Other full case

Still dizzy after all these years: a 90-year-old woman with a 54-year history of dizziness

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Summary

This report presents the case of a 90-year-old female with a 54-year history of dizziness, which has been exhaustively investigated. Over the years, the patient made 59 visits to her family doctor and 18 visits to various specialists, as well as emergency department visits and hospitalisations. In detailing the exhaustive investigations and referrals that the patient has undergone over many years (with inconclusive results), this case illustrates the myriad challenges in diagnosing and treating chronic dizziness in the older. The authors suggest that, in complex cases characterised by multimorbidity and polypharmacy, a function-oriented approach is indicated. In place of the conventional 'diagnose and treat' model, a functional approach to ongoing care emphasises the symptom management, improvement of function and quality of life. To optimise patient outcomes, an interprofessional team approach is preferred.

BACKGROUND

Dizziness is one of the most common complaints at physician visits with a prevalence of 20% to 30% in the general population.¹ Dizziness is especially common in the older and the prevalence of symptoms occurring more than once per month increases significantly with advancing age.² Chronic dizziness presents a challenge to healthcare providers because it is often difficult to isolate the underlying cause. More than 60 disorders can result in dizziness and many medications can cause dizziness as a side effect.³

This case study is a unique presentation of an older woman who has been seeking care for complaints of chronic dizziness for over 54 years. We recount the evolution of her symptoms and the myriad investigations that she has endured. Unfortunately, this case illustrates the experience of all-too-many older patients who present with long-term debilitating conditions for which a clear diagnosis and treatment plan prove elusive. Indeed, the management of these complex cases can be a source of challenge and frustration both for patients and providers alike.

CASE PRESENTATION

Chief complaint and history of presenting illness

The patient is a 90-year-old sensible and cognitively intact woman who has been experiencing recurring attacks of dizziness since 1956. Initially, the patient experienced sudden attacks of true vertigo, as well as nausea and vomiting lasting for 4–5 h. The symptoms improved and settled if she laid still. She sometimes experienced loss of balance for up to 10 days causing her to take time off work for up to 3 weeks at a time. The patient typically had four or five episodes a year and was asymptomatic between episodes.

During the 1980s, the patient's symptoms changed from true vertigo to other less specific complaints. She began to report that on extension of her neck during household activities her 'head would feel large'. It is important to note

here that the observed variability and ambiguity in our patient's reporting of symptoms is characteristic of cases of chronic dizziness in older patients. While most patients' complaints fall into one of four main types of dizziness (vertigo; presyncope; disequilibrium; and vague light- or heavy-headedness), it is not atypical for patients to express more than one type of complaint.³

Likely owing to the observed change in symptoms, in 1985 the patient was referred for a neurology assessment at which she specifically denied experiencing vertigo or headache. The consult report noted that her primary concerns at that time were a 'heavy, big head and a discomfort in the back of neck and occiput'.

Between 1989 and 2000, the patient was diagnosed with colon cancer and she suffered a heart attack. During this time, she only saw her family doctor a couple of times and she did not see any specialists for issues pertaining specifically to her dizziness.

Then, in December 2001, the patient experienced a sudden onset of symptoms while walking in a heavy snowstorm. She reported a feeling of 'heaviness in her head towards the back' as well as 'buzzing' in her ears after which she became very unsteady on her feet. Although initially these symptoms were intermittent, occurring only after any meaningful exertion or prolonged neck position, since 2001 they have become persistent and are exacerbated by slight head turns, neck extension, or neck flexion, even during a simple conversation. She reports 'fullness and pressure' in her head, as well as pressure behind the ears and tinnitus, which is present continuously. It is worse in the evening and improved in the morning and after rest.

During exacerbations, she describes her head as feeling 'heavy and large like a beach ball'. Her hearing remains unaffected and there is no headache or pain. She complains of blurring of vision and a change in her voice during the attacks. There is no vomiting or nausea associated with the heavy-headedness. There is also no presyncope or syncope. She denies any chest pain, but does experience shortness

of breath upon exertion. She has not had any postural nocturnal dyspnoea or orthopnea. On several occasions, the patient felt weak on her legs during the exacerbations of her symptoms and she felt like she could not stand. The symptoms would become so severe that three hospital admissions and two emergency visits occurred between 2003 and 2008.

At present, the patient must limit her activities on days that she is experiencing symptoms, and because of this she has been unable to attend potentially therapeutic rehabilitation programs recommended by her physicians. The patient lives alone in her own home. She is able to perform all activities of daily living (ADLs, which are basic daily self-care activities), including personal hygiene and grooming, feeding herself, dressing and undressing, toileting, transferring and ambulation. In addition, she is able to perform most of the instrumental activities of daily living (IADLs, which are not necessary for fundamental functioning and can be delegated to others, but let an individual live independently in the community), including banking, housework and meal preparation. She receives assistance from her sons with some IADLs, such as grocery shopping during the winter months. The patient denies feelings of depression or anxiety and is adamant about remaining in her house as long as possible, even though certain ADLs and IADLs cause exacerbation of her symptoms.

Medical history

The patient's medical history is significant for coronary artery disease with acute coronary syndrome (2004), transient ischemic attack (2001), a coronary artery bypass graft (1997) complicated by congestive heart failure, hypertension and hypercholesterolemia, hernias, fibromyalgia, osteoarthritis, disk degeneration, colon cancer with bowel resection (1989), cholecystectomy and hiatus hernia repair (1986), chronic low back pain (since the 1970s), fracture of right wrist (1976), hysterectomy for pressure, multiple fibroids, continuing menstrual cycles, occasional urinary incontinence (1973), primary hypothyroidism (since 1974), recurrent cystitis and incontinence (since 1960s), anterior and posterior vaginal wall repair (1958) and right ovarian cyst removal (1949).

Social history

The patient is a widowed homemaker. She has been living in her two-storey detached home in Toronto for 55 years. Her husband died as a result of Alzheimer's disease several years ago; she has been living independently since then. She has two adult sons, one of whom lives close by and the other lives in a neighbouring city. The patient receives a lot of support from her neighbours and extended family members who live in the neighbourhood. She travels by taxi to her appointments because she is afraid of losing her balance when getting off the bus. She does not smoke or drink alcohol.

Medications

The patient is currently taking 11 medications on a routine basis: nitro-dur (0.4 mg/h patch once daily), enalapril (5 mg tablet twice daily), nitroglycerin (0.4 mg/dose aerosol spray as needed), diltiazem Xc (360 mg tablet once daily),

furosemide (40 mg tablet once daily), simvastatin (40 mg tablet once daily), levothyroxine (0.088 mg tablet once daily), clopidogrel (75 mg tablet once daily), amitriptyline (10 mg tablet at bedtime), zopiclone (5 mg tablet, half tablet at bedtime) and alendronate (70 mg tablet once weekly).

INVESTIGATIONS

The patient has had three different family physicians, all of whom were challenged by her symptoms. In the 54 years since the first onset of dizziness, the patient has made 107 physician visits, 18 of which were directly related to her symptoms of dizziness. These visits included eight neurology assessments, three otolaryngology visits, two cardiology assessments, two internal medicine assessments and one visit to each of endocrinology, physical medicine and an allergist.

Early assessments relied on history and physical examination. Reports from 1969–1983 do not provide much information on objective findings to support the physicians' advice. In 1985, however, when her symptoms changed to those of 'heavy head' and instability, the neurology report stated that she had a normal neurological examination, including the cranial nerve examination, cerebellar, visual fields testing and funduscopy. Hallpike manoeuvre did not elicit her dizziness symptoms. Three years later, a physical examination by an otolaryngologist found 'slight problems' with tandem gait and a 'slight sway' on Romberg.

When her symptoms exacerbated in 2001, although her gait was normal, she could not tandem walk due to ataxia. Later the same year, her gait also became ataxic, but her cerebellar testing remained normal even during exacerbations including rapid alternating movements, finger-nose and heel-knee-shin tests. She later had to use a cane and developed a wide-based gait, again with no cerebellar symptoms. Repeated Romberg tests remained negative, except for one occurrence in 2002 during an otolaryngologist assessment when she swayed significantly. The most recent physical examination findings in 2007 included vertical diplopia on left and right gaze with light-headedness with head movement.

The patient had her first CT scan of the head in the 1980s when her symptoms first changed from vertiginous to 'heaviness' in the head. That scan was normal. After that, the patient has had two MRI scans, six more CT scans and two transcranial and carotid doppler ultrasounds. Follow-up CT scans showed diffuse small vessel disease. The spinal cord was not compressed. An MRI in 2001 indicated a central pontine signal abnormality with diffuse small vessel ischemic changes. Both imaging modalities failed to show evidence of new strokes during the exacerbation of the patient's symptoms in 2003 and 2007.

MR angiogram and transcranial doppler did not find vertebrobasilar occlusion, with no change in circulation during manipulation of the neck. CT angiogram showed no aneurysm. There was an atherosclerotic plaque of the right internal carotid artery, but no significant stenosis. Electronystagmography (ENG) performed in 2002 showed bilateral peripheral vestibular hearing loss consistent with immunoglycoside toxicity or other degenerative process. Audiogram showed bilateral symmetrical mild-to-moderate sensorineural hearing loss.

DIFFERENTIAL DIAGNOSIS

The patient has been seen by multiple physicians for her dizziness and multiple diagnoses have been suggested as the most likely underlying cause of her symptoms. Potential causes have included allergies, cerebrovascular accident, vertebral basilar insufficiency, benign positional vertigo, viral meningitis, hepatitis, hypothyroidism, headache and stress. The difficulty of arriving at a diagnosis is not uncommon given that cases of chronic dizziness are often characterised by an apparent vagueness and variability of symptoms.³ Moreover, patients experiencing chronic disease often present with multimorbidity and polypharmacy, as is the case with the patient, which further complicates the process of diagnosis.

One of the first referrals to an allergist in 1969 yielded a diagnosis of allergic labyrinthitis following which the patient received allergy injections for several years. Then, in 1988, further allergy testing was negative and therefore she was thought to have non-allergic rhinitis. In 1974, she was diagnosed with hypothyroidism and her symptoms were thought to be a result of the disease presentation. Treatment for hypothyroidism did not resolve her problems.

Between 1983 and 1988, the patient had six different assessments of her symptoms, which included diagnoses of recurrent vestibulopathy, labyrinthitis and tension headache, non-allergic vasomotor rhinitis and anxiety.

Specialist opinions from 2000 onwards centred on whether the patient's symptoms were stroke-related. Neurology assessments in 2001 revealed several possible explanations: a kink in posterior circulation of her brain, extensive vestibular damage, or hypertensive small vessel disease. An additional referral to a neurologist at a stroke prevention clinic was of the opinion that her balance difficulties were not related to a stroke, but were more psychogenic in origin. Three neurologists as well as her family physician remained convinced, however, that she was having hypertensive lacunar infarcts as per MRI findings of diffuse small vessel ischemic changes.

Between 2002 and 2007, the patient was sent to several other specialists for assessment. In 2002, an otolaryngologist found bilateral peripheral vestibular loss based on ENG studies presumed to be due to brain ischemic changes. A geriatric assessment suggested the cause was osteoarthritis in the neck as there were osteoarthritic changes seen on the cervical spine x-ray. Cardiology assessments in 2004 and in 2006 concluded that her dizziness was non-cardiac related. Although there are contrasting explanations and findings, the predominant specialist opinion was that her loss of balance is likely secondary to ischemic changes in the central pons and diffuse atherosclerosis of the brain. Therefore, after 54 years of multiple assessments and diagnostic investigations, the patient has not been given a definitive diagnosis regarding her chronic dizziness.

TREATMENT

In the 54 years since the initial onset of symptoms, the patient has not been offered a treatment that has alleviated any of her dizziness symptoms. In 1969, her symptoms were thought to be allergic in origin and she received allergy shots. She was prescribed amitriptyline in 1985 with only slight improvement, but the patient chose to take the drug

for only 14 days. In 1988, nortriptyline, diazepam and even a β -blocker for muscle relaxation were proposed.

When her symptoms were thought to be secondary to ischemic changes in her brain, the focus was mainly on prevention and rehabilitation. The patient has been referred to social work, physiotherapy, the Cardiovascular Assessment and Risk Evaluation clinic (2000), Falls Prevention Program (2001), Stroke Secondary Prevention Clinic (2003) and the Geriatric Outreach Team (2007). Neurological recommendations focused on risk factor modification, including managing lipids and high blood pressure, as well as anticoagulation therapy.

In 2009, the patient's family physician referred her to the IMPACT clinic (interprofessional model of practice for ageing and complex treatments) at Sunnybrook Health Sciences Centre with the goal of improving her quality of life while avoiding further emergency room visits and hospitalisations. The interprofessional IMPACT team consists of the patient's family doctor, a pharmacist, a physiotherapist, an occupational therapist, a geriatric social worker, a dietitian and a community nurse. The IMPACT model is unique in that all members of the team assemble in one room and work together in real time during the course of the patient visit. This model optimises communication and dialogue between the family doctor and the rest of the team, as well as among team members. Each member of the team bring their own expertise for solving problems; however, the greatest benefit lies in the development of an individualised and comprehensive interprofessional care plan for each patient. The IMPACT team emphasises a function-oriented approach with a focus on symptom management and quality of life as opposed to an orientation towards diagnosis and treatment. (detailed descriptions of the IMPACT model are available elsewhere).⁴⁻⁶

In the IMPACT clinic, the patient was asked about her current concerns and a comprehensive assessment was performed. The team developed a detailed interprofessional care plan, including practical recommendations for the patient. For instance, it was recommended that she avoids sudden movements with her head down and that she uses a reacher to pick things up. Her medication regimen was modified in order to improve compliance. And it was recommended that, in the future, the patient should call the family practice unit when she started experiencing symptoms so that a house call could be arranged.

OUTCOME AND FOLLOW-UP

At a follow-up IMPACT visit 1 year after her initial assessment by the IMPACT team, the patient reported that she still continues to experience fullness and pressure in her head, tinnitus and unsteadiness on her feet. When her symptoms are worse, she feels her head is heavy and large, and she has to sit down until the symptoms resolve. The patient is now careful when moving around the house using furniture to steady herself. While the patient did not get a reacher, as recommended, she does avoid sudden head movements, such as moving her head during a conversation, as this can impair her for several days.

Following her visits to the IMPACT clinic, the patient has had no emergency department visits or hospital admissions as a result of her ongoing dizziness symptoms. She attributes this in part to her understanding that her

symptoms cannot be solved medically, but that the severity of the symptoms can be lessened and managed. In addition, she reports that the support of her family physician, the IMPACT team and the availability of 24 h on-call service at the family practice unit have been the source of much support and reassurance.

DISCUSSION

This case report presents the history of a 90-year-old woman with a 54-year history of chronic dizziness. As is common with complex multicausal conditions in the older, repeated investigations by multiple specialists and considerable expensive diagnostic testing yielded no conclusive results.

The challenge of diagnosing chronic dizziness in the older has been previously reported. In a retrospective chart review of 310 patients, Kwong and Pimlott found that 46% of patients with dizziness had no diagnosis and 10% had more than one diagnosis.⁷ Interestingly, in this study, those patients whose symptoms were charted in their own words were significantly more likely to have a clinical diagnosis. Drachman describes the case of a 69-year-old man with chronic dizziness.³ In this case, the patient experienced symptoms with varying frequency and severity and no clear triggering event. After an extensive investigation, no complete diagnosis was given; the recommended approach includes several strategies, including a focus on patient education to address the understandable anxiety that arises from the uncertainty and unpredictability associated with chronic dizziness.

There is little known about the pathophysiology of chronic dizziness and the meaning of radiologic findings on the mechanism of dizziness, although the causes are being investigated. Functional studies using auditory-evoked magneto-encephalography by Naritomi found that dizziness was associated with prolonged conduction between hemispheres, which was also proportional to the severity of white matter lesions seen on MRI of patients with dizziness.⁸

Epidemiological studies suggest that central causes of dizziness account for almost 25% of cases; the underlying cause remains unknown in approximately 13% of cases.¹ In a prospective study of 100 ambulatory patients presenting with a chief complaint of dizziness, vestibular and psychiatric disorders were found to be the most common causes; however, only 52% of patients had a single 'pure' cause and a multi-factorial causal pathway was implicated in the remaining cases.⁹

For patients experiencing chronic dizziness, a clinical diagnosis may not lead to a cure of their symptoms. Indeed, many patients continue to experience symptoms after receiving a diagnosis.¹⁰ This is an ominous prognosis for women as their risk of chronic dizziness is double that of males.¹¹ Colledge and colleagues emphasise the importance of improving management in older since the causative conditions are controlled symptomatically rather than cured.¹²

When a clear diagnosis proves elusive, ongoing care should emphasise improvement of function and quality of life. Because it is difficult to isolate an underlying etiologic cause, it is prudent to shift the goal of care away from the conventional diagnosis and treatment approach towards a more function-oriented approach with a focus on symptom

management and maximising quality of life and functional ability. For patients experiencing chronic dizziness, it has been proposed that management should include identifying common treatable causes and recurrent dizziness risk factors, followed by an interdisciplinary approach to rehabilitation and minimising contributive causes.^{3 13} While there is a growing trend towards interprofessional team practice models in the primary care setting, it is important to note that not all practitioners will have access to a comprehensive team. In the absence of a team, the treating practitioner is nonetheless advised to orient the care plan towards optimising function and quality of life.

Complex chronic conditions in older patients with multiple co-morbidities represent a significant challenge to the family physician due to the lack of clear practice guidelines in this patient population.^{14 15} In the present case of a 90-year-old woman with a 54-year history of dizziness, the interprofessional IMPACT team focused on optimising the patient's functional status and provided her with practical suggestions for minimising the negative impact of her chronic symptoms. Since her two visits to the IMPACT clinic, the patient reports that she feels supported and more assured that help is readily available when she experiences exacerbations of her symptoms.

Learning points

- Dizziness is a common complaint among the older and can be a life-long disabling condition.
- Chronic dizziness can be extremely challenging to diagnose and treat because of fluctuating symptoms and non-specific findings.
- It is not uncommon for repeated investigations, multiple specialist referrals and expensive diagnostic tests to yield inconclusive results.
- When a clear diagnosis proves elusive, ongoing care should emphasise symptom management, improvement of function and quality of life rather than diagnosis and treatment.
- An interprofessional team approach is preferred for complex cases characterised by multimorbidity and polypharmacy.

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