

Persistent Hiccups in Posterior Circulation Stroke as Rare Presentation of Pulmonary Embolism—Don't Jump the Gun

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Persistent hiccups in patients admitted to the intensive care unit (ICU) are not uncommon. Various causes for persistent hiccups in the ICU include gastric distension, esophageal disorders, central nervous system disorder, drugs like steroids, and dyselectrolytemia.¹ Rarely pulmonary embolism (PE) may also present as persistent hiccups.² We report a case of posterior circulation stroke, when persistent hiccups were thought to be secondary to central disorder, causing delay in the diagnosis of pulmonary embolism.

A 66-years-old male was admitted with complaints of vomiting and vertigo since last night. He had no known comorbid illness. On examination, his Glasgow Coma Scale (GCS) was E4V5M6, and he had truncal ataxia. On further evaluation, he was diagnosed to have acute right posterior inferior cerebellar artery (PICA) infarct with hemorrhagic conversion. His routine blood investigations, electrocardiogram (ECG), and 2D-echocardiography were unremarkable. His treatment included antiedema measures and deep vein thrombosis (DVT) prophylaxis with intermittent pneumatic compression device. Next day, the patient developed reduced GCS along with bradycardia. He was immediately intubated and put on mechanical ventilation, and he underwent decompressive craniectomy with external ventricular drain (EVD) insertion. During his stay in the ICU, he developed ventilator-associated pneumonia, which was treated with appropriate culture-based antibiotics. He subsequently underwent percutaneous tracheostomy and was weaned off the ventilator. On day 8, EVD was removed. Next day, the patient developed hiccups for which chlorpromazine tablets were prescribed but the hiccups persisted. Two days later, the patient developed drowsiness with tachypnea, tachycardia, and hypotension. On evaluation, ECG showed ventricular premature complexes, and arterial blood gas showed pH 7.22, pCO₂ 71.3, and pO₂ 79.7. The patient was put back on a mechanical ventilator, and intravenous noradrenaline was started to treat hypotension. A differential diagnosis of tracheostomy tube blockade with mucus plug or PE was made, and the patient was further evaluated. Repeat 2D echocardiography, bilateral lower limb venous Doppler were normal. Computed tomography pulmonary angiogram revealed intraluminal filling defects within bilateral pulmonary artery branches, extending into segmental and subsegmental branches. He was immediately started on low-molecular-weight heparin. Following 4–5 days, hiccups disappeared completely, and the patient was weaned from the ventilator. Later, he was shifted out of the ICU and was discharged home successfully.

To our knowledge, this is the first case of persistent hiccups developing secondary to PE in a patient with stroke. Patients with neurological disorders commonly experience persistent

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hiccups, especially in posterior circulation stroke.^{3,4} It results from disturbance in the reflex arc consisting of the brainstem, phrenic and vagus nerve, and sympathetic chain.⁵ After excluding common causes of hiccups, we assumed that hiccups were due to PICA territory infarct. Pulmonary embolism commonly presents with dyspnea, pleuritic pain, and cough. On the other hand, persistent hiccups are a rare presenting symptom of PE. Although the exact mechanism is not known, hiccups in PE may result from irritation of the reflex arc in the chest.

Stroke patients are at increased risk of PE secondary to DVT. Since our patient did not show any clinical signs of DVT and he was on mechanical prophylaxis from the day of admission, we did not rule out PE as a causative factor for persistent hiccups initially, causing delay in diagnosing of such fatal condition.

Our case highlights the importance of including PE as a rare cause of persistent hiccups besides neurogenic onset in patients with stroke. High index of suspicion is critical for a possible diagnosis of PE.

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