Chorea as the Neurological Symptom of Delayed Encephalopathy After Carbon Monoxide Intoxication in a Child

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Figure 1. A, T2-weighted axial sequence of brain magnetic resonance imaging (MRI) shows hyperintensities in the bilateral basal ganglia. The signal changes are greater involving the left caudate and putamen and greater involving the right globus pallidus. B, Brain magnetic resonance spectroscopy (MRS) with voxel over the left basal ganglia shows small lactate peaks.

A 10-year-old boy presented to the emergency department with abnormal movements 8 days after he was rescued from a house fire. At the scene, he was comatose and was found to have soot in his airway. He had an elevated carboxyhemoglobin level (24.5%). He received mechanical ventilation with 100% oxygen for 40 hours. He showed rapid recovery in mental status and was discharged home. Eight days after the injury, he developed tremors, dystonia, and chorea involving his face and all extremities (Video). Brain magnetic resonance imaging showed T2 hyperintensity in the caudate, putamen, and globus pallidus bilaterally, and magnetic resonance spectroscopy showed lactate peaks in the basal ganglia (Figures 1A and B).

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Trihexyphenidyl improved his dystonia and tremor within a month, but the chorea worsened. After he discontinued trihexyphenidyl, chorea gradually resolved. Eight months after the injury, he is still experiencing emotional, behavioral, and academic problems as well as intermittent urinary incontinence.

Delayed encephalopathy after carbon monoxide (CO) intoxication is characterized by mental deterioration, gait disturbance, speech disorder, seizure, and incontinence preceded by an asymptomatic period of variable duration (from 2 to 40 days) following recovery from the acute stage.¹ Additionally, destructive lesions of basal ganglia may result in movement disorders. Parkinsonism has been reported to occur in 9.5% of CO-poisoned patients.² The incidence of chorea after CO poisoning is known to be rare. Its duration ranges from days to months, and it is usually alleviated through the use of neuroleptics and aggravated by anticholinergics.³

Declaration of Conflicting Interests

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