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Carving Out an Identity for Vestibular Migraine

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Vestibular migraine goes by many names: migraine-associated vertigo, migraine-related vestibulopathy, and migrainous vertigo, just to name a few. The condition, which accounts for about 3% of migraines, was finally given a separate set of diagnostic criteria in the 2013 update to the *International Classification of Headache Disorders, 3rd Edition*. Likely underdiagnosed, vestibular migraine is often mistaken for a host of other syndromes and conditions.[1]

"Vestibular migraine is a mouthful of a topic. The more you look at it, the more complicated it gets. It may be the most common cause of chronic dizziness. The new diagnostic criteria will help but may be too restrictive to capture all migraineurs with vertigo," said Jason D. Rosenberg, MD, assistant professor of neurology and director of the Johns Hopkins Headache Center.

Diagnosing Vestibular Migraine

According to the new criteria, a patient should have a history of migraine and at least five episodes of vertigo lasting between five minutes and 72 hours in order to earn a vestibular migraine diagnosis. At least 50% of these episodes should be associated with migraine-type headache, photophobia or phonophobia, or a visual aura. Vertigo of vestibular migraine may occur during or between headaches and be associated with non-headache migraine symptoms. Other vestibular disorders should also be ruled out.[1]

"The new criteria are useful, but many patients will fall outside of the criteria. There are no tests that rule in the diagnosis. It is almost entirely clinical," said Jonathan H. Smith, MD, assistant professor of neurology at the University of Kentucky College of Medicine.

"Primary care doctors can make this diagnosis by ruling in migraine and ruling out peripheral causes of vertigo, like benign paroxysmal positional vertigo (BPPV). A lifelong tendency for motion sickness and vertigo, stimulated by a visually busy environment (like walking down a grocery store aisle) are supportive of the diagnosis. Sudden onset of persistent vertigo is a red flag and should suggest other causes. Remember that peripheral vertigo, Meniere's disease, and stroke are more common in migraineurs," said Rosenberg.

He noted that bedside testing can be very useful for ruling out peripheral causes of vertigo, including tests for dynamic visual acuity, the Hallpike maneuver for BPPV, and a combination of the head impulse, nystagmus, and test of skew (HINTS) exam.

Etiology of Vestibular Migraine

The old vascular hypothesis of migraine has been replaced by theories of cortical habituation and genetically coded calcium channelopathies, among others. The etiology of vestibular migraine, however, is still unknown. They may represent brainstem aura phenomena or cortical depression spreading to vestibular nuclei.[1] "The best guess is that migraine is not one disorder. Different patients may have different biology," said Smith.

"One way to look at etiology is that vertigo is just another part of migraine hypersensitivity, like pain and photophobia. But the short answer is we just don't know," said Rosenberg.

Vestibular Migraine Mimickers

"ENT doctors know that many patients with inner ear problems have headaches, and neurologists know that many patients with migraine have inner ear problems," said Rosenberg. Many experts think that BPPV, Meniere's disease, migraines, and vertigo are all related conditions on the same spectrum.[1]

A study published in *Frontiers of Neurology* in 2014 looked at the overlap of Meniere's disease and vestibular migraine, the two most common causes of spontaneous recurrent vertigo. In 268 patients with either disorder, it was found that a subset of patients with Meniere's experienced migraine headaches, and some vestibular migraine patients complained of auditory symptoms like tinnitus and hearing loss, as seen in Meniere's.[2]

"Meniere's disease is a common confounder. An audiogram is a simple test that can be helpful. Patients with Meniere's will usually have a unilateral, significant sensorineural hearing loss. Patients with vestibular migraine may have a milder, bilateral hearing loss," said Smith.

In addition to otologic causes of vertigo, other disorders in the differential diagnosis include acoustic neuroma, brainstem lesions, posttraumatic headache or vertigo, and vascular abnormalities. "Throw in MS, stroke, and infection. Neurologic findings that are red flags include ataxia, skew, diplopia, cranial nerve abnormalities, visual field loss, and static imbalance," said Rosenberg.

Potential Treatments

As you might expect in a disorder recently defined, treatment trials that specifically target vestibular migraine are scarce. A 2014 review of treatments published in *Frontiers of Neurology* could not find any randomized controlled trials on prophylactic treatment of vestibular migraine. Two randomized controlled trials (RCTs) provided limited evidence for treating vestibular migraines with triptans, testing rizatriptan, and zolmitriptan for acute attacks.[3]

A 2015 study, identified 65 patients with vestibular migraine out of 407 patients referred to an otolaryngology clinic for vertigo. A retrospective review of 407 patients referred to an otolaryngology clinic for vertigo identified 65 patients with vestibular migraine. The study, published in *Otology & Neurotology*, evaluated the response of the patients to prophylactic treatment with flunarizine (a calcium channel blocker) or propranolol. Response rate for both was above 60%. The authors concluded that vestibular migraine is common in vertigo patients and should not be overlooked because patients can benefit from prophylactic treatment. [4]

With a lack of proven guidelines, treatment for vestibular migraine is based on expert opinion and experience. Drugs used to treat acute episodes are usually the same drugs used to treat migraine. Flunarizine, topiramate, beta blockers, and antidepressants have all been used for prevention.[4]

"I use triptans for acute attacks. For prevention I use trigger avoidance. Useful medications include topiramate, an SNRI, or verapamil. None is clearly better than the others. As a last resort, I may use a benzodiazepine and vestibular rehabilitation, but keep in mind that rehabilitation may make patients feel worse," said Rosenberg.

"I treat acutely the same as for migraine. Preventive treatments are hit or miss and need to be individualized. Topiramate, lamotrigine, or a calcium channel blocker seem to work best. I also consider adding a benzodiazepine or an antidepressant because the experience of vertigo is very anxiety producing. Success rate overall is about the same for migraine, around 60%," said Smith.

Although vestibular migraine has a new criteria for diagnosis, it is still a controversial, challenging, emerging, and underdiagnosed condition. It may be the most common cause of recurring or ongoing dizziness, and it certainly deserves more attention. Perhapsvestibular migraine will emerge as a distinct diagnosis with its own treatment guidelines, but "for now, I prefer to think of vestibular migraine as a syndrome of vertigo in people with migraine," said Rosenberg.

If you're a primary care provider unfamiliar with the above mentioned diagnostic tests, visit the Chicago Dizziness and Balance website to review protocols.

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