Diagnostic Differentials of Dizziness

It is important for the clinician to collect an adequate history from the patient, in order to determine which differential category to place a patient. First, you must determine whether the patient's symptoms are a result of gait disturbances versus vertigo. Once this is determined, one of the most pertinent clinical signs when determining the etiology of a patient's dizziness is the duration of the patient's dizzy episodes.

Are symptoms exacerbated with non-specific high gain head movements in a sitting position?

No

Gait Difficulties and Gait Ataxia

-These patients have gait or balance complaints that occur while ambulating, but not necessarily while sitting. Causes include, but are not limited to: central spinal cord stenosis, subacute combined degeneration, pontine ischemic disease, orthopedic complaints, and peripheral neuropathy.

-These patients are able to make nonspecific high gain head accelerations while sitting with no significant difficulty. They should also be able to place their eyes on a target quickly.

-Patients may present with a wide based unsteady gait, multiple falls or near falls, and the appearance of walking like they are "drunk".

Yes

How long do the patient's episodes of symptoms of dizziness last?

Dizziness that lasts from seconds to minutes

Benign Paroxysmal Positional Vertigo (BPPV)

-BPPV is the result of tiny "crystals" of calcium oxalate that are usually a normal part of the inner ear's anatomy, detaching from the gelatinous membrane in the utricle or saccule and collecting in one or more of the ear's six semicircular canals. When the head moves, these "crystals" shift, resulting in a disruptive flow of the inner ear's endolymphatic fluid, causing the cupula to send false signals to the brain, producing vertigo and triggering reflexive nystagmus patterns. Approximately 40% of all dizziness is caused by canalithiasis. 50% of all dizziness in the elderly is due to BPPV.

-The patient typically complains of paroxysmal episodes of vertigo that occur with changes in head position with respect to gravity. The episodes of vertigo last for seconds to minutes and improve/resolve with keeping head still in a neutral position.

-Common exacerbating head movements include lying supine and rolling in a yaw-like fashion to the right or left, pitching head up (as in reaching for something on the top shelf) or down (picking something up off the ground or looking under the kitchen sink).

Cardiovascular, Vascular, Cardiogenic, and Cardiac Arrhythmias

-Cardiogenic dizziness occurs as a result of an episode of acute decrease in blood flow to the brain. Causes include paroxysmal cardiac arrhythmias and vascular flow disturbances such as vertebral artery dissection or orthostatic hypotension.

-Orthostatic hypotension causes episodes of vertigo that occur mainly when the patient is transitioning from a sitting or supine to standing position, causing an inability of the heart to provide blood flow to the brain as it fights gravity.

-Episodes related to paroxysmal cardiac arrhythmias may have no triggers or precipitating factors as the heart goes in and out of a dysrhythmia such as atrial-fibrillation. The patient may complain of associated chest pain, shortness of breath, or sensation of heart palpitations.

Dizziness that lasts from hours to days

Meniere's Disease

-Meniere's disease is also called idiopathic endolymphatic hydrops . In most cases only one ear is involved, but both ears may be affected in about 15 percent of patients. Meniere`s disease is believed to result from an abnormality in the volume of fluid in the inner ear. Excessive inner ear fluid may accumulate either due to excess production or inadequate absorption. We also feel that migraine or autoimmune disorders may play a role in producing Meniere's disease.

-These patients come in with complaints of vertigo, fluctuating tinnitus and hearing loss that may last hours to days. The patient may also be chronically dizzy due to permanent damage caused to the inner ear. However, the primary diagnostic differential finding would be documented hearing fluctuation associated with episodes of dizziness while the patient is symptomatic.

Migraine Variant Vertigo

-Migraine variant is the term applied to a migraine that exhibits itself in other ways besides the typical headache. The etiology of migraines is not well understood, however epidemiological evidence suggests that changes in blood vessels, hypoperfusion disorders, and microembolisation can cause neurovascular dysfunction and evoke cortical spreading depression accompanied by a transient change in blood flow to the cortex.

-These patients come in with a history of paroxysmal episodes of vertigo that may last hours to days. These episodes may or may not also be associated with episodes of transient fluctuating tinnitus and hearing loss, and other symptoms typically associated with classic migraine, including headache and visual aura.

Peripheral Vestibulopathy

-The causes of chronic peripheral vestibulopathy (dizziness with no relief) include: viral syndromes causing permanent damage to the vestibular apparatus, autoimmune inflammatory disorders (such as Meniere's Disease), acoustic neuroma, or Semi Circular Canal Dehiscence. Patient's will have a chronic daily sensation of dizziness that may wax and wane, as diminished vestibular sensory information is provided from one of the ears, causing a net imbalance of sensory input.

-Patients will have difficulty while sitting or standing, and symptoms will be exacerbated with nonspecific high gain head accelerations. Patients will also have difficulty tracking or placing their gaze on a target quickly.

Dizziness that lasts from months to years (Chronic Dizziness)

Central Vestibulopathy

-These patients have a dysfunction involving the central processing and integration of visual, somatosensory, and vestibular information coming from the ear into the brain. Causes may include cortical and brainstem lesions, stroke, tumors, hydrocephalus, demyelinating disease, hematoma, and concussion. Patients present with complaints of chronic balance and dizziness issues that wax and wane while sitting or standing.

Superior Semi-Circular Canal Dehiscence

-The symptoms are caused by a thinning or complete absence of the part of the temporal bone overlying the superior semicircular canal of the vestibular system, resulting in dysfunction of the membranous labyrinth.

-Patients with SSCD can experience vertigo evoked by loud noises and/or by maneuvers that change middle-ear or intracranial pressure (such as coughing, sneezing, or straining). Auditory manifestations of the syndrome include autophony (increased resonance of one's own voice), hypersensitivity to bone-conducted sounds, and an apparent conductive hearing loss revealed on audiometry.