Cough Headache Presenting with Reversible Cerebral Vasoconstriction Syndrome: A Case Report

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Abstract:
Cough headache can be a primary benign condition or secondary to underlying etiologies. We herein describe a case of a 52-year-old woman with cough headache that presented as reversible cerebral vasoconstriction syndrome (RCVS). Some cases of RCVS are caused by an aberrant sympathetic response to activities that cause an intracranial pressure surge. Therefore, cough headache should be recognized as a possible presentation of RCVS, even without thunderclap headache or neurological deficits.

Key words: cough headache, reversible cerebral vasoconstriction syndrome, cerebral infarction

Introduction
Cough headache is provoked by coughing or the Valsalva maneuver. It occurs immediately after coughing and is relatively rare, with a lifetime prevalence estimated to be 1% (1). It can be a primary benign condition or secondary to underlying etiologies, most of which are associated with Arnold-Chiari malformation type I (2). By definition, primary cough headache (PCH) can be diagnosed only if the results of neuroimaging studies are normal (3).

We herein describe a patient with cough headache that presented as reversible cerebral vasoconstriction syndrome (RCVS) and highlight the possible association between PCH and RCVS.

Case Report
A 52-year-old woman without a history of headaches or prior respiratory disease was referred to an affiliated hospital because she had been experiencing sore throat and stubborn dry cough as well as recurrent and transient headaches for 2 weeks. She was diagnosed with an upper respiratory infection. The headaches, which were characterized by mild to moderate stabbing pain, developed immediately after coughing and the Valsalva maneuver and subsequently changed to a dull pain. These brief headaches were localized to the parietal regions and lasted less than 30 minutes. A diagnosis of PCH was tentatively made because her brain computed tomography scans were unremarkable.

Although loxoprofen was started at a dosage of 60 mg as needed, the intensity and frequency of headaches showed no significant improvement. The day after the consultation, she experienced transient bilateral blurred vision that resolved within 10 minutes. Five days later, although the cough stopped by the administration of benproperine phosphate, she developed a persistent and dull but bearable headache. Therefore, she revisited the medical institution. Diffusion-weighted and fluid-attenuated inversion recovery magnetic resonance imaging (MRI) revealed high-intensity lesions in the cerebral cortex of the bilateral parietal lobes (Fig. 1A). The lesions showed a decreased apparent diffusion coefficient. Magnetic resonance angiography (MRA) revealed multifocal narrowing of the cerebral arteries (Fig. 1B). She was subsequently admitted to our hospital for the further evaluation of her condition.

Physical and neurological examination findings were normal. She was diagnosed with multiple cerebral infarcts due to cerebral vasoconstriction. We prescribed clopidogrel and lomerizine, and her headache gradually improved. MRA on day 8 showed no vasoconstriction of the cerebral arteries (Fig. 2). She was finally diagnosed with symptomatic cough headache with RCVS.
Applications, such as cerebral infarction, intracerebral hemorrhage, or reversible posterior leukoencephalopathy syndrome (4, 5, 10). PCH has been considered a benign condition. Based on our observations, the neurovascular imaging findings in individuals with cough headache, even without thunderclap headache or neurological deficits, need to be analyzed.

The authors state that they have no Conflict of Interest (COI).

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