Choreic movement in striatal infarction

Involvement in cortico-striato-nigral disconnection

Toshiaki Takeuchi, MD, Masafumi Harada, MD, and Takao Mitsui, MD

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Correspondence

Dr. Mitsui
tmitsui@tokushima-nh.
hosp.go.jp

Figure MRI and dopamine transporter (DAT) SPECT with ^{123}I -ioflupane

Diffusion-weighted imaging (A) and T2-weighted imaging (B, D) on MRI show acute infarct in the right striatum, where DAT binding was relatively reduced (C, E). Diffusion tensor imaging on MRI (F) shows impaired right cortico-striato-nigral connectivity.

A 79-year-old woman presented with a 3-day history of choreic movement on the left side of her body (video, links.lww.com/WNL/A350). Results of laboratory and genomic analyses did not indicate choreic disorders such as Huntington disease or Wilson disease. MRI showed acute infarction in the right striatum (figure). SPECT imaging with ^{123}I -ioflupane showed reduced dopamine transporter (DAT) binding in the right dorsal striatum (figure). Diffusion tensor imaging showed relatively impaired cortico-striato-nigral connectivity on the right side (figure).

The patient had been generally in good health and actively performed daily housework until her family members unexpectedly noticed hyperkinetic movements in her left arm. She had no medical history other than hypertension at the age of 70 years. Except for antihypertensive drugs, she had not taken any other medicine, including dopamine receptor blocking agents. There was neither a family history of movement disorders nor parental consanguinity.

MORE ONLINE

➔ Video

links.lww.com/WNL/A350

Department of Neurology (TT, TM), Tokushima National Hospital, National Hospital Organization; and Department of Radiology (MH), Institute of Health Biosciences, The University of Tokushima Graduate School, Japan.

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Therefore, underlying conditions or diseases, including rheumatologic or neuroimmunologic disorders, were unlikely to be related to the development of sudden-onset choreic movement.

Presynaptic and postsynaptic dopaminergic involvement and corticostriatal signaling impairment have been observed in a hereditary disorder: Huntington disease.^{1,2} However, it is difficult to understand whether cortico-striato-nigral disconnection is causal or consequent in such a systemic disease. The present finding indicates that a striatal lesion can cause cortico-striato-nigral disconnection, inducing choreic movement.

Author contributions

T. Takeuchi: data interpretation and manuscript writing. M. Harada: neuroimaging analysis. T. Mitsui: study concept and critical revision of the manuscript.

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References

1. Cepeda C, Murphy KP, Parent M, Levine MS. The role of dopamine in Huntington's disease. *Prog Brain Res* 2014;211:235–254.
2. Plotkin JL, Surmeier DJ. Corticostriatal synaptic adaptations in Huntington's disease. *Curr Opin Neurobiol* 2015;33:53–62.

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