

Mayo Clinic Proceedings

Dizziness: How Do Patients Describe Dizziness and How Do Emergency Physicians Use These Descriptions for Diagnosis?

“When I use a word,” Humpty Dumpty said, in rather a scornful tone, “it means just what I choose it to mean—neither more nor less.”

“The question is,” said Alice, “whether you can make words mean so many different things.”

Lewis Carroll, *Through the Looking Glass*

Physicians are taught repeatedly throughout their training that the clinical history is the single most important source of information on which to build a diagnosis. However, few studies systematically analyze the utility of aspects of history taking and of the reliability of patient descriptions. The importance of this issue cannot be overemphasized because symptoms are why patients visit physicians. New or serious symptoms often drive patients to overcrowded emergency departments (EDs). Feelings of dizziness, vertigo, and imbalance can be extremely unpleasant and frightening, especially if they occur suddenly. We all derive security from the feeling that terra firma is firmly placed beneath us, and when we think it is not we often panic. Dizziness and vertigo are among the most common symptoms of patients who come to EDs and physicians offices. In this edition of *Mayo Clinic Proceedings*, 2 systematic studies address (1) how well patients describe dizziness in the ED¹ and (2) how physicians use these descriptions to formulate diagnoses.²

QUALITATIVE DESCRIPTION OF SYMPTOMS

How do individuals know what words to use when asked to describe a particular sensation? It primarily depends on whether they have had that sensation or a similar one previously. A new feeling is difficult to describe. In reference to dizziness, physicians may ask, is it like the spinning

feeling on a merry-go-round or like being in a boat on choppy water? If the patient has had neither experience, he or she would be unable to make a meaningful comparison. Some patients remain alert and analytical when they have a new sensation, while others become anxious and even reticent, making no attempt to analyze the type of sensation. Of course, the precision of the description also depends on the patient's intelligence, education, and facility with the nuances of language.

Although physicians emphasize the details of the historical account, many patients are more impressed by physicians' ability to find the answer by physical examination and especially by technology. My grandmother exemplified this. When asked to give an account of a feeling, she said, “You are the physician. You tell me.” When individuals pull into an automobile repair shop, they are often asked to describe the problem with their vehicle. The mechanic asks, “What happens when you press on the brake, speed up”...etc? Individuals often have paid attention to the vehicle dysfunction during these circumstances because they know they will be asked. Often, it is not their first experience with vehicle trouble. Strangely, when something happens to their body, they often do not inventory what does and what does not work. One reason that many people have difficulty responding to questions about their bodies is that they are ignorant about body functions and physiology. They do not know what to look for. Clearly, education about body physiology must be improved for people of all ages. In addition, physicians must emphasize the importance of accurate descriptions—of giving a detailed, precise, and accurate history. When individuals feel sick, they should try to analyze the experience in detail. They should be encouraged to rehearse (or write down) the history before coming to the physician. External pressures that compress the time for each patient's visit with a physician make this even more important.

See also
pages 1319
and 1329

Address correspondence to Louis R. Caplan, MD, Department of Neurology, Beth Israel Deaconess Medical Center, 330 Brookline Ave, Boston, MA 02215 (lcaplan@bidmc.harvard.edu).

© 2007 Mayo Foundation for Medical Education and Research

To separate dizziness, vertigo, and light-headedness, Newman-Toker et al¹ report that ED physicians used several different techniques: open-ended questions, choice between multiple responses, single-choice queries, and directed queries. The answers given were often inconsistent or described more than 1 type of sensation. In short, the qualitative descriptions were undependable. By contrast, patients gave dependable estimates of the duration of the experience and the triggers or situations that preceded and might have provoked it. This makes sense because all patients have had experience gauging time—it is an everyday activity. Additionally, they can usually recall what they were doing because description of activities is routine.

The differential diagnostic thinking about dizziness/vertigo/light-headedness should emphasize timing and precipitating events. Physicians should be trained to use this type of information when evaluating patients. For example, presyncopal feelings of light-headedness are very brief (ie, seconds) and often are triggered by sudden standing, with decreases in blood pressure. Benign positional vertigo lasts seconds, begins a fraction of a second after a head movement, and is most common in the morning on arising and at night when first getting into bed. Vertiginous migraine auras last from 10 to 30 minutes, are insensitive to position, and may be followed by headache. Ménière-related vertigo lasts hours, is often accompanied by tinnitus or hearing loss, and is not triggered by motion. Vestibular neuritis lasts for days. Transient ischemic attacks last a few minutes, and vertigo is often accompanied by other brainstem or cerebellar symptoms.

ED PHYSICIANS' DIAGNOSTIC FORMULATIONS

Being an ED physician is difficult. Such physicians must become proficient at rapidly diagnosing and managing innumerable and diverse medical emergencies. Neurological problems are just one challenge among many. Following up on patients seen in the ED is often difficult and time consuming.

Neurological urgencies are complex, and ED physicians, almost universally, have inadequate training in neurology. A decade ago when my colleague and I reviewed the training of various groups of physicians, we learned that neurology exposure during training of ED physicians was usually brief and primarily under the direction of ED staff physicians, not neurologists.³ I do not think the situation has changed much since then. In my experience and that of many of my neurologist colleagues (including those at academic institutions), the care of acute neurological emergencies, especially acute ischemic stroke, subarachnoid hemorrhage, and seizures, by ED physicians is problematic. My colleagues and I recently reviewed misdiagnosis of cerebellar infarction in

the ED.⁴ Patients were misdiagnosed, often with dire consequences and medicolegal suits. The treating ED physicians took incomplete histories, performed inadequate neurological examinations (gait was often not examined), and relied unduly on computed tomographic (CT) scans.⁴ On another front, ED physicians are being sued in relationship to decisions they make about thrombolysis in patients with acute ischemic strokes who present to the ED.⁵

In the current edition of *Mayo Clinic Proceedings*, Stanton et al² used a survey to evaluate patients who presented to the ED as a result of dizziness. The survey centered on features of the history and use of CT scans. The only neurological examination questions concerned elicitation of nystagmus and did not include other parts of the neurological examination. Physicians in the ED placed too much emphasis on the qualitative features of the history and CT findings and too little emphasis on timing and triggers.² These results concur with my experience. Unfortunately, ED physicians, when viewed as a group (not individually), may be guilty of the following: (1) showing inadequate differential diagnostic reasoning as applied to the patient with neurological symptoms, (2) performing incomplete and inadequate neurological examinations, (3) showing little understanding of the limitations of CT scans obtained soon after neurological symptom onset (especially in patients with posterior fossa conditions), and (4) having insufficient appreciation for the need for vascular imaging in patients suspected of having transient ischemic attacks or strokes.

However, we should resist placing blame. Neurology is complex. Clearly, the training of ED physicians in neurology is grossly inadequate. This puts patients with acute neurological symptoms at risk when they go to an ED if they are not seen by a neurologist. This also puts ED physicians at considerable medicolegal risk. New strategies must be implemented. Alternative strategies include the following:

1. Have neurologists available in EDs—currently, there are far too few hospitalist-type or stroke neurologists to fulfill that function.
2. Train ED physicians more extensively in neurology—this would put a great strain on ED physician training programs, and other medical urgencies probably deserve equal time.
3. Partner ED physicians with neurologists as a team that manages the acute neurological cases in the ED—if this is done, with time and motivation, the ED physicians in the team would become more adept at managing neurological urgencies with available consultation with neurologist members of the team. Teams of physicians who screen patients suspected of having recent-onset strokes have used this approach effectively.⁶

Currently, when an acute neurological problem is encountered in the ED, many ED physicians simply refer the patient to neurologists and do not sufficiently remain engaged in the care of the patient and thus learn little from the experience.

In summary, the ED provides an environment that is unfair to both the patient with dizziness and the ED physician. Fundamental changes in patient care and physician education are needed if we are to resolve the problems.

Louis R. Caplan, MD
 Department of Neurology
 Beth Israel Deaconess Medical Center
 Boston, MA

1. Newman-Toker DE, Cannon LM, Stofferahn M, Rothman RE, Hsieh Y-H, Zee DS. Imprecision in patient reports of dizziness symptom quality: a cross-sectional study conducted in an acute care setting. *Mayo Clin Proc.* 2007; 82(11):1329-1340.

2. Stanton VA, Hsieh Y-H, Camargo CA Jr, et al. Overreliance on symptom quality in diagnosing dizziness: results of a multicenter quantitative survey of emergency physicians. *Mayo Clin Proc.* 2007; 82(11):1319-1328.

3. Caplan LR, Adelman L. Neurologic education. *West J Med.* 1994; 161(3):319-322.

4. Savitz SI, Caplan LR, Edlow JA. Pitfalls in the diagnosis of cerebellar infarction. *Acad Emerg Med.* 2007;14(1):63-68.

5. Weintraub MI. Thrombolysis (tissue plasminogen activator) in stroke: a medicolegal quagmire. *Stroke.* 2006 Jul;37(7):1917-1922. Epub 2006 May 25.

6. Kothari RU, Brott T, Broderick JP, Hamilton CA. Emergency physicians: accuracy in the diagnosis of stroke. *Stroke.* 1995;26(12):2238-2241.

