

ENT NEWS

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Evaluation and Management of the Dizzy Patient

Dizziness is a common but rather vague complaint the evaluation of which requires a systematic approach. At times a patient must be followed for a while through a few episodes until a diagnosis can be rendered. Like many areas in medicine, the History and Physical, guided by a knowledge of potential diagnoses, is the foundation of the evaluation with selected testing and referral following the initial evaluation.

History: The most important part of the history in dizziness is to clearly define what the patient means by dizziness. After an initial question as to what specifically the patient is experiencing, it helps to offer the patient options to choose from. Dizziness can usually be divided into three categories which guide further care.

Lightheadedness, or a feeling like the patient might pass out. This is more typical of either hypotension, which may be postural or due the effects of antihypertensives. It may also be due to arrhythmias or hypoglycemia. Primary care physicians are well versed in the evaluation and management of these conditions.

Imbalance, or unsteadiness on one's feet, may be otologic or neurologic in origin and calls for a more complete neurologic exam looking for evidence of peripheral neuropathy, motor neuron or CNS disease. Significant associated neurologic findings may warrant imaging studies and/or a neurology referral.

Vertigo, or a true spinning or motion sensation typically of the environment with eyes open or of the patient himself with eyes closed, can be neurologic but is usually labyrinthine in nature and calls for an neuro-otologic evaluation. The evaluation, diagnosis and management of vertigo are the focus of this newsletter.

Associated symptoms that should be questioned include hearing loss, tinnitus (if either of these are unilateral it may indicate the need for an MRI to rule out an acoustic neuroma), fullness in the ear, nausea, vomiting, paresis, paresthesias, visual symptoms, dysarthria or dysphagia the latter few suggesting a neurologic cause.

Neuro-otologic Physical Exam: Included are examination of the eardrums and canals, cranial nerves, and observation for nystagmus or tremors. Cerebellar and proprioceptive tests include finger to nose, rapid alternating movements and a **rhombberg test**. The latter often is positive with active labyrinthine disease with eyes closed, but due to the strong visual suppression of abnormal vestibular input will be negative with eyes open unless the vertigo is acute and severe. A positive rhombberg with eyes open usually indicates CNS disease. A **dix halpike maneuver** consists of laying the patient from a sitting position with legs on the exam table to head hanging off the end of the exam table and turned to the right (head-hanging right) with eyes wide open and observing the eyes for 20 seconds for horizontal or rotary nystagmus and symptomatic vertigo. This should not be confused with normal saccadic movement that occurs as the patient's visual frame of reference changes as the head moves from upright to supine. The patient should then sit up and the maneuver repeated to the head-hanging left position. Typically, if the test is positive, the offending ear causes nystagmus and/or vertigo when it is dependant (i.e. a diseased right ear causes nystagmus and/or vertigo in the head-hanging right position).

Testing: usually includes an **audiogram** (which can be ordered at the ENT Center without a physician's evaluation if desired). An **MRI** may be indicated if unilateral sensorineural hearing loss or unilateral tinnitus is present (rule out acoustic neuroma) or to evaluate for MS or other CNS conditions should the H&P warrant. More specialized test such as an **ENG** or **posturography** are best reserved for after ENT evaluation.

Specific Entities and their Management:

Post-viral Labyrinthitis, also known as serous labyrinthitis or vestibular neuronitis, is probably caused by viral or post-viral immunologic inflammation of the labyrinth or vestibular nerve. It presents with acute severe vertigo with nausea and vomiting that lasts for about a week with some brief vertigo on head turning or head extension for about a month. Nystagmus may be present at rest and is often seen on dix halpike maneuver. If it completely resolves, with no associated tinnitus or hearing loss, referral or further evaluation is usually not necessary. Symptoms are managed with Valium, a potent vestibular suppressant; 2mg tabs 1-2 po tid prn.

BPV (BPPV) Benign Paroxysmal (Positional) Vertigo is caused by dislodgment of otoliths (aka otoconia) or small calcium deposits from the utricular membranes in the semicircular canals. This dislodgement either occurs spontaneously in older adults or following head trauma (usually severe enough to cause at least transient LOC). When the head is placed in the provocative position (usually the affected ear down, as in lying on one's side in bed, or the head extended and turned toward the involved ear as in looking at the top closet shelf), these "stones" impact and deflect the utricular membrane stimulating the labyrinthine nerve causing acute vertigo that quickly subsides when the head is turned back to the horizontal or neutral position. Vertigo and rotary nystagmus are seen on dix halpike with the affected ear down. The condition either spontaneously resolves over a few months, or may be managed by manipulating the otoliths into a "safe" position by a specific head turning treatment known as an Eply maneuver. Via the Internet the interested reader can learn how to perform this maneuver, which has multiple variations and takes about 15 minutes to complete in the office.

Meniere's Disease is an idiopathic condition where excess fluid accumulates (aka endolymphatic hydrops) in the endolymphatic space (or membranous labyrinth) which ruptures, spilling potassium-rich endolymph into the perilymphatic space (or boney labyrinth) stimulating the vestibular nerve causing acute vertigo lasting hours to a day followed by a few days of imbalance and vertigo on head turning. The vertigo is then quiescent for several months until another episode occurs, sometimes precipitated by the fluid retention associated with significant salt intake. The fluid build up, which of course is not visible through the TM, may cause a feeling of fullness in the ear which may be persistent and often worsens before an episode. The endolymph rupture may also stimulate the auditory nerve causing roaring tinnitus and acute hearing loss during an attack. The recurrent insult to the cochlear (which connects to the labyrinth) often produces chronic hearing loss and chronic tinnitus in the involved ear. The diagnosis is made clinically following the exclusion of other disease (e.g. a negative RPR and MRI in a vertiginous patient with unilateral tinnitus and other symptoms consistent with

Meniere's disease). Nystagmus and positive Romberg and Dix-Hallpike tests may be present during an episode. An ENG typically reveals a unilaterally weak response from the involved ear. Initial treatment consists of a low salt diet and diuretics (furosemide). Other therapies include middle ear gentamicin instillation which diffuses into the inner ear and is toxic preferentially to the labyrinth (over the cochlea) blunting its response. Surgical therapy includes endolymphatic space decompression, vestibular neurectomy or labyrinthectomy.

Otic Syphilis can present with hearing loss and vertigo. It is screened for with an RPR or VDRL. FTAs have produced many false positives and are not useful. ID and neurology (for neurosyphilis) evaluations should be considered if the RPR is positive. Steroids lessen the inner ear inflammation improving vertigo and hearing.

Multiple Sclerosis true to its reputation as "the great imitator" can present with vertigo or imbalance but usually with other suggestive symptoms or physical findings. Clearly an MRI is helpful in this situation.

Cervical Vertigo is brought about by inaccurate proprioceptive information from diseased, strained or inflamed cervical joints, ligaments or muscles. This input to the cerebellum is at odds with that from the eyes and the labyrinth. The "sensory mismatch" causes imbalance or a swimming or rocking sensation especially on head turning. There is often a history of neck strain (frequently related to long days staring at a CRT screen in a poor ergonomic setting). The neurologic exam is usually benign. An ENG reveals nystagmus on head turning but normal labyrinthine function. The diagnosis is made by a suggestive history, benign physical exam, normal hearing test and, if needed, an ENG. The symptoms tend to be mild and short-lived but can be recurrent. The vertigo usually can be controlled with antivert while more definitive treatment for the underlying condition is sought.

Acoustic Neuroma is a slow growing benign tumor which can present with imbalance or vertigo and frequently has associated unilateral tinnitus or hearing loss (occasionally of sudden onset). Diagnosis (by MRI) when the tumor is small is helpful in preserving the auditory and facial nerves at the time of surgery. This fact warrants evaluation early on if symptoms are suggestive. It may be associated with neurofibromatosis.