

# Misdiagnosing Dizzy Patients

## Common Pitfalls in Clinical Practice



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### KEYWORDS

• Dizziness • Vestibular disorder • Vertigo • Management

### KEY POINTS

- Opportunities exist to improve the diagnosis and management of patients with acute dizziness in routine care settings.
- To optimize the accuracy and efficiency of diagnosis in acute dizziness and vertigo, providers should deemphasize the type of dizziness, patient demographics, and the routine use of computed tomography (or MRI) neuroimaging.
- Providers should emphasize the timing and triggers for dizziness symptoms and leverage bedside eye movement assessments to identify opportunities to effectively and efficiently diagnose and treat common peripheral vestibular disorders and simultaneously to determine whether MRI neuroimaging is indicated to search for dangerous central causes.

### INTRODUCTION

As a general rule, peripheral vestibular disorders are not correctly diagnosed or managed in the emergency department (ED), with misdiagnosis rates estimated in the range of 74% to 81%.<sup>1,2</sup> Common disorders such as benign paroxysmal positional vertigo (BPPV) and vestibular neuritis are frequently confused for one another<sup>1</sup> and for more serious central causes such as stroke.<sup>2</sup> Management is non-evidence based and suboptimal.<sup>3,4</sup>

Identifying peripheral vestibular disorders should be a priority for several reasons. First, these disorders are very common; BPPV alone has an estimated lifetime prevalence around 2%.<sup>5</sup> Second, evidence-based treatments exist. The most common peripheral vestibular disorder, BPPV, has systematic reviews and clinical guideline

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statements to support the use of the Dix-Hallpike test and the highly effective canalith repositioning maneuver.<sup>6,7</sup> Physical therapy strategies are also supported by systematic reviews for the treatment of acute unilateral vestibulopathy (eg, vestibular neuritis).<sup>8</sup> Optimal identification of peripheral vestibular disorders could enable more efficient care because additional laboratory or imaging tests are not necessary and are generally not even warranted in the management of these disorders.<sup>6</sup> In addition, physicians who can accurately identify peripheral vestibular disorders are probably better equipped to identify dangerous central vestibular disorders because the probability of a central disorder substantially increases when peripheral vestibular disorders are ruled out.

Identifying central vestibular disorders is also important. Vascular causes (stroke or transient ischemic attack [TIA]) are the most common central disorders that present with acute dizziness<sup>9</sup> and evidence-based treatments exist for both acute and chronic management to improve functional recovery and reduce the risk for future stroke events.<sup>10</sup> Clinical practice research suggests that identifying stroke-dizziness presentations may be suboptimal. One population-based study found that 16 out of 46 (35%) acute stroke/TIA-dizziness cases did not receive a stroke or TIA diagnosis from the treating ED provider.<sup>11</sup> Dizziness was also found to be the presenting symptom most closely linked with subsequent stroke presentations in the ED, a finding that suggests the initial dizziness presentations may have been misdiagnosed as nonvascular events.<sup>12</sup> In another population-based study, TIAs presenting posterior circulation symptoms such as isolated dizziness and vertigo were initially misdiagnosed in 90% of cases (n = 9 out of 10).<sup>13</sup>

Harm may result from missed opportunities to apply timely therapies for underlying disorders, including both peripheral and central diseases. For example, patients with BPPV who are not treated within 24 hours of the ED visit have more than double the recurrence risk (46% vs 20%;  $P = .002$ )<sup>14</sup> and unrecognized BPPV confers 6.5-fold greater odds of falling.<sup>15</sup> When stroke diagnosis is delayed, missed opportunities for thrombolysis,<sup>16</sup> early surgery for complications such as malignant posterior fossa edema,<sup>17</sup> and early prevention of subsequent vertebrobasilar infarction can result in permanent disability or death.

This article explores some of the likely reasons why misdiagnosis is frequent. It highlights 5 diagnostic pitfalls (**Table 1**) often encountered in clinical practice, and makes recommendations for how to avoid these known traps when assessing acutely dizzy patients.

### **PITFALL 1: OVERRELIANCE ON THE TYPE OF DIZZINESS TO GUIDE DIAGNOSTIC INQUIRY**

The traditional approach to the evaluation of patients who present with dizziness symptoms has been to heavily weight defining the type of symptom when assessing the most likely cause.<sup>18,19</sup> The recommended first question for the patient is generally, “What do you mean by dizzy?” In this traditional paradigm, the dizziness is classified into one of 4 specific types: (1) vertigo (the illusion of spinning or other false motion); (2) presyncope (a feeling of impending faint or loss of consciousness); (3) disequilibrium or loss of balance without head sensation; and (4) other ill-defined symptoms such as lightheadedness, wooziness, or giddiness.<sup>18</sup> The teaching suggests that once a patient is categorized as having a type of dizziness, the likely causes are as follows: vertigo, which is thought to indicate a vestibular disorder; presyncope, which indicates a cardiovascular disorder; disequilibrium, which indicates a neurologic disorder; and nonspecific dizziness, which indicates a psychiatric or metabolic disorder.<sup>19</sup>

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