A Clinical Approach to Dizziness
Case Study and Commentary, Irwin Nazareth, MBBS, PhD, and Lucy Yardley, MSc, PhD

INSTRUCTIONS
The following article, “A Clinical Approach to Dizziness,” is a continuing medical education (CME) article. To earn credit, read the article and complete the CME evaluation form on page 168.

OBJECTIVES
After participating in the continuing education activity, primary care physicians should be able to:
1. Identify potentially life-threatening illnesses that may underlie dizziness
2. Recognize less serious but treatable conditions that cause dizziness
3. Obtain critical information on history and physical examination of the dizzy patient to rule out possible diagnoses and test hypotheses
4. Understand the available management approaches for conditions that cause dizziness
5. Recognize circumstances in which referral to a specialist should be considered

Dizziness is a symptom that describes a disordered sense of the body’s relationship to space. Dizziness is challenging to diagnose and treat; patients may have difficulty describing their symptoms precisely, and the literature lacks adequate data to support an evidence-based approach to management. Although most cases of dizziness are self-limited, dizzy patients can experience great impairment of daily activities and psychological morbidity as a result of their symptoms [1]. It is important that physicians be able to identify the potentially life-threatening illnesses that may underlie dizziness as well as less serious but treatable conditions that produce disability. This article presents 3 case studies that illustrate approaches to managing common clinical presentations of dizziness in primary care practice.

CASE STUDY 1
Initial Presentation
A 55-year-old woman presents to her family physician with the complaint of intermittent bouts of dizziness over the past 2 months.

History
The patient states that during an attack “the room is swimming,” and she has difficulty standing or turning around. Each episode lasts less than 1 minute and is precipitated by turning, rolling over in bed, or bending down. She is asymptomatic between attacks. The patient adds that she has also had 2 episodes of severe headache during the past 2 months, each lasting 6 to 8 hours. She denies neck stiffness or aggravation of her symptoms by neck movements, and there is no associated vomiting or tinnitus during the dizziness episodes. The patient has a 4-year history of mild hypertension that is controlled by a diuretic. Her medical history is also notable for a mild concussion sustained in a car accident 3 years ago.

The patient is unmarried and lives alone. She lost her job as a technical writer about 6 months ago and admits that she is worried about finding another job. She does not drink alcohol, smoke, or use any recreational drugs.

Physical Examination
Physical examination reveals a pleasant-appearing woman in no apparent distress. Height is 5’4”, weight is 140 lb, blood pressure is 140/80 mm Hg, and pulse is 70 bpm and regular. No abnormalities are detected on examination of the cardiovascular system, central nervous system, and cervical spine.

• How prevalent is dizziness?

Dizziness is a common symptom in adults, with the prevalence generally increasing with age [1,2] (Table 1). Prevalence in the community ranges from 16% to 35% [1–5]. In a study of 2064 working-age adults in Britain, about one quarter (26%) had experienced dizziness during the past 6 months, 44% of whom reported presence of the

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symptoms for 6 months to 5 years, and 30% of whom reported a more chronic history (ie, longer than 5 years) [1]. Approximately 1% of all consultations in British primary care practice [6] and 2% in the United States are because of dizziness [7].

- What is the differential diagnosis of dizziness?

Various disease entities may cause dizziness (Table 2), and the reported frequency of specific diagnoses varies widely [8]. Sloane [8] suggests that although the variations in reported diagnoses might be explained by true differences between samples studied, a more likely reason for the observed differences is investigator bias introduced by an overdiagnosis of the conditions that specifically interest the investigators. Common diagnoses among primary care patients are peripheral vestibular disorders (22% to 33%) [9–11], infections (15% to 21%) [9,10], and cardiovascular conditions (7% to 18%) [9,10]. The frequency of a psychological diagnosis in persons with dizziness ranges from 4% to 17% [9–11] among primary care patients to 32% to 50% in community samples [12,13]. Psychological distress causes dizziness through its central action [14]; at the same time, symptoms of dizziness can independently lead to psychological distress [15]. In a critical review, vestibular and psychiatric causes accounted for more than 70% of cases of dizziness; serious causes were relatively uncommon [16].

- What information should be obtained in the clinical history of the dizzy patient?

Pertinent Clinical History

Description of the Sensation of Dizziness

Patients use many different terms to describe dizziness [8]. Classifying dizziness into 1 of 4 subtypes—vertigo, presyncope, dysequilibrium, and other—can assist in the differential diagnosis. Vertigo, an illusion of movement (most often, spinning), is usually a symptom of vestibular disturbance. Presyncope, a feeling that one is going to faint, is most often caused by orthostatic hypotension; serious cardiovascular and neurologic conditions are less common causes. Dysequilibrium is a feeling of unsteadiness; causes include osteoarthritis of the knees and peripheral neuropathy. “Other dizziness” is used to classify symptoms not better characterized by the other subtypes.

Precipitating Factors

The clinician should ascertain whether attacks are spontaneous or positional. Positional dizziness is frequently due to benign paroxysmal positional vertigo (BPPV). Almost all types of vertigo are aggravated by head movements and are relieved by being still. Meniere’s disease can cause recurrent spontaneous attacks of vertigo; however, in primary care practice, migraine is the first diagnosis that should come to mind. Spontaneous episodes of dizziness with loss of consciousness must be investigated for cardiac or neurologic abnormalities. Dizziness or loss of consciousness triggered by changes in posture (ie, from lying to standing position) can be caused by orthostatic hypotension.

Duration of Symptoms

Brief (less than 1 minute) episodes of vertigo suggest BPPV. A single episode lasting 3 to 4 days with total recovery over several weeks is suggestive of benign labyrinthine disorders such as vestibular neuronitis or labyrinthitis. Recurrent episodes lasting from minutes to hours with or without associated headache can occur in migraine, Meniere’s disease, and cardiovascular disease. Persistent or progressive symptoms of any type of dizziness for more than 6 weeks suggest uncompensated peripheral vestibular pathology or central vestibular dysfunction (eg, cerebellar disorders).

Associated Symptoms

The physician should inquire about the presence of psychological symptoms, such as somatic complaints or symptoms of anxiety, phobia, or depression. It should be noted that psychological disorders are frequently comorbid with physical disorders that provoke dizziness; hence, the presence of psychological symptoms does not exclude a physical cause for dizziness [13]. Neck pain might be present due to cervical pathology, but it is important to note that patients suffering from chronic dizziness may hold their head rigidly (consciously or unconsciously) to avoid precipitating positional symptoms, thus
inducing secondary neck pain and stiffness. When relevant to the clinical presentation, patients should be assessed for associated symptoms involving the cochlea (deafness, tinnitus), cardiovascular system (palpitations, chest pain), central nervous system (numbness or weakness in face or limbs, slurred speech, diplopia), or endocrine system (symptoms of diabetes or thyroid dysfunction). Vertebrobasilar insufficiency or transient ischemic attacks are usually associated with neurologic symptoms, such as syncope and transient loss of consciousness, and do not occur with vertigo alone.

Medications
Many medications can cause dizziness, and the importance of a detailed drug history cannot be overemphasized. A drug history is particularly critical in elderly patients, who often take multiple medications. Gentamicin toxicity, for example, is known to cause vestibular damage. Drugs that have effects on the central nervous system are also known to cause dizziness, especially in the elderly [2].

Table 2. Causes of Dizziness

<table>
<thead>
<tr>
<th>Category</th>
<th>Conditions</th>
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<tbody>
<tr>
<td>Otologic</td>
<td>Vestibular neuronitis/labrynthitis</td>
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<td></td>
<td>Benign paroxysmal positional vertigo</td>
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<td></td>
<td>Meniere’s disease</td>
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<td>Acute otitis media mastoiditis</td>
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<td>Cholesteatoma</td>
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<td>Ototoxins</td>
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<td>Psychiatric</td>
<td>Anxiety</td>
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<td>Panic disorder</td>
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<td>Depression</td>
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<td>Neurologic</td>
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<td>Trauma</td>
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<td>Concussion</td>
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<td>Multiple sclerosis</td>
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<td>Cerebello-pontine</td>
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<td>Brain stem or cerebellar hemorrhage or infarction</td>
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<td>Ophthalmoplegia with diplopia</td>
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<td>Acoustic neuroma</td>
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<td></td>
<td>Spinocerebellar atrophy</td>
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<td></td>
<td>Arnold Chiari malformation type I</td>
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<td>Tumors of brain stem and cerebellum</td>
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<td>Cardiovascular</td>
<td>Migraine</td>
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<td></td>
<td>Vertebrobasilar insufficiency</td>
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<td>Arrhythmias</td>
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<td>Postural hypotension</td>
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<td>Heart failure</td>
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<td>Anemia</td>
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<td>Medication induced</td>
<td>Antiarrhythmics</td>
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<td>Aminoglycosides</td>
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<td>Antihypertensives (diuretics, vasodilators, calcium channel blockers)</td>
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<td>Anxiolytics (benzodiazepines)</td>
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<td>Antiparkinsonian drugs</td>
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<td>Neuroleptics</td>
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<td>Nonsteroidal anti-inflammatory drugs</td>
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<td>Quinine</td>
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<td>Systemic disorders</td>
<td>Fever</td>
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<td>Viral infection</td>
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<td>Diabetes</td>
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What examinations should be performed in the dizzy patient?

Physical Examination of the Dizzy Patient
The physical examination of the dizzy patient is determined by the presenting history. The procedures listed below do not need to be done on every patient but should be selected based on the history to rule out concerns and to test hypotheses.

Evaluation for Nystagmus
Eye movement examinations remain paramount in the patient with vertigo. Nystagmus is a rhythmic oscillation of the eye that occurs due to disorders of the vestibular labyrinth and/or the central vestibular-ocular pathways. In its most common form, nystagmus is characterized by a slow movement of the eye in one direction and a fast movement in the reverse direction. The fast movement is described as the beat direction of the nystagmus. Nystagmus is assessed by asking the person to fix his gaze straight ahead and then asking him to gaze up, down, right, and left, holding each position for at least 5 seconds. Nystagmus occurring in the light is a sign of an acute vestibular disorder, a neurologic disease, or a congenital nystagmus. The latter is usually asymptomatic, and patients may be aware that they have had nystagmus since childhood.

Positional nystagmus is detected by the Hallpike maneuver, which is carried out as described in the Figure. A positive test produces acute vertigo and nystagmus lasting about 30 seconds on the affected side. This maneuver, by suddenly placing the posterior semicircular canals in the upright
position, is believed to displace the otoconia in the semicircular canal causing an endolymphatic current that precipitates a vestibular ocular response and, hence, nystagmus.

**Other Evaluations**

**Physical examination procedures.** Otoscopic examination for chronic otitis media or cholesteatoma may be indicated; this examination will fail to identify the presence of fistulas. Cardiovascular examination should be performed to rule out arrhythmias and orthostatic hypotension; the latter is particularly important in elderly patients on antihypertensive medication. Neurologic examination should consist of a brief examination of cerebellar function and reflexes as well as examinations of cranial nerves III, IV, VI, and VIII. The cervical spine should be examined for local tenderness, paraspinal muscle spasm, or restricted neck movements that could occur in cervical osteoarthritis. In some instances, neck movement can provoke an attack of dizziness, which often suggests vertebobasilar insufficiency.

**Romberg test.** In the Romberg test, the patient is asked to stand with feet close together with eyes open and then closed. If the patient falls or nearly falls with the eyes closed, the test is considered positive. In the very early stages of a unilateral peripheral vestibular lesion, the patient may fall in the direction of the lesion.

**Head impulse test.** In the head impulse test, the patient fixes her gaze on a distant object, and the examiner turns the patient’s head by 15% to one side and then to the other side [17]. The test is positive if the patient cannot keep her gaze on the target but has to make a voluntary rapid eye movement back to the target after the head is rotated. The test is very sensitive in detecting total loss of vestibular function but does not detect mild or moderate vestibular weakness [18].

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**What are possible diagnoses in this patient?**

Several possible diagnoses could account for this patient’s presentation and examination findings.

**Most Likely Diagnoses**

The patient’s brief episodes of vertigo induced by positional change are consistent with the diagnosis of BPPV. BPPV is a common cause of vertigo following head injury or viral labyrinthitis due to stray otoconia within the duct of the posterior semicircular canals. A positive Hallpike maneuver confirms the diagnosis (Figure). Migraine is an important diagnosis, and the history of headache provided by the patient must be explored and the association of dizziness and headache ascertained. Panic attacks would be a consideration if the episodes included autonomic and affective features. Drug-induced dizziness must be considered in a patient taking medication. Diuretics can cause dizziness both because of the hypotensive effects of the drugs and as a result of electrolyte depletion. The dose of diuretics used in the patient to treat hypertension, however, is too small to produce such effects. Furthermore, in the presence of a normal blood
pressure reading, this patient’s diuretic medication is unlikely to be the cause of her symptoms. Nevertheless, it might be useful to do serum electrolyte tests to ensure that electrolyte levels are within the normal range.

**Less Likely Diagnoses**

Less likely diagnoses include Meniere’s disease, cervical dizziness, and cardiovascular disease. Meniere’s disease presents as recurrent spontaneous vertigo lasting for 1 hour or longer. The condition is caused by endolymphatic hypertension, which produces disabling attacks of vertigo, nausea, and vomiting together with unilateral hearing loss, a low frequency tinnitus, and a sense of fullness and blockage in the ear that can last for several days after the dizziness subsides. The prevalence of Meniere’s disease in the population is low (0.1% to 1%). As the patient does not report vomiting or tinnitus, Meniere’s disease is not a likely diagnosis in this case. Cervical dizziness is an unlikely diagnosis in the absence of symptoms or signs in the cervical spine. A cardiovascular cause such as arrhythmia or hypotension is unlikely in view of the history and the absence of any cardiovascular signs or relevant past history.

**Diagnosis**

Hallpike’s test is mildly positive with the patient’s head turned to the right. On further inquiry, the patient describes her headaches as a band-like tightness located in the occipital region; the headaches were not associated with dizziness. This history is indicative of tension headaches rather than migraine. Moreover, none of the dizziness episodes were associated with panic symptoms or other autonomic manifestations. In view of this additional history, the physician makes a diagnosis of BPPV.

- **How should this patient be treated?**

BPPV generally improves spontaneously but can be treated with a canalith repositioning procedure (also known as an Epley maneuver) [19]. Although some studies have suggested a success rate of 80% to 90% with this procedure, this evidence is limited to case reports [20]. This procedure relieves symptoms by removing otoconia from the semicircular canals. It is noninvasive, takes only a few minutes, and can be performed in the physician’s office. The steps involved in the procedure are described in **Table 3**.

**CASE STUDY 2**

**Initial Presentation**

The wife of a 60-year-old man telephones her physician’s office extremely agitated about her husband, who has severe vertigo, nausea, and vomiting. He “cannot move” and is lying in bed with his eyes closed. She says her husband has never had these symptoms before, and she is very worried that he might be having a heart attack. She has already called for an ambulance. The husband has had no past history of ischemic heart disease, hypertension, neurologic disorders, or head and neck problems.

- **What are possible diagnoses in this patient?**

Vestibular neuronitis (also known as labyrinthitis) is a common cause of such a presentation, but cerebellar infarction and cardiovascular disease must also be considered. A meticulous history must be sought to identify any cardiovascular or neurologic symptoms. In addition, relevant cardiovascular as well as specific neurologic and otologic examinations should be performed as described previously.

**Acute Vestibular Neuronitis**

Acute vestibular neuronitis produces symptoms similar to those experienced after a labyrinthectomy or vestibular neurectomy. Onset of vertigo is acute and spontaneous and can last for several days to a few weeks before spontaneous resolution. There is horizontal-torsional spontaneous nystagmus with the slow phases to the affected ear and
quick phases to the unaffected side. The nystagmus occurs only on the affected side. Gaze-evoked nystagmus observed on both sides is not associated with this condition. Nystagmus is suppressed by visual fixation and will be missed if not specifically pursued. The head impulse test is positive. In addition, although the person is unsteady, she can stand without support with eyes open but will rotate toward the side of the lesion if asked to March on the spot with eyes closed (positive Unterberger test) [17].

**Cardiovascular Disease**

**Cerebellar Infarction**

Cerebellar infarction is a rare and severe cardiovascular disorder and is an important differential diagnosis of acute vestibular neuronitis. Cerebellar infarction is essentially a stroke of the cerebellum, and affected individuals are at increased risk for another stroke or a myocardial infarction (MI). Clinical differentiation between cerebellar infarction and acute vestibular neuronitis can be made as follows:

- If the head impulse test is negative, the person is unlikely to have acute vestibular neuronitis.
- Nystagmus might be bilateral and/or vertical and is not suppressed by visual fixation in cerebellar infarction.
- The sufferer cannot stand without support in cerebellar infarction.
- The presence of neurologic cerebellar signs and/or cranial nerve defects is indicative of cerebellar infarction.

**Cardiac Disorders**

Cardiac conditions can produce the acute symptoms of dizziness described in this case. The most likely causes are MI, arrhythmias, vasovagal attacks, and heart failure. History of previous cardiac problems can assist in narrowing the diagnosis, but in the absence of such a history a thorough cardiovascular examination and an electrocardiogram (ECG) are essential. In addition to cerebellar infarction, other cerebrovascular accidents (eg, strokes) can produce similar symptoms.

**Diagnosis**

The patient is admitted to the emergency department (ED). On examination, the head impulse test is positive and right-sided nystagmus is present, suppressed by visual fixation. Cardiac and neurologic examinations are unremarkable, and the patient’s ECG is normal. In view of these findings, the ED physician makes a diagnosis of vestibular neuronitis.

• **How should this patient be treated?**

Patients suffering from vestibular neuronitis should recover spontaneously over a few weeks but may develop more persistent positional symptoms due to inadequate compensation or subsequent attacks of BPPV; these can be relieved by treatment. Patients with acute vestibular neuronitis can be treated with an antiemetic such as prochlorperazine (administered buccally, intramuscularly, or by suppository) during the acute phase, which can be followed by a vestibular sedative given every 8 hours until the acute symptoms subside.

**CASE STUDY 3**

**Initial Presentation**

An 85-year-old woman presents to an outpatient clinic with a progressive history of persistent dizziness over the last 10 months. The symptoms have worsened considerably and are now present most of the time. The patient has been housebound during this time because she is afraid to leave the house due to fear of falling.

The patient describes the dizziness as a feeling that the ground is distant and that she is “walking on clouds.” She has a history of atrial fibrillation and long-standing cervical osteoarthritis. Medications include digoxin, warfarin, benzodiazepines, and antidepressants. The patient wears a hearing aid and over the past 2 years has developed cataracts in both eyes. She lives alone in an assisted living complex. She says she has been depressed since her husband died 5 years ago.

• **What are possible diagnoses in this patient?**

Dizziness in the elderly can be difficult to diagnose and is often due to multiple disorders of one or more sensory inputs (ie, visual deficits, arthritis, previous injury to the labyrinth, peripheral neuropathy) combined with disorders of the cardiovascular and central nervous systems. Hence, it is necessary to identify each of the disorders likely to cause symptoms of dizziness and address each one of them in order to treat the condition. Tinetti and colleagues [5] suggested that dizziness in the elderly may constitute a geriatric syndrome similar to delirium and falling. In this patient, the chief diagnoses to consider are multiple neurosensory deficits and cardiovascular disease.

**Major Causes of Dizziness in the Elderly**

Multiple neurosensory deficits present as chronic, persistent, or relapsing dizziness with some degree of peripheral
vestibular dysfunction. Compensation for the vestibular disorder in this patient is hampered by her comorbid disorders, namely, visual defects (cataracts), musculoskeletal disorders (cervical osteoarthritis), and associated general medical disorders (atrial fibrillation). In addition, it is likely that the patient has a degree of cerebral atherosclerosis, a general age-related reduction in fitness and poor central functioning. Cardiovascular disease, in particular cardiac arrhythmias and multiple recurrent infarcts due to atherosclerotic brain disease, must be considered given this patient’s advanced age and clinical presentation.

Other Causes of Dizziness in the Elderly

Other possible diagnoses include panic attacks associated with chronic hyperventilation (overbreathing), which often occur secondary to anxiety. Symptoms include feeling breathless and frequent sighing, gasping, or yawning. Hyperventilation can be confirmed if voluntary overbreathing for 1 or 2 minutes reproduces the patient’s usual symptoms. Although this syndrome is more common in a person of younger age, it is a consideration in this patient because she has depression and anxiety is often comorbid with depression. As discussed, anxiety can be associated with panic symptoms and hence symptoms of dizziness.

Other conditions that cause persistent unsteadiness include chronic central vertigo, a poorly understood condition found in approximately 20% of people with multiple sclerosis as well as in the elderly. It is associated with abnormal eye movements (such as periodic alternating pendular nystagmus and microsaccadic oscillations) and other neurologic pathology. Another condition that could be responsible for this patient’s dizziness is bilateral loss of vestibular function. This most often occurs due to drug toxicity, especially gentamicin, and must be considered if dizziness presents after a hospital admission. The main clinical signs are unsteadiness while standing on a soft yielding surface (eg, a mattress) with eyes closed (positive modified Romberg’s test) and a head impulse test that is positive for left, right, up, and down movements. Rare syndromes that cause persistent unsteadiness include familial vestibulopathy, normal pressure hydrocephalus, posterior fossa tumors, and parkinsonian syndrome.

Diagnosis

The patient’s visual and hearing deficits combined with her history of atrial fibrillation lead the clinic physician to suspect a multiple neurosensory deficit syndrome. On further questioning, the physician learns that the patient currently is under the care of an ophthalmologist, an audiologist, and a primary care physician for her cataracts, hearing loss, and atrial fibrillation. She also has seen psychiatric, who diagnosed depression due to loneliness and failing health and started her on antidepressants and benzodiazepines. The patient’s mood is unchanged, however, after more than 3 months on antidepressant therapy. The clinic physician concludes that side effects of her drug therapy could have largely contributed to her dizziness.

- How should this patient be treated?

It would be useful to review each of the disorders likely contributing to this patient’s dizziness. Such a review would include assessing the patient’s cataracts for surgery; ensuring that her hearing aids function adequately; making certain her atrial fibrillation is well controlled; and reviewing her use of benzodiazepines and antidepressants. Given her poor response to both drugs over 3 months of treatment, psychological therapies should be considered as an option for managing her anxiety and depression. In addition, multiple neurosensory vertigo is best managed by vestibular rehabilitation, consisting of exercises that promote compensation (Table 4). These exercises are taught to the patient by a trained therapist and are then practiced for 5 to 10 minutes twice a day. They initially provoke dizziness, but with continued practice, symptoms resolve over 6 to 12 weeks [21]. Psychological treatments and support are also an important aspect of management and include provision of information on the causes of vertigo and, optionally, simple relaxation and breathing exercises [22].

- When should dizzy patients be referred to a specialist?

Indications for Specialty Referral

Most patients encountered in primary care practice suffer from brief acute transitory episodes of dizziness that do not require extensive investigation. The history and physical examination lead to a diagnosis in 75% of patients [23], and the majority of dizzy patients can be managed quite successfully in the community [9]. However, referral to a specialist should be considered in circumstances such as:

- Persistent dizziness (lasting longer than 4 to 6 weeks) in the absence of a known general medical or neurologic disorder
- First acute attack of dizziness when cardiovascular disease has been ruled out and the primary care physician cannot differentiate between acute vestibular neuritis and cerebellar infarction
- Unilateral hearing loss (possible acoustic neuroma) associated with vertigo

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Cardiovascular disorders that cannot be managed by a primary care physician

In general, persistent dizziness due to suspected peripheral disorders or a suspected acoustic neuroma is best referred to an ear, nose, and throat (ENT) specialist. All other patients with relevant symptoms should be referred to a neurologist or cardiologist. A detailed neuro-otologic evaluation by an ENT specialist will involve an assessment of auditory function and an evaluation of the cochlea and auditory nerve. Such investigations offer information about the peripheral and central vestibular pathways.

Table 4. Vestibular Rehabilitation Exercises

Exercises for dizziness, vertigo, and imbalance
The process of getting over dizziness or vertigo is exactly the same as when a sailor gets his or her “sealegs,” or a dancer learns to spin around without getting dizzy. The only way that the balance system can overcome dizziness and imbalance is by practicing the movements and situations that cause dizziness. The aim of these exercises is to give the balance system all the practice it needs at a time and place where you will not be distracted or put at risk.

The exercises listed below should be performed twice a day. Make sure you carry them out somewhere safe, where you will not bump into anything sharp or hard. At first the exercises will probably make you feel a bit dizzy and sick, and you may experience some tiredness and headache. These feelings may last for a little while after you have done the exercises, or may even come on some time later. Do not worry about these feelings—they are a sign that the exercises are working. If the dizziness and sickness are very unpleasant or are causing problems, then do the exercises more slowly and do fewer of them at first. As you recover, you can gradually increase the number and speed of the exercises you do. If the exercises seem to bring on any of the symptoms listed below (which is very unlikely), stop doing them at once and ring the nurse or principal investigator.

Stop doing the exercises if you experience:
- Sharp, severe, or prolonged pain in your neck, head, or ear
- A sensation of fullness, deafness, or noises in the ear
- Fainting, loss of consciousness, blacking out, or double vision
- Numbness, weakness, or tingling in your arms or legs

1. Sit upright with your legs out in front of you. Quickly lie straight down on your back. Wait for your symptoms to calm down, and then sit back up again. Repeat 2 or 3 times. Advanced stage. When you can do this exercise without dizziness, try it with your head turned first to the left and then to the right.

2. Sitting in a chair, bend forward and bring your head down halfway toward your knees. Wait for your symptoms to calm down, and then sit back up again. Repeat 2 or 3 times. Advanced stage. When you can do this exercise without dizziness, try it with your head turned first to the left and then to the right.

3. Sitting in a chair, quickly turn your head and eyes from left to right, 5 times in each direction, as if you were watching a tennis match. Try to focus on an object in each direction. Stop, wait for your symptoms to go away, and repeat 3 times. Advanced stage. When you can do this exercise without dizziness, try doing it while you are standing up.

4. Repeat exercise 3, but look up and down instead of left and right. Advanced stage. When you can do this exercise without dizziness, try doing it while you are standing up.

5. Do exercise 3 with your eyes closed. (Do not do this exercise standing up.)

6. Do exercise 4 with your eyes closed. (Do not do this exercise standing up.)

7. Sit in a chair with one arm outstretched in front of you with your first finger pointing up. Stare at your finger and turn your head to the left and right 10 times. Start slowly and gradually speed up. Repeat 3 times.

8. Repeat exercise 7, but hold your finger sideways and move your head up and down.

General balance training
Go for a walk (include some stairs or hills if possible) or play a ball game either for 5 to 10 minutes, 5 days a week, or for 15 to 30 minutes, 3 days a week.

References
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EVALUATION FORM: A Clinical Approach to Dizziness

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Part 1. Please respond to each statement.

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<th>Statement</th>
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<th>Strongly Disagree</th>
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<td>❑</td>
<td>❑</td>
</tr>
<tr>
<td>I reaffirmed a specific skill or knowledge.</td>
<td>❑</td>
<td>❑</td>
</tr>
<tr>
<td>This article will help with clinical decision making.</td>
<td>❑</td>
<td>❑</td>
</tr>
<tr>
<td>Relevant clinical outcomes are addressed.</td>
<td>❑</td>
<td>❑</td>
</tr>
<tr>
<td>The case is communicated in a manner that kept my interest.</td>
<td>❑</td>
<td>❑</td>
</tr>
<tr>
<td>The case presentation is realistic and effective.</td>
<td>❑</td>
<td>❑</td>
</tr>
<tr>
<td>I could easily interpret the tables and figures.</td>
<td>❑</td>
<td>❑</td>
</tr>
<tr>
<td>My attitude about this topic changed in some way.</td>
<td>❑</td>
<td>❑</td>
</tr>
</tbody>
</table>

Additional comments: ______________________________________________________________________________________
________________________________________________________________________________________________________

Part 2. Please complete the following sentence.

As a result of reading this case study, I . . .
❑ see no need to change my practice.
❑ will seek more information before modifying my practice.
❑ intend to change the following aspect(s) of my practice: (Briefly describe)
________________________________________________________________________________________________________
________________________________________________________________________________________________________


Signature: __________________________ Date: __________________________

Part 4. Identifying information: Please PRINT legibly or type the following:

Name: __________________________ Fax number __________________________
Address: __________________________ Telephone number __________________________
Social Security number: __________________________ (Required and confidential)

Medical specialty: __________________________

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