

## **Vestibular Migraine**

Shin C. Beh, MD, Deborah I. Friedman, MD, MPH

University of Texas Southwestern Medical Center, Dallas, Texas

### **INTRODUCTION**

While the association between dizziness and migraines has been long-recognized, vestibular migraine has only been recognized as a unique clinical entity within the past decade [1-3]. Various terms have been used to describe this disorder including migraine-associated vertigo, migraine-associated dizziness, migraine-related vestibulopathy, benign recurrent vertigo, and migrainous vertigo. The term “vestibular migraine” is more apt and accurate, since it encompasses the various vestibular symptoms that afflict these patients, and emphasizes its migrainous etiology. It is the most common cause of episodic vertigo in adults and children [4].

### **DIAGNOSIS**

Vestibular migraine patients typically present with recurrent vestibular symptoms, which are not limited to vertigo (which is defined as the illusion of self or environmental rotation) and include spontaneous vertigo, positional vertigo, visual vertigo (dizziness provoked by complex visual stimuli), head motion-induced vertigo, and head motion-induced dizziness with nausea [1-3]. These vestibular symptoms are moderate (interfering with but not prohibiting daily activities) or severe (resulting in inability to carry out daily activities) [2]. The duration of the vestibular symptoms can be highly variable, but usually last between 5 minutes to 72 hours [1,2]. Some patients may suffer from persistent vestibular symptoms lasting months to years with episodic exacerbations. These symptoms are usually accompanied by migrainous symptoms (headache, photophobia, phonophobia, and/or visual or other auras).

Nausea, vomiting, and kinetophobia are not specific symptoms of vestibular migraines since almost all dizzy patients feel nauseated and/or vomit, and prefer not to move around. Typical migraine triggers (sleep deprivation, menses, stress, missed meals, specific foods) also may precipitate vestibular migraine attacks; vestibular migraine episodes may also be provoked by stimuli that cause visual-vestibular mismatch (e.g., 3D movies, riding in the back seat of a car, etc). Importantly, typical migraine headaches do not typically accompany these vestibular symptoms, which can make the diagnosis of vestibular migraine challenging; indeed, a fixed association between headache and vertigo is present in less than half of patients [1, 2]. Many vestibular migraine patients suffer from typical migraine headaches earlier in life, but by the time vestibular symptoms manifest, the migraine headaches have attenuated or disappeared [1]. As

such, it is important to inquire about a past history of migraines, as well as current symptoms of photophobia, phonophobia, and other migraine auras.

It is important to point out that vestibular migraine cannot be diagnosed in dizzy patients who happen to have a history of migraine headaches. The diagnosis requires recurrent vestibular symptoms accompanied by migrainous features. The Committee for Classification of Vestibular Disorders of the Bárány Society and the Migraine Classification Subcommittee of the International Headache Society jointly formulated diagnostic criteria for vestibular migraines [2] that are published in the appendix of the ICHD-3 beta version of the international headache classification [3].

The neurological exam is generally normal between attacks but up to 2/3 of patients have interictal ocular motor abnormalities, including central positional nystagmus, gaze-evoked nystagmus, saccadic pursuits, ocular dysmetria, and slow saccades.

## **DIFFERENTIAL DIAGNOSES**

Vestibular migraines are distinct from migraine with brainstem aura (“basilar-type”) as the latter diagnosis requires at least TWO symptoms attributable to the posterior circulation territory, and vestibular symptoms are the only manifestation in the former [1]. Furthermore, the duration of vestibular symptoms in migraine with brainstem aura should meet criteria for an aura (i.e., lasting 5 to 60 minutes, and immediately preceding the onset of migraine headache), which is rare in vestibular migraines [1,2]. Vestibular migraines are also distinct from benign paroxysmal vertigo of childhood since the vestibular symptoms begin in adulthood [1].

Migraine is more common in patients with Meniere’s disease compared to healthy controls [5], and there are patients with features of both vestibular migraine and Meniere’s disease. It can be very difficult to differentiate the attacks of Meniere’s disease from that of vestibular migraine, especially if only vestibular symptoms occur in Meniere’s disease, or if aural symptoms accompany episodes of vestibular migraine. Tinnitus, ear pressure, and fluctuating hearing changes may sometimes occur in vestibular migraine [2]. However, significant hearing loss (especially low frequency hearing loss), roaring tinnitus, and otolithic crises are extremely atypical of vestibular migraine. If there is diagnostic confusion between vestibular migraine and Meniere’s disease, otolaryngologic consultation is essential.

Benign paroxysmal positional vertigo (BPPV) is also commonly associated with migraine but the attacks are very brief (seconds to minutes) and triggered by a change in head position in a specific plane. Anxiety is also comorbid with migraine and is frequently associated with dizziness; however, the anxiety-related dizziness is usually non-specific lightheadedness that is not associated with migrainous features.

In every patient complaining of dizziness or vertigo, a thorough history and examination are essential to ensure that the patient does not have a vestibular disorder and concomitant migraine.

## TREATMENT

Similar to migraine headaches, the treatment of vestibular migraine can be divided into abortive therapy for acute vestibular attacks, and prophylactic therapies to decrease or prevent further attacks.

Acute or abortive treatment for vestibular migraine episodes consist of vestibular suppressants, and anti-emetics. There is limited evidence to support the use of triptans to treat dizziness in vestibular migraine [3,4]. In our experience, benzodiazepines are more efficacious vestibular suppressants compared to meclizine. We prefer to use diazepam for episodes lasting 2-3 hours, and lorazepam or clonazepam for longer attacks; alprazolam is too short-acting and may cause addiction. Analgesics can be used to treat concomitant migraine headaches if needed. We sometimes recommend a trial of triptans in conjunction with vestibular suppressants and/or antiemetics if the patient has used triptans to treat their migraine headaches in the past, and if headaches frequently accompany vestibular symptoms.

Prophylactic treatments in vestibular migraines are similar to that used to treat migraine with or without aura, and include beta-blockers, anti-epileptic medications, tricyclic antidepressants, and calcium-channel blockers [3,4]. There have been no studies that show the superiority of any particular agents [3]. Behavioral modification, including limiting caffeine intake, and trigger avoidance, is very important reducing the number of attacks. In those patients with significant motion intolerance, or sensitivity to specific stimuli, vestibular therapy should be considered.

## References

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