

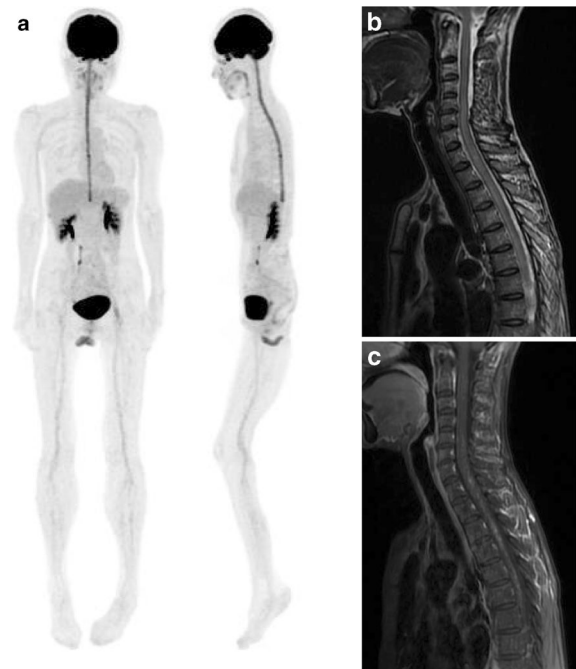
# Diffuse $^{18}\text{F}$ -FDG uptake throughout the spinal cord in the acute phase of Neuromyelitis Optica Spectrum disorder

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A 58-year-old woman visited our hospital with a 3-month history of progressive numbness in the lower extremities, gait disturbance, constipation, frequent urination, and photopsia.  $^{18}\text{F}$ -FDG PET/CT imaging showed expansive and diffuse FDG uptake (SUVmax = 5.5) throughout the spinal cord (a). Sagittal T2 weighted MR images showed diffuse swelling and hyperintensities (b), and sagittal Gd-T1 weighted images showed cloud-like enhancement in the same areas (c). Ophthalmoscopy revealed bilateral optic disc swelling and redness suggestive of the optic nerve inflammation. These findings satisfied the diagnostic criteria for neuromyelitis optica spectrum disorders (NMOSD) [1]. With corticosteroid therapy, symptoms improved and lesions disappeared on both PET and MRI.

NMOSD are autoimmune inflammatory diseases that primarily manifest as necrotizing inflammation of astrocytes in the optic nerve and spinal cord [2]. The  $^{18}\text{F}$ -FDG uptake in this case may be attributable to inflammatory cell infiltration. Local FDG uptake has been reported in previous cases [3, 4], but a diffuse FDG uptake throughout the spinal cord observed in this case has never been reported. These findings exemplify the characteristic “longitudinally extensive myelitis ( $\geq 3$  vertebral segment)” that is a diagnostic criterion for NMOSD and



indicate that FDG PET can detect spinal cord lesions with high sensitivity in the acute-phase of NMOSD.

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