Secondary Cough Headache Responding to Topiramate

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ABSTRACT
Cough headache is a type of headache lasting one minute to 30 minutes and arising from activities, such as cough and Valsalva maneuver, which increase intra-abdominal pressure. It is seen in adults aged forty years and older. It is bilateral, intense and stabbing type of headache. Herein, we report the case of a 65-year-old patient presented with severe headache which was aggravated with defecation, lifting a heavy object and going up and downstairs. Her neurologic examination was normal. Magnetic resonance imaging revealed Arnold-Chiari malformation type 1. Surgical operation was planned, but she denied surgical operation. Indomethacin was not administered due to intractable dyspeptic complaints. Topiramate was administered to lower intracranial pressure. Her headache symptom considerably disappeared. We concluded that, topiramate could be medical alternative for secondary headaches, such as cough headache in case of Arnold-Chiari malformation type 1. (Archives of Neuropsychiatry 2013; 50: 82-83)

Key words: Cough headache, Arnold-Chiari malformation type 1, topiramate

ÖZET

Anahat kelimeler: Öksürük baş ağrısı, Arnold-Chiari tip I malformasyonu, topiramat

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Introduction
For many years, it has been recognized that cough headache can occur during exertion, coughing, and sexual activities (1). These headache disorders share many pathophysiologic and clinical characteristics. Activities which provoke cough headache are usually Valsalva-like maneuvers. Some patients have more than one of the above headache triggers. Cough headache can be primary or secondary. Primary cough headache (PCH) ranges in intensity from moderate to severe with mostly explosive or dull pain at onset but can be pulsatile, stabbing sometimes. The most common secondary causes of cough headache are Chiari malformation type 1 and posterior fossa lesions. Therefore, investigation of secondary causes is mandatory (2).
In the treatment of PCH, strategies include drugs such as, indomethacin, carbonic anhydrase inhibitors and procedures that may lower intracranial pressure. In secondary cases, treatment is selected according to underlying reasons. Primary cough headache frequently responds to indomethacin (3), but this response is limited for secondary ones. Herein, we report a case presented with cough headache secondary to Arnold-Chiari type 1 malformation and responded to topiramate administration.

Case

A 65-year-old female patient was admitted to our outpatient neurology clinic with severe headache localized to bilateral occipital region, provoked by lifting heavy subjects, going up and down-stairs, laughing and difficult defecation, lasting 5-10 minutes since 3 years. She stated that non-steroidal anti-inflammatory agents and serotonin re-uptake inhibitor agents did not relieve her headache. Her family and previous medical history was not significant. Cranial magnetic resonance imaging (MRI) revealed Arnold-Chiari malformation type 1 (Figure 1). She was advised, but refused operation. She was advised to attend the clinical follow-up, since no neurological deficits were detected and ventricular hydrocephaly or syringomyelie were not observed on cranial MRI. She could not tolerate indomethacin, severe gastrointestinal upset developed. Therefore, topiramate, a weak carbonic anhydrase inhibitor, was administered in the intensified dose of 25 mg weekly. On 100 mg dose treatment of topiramate, her headache complaint was quite improved. The initial value for pain score on the visual analogue scale (VAS) was 10, but it decreased to 1 at the end of the 1-month topiramate therapy. After six months, the treatment was discontinued at the request of the patient. However, after cessation of the treatment, her headaches recurred. Therefore, topiramate was started again. The symptom has not occurred during one-year follow-up.

Discussion

In primary cough headache, treatment strategies include drugs such as indomethacin, carbonic anhydrase inhibitors and procedures that may lower intracranial pressure. In secondary cases, the treatment is designed according to the underlying causes (4). About 40% of cases of cough headache do not show demonstrable etiology, while others will be secondary to structural lesions, mostly a Chiari type I malformation. The characteristics of secondary cough headache including occurrence at an average age of 40 years, posterior location, longer duration compared to primary variety, association with posterior fossa symptoms/signs and non-response to indomethacin are different from those of PCH. Dynamic magnetic resonance imaging reveals difficulties in cerebrospinal fluid circulation in the foramen magnum territory and disappearance of preoperative plateau waves after posterior fossa reconstruction in patients with secondary cough headache (6).

The lifetime prevalence of PCH in a was about 1% cross-sectional epidemiologic study (1). Asians have lower frequency of secondary cough headache compared to Westerners (10.8% vs 58.8%, respectively). Chiari malformation type I and posterior fossa lesions are the most common secondary causes of cough headache (3, 4). In our case, secondary cough headache was due to Chiari type I malformation detected by MRI. Our patient refused surgery.

Topiramate has a beneficial therapeutic profile and has been used successfully for the treatment of epilepsy in children and adults and as prophylactic agent in migraine. Topiramate is used in patients with intracranial hypertension to reduce intracranial pressure (6). It has a weak action of carbonic anhydrase. In the literature, a few case reports exist regarding topiramate use in the treatment of headache syndromes such as exploding head syndrome and chronic paroxysmal hemicrania instead of epileptic disorders (7,8). In the present case report, topiramate was used in the treatment of cough headache. Initially, 25 mg was administered. It was intensified at the dose of weekly 25 mg. Since our patient refused surgery, we postponed surgical operation.

We searched the literature and found that topiramate use has been reported in the treatment of several headache syndromes. However, no case of secondary cough headache treated with topiramate has been reported. Therefore, our case report was unique and the first case presentation.

In conclusion, topiramate could be effectively and safely used in patients with secondary cough headache due to Arnold-Chiari type I malformation to improve symptoms and increase quality of life.

References


Figure 1. Sagittal T1 weighted images demonstrates Arnold-Chiari type I malformation, inferiorly displaced cerebellar tonsils.