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Nigrosome 1 absence in de novo Parkinson disease

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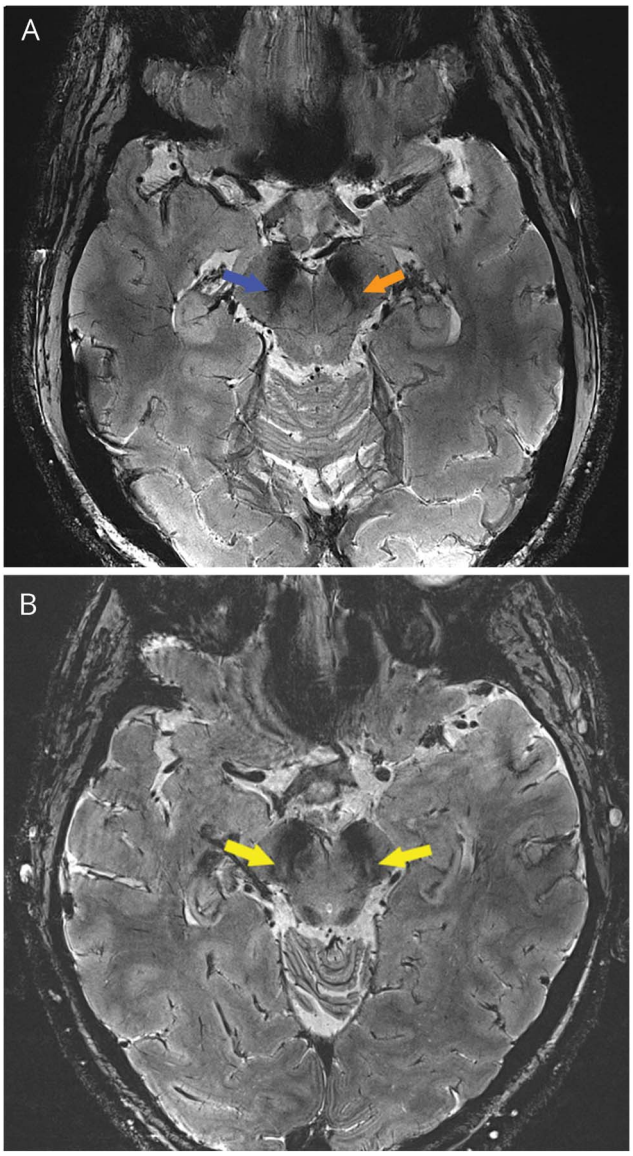
Figure Comparative brain MRIs of an individual with de novo Parkinson disease and an age-matched control



(A) 7T MRI gradient echo sequence axial slice shows nigrosome 1 signal present in the left substantia nigra (orange arrow) and absent in the right substantia nigra (blue arrow). (B) 7T MRI of a healthy 63-year-old is shown for comparison, with normal nigrosome 1 signal present bilaterally (yellow arrows).

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A 63-year-old man with 6 months of mild left hand rest tremor and bradykinesia and subtle left wrist cogwheel rigidity was diagnosed with idiopathic Parkinson disease (PD). The most profound neuronal degeneration in PD occurs in nigrosome 1, a lens-shaped substructure of the substantia nigra containing approximately 22,000 cell bodies in each hemimidbrain, measuring 6 × 6 × 1 mm.[1,2] A 7T MRI at the caudal level of red nucleus (figure, A) shows nigrosome 1 signal present in the left nigra and absent in the right, consistent with the clinically affected side. 7T MRI of a healthy 63-year-old with normal bilateral nigrosome 1 signal is shown for comparison (figure, B).

Author contributions

Matthew Brodsky: study concept and design, acquisition and analysis of data. David Lahna: study design, acquisition and analysis of data. Jeffrey Pollock: study design, acquisition of data. David Pettersson: study design, acquisition of data. John Grinstead: study design. William Rooney: study design.

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Disclosure

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