History Taking in Vertigo Patients

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Introduction

Dizziness is the most common complaint. Balance of the body is mediated by 3 systems
i. Visual
ii. Proprioception
iii. Vestibular

Imbalance in either of these systems leads to balance disorder which begins with dizziness (Figure 1).

Figure 1: Vestibular Dysfunction.

How to evaluate??

a) Obtain a detailed case history.
b) It is the most important diagnostic tool to understand the disorder in a broader perspective.
c) A careful case history obtained is useful in differential diagnosis.
d) A thorough case history is the most important factor in determining the cause of vertigo.
e) It provides qualitative information that can be confirmed with quantitative vestibular testing.

Describe What You Are Experiencing?

a) This question really addresses the character of the dizziness the patient is experiencing.
b) It is helpful to stratify patients into two different categories of dizziness: Vertigo and Non vertigo dizziness [1-10].
c) It is important to establish this dichotomy as vertigo is often due to a disorder in the vestibular system, whereas non vertigo may be related to myriad causes including cardiovascular, ocular, or systemic diseases.
d) Begin with open ended questions and allow the patient to respond instead of being biased during history taking
vertigo - sensation of movement, often rotary, indicating disorder of the vestibular system
Non-vertiginous dizziness such as: imbalance, lightheadedness, syncope, faintness, and other diseases.

Imbalance may be described as dizziness, however, does not in isolation result from vestibular lesions. Imbalance may be a symptom of cerebellar dysfunction, drug toxicity, extrapyramidal disease (e.g. Parkinson disease), or other non-vestibular disorders.

Light headedness, often described as “floating” dizziness or “wooziness” may result from medications or the multiple sensory deficits syndrome. The multiple sensory deficits syndrome results from “de-afferentation”; often patients are elderly who have visual dysfunction (e.g. macular degeneration), balance difficulty (orthopedic or extrapyramidal disease), hearing loss and peripheral neuropathy. Patients are thus effectively cut off from receiving accurate information about the orientation of the environment which often leads to “dizziness.” Additionally, certain medications may produce a non-vertiginous sense of dizziness described as lightheadedness [11-15].
Syncope or presyncope often presents with “faint” feelings of dizziness. This sensation results from global hypoperfusion of the brain. Cerebral hypoperfusion may result from hypotension or arrhythmias. Orthostatic hypotension is a relatively common type of syncope/presyncope. This typically presents with faint feeling of dizziness after postural change, such as arising from the seated or lying position. Dehydration, certain antihypertensive medications, or autonomic failure may produce orthostatic hypotension. Other medical conditions such as endocrine diseases (especially hypothyroid) may present with non-vertiginous dizziness. Lab tests to include thyroid function and FTA/RPR are often obtained in unexplained cases. Drugs including prescription medications may also result in several types of dizziness. Patients with psychiatric disorders may describe dizziness (Figure 2) (Table 1).

Figure 2: Describe what you mean by ‘dizzy’.

Table 1

| Feature                  | Peripheral                                                                 | Central                |
|--------------------------|---------------------------------------------------------------------------|------------------------|
| Nystagmus                | Horizontal and Torsional                                                   | Purely vertical or horizontal or torsional                        |
|                          | Inhibited by fixation                                                     | Not inhibited by fixation                                      |
|                          | Doesn’t change with gaze                                                  | Direction changing with gaze                                    |
| Otologic symptoms        | Hearing loss or tinnitus common                                           | Uncommon                                                           |
| Latency after provocation| Longer (>15 seconds)                                                      | Short                                                              |
| Fatigability             | Yes                                                                       | No                                                                  |
| Duration                 | Variable                                                                  | Long                                                               |
| Neurologic symptoms      | No                                                                        | Yes                                                                |
| Loss of consciousness    | No                                                                        | Possible                                                          |

How often do you have attacks of vertigo?

The number of attacks is usually inversely proportional to the length of time each attack lasts.

a) Single
b) Constant
c) Multiple
i. Seconds
ii. Hours
iii. Days (Table 3).

How long does the dizziness last??

a. Fleeting: Dizziness lasting less than a second probably is the result of disequilibrium due to an imbalance in peripheral vestibular inputs.

b. Short-lasting: Vertigo lasting between a few seconds and a few minutes is usually due to a peripheral vestibular dysfunction

c. Intermediate: Vertigo lasting between 20 minutes and several hours can occur as a result of either central or peripheral vestibular disorders.

d. Long Lasting: An isolated attack of vertigo lasting longer than 2 to 3 hours and usually a day or days usually results from a unilateral complete permanent injury to the peripheral vestibular system

e. Continuous: Continuous vertigo is a relatively uncommon but serious problem. Although the brain compensates for vertigo arising from the inner ear or vestibular nerve over several weeks, vertigo from central dysfunction can persist longer (Table 2).

Table 2

|                        | Short                  | Intermediate                  | Long                       |
|------------------------|------------------------|------------------------------|----------------------------|
| Seconds to Minutes     | 20 Minutes to 2 Hours  | Lasting Over 24 Hours         |
| BPPV                   | Meniere’s disease      | Labyrinthitis                 |
| Perilymphatic fistula  | Migraine               | Temporal bone trauma          |
| SSCD                   | Metabolic              | Stroke                        |
| Vascular insufficiency | Syphilis               | Multiple sclerosis            |
| Chiari malformation    | Panic attacks          | Iatrogen                      |
| Iatrogenic             | TIA                    | Autoimmune inner ear disease  |

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Is there anything you can do that will cause you to feel dizzy? (precipitating factors)

Although vertigo intensity may vary between individual episodes, there are often similar circumstances surrounding the onset of attacks [16-20]. Individual triggers are helpful in both short and long duration vertigo.

These are three types

a) Short duration
b) Long duration
c) Intermediate duration (Table 4).

What other symptoms do you get around the time of vertigo attacks (associated symptoms)?

Concomitant symptoms including hearing loss, pain, or neurological symptoms may also help establish the diagnosis of dizziness or vertigo.

Do you have any other medical problems?

Other medical conditions may cause vertigo through direct or indirect injury to the vestibular system. It is important to determine if medical problems are contributing to or causing the patients dizziness.

What medications are you currently taking?

a) Nearly 23% of all medicines list dizziness as a possible side effect (Bhansali, 2001). Adverse reactions are more common in the elderly for 3 reasons:

b) The elderly are prescribed more medications increasing by sheer volume the likelihood to have dizziness as a side effect.
c) Reduced renal and hepatic clearance promotes increased and prolonged systemic concentrations.

d) Reduced vascular reflexes reduce promote increased orthostatic symptoms (Table 6).

Table 6

| Drug                         | Names                        |
|------------------------------|------------------------------|
| Anxiety                      | Valium, Xanax                |
| Antihistamines               | Benadryl                     |
| Diuretics                    | Lasix, diuril,spironolactone, basix |
| Antihypersensitive medications | Diltilazem, Verapamil, Nifedipine metoprolol, Toprol, Atenolol, Catapres, Clonidine |
| Calcium channel blockers     |                             |
| Beta-blockers                |                             |
| Others                       |                             |
| Antiseizure medication       | Dilantin, Tergretol          |
| Antidepressant               | Prozoc, Zoloft, Elavil      |
| Chemotherapeutics            | Cisplatin, carboplatin, mechlorethamine |
| Antibiotics                  | Gentamycine, Streptomycin, vancomycin, Amikacin |
| Anti-inflamatory             | NASAIDs, aspirin             |

Other Significant Questions

Metabolic disorders

Such as uncontrolled diabetes, renal failure, hepatic failure and altered ion homostasis can induce a constant feeling of dizziness. Any abnormality in blood or serum levels can drastically alter the central nervous system’s ability to function properly [20-27]. The result can often be continuous dizziness which will persist until the metabolic disorder is treated.

Psychological disorders

Psychologic disorders including hyperventilation syndrome account for the most common cause of dizziness among younger patients. Whereas symptoms typically revolve around times of heightened apprehension or anxiety, continuous symptoms are common in these patients due to continuous hyperventilation and altered CO₂ concentrations.

Family history

The patients should be asked about family history of otologic and neurologic dysfunction vestibular dysfunction with a familial predisposition includes Meniere’s disease, BPPV, otosclerosis, migraines, seizures and neural degenerative diseases.

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