

Evaluation and Management of Difficult Symptoms in Older Adults in Primary Care



Chitra Hamilton, MD, Colleen Christmas, MD*

KEYWORDS

• Leg cramps • Dizziness • Vertigo • Insomnia • Weight loss

KEY POINTS

- Nocturnal leg cramps are best treated with nonpharmacologic approaches.
- Dizziness can be further distinguished into categories of vertigo, disequilibrium, presyncope, and nonspecific dizziness to guide further evaluations.
- Sleep and cognitive function are clearly linked, but whether sleep interventions significantly improve cognition in age-related changes in sleep has not been shown.
- Evaluation of weight loss in the elderly focuses on finding and fixing those contributors that are readily identified and remedied.

INTRODUCTION

One of the most challenging, and rewarding, components of caring for older adults is the complex decision making involved in determining how much of a given concern is to be expected with aging of the human body alone and not amenable (or even harmful) to treatments versus a vague or nonspecific presentation of a disease that, once identified and treated, leads to important improvements in health and well-being. This article discusses 4 common vexing symptoms in primary care settings with guides for what further considerations may guide evaluation and potential treatments.

LEG CRAMPS

Background

Nocturnal leg cramps (NLCs) are a common but poorly understood problem that affects up to 50% of the population more than 50 years of age.¹ NLCs increase with age in both severity and frequency and have been associated with decreased quality

Division of Geriatric Medicine and Gerontology, Johns Hopkins School of Medicine, 4940 Eastern Avenue, MFL Center Tower 2nd Floor, Geriatrics Suite, Baltimore, MD 21224, USA

* Corresponding author.

E-mail address: cchristm@jhmi.edu

Twitter: @ChitraHamilton (C.H.); @CchristmColleen (C.C.)

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of life and reduced quality of sleep.² Often described as a musculoskeletal disorder, NLCs are characterized by episodic, persistently painful, involuntary muscle tightness, most often in the calf, thigh, or foot, lasting seconds to many minutes. At present, no clear cause or mechanism of NLC has been determined, although there is some consideration given to shortened muscle length as a risk factor in older adults who are less physically active.

Electromyography has shown cramp discharges during NLCs, with a variability in firing rates from 40 to 60 Hz.³ The muscle discharges occur in a sputtering fashion with abrupt onset and cessation, distinguishing them from dystonia or voluntary muscle contraction.

NLC can be idiopathic or secondary to other causes, such as structural/mechanical causes, neurologic disorders, or metabolic/fluid disturbances. Structural or mechanical causes include genu recurvatum, flat feet, or prolonged sitting. Neurologic conditions such as Parkinson disease, multiple sclerosis, motor neuron disease, and nerve root compression can predispose patients to NLC. Metabolic and fluid/electrolyte causes include extracellular volume depletion, dialysis disequilibrium syndrome, hypoglycemia, hypomagnesemia, and hypocalcemia. Most commonly, patients have no evidence of volume depletion or electrolyte imbalances.

Medications, a common culprit of adverse effects in the geriatric population, can also contribute to NLC. The most common of these include long-acting beta-agonists, potassium-sparing diuretics, thiazidelike diuretics, and donepezil.

Diagnosis and Differential Diagnosis

NLCs are often misdiagnosed because of heterogeneity of symptoms. Most often, patients present to their primary care providers complaining of insomnia or sleep disturbance but not necessarily with symptoms of NLC. Almost all patients have cramps in the evening. NLC may be seasonal and can double in frequency from winter to summer. The reason for this is currently unknown.⁴

As with any medical ailment, a focused history and examination is pivotal in making the diagnosis of NLC. Laboratory testing and other studies are typically not indicated. The focused history should confirm the symptoms and identify any possible predisposing factors or medication causes. Inspection of legs, feet, and pulses should occur. Lastly, a neurologic examination should include assessment of strength, gait, deep tendon reflexes, sensation to light touch and pinprick, and assessment of tremor.

The diagnosis for NLC as described by the American Academy of Sleep Medicine must meet all of the following 3 criteria: a painful sensation in the leg or foot associated with sudden, involuntary muscle hardness or tightness indicating a strong muscle contraction; the muscle contractions must occur during the time in bed, although patient may be awake or asleep; and the pain can be relieved by forceful stretching of the affected muscles releasing the contraction.

Because nocturnal discomfort or cramping sensations in the legs are common symptoms of other conditions, NLCs are often mistaken for other disease processes, such as restless legs syndrome (RLS), dystonias, peripheral vascular disease, or periodic limb movements of sleep. In RLS, patients also experience symptoms at night and may have a cramping sensation. However, unlike NLC, RLS is characterized by more continuous discomfort and a need to move the affected limb. A distinguishing feature of RLS is that it does not involve sustained muscle contractions. In periodic limb movements of sleep, the movements are involuntary and jerking. They do occur at night but are not associated with muscle tightening or pain. A formal diagnosis of PLM can be made with polysomnography. With peripheral vascular disease,

cramplike pain can occur in a pattern of claudication, which is relieved with rest of the limb, unlike in NLC. Patients often have other findings of arteriosclerotic vascular disease, such as decreased pulses on examination. In addition, dystonias in the feet can resemble NLC because they can cause cramping episodes; however, unlike NLC, patients experience agonist and antagonist muscle cocontraction. The difference can be determined by electrophysiology studies.

Approach to Management

Treatment of NLC can be extremely challenging. Initially, nonpharmacologic measures rather than pharmacotherapy should be used. Stretching exercises in the weight-bearing position of the posterior leg muscles before bed can be helpful. Deep tissue massage, improved footwear, loose (not tucked) bed covers, stationary bicycle use in sedentary patients for a few minutes before bed, avoidance of volume depletion, ice massage, or hot shower or warm bath can be tried. During an acute cramping episode, patients should forcefully stretch the affected muscle, which can often provide rapid relief. All fluid or electrolyte abnormalities should be assessed and treated.

Many pharmacologic treatments have been unsatisfactory in prevention or symptom management. For many years, quinine derivatives were used as a preventive method.⁵ Quinine has been associated with serious side effects, including thrombocytopenia, chronic visual impairment, blindness, and death secondary to cardiac dysfunction. In 2006, the US Food and Drug Administration (FDA) advised against off-label use of quinine for leg cramps.⁶

In patients with inadequate responses to nonpharmacologic interventions, medications such as vitamin B complex, vitamin E, calcium channel blockers, magnesium, and gabapentin can be used. Diphenhydramine has been used in some studies but, given the side effects in the geriatric population, this medication should be avoided. Vitamin B complex can be given at a dosage of 30 mg 3 times a day. Vitamin E can be given as 800 international units before bed. Iron may also be helpful in patients with iron deficiency anemia. Magnesium supplements are often marketed for muscle cramp prophylaxis and have been beneficial in pregnancy-related cramps.⁷ Most recently, in a double-blinded placebo-controlled clinical trial, it was shown that oral magnesium oxide was not superior to placebo for older adults experiencing NLC.⁸ Calcium channel blockers such as diltiazem or verapamil can be used, but, given concern for hypotension and falls in the geriatric population, these should be used with careful monitoring. Lastly, gabapentin at doses of approximately 900 mg/d divided between dinner time and bedtime can be used as a last resort, with particular care in older patients given the risk of side effects. If the patient is resistant to pharmacotherapies, the use of tonic water rather than prescription quinine can be used if cramps persist and are disabling and severe. In addition, if pharmacotherapy continues to be ineffective, in patients who experience significant distress from NLC, a referral to a sleep specialist may be made to clarify the diagnosis and to see whether there is another underlying sleep disorder.

DIZZINESS

Background

Dizziness is a broad symptom described by up to 30% of geriatric patients in the clinic setting. It has been estimated that primary care physicians manage more than 50% of the patients who present with dizziness. It is a growing public health concern because it causes falls, which is the leading cause of hospital admission in older patients. Because dizziness is a broad and complex term, it is most often broken down into

different types, including vertigo, disequilibrium, presyncope, and nonspecific dizziness. The sensation of dizziness can be associated with changes in the sensory, vestibular, visual, neurologic, or musculoskeletal system, all of which decline with age. Dizziness in the elderly should be considered a multifactorial geriatric syndrome involving many symptoms from a variety of causes, including neurologic, sensory, psychological, cardiovascular, and medication-related problems.⁹

The most frequent form of vestibular dysfunction in the elderly is benign paroxysmal positional vertigo (BPPV), followed by Meniere disease.

Diagnosis and Differential Diagnosis

Given the numerous causes of dizziness, this article breaks down the diagnosis by various types. Work-up, including a good history and physical, usually leads to an appropriate diagnosis; however, it has been found that the final cause of dizziness cannot be identified in up to 20% of patients. In general, laboratory tests and radiography are not beneficial in the work-up of patients with dizziness if no other neurologic abnormalities are found on examination.¹⁰ Presbystasis refers to dizziness without an attributable cause.

Vertigo

Vertigo is often described as an interpretation of motion of the environment or self-motion. Commonly the words spinning, moving, or tilting are in patient descriptions. The description of spinning is often unreliable; however, lack of spinning can be used to exclude vestibular disease. All vertigo is made worse with movements of the head, which can help discern vertigo from other forms of dizziness. The presence of nystagmus is also suggestive of vertigo. Nystagmus may not be visible at all times and may be unmasked with a provocative maneuver such as Dix-Hallpike. It is important to remember that bilateral symmetric horizontal nystagmus for a few beats on lateral gaze is normal and that pathologic nystagmus is more prolonged and asymmetric. The elderly population has a higher incidence of central causes of vertigo, approaching 10%, most often caused by stroke. Although symptoms are important to help distinguish the cause, the duration of symptoms and aggravating factors can be more helpful in discerning the cause. With regard to duration, vertigo does not last more than a few weeks, because the nervous system eventually compensates for the dizziness. Determining the true meaning of constant dizziness is important for accurate diagnosis because many patients describe frequent episodic dizziness as constant. Prolonged dizziness is likely psychogenic and not vestibular. In addition, it can also be helpful to further divide patients with vertigo into acute prolonged episodes versus recurrent spontaneous attacks versus recurrent attacks with positional triggers. Most often, acute prolonged vertigo is associated with vestibular neuritis or stroke, whereas recurrent attacks can be associated with Meniere disease or migraine. When attacks are recurrent because of positional triggers, the diagnosis is likely benign BPPV.

BPPV peaks around the age of 60 years and is typically diagnosed by the presence of episodic vertigo provoked by changes in head position and findings of nystagmus during the positioning maneuver. BPPV is caused by calcium carbonate debris (otoliths) that is dislodged from the utricle for a variety of reasons, including inner ear disorder, infection, or head trauma.

Meniere disease is thought to be a disease of middle age; however, drop attacks from otolithic dysfunction are more frequent in older people compared with the general population.

Epidemiologic data for vestibular neuritis are scarce. It is thought that the peak age distribution is between the ages of 40 and 50 years. Vertigo lasting for hours with difficulty ambulating is likely vestibular neuritis.

Disequilibrium

Disequilibrium is the sense of imbalance that occurs with ambulation. It can result from a variety of causes, including peripheral neuropathy, vestibular disorders, visual impairment, musculoskeletal disorders, and cerebellar disorders. This sense of imbalance is often seen in patients with Parkinson disease. Most often, patients with this form of dizziness can be identified with observation of gait and full neurologic examination.

Presyncope

Some studies have shown that almost 70% of geriatric patients have presyncope type dizziness. Presyncope is often described by patients as feeling faint or a near-fainting episode. Typically, the symptoms are short lived, seconds to minutes, and can be accompanied by diaphoresis, nausea, visual blurring, or lightheadedness. Pallor is often seen by bystanders. Cardiac review of symptoms should be pursued in the setting of presyncope.

Nonspecific Dizziness

Nonspecific symptoms are often caused by psychiatric disorders, including major depression, anxiety disorder, somatization disorder, and alcohol dependence. Nonspecific dizziness can also be related to hyperventilation in stressful situations. Nonspecific dizziness can sometimes follow head trauma or whiplash injuries or be found in episodes of hypoglycemia. Patients should also be asked about nicotine, alcohol, and caffeine intake.¹¹ A medication review looking for side effect causes from antidepressant medications and anticholinergics is important. Some medications can also produce dizziness as a symptom of abrupt withdrawal. At times, if the cause is related to anxiety, reproducing symptoms with hyperventilation can often be reassuring and therapeutic.

Approach to Management

Given the causes of dizziness in older adults, multifactorial disease management should be customized to the individual. Variable approaches exist, including medical treatment, prosthetic devices, and vestibular rehabilitation. Vestibular rehabilitation includes habituation exercises to reduce pathologic responses to provoking stimuli. Vestibular rehabilitation can be effective in people with dizziness caused by vestibular dysfunction, cerebellar dysfunction, or Parkinson disease. In addition to rehabilitation, various prosthetic devices have been created to help with balance in the elderly. Vibrotactile feedback devices provide augmented feedback through vibration while improving postural balance during standing and ambulation. Currently, no medication exists to improve or inhibit the age-related deterioration of vestibular function. Although a common medication often used for patients with dizziness, meclizine should be avoided in geriatric patients if possible. Given its antihistamine properties and that it can act as a vestibular suppressant, it often causes sedation, delirium, and ataxia in the geriatric population.

INSOMNIA

Background

Concerns about poor sleep quality and quantity are common among older adults. Even though a third of people's lives is spent sleeping, clinicians are only recently

beginning to understand the complex and important roles sleep plays in health. Increasingly, there is emerging evidence that, during sleep, people's brains are conducting processes to remove toxins that accumulate during the metabolic process of the daytime work and during certain stages of sleep in which learning is consolidated. Therefore, sleep disruption is thought to be linked to cognitive problems common with aging, although whether sleep changes cause poor cognition, are caused by poor cognition, or are simply an epiphenomenon is not yet understood.

Factors that control sleep tend to change with even healthy aging. For example, the drive to fall asleep weakens as people become older, even for healthy adults. Similarly, levels of melatonin production decline and relation to light and darkness also decreases with aging. In addition, there are environmental and behavioral factors that contribute to more time indoors and less exposure to bright light, often combined with reduced levels of physical activity, all of which can confound sleeping issues in older adults. In healthy adults the normal sleep pattern is that, after sleep onset, there is a cycle of non-rapid eye movement (REM) sleep that progresses through stages 1 through 4, ranging from lighter to deeper sleep stages, lasting 40 to 60 minutes. After the second cycle of non-REM sleep, REM sleep is introduced. In general, deep sleep stages predominate in the first third of the night and comprise about 15% to 25% of the total nocturnal sleep time of young adults. However, light sleep stages increase with aging and deep sleep stages 3 and 4 decrease with aging; REM sleep is largely unchanged but may be slightly decreased. Some older adults only get from 0% to 3% of their total sleep time in the deep sleep stages even without any known pathologic sleep disorder. In epidemiologic studies, the duration of sleep declines approximately 27 minutes for each increasing decade of life. Therefore, lighter stages and lesser quality of sleep are remarkably common with aging, even absent any disease process.^{12,13}

Insomnia Diagnosis and Differential Diagnosis

Sleep concerns are common in primary care settings and approximately one-third of adults at some point request sleeping medications, but only 5% to 10% of those meet the criteria for insomnia. Insomnia is defined as difficulty falling asleep, staying asleep, or nonrestorative sleep that results in impaired daytime functioning and exists despite adequate opportunity to sleep. It must also be persistent longer than a month and occur more than 3 times per week with a preoccupation with sleeplessness.¹⁴ To evaluate sleep concerns, a careful sleep history can help distinguish primary insomnia from other causes of sleep concerns. In particular, clinicians want to understand the timing of the insomnia; what the sleep behaviors are with regard to the sleep schedule and environment related to that; the daytime effects of this poor sleep; and any comorbid psychiatric, medical, or other conditions. In the differential diagnosis of insomnia are other sleep disorders that have specific treatments: sleep disordered breathing, periodic limb movements of sleep, and RLS, to name a few. Sleep disordered breathing is the occurrence of hypoxia and apnea episodes during sleep that lead to repeated arousals and hypoxemia. This condition is more common in men than in women and is associated with hypertension, cardiac disease, and pulmonary disease. Often patients report that their bed partners complain of loud snoring or choking or pauses in respiration while sleeping. Treatments for this include weight loss and use of dental or mechanical devices, surgery to reduce obstruction, and continuous positive airway pressure devices. Periodic limb movements of sleep is a disorder consisting of clusters of repeated leg jerking during sleep, diagnosed by a sleep study. The primary treatment of periodic limb movements of sleep is avoidance of alcohol, caffeine, and tricyclic antidepressant medications and treatment with dopaminergic

agents. Periodic limb movements are similar to RLS; however, RLS consists of dysesthesias in the legs with the sensation of creeping and crawling or pins and needles that is only relieved with movements of the legs. The sensations most commonly occur when the patient is in a restful state and are treated with iron (for patients who have iron deficiency) and dopaminergic agents. In addition, sometimes reports of poor sleep are simply related to unrealistic expectations of sleep as people age. Many people report concerns about their sleep when the pattern is compared with a younger age, but, when probed, do not have daytime somnolence or other ill effects of poor sleep. Reframing sleep expectations can be helpful in separating these conditions from true sleep disorders.

Approach to Management

In treating primary insomnia, clinicians first should consider sleep hygiene and then increase to more intensive therapies such as cognitive behavior therapy for insomnia, and then consider the risks and benefits of sleep medications in highly select patient populations for short durations.¹⁵ In evaluating sleep hygiene, first it is necessary to understand whether the patient follows a regular sleep schedule, bedtime rituals, and how much time is spent in bed relative to the amount of time sleeping. Clinicians also need to understand the timing and quantity with regard to stimulants: their exposure to light; timing of exercise; use of stimulants, including caffeine, nicotine, alcohol, and allergy medications; use of cell phone and other blue light-emitting devices; and so forth. It is useful to evaluate the environment to ensure that the patient has a safe and comfortable sleep environment adjusted to the temperature level that is preferred for the individual and where noise and other factors that disrupt sleep are minimized.

Once sleep hygiene is maximized, if sleep is still inadequate, consider treatment with cognitive behavior therapy for insomnia (CBT-I). Therapists specifically trained in this technique, when available, can have dramatic and lasting impact on improving sleep quantity and quality, as has been well shown in multiple trials using various levels of interventions. Recently, commercial products deployed using digital applications have come to market and hold tremendous promise for helping patients who do not otherwise have access to a CBT-I-trained therapist. Tai chi, practiced 1.5 to 3 h/wk, significantly improves sleep quality among healthy older adults and those with chronic conditions.¹⁶

There is little evidence to suggest that medications to treat primary insomnia result in improved daytime functioning or large gains in sleep quantity, although often patients report satisfaction with the use of sedative medications.¹⁷ Although sedative hypnotic medications approved for sleep are only FDA approved for short durations, they are rarely used that way. In contrast, there is mounting evidence that sleeping medications increase the risks of falls, poor daytime cognitive performance, and over the long term may be associated with overall poorer cognition. Thus the risks of these medications in most instances outweigh any potential benefits, and their use in the older population is strongly discouraged.

WEIGHT LOSS

Background

Although articles discussing weight loss in the elderly often include titles suggesting that malnutrition is underdiagnosed and undertreated, there is no gold standard for its diagnosis and, in many instances, no effective treatment exists. The challenge for clinicians is to understand when weight loss is the marker of a disease that, once identified and treated, will result in clinical improvement and improved weight

and when, despite extensive investigation, no reversible cause is found to understand the risks and benefits of nutritional interventions to try to improve clinical outcomes associated with malnutrition, namely death, functional decline, decubitus ulcer outcomes, infections, and quality of life.

Diagnosis and Differential Diagnosis

Weight loss is a straightforward diagnosis. Patients are often concerned about weight loss owing to changing appearance with aging, particularly loss of muscle mass. These concerns should be confirmed by measuring change in weight. Significant weight loss is arbitrarily standardly defined as a loss of 5% or more of the body weight in a month or a loss of 10% or more of body weight in 6 months, exclusive of reduced edema from the use of diuretics or other intentional changes in body composition.

Treatment

After confirming the weight loss, a structured approach can help identify treatable causes. Notably, some nutrition guides suggest measurement of albumin, prealbumin, transferrin, and other protein markers as guides to diagnosis and treatment. These markers track very closely with inflammation but are not useful to titrate nutritional interventions. Evaluation begins by reviewing any changes in appetite, dietary intake, medications, mood, and physical functioning.

A reasonable approach to treating confirmed weight loss often begins with discontinuing any medications that may be contributing to poor appetite, trouble swallowing, dry mouth, taste changes, or inattention. Clinically, evaluate for depression, thyroid disorder, chewing and swallowing problems, and need for assistance with obtaining food and feeding, and consider the risks and benefits of investigations looking for malignancies if identifying such an issue would result in important prognostic information or potential interventions. Interventions include minimizing medications, ensuring access to a palatable diet, adjusting the ambience during meal times to minimize disruptions, and considering compensatory techniques when swallowing problems are identified. Living alone, social isolation, and loneliness are all associated with malnutrition. As part of the environmental evaluation, these risk factors should be screened for.¹⁸ These interventions ideally engage a multidisciplinary team including nurses, family members, medical assistants, and speech language practitioners. Before embarking on potentially more burdensome evaluations and interventions, consider carefully the likely benefit of those evaluations and interventions and ensure they are consistent with the patient's goals of care. In 1 study, involving a geriatrician in discussion of goals of care at the time of consideration of placement of a feeding tube resulted in a 50% reduction in the use of feeding tubes without any change in 6-month, 1-year, and 2-year mortality.¹⁹

In patients who lose weight owing to dementia, strong evidence mostly from cohort studies fails to show any improvement in survival with use of feeding tubes.^{20,21} Some cohort studies suggest that mortality may be higher in patients with dementia with chewing and swallowing problems who are fed by tube than in patients who are fed by hand.²² The addition of oral nutritional supplements to reduce pressure ulcers in malnourished individuals has shown conflicting outcomes.²³ The use of feeding tubes is associated with increased rates of *Clostridium difficile*, aspiration pneumonia and pneumonitis, and peristomal infections; there is no evidence they reduce the rate of any infections.²⁴ Overall, 13% to 40% of people who have feeding tubes placed have minor complications, 0.4% to 4.4% have major complications, and 30-day mortality after tube placement is 6.7% to 26%. In a classic study of 100 frail nursing home residents, provision of an exercise intervention substantially increased muscle

strength and function compared with nutritional supplements alone or control; the addition of a nutritional supplement to exercise provided no statistically significant improvement compared with that gained by exercise alone.²⁵

In patients with weight loss when a brief search for treatable causes is not fruitful and careful hand feeding does not seem to improve the situation, often families (and facilities) consider a feeding tube. This time is the ideal opportunity to discuss overall goals of care because mortality is significant and not changed by placement of tubes in most instances.

DISCLOSURE

The authors have nothing to disclose.

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