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EDITORIALS

Making a diagnosis in patients who present with vertigo

Not all vertigo is labyrinthitis

D Kaski *neurology registrar*, A M Bronstein *professor of neuro-otology*

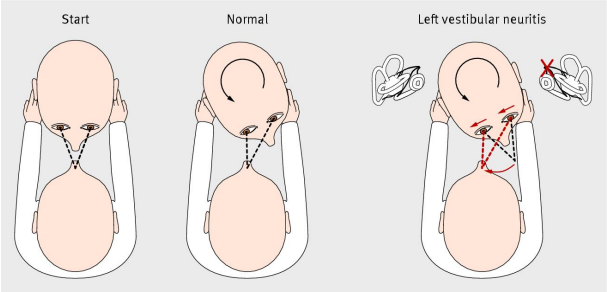
Department of Neuro-otology, Charing Cross Hospital, Imperial College London, London W6 8RF, UK

Dizziness is a common problem. For many non-specialists the term "vertigo" has become synonymous with labyrinthitis, a label that is often attached to acute and chronic dizziness that is presumed to be benign in origin. However, vertigo is simply the illusion of movement, whereas labyrinthitis refers to inflammation of the labyrinth (vestibular and cochlear parts) and is exceptionally rare in clinical practice. Furthermore, vestibular neuritis—inflammation of the vestibular nerve with sparing of the cochlear nerve, which is more common than labyrinthitis—is also often referred to as "vestibular labyrinthitis." It is important that patients who present with dizziness are given the correct diagnosis both to avoid missing serious neurological causes and to ensure that the right treatment is given.

The incidence of vestibular neuritis is about 3.5 per 100 000 population,[1] although it is probably overdiagnosed and often misdiagnosed. In a study of patients referred to a specialist neuro-otology service with vestibular neuritis mislabelled as labyrinthitis, the diagnosis was correct in only 15%; most of the others had benign paroxysmal positional vertigo (BPPV) or vestibular migraine.[2] In a retrospective study of patients who presented to the emergency department with dizziness, a worrying finding was that stroke was often misdiagnosed as vestibular neuritis.[3] The clinical outcome can be poor for patients with stroke who present with dizziness and are initially misdiagnosed.[4] Benign causes of dizziness are treated differently from vestibular neuritis. For example, BPPV is treated effectively with the repositioning manoeuvre and vestibular migraine is best managed with prophylactic drugs.

So how are the different conditions distinguished? Vestibular neuritis presents as a single acute attack of continuous rotational vertigo ("the room is spinning around"), nausea (and often vomiting), and imbalance. The vertigo and nausea typically last several days, during which the vertigo is constant, even when the head is held completely still. This contrasts with BPPV, where vertigo is specifically induced with head movements and can therefore only be diagnosed with the Hallpike manoeuvre (a positional manoeuvre in which the patient's head is turned sideways and then the patient is tipped backwards such that the head overhangs the edge of the couch). Recurrent attacks of BPPV, although in themselves brief, can be confused with a prolonged episode of vertigo if the patient is not specifically asked about periods of relief. Vestibular neuritis is distinguished from cerebellar stroke by assessing the nature of the disrupted balance; patients with vestibular neuritis can remain upright using "furniture walking," but patients with cerebellar stroke are unable to stand.

Patients with acute vestibular neuritis will have spontaneous nystagmus when instructed to look forwards. This is why patients experience their environment as spinning. The nystagmus of vestibular neuritis is mostly horizontal, with some rotatory (torsional) component, and is unidirectional—for example, right beating whether the patient looks to the left, right, or centre. In the absence of other central nervous system symptoms or signs, spontaneous and unidirectional nystagmus usually points to an abnormality in the peripheral, as opposed to central, vestibular system. Patients with vestibular neuritis have unilateral loss of the vestibulo-ocular reflex, a reflex eye movement that stabilises images on the retina during head movement by producing an eye movement in the direction opposite to head movement, like a "steadycam." This reflex is a key function of the vestibular system. Signals from the semicircular canal detect head movements and travel directly to the eyes, moving them in the opposite direction from the head, and at the same speed. This is the principle of the head impulse test,[5] which tests the integrity of the vestibulo-ocular reflex at the bedside (figure).



Principle of the head impulse test

Red flag signs associated with acute dizziness that indicate a possible central neurological cause (such as posterior circulation

d.kaski@imperial.ac.uk

stroke) include unilateral hearing loss, abnormal neurological symptoms or signs, new headache, and a normal vestibulo-ocular reflex as assessed by the head impulse test (which would imply that the vertigo does not originate in the peripheral vestibular system). Hearing and otoscopy are normal in vestibular neuritis and in most other benign causes of dizziness.

It is extremely rare for vestibular neuritis to recur; if a patient experiences recurrent episodes of dizziness consider a diagnosis of BPPV or vestibular migraine.

How is true vestibular neuritis treated? Encourage patients with vestibular neuritis to resume physical activity as soon as possible; bed rest and antiemetics should be recommended for a maximum of three days. Advice on steroid treatment in vestibular neuritis is inconsistent. A Cochrane review found no conclusive evidence for their usefulness,[6] although early intervention with corticosteroids may improve vestibular function test results in the long term.[7] Gradual recovery over weeks is the usual pattern as the central nervous system compensates for the disruption of the peripheral vestibular system. It is worth remembering that dizziness may be exacerbated by psychological factors, and in some patients an incomplete or false understanding of the symptoms can lead to long term dizziness and handicap.[8]

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