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Paroxysmal Autonomic Instability with Dystonia after Multiple Cerebral Insults : A Case Report

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Introduction

Paroxysmal autonomic instability with dystonia (PAID) is an under-diagnosed syndrome that describes a collection of symptoms after the diverse cerebral insults like traumatic brain injury, hydrocephalus, hemorrhagic stroke, brain anoxia. It is manifested by systemic hypertension, hyperthermia, tachycardia, tachypnea, diaphoresis, intermittent agitation and certain forms of dystonia.

Case

A semicomatous 46-year-old male presented to the emergency room with fluctuating vital sign such as uncontrolled hyperthermia (39~40.6°C), hypertension (systolic blood pressure 168~190 mmHg), tachycardia (133~155/min), tachypnea (35~48/min) and dystonia in all extremity (decerebrate posture). Patient had a brain surgery for astrocytoma in 1996. He also got a history of a first ischemic stroke on basal ganglia in 2008 and a second one in 2017 on the same area. The lab, EKG and radiologic study were normal. His brain image indicated an old infarction on basal ganglia with hydrocephalus. Tractography using diffusion tensor image technique showed a discontinuity of multiple tracts and electrophysiologic tests like evoked potentials displayed an absent response. Based on his dysautonomic symptoms and brain evaluations, physiatrist diagnosed patient of PAID syndrome. To manage PAID syndrome, propranolol and clonazepam were administered sequentially, but no effects were identified for improving the autonomic instability. Intravenous opioid (IV morphine) was then administered, and his body temperature, heart rate and respiratory rate were effectively controlled and his decerebrate type dystonia subsided. However blood pressure was excessively controlled that severe hypotension occurred as systolic blood pressure below 90mmHg. And then, transdermal opioid (fentanyl) patch was applied, to dose of which equivalent to IV opioid, once in every 3 days for PAID syndrome. Finally all his vital signs and dystonia were managed without any complications and patient was discharged from the hospital.

Conclusions

We observed the patient with PAID after multiple cerebral insults controlled by applying opioid patch not by intravenous route or oral route. Transepidermal opioid patch such as fentanyl patch can be effective for the patients with PAID after multiple cerebral insults.