

MINIREVIEW

EVALUATION OF THE DIZZY PATIENT

CRISTINA MARIA GOANȚĂ^{1,2}, MIHAI TUȘALIU^{1,3*}, REMUS GABRIEL MIHALCEA¹, VLAD ANDREI BUDU^{1,3}

¹University of Medicine and Pharmacy “Carol Davila”, Bucharest, Romania

²Clinical Emergency Hospital “Sf. Pantelimon”, Bucharest, Romania

³Institute of Phonoaudiology and Functional ENT Surgery “Prof. Dr. D. Hociotă”, Bucharest, Romania

SUMMARY

Dizziness is a symptom accused very often by patients. The patient that presents himself to the doctor for this accuse will usually say words like: I feel an illusory movement of the environment (we call this vertigo), I have a feeling of light headedness, of imbalance or I feel like I am going to faint. The ENT specialist first has to figure out if the symptoms of the patient are from a pathology to the inner ear or maybe he should sent the patient to a neurologist, neurosurgeon, orthopedic doctor. The clinical evaluation of the dizzy patient may establish the right diagnosis, only by history. Due to limited time of the medical consult, the physician may use a questionnaire that can further guide the evaluation.

Key words: dizzy, inner ear, vertigo, nystagmus

RÉSUMÉ

Evaluation du patient avec le vertige

Le vertige est un symptôme que les patients accusent très souvent. Le patient qui se présente chez le médecin pour cette accuse va dire des mots comme: J'éprouve un mouvement illusoire de l'environnement (nous appelons ça vertige), j'ai un sentiment d'étourdissement, de déséquilibre ou je sens que je vais m'évanouir. Le spécialiste ORL doit d'abord déterminer si les symptômes du patient tiennent d'une pathologie à l'oreille interne ou envoyer le patient à un neurologue, neurochirurgien ou un orthopède. L'évaluation du patient souffrant d'un vertige est très importante et l'on dit qu'on peut poser un bon diagnostic en écoutant avec attention l'histoire du patient; généralement on a peu de temps avec le patient dans le bureau, on devrait donner un questionnaire avec des données importantes qui vont guider le médecin dans ses consultations.
Mots clefs: vertige, oreille interne, nystagmus

GENERAL DATA

Dizziness is a symptom accused very often by patients. The patient that presents to the doctor for this accuse will usually say words like: I feel an illusory movement of the environment (we call this vertigo), I have a feeling of lightheadness, of imbalance or I feel like I am going to faint.

The ENT specialist first has to figure out if the symptoms are from a pathology of the inner ear or maybe he should sent the patient to a neurologist, neurosurgeon, orthopedic doctor.

The clinical evaluation of the dizzy patient may establish the right diagnosis, only by history. Due to limited time of the medical consult, the physician may use a questionnaire

that can further guide the evaluation.

The main points that should be found in the questionnaire are related to: (3)

- Are the symptoms constant or they appear episodically?
- Does the patient have any associated symptoms like nausea, hearing loss and so on or is just the dizziness?
- The onset was sudden or did it happen gradually?
- If the attacks are episodic how long do they last?
- Are there any triggers for the dizziness?

The important question for distinguishing what the patient feels in vertigo or other type of dizziness is related to time. Vertigo is never continuous, the CNS always adapts to the defect and so the vertigo usually subsides over several weeks.

Correspondence address:

Mihail Tușaliu, MD, PhD

Institute of Phonoaudiology and Functional ENT Surgery “Prof. Dr. D. Hociotă”

21 Mihail Cioranu street, 5th District, Bucharest, Romania

e-mail: mtusaliu@yahoo.com

The factors that provoke the vertigo are also of great importance. Vertigo can occur spontaneously but usually it will be associated with change in head positions or dizziness upon standing up. We should always determine whether the dizziness can be provoked by maneuvers that change head position without lowering blood pressure or decreasing the cerebral blood flow and such maneuvers can include lying down, rolling over in bed or bending the head trying to look up or down. We can say that in general if head motion does not worsen the feeling it is probably another type of dizziness. However the patient may experience aggravated dizziness with position change in any type of disease but if it is benign positional vertigo than this will occur only after the position has changed. (4)

So, the basic key points that are essential when interviewing the dizzy patient are the presence or absence of true vertigo, the time course of the episode, the signs and symptoms that accompany the episode and the relation to the movement of the head.

Examining the dizzy patient is not very easy. Some patients are hard to persuade in accepting the maneuvers because they are probably going to provoke the episode and the patients are afraid of the dizziness. So, it is very important the patient trusts the doctor.

The main components of a physical examination in the ENT department should be: VOR exam – nystagmus, head impulse, headshake, dynamic visual acuity, ocular torsion; VSR exam – tandem Romberg, foam Romberg, step test; Central OM exam; gaze, pursuit, saccade, fixation, suppression; posture and gait.

When we look for nystagmus we should look first for spontaneous nystagmus. We can do that with or without Frenzel glasses. We should be careful if the nystagmus has the same direction or it changes with the movement of the eyes, if it is pendular or if it has saccadic intrusions. If the nystagmus is present only in gaze and towards the fast phase than it is 1st degree nystagmus by Alexander's law. If it is present in neutral gaze and stronger in gaze towards fast phase it is 2nd degree and if it is present in all gazes then it is 3rd phase nystagmus. Some forms of nystagmus are related to central diseases. If the nystagmus has one of the next characteristics usually the problem is of central origins: down beating, up beating, ocular flutter, opsoclonus. (5) When looking at the eye try and look if you see a saccadic eye movement. If you have saccadic slowing the cause may be aging, medication, brainstem lesions or oculomotor lesions; if you have delayed saccades it can be oculomotor apraxia or Parkinson's disease.

With the head impulse test the examiner asks the patient to fixate on a target on the wall in front of the patient while the examiner moves the patient's head rapidly to each side. The examiner looks for any movement of the pupil during the head thrust and a refixation saccade back to the target. Either direct observation of pupillary movement or the use of an ophthalmoscope is employed to document eye movement. (2)

The observation of eye movement during the maneuver is a sign of decreased neural input from the ipsilateral ear to

the vestibulo-ocular reflex (VOR) because the contralateral ear is in inhibitory "saturation" and cannot supply enough neural activity to stabilize gaze. In such instances, the eye travels with the head during the high-velocity movement, and a refixation saccade is necessary to refoveate the target. Bilateral fixation movements are seen frequently in cases of ototoxicity. (1)

Another important maneuver in determining the cause of the vertigo is the Dix-Hallpike Maneuver. In a bed the examiner turns the patient's head 45 degrees to one side while seated and rapidly but carefully have the patient recline. He should observe the eyes for nystagmus and, if present, note the following five characteristics: latency, direction, fatigue (decrease on repeated maneuvers), habituation (duration) and reversal upon sitting up. A positive maneuver is diagnostic for benign position vertigo, which is thought to be due to otoconial debris either floating (canalithiasis) or fixed (cupulolithiasis) within the posterior semicircular canal of the undermost ear. Characteristics of classical positioning nystagmus include geotropic torsional direction, brief latency (5 to 20 seconds), decline with repeated positioning, 30 seconds or less duration, and reversal upon arising. Atypical positioning nystagmus may imply either peripheral or central disease. (6)

Limb Coordination Tests – the doctor asks the patient to perform a series of coordination tasks such as finger-nose-finger, heel-shin, rapid alternating motion, and fine finger motion (counting on all digits), then observes for dysmetria or dysrhythmia. (7)

The presence of limb dysmetria or dysidiadochokinesia is a useful indicator of cerebellar cortical disease, which may or may not accompany midline or vestibulocerebellar oculomotor dysfunction.

Romberg Test - The patient should stand with feet close together and arms at the side with eyes open and then eyes closed, then observed for the relative amount of sway with vision present versus absent. The Romberg stance is primarily a test of somatosensation and proprioception and not of vestibular input. Patients with compensated bilateral vestibular loss stand normally in both eyes-open and eyes-closed Romberg position because of adequate proprioception from the stable support surface. There are two ways, however, to make this test more sensitive to vestibular deficits - tandem stance and 3-inch foam. In the tandem stance, the support surface cues are sufficiently altered that vestibular cues play a greater role in maintaining upright posture. Similarly, when the patient stands on a compliant support surface such as 3-inch foam, somatosensory cues are muted and vestibular cues become more important. (8)

Gait Observation - Ask the patient to walk 50 feet in the hall, turn rapidly, and walk back without touching the walls. Observe for initiation of movement, stride length, arm swing, missteps and veering, and signs of muscle weakness or skeletal abnormality (kyphoscoliosis, limb asymmetry, limp). There is no such thing as a "vestibular gait." If a patient suffers an acute unilateral loss of otolithic function, the patient will tend to veer toward the side of

the lesion. However, a variety of central brain stem and musculoskeletal lesions also produce lateral deviation during ambulation. Difficulties with gait initiation and turns and decreased arm swing can be seen in extrapyramidal disease. Gait ataxia implies cerebellar dysfunction and is distinctly different from gait deviation associated with uncompensated peripheral vestibular disease. Finally, exaggerated hip sway, rhythmic deviations, and an excessive reliance on touching the wall during walking may constitute signs of a functional gait disorder. (9)

The most common cause of peripheral vertigo is BPPN. Usually it can be triggered by the Dix Hallpike test. The most common ones are right and left posterior canal BPPN. In lateral canal BPPN we can have canalithiasis characterised by transient geotropic horizontal nystagmus (beating downward stronger ear) or cupulolithiasis characterised by prolonged ageotropic horizontal nystagmus, downward weaker ear). (10, 11) It is treated with log roll maneuver.

The anterior canal BPPN is very rare and characterized by a downbeating ageotropic torsional nystagmus; in many cases we have posterior canal BPPN with debris on non-ampullated end. We treat it with modified CRP or Epley maneuver. (12)

Vestibular neuronitis is common in young adults and has a rapid onset with severe vertigo accompanied by nausea, vomiting and imbalance. It probably has a viral etiology, symptoms gradually decrease over several days and has a self limited course.

Meniere's disease consists of recurrent attacks of vertigo associated with auditory symptoms (hearing loss, tinnitus, aural fullness). Attacks are variable in duration most of them lasting over 20 minutes. In its evolution it can associate sensorineural hearing loss. (13)

Other forms of peripheral vertigo can be found in: vestibular paroxysmal, vestibular fistula, acoustic neuroma. Frequent central causes are stroke, multiple sclerosis, basilar migraine. Some systemic causes are: some medications, hypotension, infectious diseases like meningitis, endocrine diseases, vasculitis, panic attack. (14)

CONCLUSION

The doctor should always clarify with the patient what the term dizzy means and be sure he or she is talking about vertigo. The history is the most important part of the examination, the physical exam just confirm the diagnosis. In every patient the physical exam and neurological evaluation are necessary. The most important part of the physical exam is the assessment of the ear function, the ocular nystagmus, the head thrust and the Dix-Hallpike maneuver.

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