

Episodic Vertigo and Migraine

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Dizziness or vertigo during a migraine attack is not uncommon, but vertigo without headache is even more uncommon and a frequent diagnostic challenge.

CLINICAL HISTORY

This 60-year-old woman has a 30-year history of episodes of vertigo with a spinning sensation and associated nausea, occurring about twice a year and lasting about 1 day. The episodes either awaken her from sleep or are present upon awakening in the morning. There is no associated headache, pressure in the ears, tinnitus, or hearing loss. She recently saw an ear, nose, and throat physician who noted a normal electronystagmogram and an audiogram which showed mild, bilateral, high-frequency sensorineural loss.

Since about aged 10 years, she has had a few severe headaches each year which can last all day, described as a unilateral throbbing with light and noise sensitivity but no aura or nausea. She is not aware of any triggers. Acetaminophen dulls the headache, but she has not tried any prescription drugs. There is a past medical history of ulcerative colitis for a few years and hypertension. Neurological examination is normal.

Questions.—Could the episodes of vertigo without headache be a manifestation of migraine? Are migraineurs more susceptible to episodes of vertigo

than the general population? What types of treatment are helpful?

EXPERT COMMENTARY

Yes, these episodes of vertigo without headache are almost certainly a manifestation of migraine, a so-called migraine equivalent. This patient's history of chronic recurrent attacks of vertigo unassociated with auditory or neurological symptoms is one of the most common reasons for referral to our neurotology clinic. The syndrome has been called many names including *benign paroxysmal vertigo*, *benign recurrent vertigo*, and *vestibular Meniere's syndrome*.¹ Most patients with benign recurrent vertigo have a personal and family history of migraine. However, since we currently do not understand the pathophysiology of vertigo with migraine (whether it originates from the ear, brain, or both), it can be difficult to convince patients and their physicians that migraine is the cause of the vertigo.

The association of migraine and dizziness extends back to the 19th century when Liveing mentioned their connection in *On Megrin: Sick Headaches and Some Allied Health Disorders*. Overall, episodic vertigo occurs in about 25% of unselected patients with migraine (similar to the frequency of visual aura).² Episodes typically come on abruptly, often without any precipitating factor, and can last from minutes to days at a time. The attacks of vertigo can occur with a headache, but most often the attacks occur during a headache-free interval.³

Basilar migraine is a subtype of migraine characterized by recurrent headaches and other neurologi-

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cal symptoms localized to the posterior fossa. Vertigo is one of the most common symptoms associated with basilar migraine, but the International Headache Society criteria for basilar migraine require at least one other symptom in addition to vertigo for the diagnosis (eg, double vision, ataxia, numbness, weakness, dysarthria, and so forth). Familial hemiplegic migraine (FHM) is a migraine syndrome characterized by headache attacks preceded or accompanied by episodes of hemiplegia. Within reported families with FHM, some affected members have episodic vertigo, interictal nystagmus, and progressive ataxia.⁴ The gene for FHM, located on chromosome 19p, codes for an $\alpha 1$ subunit of a voltage-gated calcium channel. We screened several of the probands of families with benign recurrent vertigo and migraine and could not identify any mutations in the calcium-channel gene on chromosome 19p.⁵

Clearly, migraineurs are more susceptible to episodes of vertigo than the general population. We recently queried 111 first-degree relatives and 43 unrelated spouses in the families of 24 probands who presented to our neurotology clinic with benign recurrent vertigo and migraine.⁶ Forty-four (40%) of the first-degree relatives reported spontaneous recurrent attacks of vertigo while only 1 (2%) unrelated spouse reported such attacks.

A wide range of antivertiginous and antiemetic drugs are useful for symptomatic treatment of vertigo with migraine. Promethazine (25 or 50 mg, orally or via suppository) is particularly effective because of its combined antivertiginous and antiemetic properties. Less sedating drugs such as dimenhydrinate and meclizine are useful for treating milder episodes of vertigo and for controlling chronic motion sickness. Metoclopramide promotes normal gastric motility and may improve absorption of oral drugs. Whether headache abortive drugs, such as the ergotamines or triptans, are effective for aborting attacks of vertigo

has not been determined. I have had several patients report that sumatriptan taken at the onset of an attack will abort the vertigo. However, there have been no controlled studies to confirm this observation. Prophylactic treatments are appropriate when episodes of vertigo are occurring frequently or when the severity is not adequately controlled by symptomatic treatment. The same prophylactic medications used to prevent headaches also prevent vertigo spells, but again there are no controlled studies. In my experience, β -blockers, calcium-channel blockers, and tricyclic amines have been effective in preventing attacks of vertigo in patients with migraine. Acetazolamide is a drug that deserves wider consideration as a migraine prophylactic. We have found it to be particularly effective in controlling vertigo and motion sickness in patients with migraine. Other inherited syndromes effectively treated with acetazolamide have turned out to be ion channel disorders. Assuming other migraine syndromes are due to ion channel defects in the brain, inner ear, or both, then acetazolamide might be effective for a wide range of migraine disorders.

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