Parkinsonism associated with striatal perivascular space dilation

Figure Axial brain MRI

Axial brain MRI shows multiple punctiform hypointense lesions in both putamen (arrowhead), caudate (notched arrow), and, to a lesser extent, thalami on T1-weighted sequences (A), without involvement of the globus pallidus (thin arrow). These lesions correspond to spotty hyperintensities on T2-weighted (B) but normal signal and only slit-like outer hyperintensity on fluid-attenuated inversion recovery sequences (C). The mild periventricular leukoencephalomalacia (worse on the right peritrigonal area from an old occipital stroke) suggests chronic microangiopathy.

A 75-year-old man with diabetes, hyperlipidemia, hypertension, and prior right occipital infarct had progressive imbalance, falls, and leg “weakness” for 4 years. Neurologic examination showed rigidity, bradykinesia, and mild resting tremor. Brain MRI revealed dilation of the perivascular or Virchow-Robin spaces (VRS) throughout the striatum as well as mild periventricular leukoaraiosis (figure). Skin biopsy excluded cerebral autosomal dominant arteriopathy with subcortical infarcts and leukoencephalopathy, a secondary cause of VRS dilation. Levodopa titrated to maximum tolerability (450 mg/day) only reduced his tremor. Parkinsonism with enlarged striatal VRS has been reported in the pre-fluid-attenuated inversion recovery (FLAIR) era.¹ Its pathophysiology remains unclear but normal FLAIR signal supports the recent finding that VRS enlargement is not associated with ischemia² or reduced flow.

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