsy demonstrated a small-cell carcinoma with an associated extensive, noncaseating, sarcoïd-like granulomatous reaction. The tumor was strongly positive for cytokeratin, neuron-specific enolase, and Ki-67 (90% of nuclei).

In this patient, PET was useful in identifying an underlying paraneoplastic syndrome in which conventional investigations were unhelpful.1 The associated sarcoïd reaction is uncommon, but at least three such cases have been reported in small-cell lung cancer.2


Figure. Attenuation-corrected [18F]fluorodeoxyglucose (FDG) PET images. Coronal (A) and axial (B) images demonstrate a small, rounded, glucose-avid lesion to the right of the midline in the superior mediastinum in the right paratracheal lymph node region (arrows). Both lung fields were otherwise clear. Normal FDG uptake in the stomach and FDG pooling in the bladder are noted (arrowheads).
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