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Teaching NeuroImages: PET-CT hypermetabolism paralleling muscle hyperactivity in stiff-person syndrome

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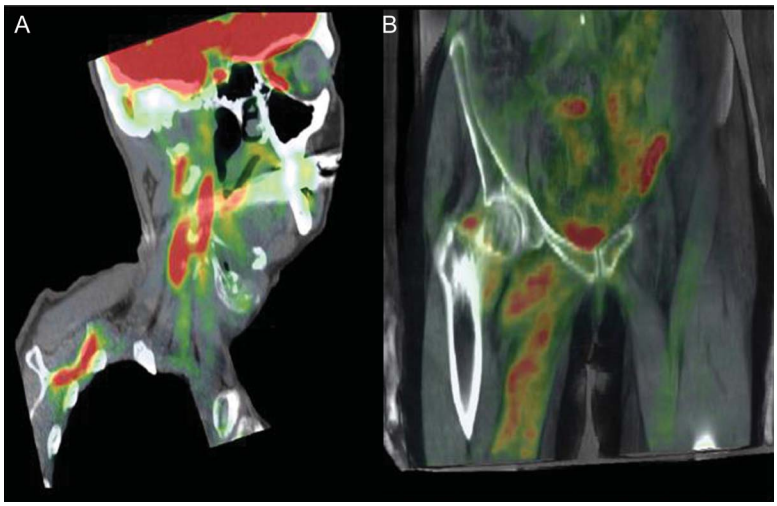
Figure F18-fluorodeoxyglucose (FDG) PET-CT of neck, trunk, and lower extremities



(A) F18-FDG-PET scan of the neck region demonstrating prominent nonmalignant muscular activity. (B) F18-FDG-PET scan of the abdominal and thigh regions demonstrating prominent nonmalignant muscular activity in the adductor musculature of the right thigh. Physiologic nonmalignant increased signal is also noted in the bladder and bowel.

A 72-year-old woman with autoimmune hypothyroidism and type 1 diabetes mellitus presented with 1 year of progressively worsening neck, back, and right thigh spasms and leg stiffness. Sudden loud noises would startle her. She ambulated with a walking frame. Serum glutamic acid decarboxylase 65 antibody was markedly elevated (1,118 nmol/L; normal value ≤0.02 nmol/L). EMG demonstrated poor relaxation in thoracic paraspinal muscles and right quadriceps and failure of the acoustic startle response to habituate consistent with stiff-person syndrome.[1,2] Whole-body PET-CT imaging, performed to exclude malignancy, demonstrated increased fluorodeoxyglucose metabolism in axial and proximal lower extremity regions that paralleled the clinically most hyperactive muscle groups (figure, A and B). No malignancy was detected.

AUTHOR CONTRIBUTIONS

Dr. Orna O'Toole: first author. Dr. Robert Murphy: imaging expertise. Dr. Jennifer Tracy: advice regarding neurophysiology in stiff-person syndrome. Dr. Andrew McKeon: advice regarding stiff-person syndrome.

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DISCLOSURE

The authors report no disclosures relevant to the manuscript. Go to Neurology.org for full disclosures.

REFERENCES

1. Moersch FP, Woltman HW. Progressive fluctuating muscular rigidity and spasm ("stiff-man" syndrome): report of a case and some observations in 13 other cases. Proc Staff Meet Mayo Clin 1956;31:421–427.
2. McKeon A, Robinson MT, McEvoy KM, et al. Stiff-man syndrome and variants: clinical course, treatments, and outcomes. Arch Neurol 2012;69:230–238.

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