

CORRESPONDENCE

Dizziness and Unstable Gait in Old Age—Etiology, Diagnosis and Treatment

by Prof. Dr. med. Klaus Jahn, Prof. Dr. med. Reto W. Kressig, Dr. med. Stephanie A. Bridenbaugh, Prof. Dr. med. Thomas Brandt, Dr. med. Roman Schniepp in issue 23/2015

Atlanto-Occipital Joint Blockage not Mentioned

As so often when the subject of dizziness is concerned, this article too is lacking an important etiology of dizziness (1). A blockage of the atlanto-occipital joint causes unfocused dizziness, which in older people may well be accompanied by unstable gait, and, additionally, often headache and sensations of eye flashes on the affected side. This cause is not visible through radiography but is easily clinically palpable as a paramedian mostly painful induration on the occiput, which is different on both sides and is caused by the reflectory increase in the tone of the muscles stabilizing the atlanto-occipital joint.

Using purely a movement technique of gentle chiropractic without applying strength or impulse can resolve any blockage of the atlanto-occipital joint at any age and in the presence of any comorbidity. In my practice, I treat patients on a daily basis who have experienced symptoms of dizziness for months or years, which apparative diagnostic evaluation was not able to confirm. Clinically, the cause is often a blockage of the atlanto-occipital joint. After successful treatment in one to three sessions, patients of all ages usually describe the improvement to their quality of life as tremendous.

I am happy to explain in detail and demonstrate the technique to interested colleagues.

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Degenerative Changes of the Vestibular Receptors as Underlying Mechanism

The authors mention the occurrence of specific balance disorders in the elderly (for example, Menière’s disease, which has a prevalence of 0.1% in the general population) (1), but they do not sufficiently explain the sequential degeneration of the vestibular receptor (hair

cells (in that order: semicircular canal receptors → sacule → utricle) (2), which determines the clinical picture of vestibular disorders in the elderly—which the Berlin Aging Study (3) has demonstrated for the first time over a time period of 30 years (first longitudinal study so far). This study also showed that the determinants correlating the most with psychosocial well-being, social interactions, and cognitive-motor functions are primarily the sensory systems hearing and balance/equilibrium. Since falls usually occur out of a movement, the tests for balance assessment suggested by the authors (Romberg’s test, for instance, has a sensitivity of only 30% for detecting vestibular deficits) are possibly suitable for screening, but not to determine the extent and quality of a vestibular deficit and/or the need for therapy. Modern posturographic approaches (4) using standardized standing and walking tests that reflect the everyday life conditions of the elderly can be quickly and easily used to assess the postural stability and the risk of falls, which in turn can then be used to decide on a specific intervention (for example, the so-called neurofeedback balance training). A further important aspect is optimizing a patient’s hearing by means of hearing aids/implants, because fewer falls occur in those with good spatio-temporal orientation as supported by optimized hearing. Substituting all sensory functions is of crucial importance for a self-sustained life at old age—which the authors explicitly stressed for vision.

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Hyponatremia Should Be Added

We read the excellent review article (1) with great interest. We wish to add a further factor to the already explained causes of dizziness and unstable gait in old age: in our opinion, hyponatremia is a clinically relevant cause of unstable gait in older patients.

A recent prospective observational study from Switzerland showed that 31% of patients with severe hyponatremia <125 mmol/L experienced unstable gait (2).

Patients with mild chronic hyponatremia also fall notably more often than patients with normal serum sodium concentrations. Hyponatremia affects the gait pattern even more than a blood alcohol concentration of 0.6 g/L. However, an unstable gait is reversible by balancing out the hyponatremia (3). In a consecutive series over 15 months in 1659 patients at the geriatric hospital of the first author of this letter, a hyponatremia of <135 mmol/L was found in 30.0% of patients and one of <130 mmol/L in 10.1% of patients during the entire inpatient stay (authors' own data). Older patients with hyponatremia are also more prone to developing ADH-induced osteoporosis and clinically relevant fractures (4).

Medication often plays a part; hyponatremia can develop during treatment with hydrochlorothiazide (HCT) and after consumption of medications affecting the central nervous system (antidepressants) and carbamazepine.

For this reason, the diagnostic evaluation of dizziness and unstable gait in old age should always include laboratory tests for electrolytes, so as not to overlook hyponatremia. It is likely that the number of falls could be reduced if our awareness of and attention towards hyponatremia in geriatric patients were to increase further.

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The authors have received honoraria for lectures on the subject of hyponatremia from Otsuka.

Not Trivial

A detailed explanation of the causes and treatment options for dizziness in old age was long overdue and

very clearly shows the complexities of an interdisciplinary approach (1). Because the problem is so common it is often regarded as trivial and as a “normal” movement disorder in old age—and all this when the risk of secondary complications, such as falls and psychological comorbidities, is extremely high. However, what would have been worth adding to the review article is the option of administering non-sedative medications that act on the symptoms and of beta-histidine as the medical of choice in endolymphatic hydrops. Adjusting people’s living environment and residences can also contribute crucially to avoiding falls as the most common complication.

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Dr Walter has received honoraria for lectures from Henning AM.

In Reply:

Dr Gorris-Vollmer describes successfully treating dizziness in patients with blockades of the upper cervical spine. There is no doubt that many patients with dizziness have symptoms and findings in the neck and the back of the neck areas and that this association exists in individual cases. However, the association is often assumed for no reason, especially since established clinical tests or apparatus-based diagnostics are not available to confirm this. This dilemma is also highlighted in a review article published in 2015 (1). Nothing has changed: if after a thorough medical history and examination of patients with dizziness problems these patients also have symptoms affecting their cervical spine that require treatment, then these should be treated independently of the dizziness. If the dizziness reduces in tandem with the cervical spine problems, even better. However, we can report from our supra-regional center that many patients have received treatment on their atlanto-occipital joint and cervical spine that did not result in any improvement of their dizziness.

Dr Walter rightly points out that in patients with dizziness, the option exists even in old age to treat causes and symptoms with medication. In our view, symptomatic treatments should be given with a clearly agreed treatment objective for a defined period of time. Non-sedating medications are preferable. In our clinical experience the treatment with betahistidine as the medication of choice for endolymphatic hydrops is effective, even though high-quality clinical evidence for this treatment is still lacking (2). Adapting and adjusting the environment in order to avoid falls in patients with dizziness, as mentioned by Dr Walter, is extremely important.

Professor Ernst described the degeneration of vestibular sensory cells that occurs sequentially with increasing age. The number of vestibular hair cells in the semicircular canals and otolith organs decreases continually from adolescence onwards. Vestibular functioning is retained for a long time owing to inter-sensory and central compensation mechanisms (3). Balance training is useful in order to stave off the time point at which decompensation occurs to as old an age as possible and to counterbalance existing deficits. A promising approach is the mentioned neurofeedback balance training that was developed in Berlin. We can only support the notion that maintaining or substituting all sensory functions is of crucial importance for a self-determined life at an old age. In order to diagnose the deficits, standardized tests for standing posture and walking—as described by ourselves—will have to be used. These need to include aggravated conditions in order to reflect deficits that are relevant for everyday life. Apparatus-based approaches, such as posturography (mentioned above), are a valuable addition (in our view), but these are not available everywhere and they require appropriate and correct interpretation after they have been undertaken.

Dr Krause and Professor Hensen point out the role of hyponatremia as a clinically relevant cause of unstable gait in old age. The supporting evidence is documented in detail in the letter. We did not expand on useful laboratory investigations because in our experience, general practitioners can reliably conduct these in patients with dizziness and unstable gait. Electrolyte disorders and changes to the blood count (anemia), liver, kidney, and thyroid function disorders are relevant in this context. The letter rightly points out that electrolyte imbalances often arise iatrogenically, as a result of medication. Some of the drugs mentioned

(carbamazepine, antidepressants) increase dizziness and unstable gait because of additional neurological side-effects.

The letters to the editor altogether underline the need for interdisciplinary thinking in assessing patients with dizziness and unstable gait (4). We are convinced that for these and other groups of patients the traditional delineations between disciplines do not suit the symptoms. Patients thus affected often seek out several medical specialists and receive help at a very late stage. The problem has been recognized. In a model project in Munich, a center was developed—supported by funding from the Federal Ministry of Education and Research (BMBF)—in which numerous disciplines in healthcare and research are collaborating on the subject of dizziness (www.klinikum.uni-muenchen.de/Deutsches-Schwindelzentrum-IFB-LMU/de/).

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On behalf of the authors

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