Hemiballism-Hemichorea Following Subthalamic Nucleus Hemorrhage

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Keywords: Cerebral hemorrhage; Hemiballism-hemichorea; Magnetic resonance images; Subthalamic nucleus; Sudden onset

Case Study

A 67-year-old man with untreated hypertension was admitted due to sudden onset involuntary movements involving the left arm and leg. Examination disclosed irregular coarse and twisting movement involving both distal and proximal muscles in the left arm and leg (Figure 1A). Magnetic resonance imaging and computed tomography of the brain revealed an acute hemorrhage in the right subthalamic nucleus (STN) (Figure 1B-D). His hemiballismus-hemichorea improved within a few days following administration of risperidone 1 mg/day. However, after admission, the patient became restless, agitated and delirious and these symptoms were resolved by administration of haloperidol 3mg/day and tiapride 50mg/day.

Hemiballism-hemichorea is a rare hyperkinetic movement...
disorder [1], which typically ensues from a lesion of the contralateral STN. However, in the study including 21 patients with hemiballism-hemichorea, only 5 patients had STN lesions [1]. It can also be caused by lesions involving the afferent or efferent pathways of the STN, caudate, globus pallidus, corpus striatum, thalamus, insular parietal, temporal, or frontal cerebral cortex [1-4], and in non-ketotic hyperglycemia [5]. In addition, although rare, a patient presented with left-sided hemiballism with ipsilateral STN without contralateral basal ganglia lesions were reported [6]. Brain imaging findings of our patient clearly detect a small hemorrhage in the STN and support the importance of STN involvement in producing hemiballism-hemichorea. Given changes in the mental state in our patient, cortical involvement was suggested, which presumably resulted from disinhibition of the thalamo-cortical pathway due to diminished STN activity [7]. However, brain scintigraphy was not performed in our patient.

A sudden onset of hemiballism-hemichorea should prompt immediate brain imaging despite a paucity of neurological abnormalities.

References