Teaching *NeuroImages*: A rare case of giant perivascular spaces in the midbrain manifesting as atypical parkinsonism

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Figure 1 Brain CT without contrast

Brain CT scan shows hypodense images in the midbrain and right thalamus (A–C), indicating expansion of the perivascular spaces. There are no calcifications in bilateral basal ganglia.

We report a case of progressive supranuclear palsy–like parkinsonism associated with giant perivascular spaces (GPVS). An 80-year-old patient consulted for progressive gait unsteadiness. Clinical assessment revealed gait unsteadiness, bradykinesia, rigidity, and vertical ophthalmoparesis, with no other alterations. An MRI showed GPVS and severe displacement of the midbrain; the GPVS also extended into the right thalamus (figures 1 and 2).

Despite this finding, the patient has remained stable for the last 10 years in terms of clinical and radiologic findings, and is independent for activities of daily living except for walking by himself.

This case illustrates the power of brain plasticity. Despite severe midbrain destruction, a slow evolution of the lesion has allowed for successful adaptation.^{1,2}

AUTHOR CONTRIBUTIONS

Pierre Ferrer: primary author; study concept and design; acquisition, analysis, and interpretation of data. Julia Montoya: coauthor; analysis and interpretation of data. Pedro J. García Ruiz: coauthor; study concept and design; analysis and interpretation of data; study supervision.

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DISCLOSURE

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Figure 2 Brain MRI without contrast

MRI without contrast shows hypointensity on T1-weighted (A) and hyperintensity on T2-weighted (B) images. These images are oval and reveal well-defined edge. Fluid-attenuated inversion recovery (C) shows complete signal intensity inversion without abnormalities in the adjacent parenchyma. On diffusion-weighted imaging, we can see that the injury is hypointense in diffusion b-value 1,000 s/mm² (D) and hyperintense in apparent diffusion coefficient map (E): no restricted diffusion is seen. These findings correspond to the expansion of giant perivascular spaces involving the midbrain and right thalamic and lentiform nucleus.

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