# **Special Features of Old Age Vertigo**

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**Abstract:** In daily clinical practice, it is seen that elderly patients complain most frequently of dizziness, tinnitus, and hearing loss. Listening to those complaints, do we not tend just to attribute them to age? Against this background, we review vertigo in elderly patients briefly and consider the key points of its treatment. In comparison to younger people, what is first noticeable about elderly people is that they have a lot of fat in the body and a markedly low level of intracellular water. In other words, elderly people are always at risk of dehydration and liable to enter a shock state. The dorsal root in the elderly is also degenerated, and this explains such diverse complaints as dizziness, tinnitus, ringing in the head, headache, neck and shoulder stiffness, and lumbago. However, these complaints cannot be dismissed simply as "an unidentified syndrome." Behind these complaints is invariably one or another organic disorder. This is the conclusion we have reached from our day-to-day clinical practice.

Key Words: elderly person; special features; vertigo

ith an increase in the elderly population, the pattern of diseases changes, and the age factor has to be considered in diagnosis and treatment. In the ear, nose, and throat field also, we are required to consider changes in organs and diseases associated with age and corresponding treatment approaches.

In daily clinical practice, the elderly patients seen complain most frequently of dizziness, tinnitus, and hearing loss. Listening to those complaints, we tend just to attribute them to age. Using this as backdrop, we review vertigo in elderly patients briefly and consider the key points of its treatment.

### FOUNDATION

In comparison to younger people, what is first noticeable about elderly people is that they have a good deal of body fat and a markedly low level of intracellular water. In other words, elderly people are always at risk of dehydration and are liable to enter a shock state. The dorsal root in the elderly is also degenerated, which explains such diverse complaints as dizziness, tinnitus, ringing in the head, headache, neck and shoulder stiffness, and lumbago. However, these complaints cannot be dismissed simply as an "unidentified syndrome." One or another organic disorder always is behind these complaints. Therefore, when we examine elderly patients, we need to pay special attention to various factors [1].

Elderly patients have varying disorders at the same time. Even if they have the same disorder as is seen in younger people, they are less likely to manifest typical symptoms. Elderly patients are liable to present unexpected symptoms. Because they are more or less conscious of death in daily life, they have a strong sensation of fear and thus visit with a variety of complaints. Because of brain atrophy with aging, they are less likely to present, for example, symptoms of increased intracranial pressure even if they have a brain tumor. When such patients have cerebral infarction, in particular, they experience a dizziness that is unexpectedly transient; thus, it requires careful attention. This is also the case with cerebral hemorrhage to a certain extent.

What is the reason for all this? As mentioned, the elderly possess excess body fat and a low level of intracellular water. Hence, they are always at risk of dehydration and present with diverse complaints. This tendency is particularly conspicuous among women, and their typical complaints include headache, vertigo, shoulder stiffness, palpitation, tinnitus, and lumbago (Table 1).

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ger and Elderly People
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	Younger (%)	Elderly (%)
Fat	15	30
Tissue	17	12
Bone	6	5
Water		
Extracellular	20	20
Intracellular	42	33

#### **COMMENTS**

Listed in Table 2 are the diseases involving vertigo, which we often encounter in daily clinical practice, specifically among elderly patients. Hypotension produces rotary vertigo in patients, as it does paroxysmal positional vertigo (PPV). Special effort should be made to differentiate between not only benign PPV but pseudobenign PPV and malignant PPV. It is also not rare that hypotension is involved in internal ear disorders. Hypotension has to do with transient ischemic attack in some patients. Thus, vertigo often occurs during sleeping or on waking early in the morning.

Cerebral infarction is liable to occur in patients with evident arteriosclerosis. Hyperlipidemia, ischemic heart disease, and diabetes mellitus require special attention in the elderly, as does orthostatic hypotension. As may be expected, Shy-Drager syndrome often involves provoked vertigo. In particular, improper use of hypotensive drugs induces vertigo (Table 3). Hypertension has much to do with vertigo. Cerebellar or pontine hemorrhage causes severe rotary vertigo, nausea and vomiting, tinnitus, and headache. By contrast, cerebral hemorrhage causes nonrotary vertigo and is sel-

#### Table 2. Old Age Vertigo

Spontaneous
Brain vascular lesion
Transient ischemic attack, VBI
Hypertensive encephalopathy
Arteriosclerosis
Subarachnoid hemorrhage
Brainstem and cerebellar hemorrhage and infarction
Luetic change
Provoked
BPPV, pseudo-BPPV, MPPV
Orthostatic dysregulation
Shy-Drager symptom complex
Brainstem and cerebellar infarction

Cervical spondylosis

 Table 3. Remarkable Risk Factors

Pathological blood pressure
Heart disease
Hyperlipidemia
Diabetes mellitus
Hyperthyroidism
Gout

dom associated with tinnitus. Subarachnoid hemorrhage, which occurs from various causes, produces headache, vomiting, and dizziness.

The extension, flexion, or stenosis of a vertebral artery, cervical spondylosis, and cervical torsion due to the abnormality of cervical soft tissue induce rotary vertigo and sometimes a transient disturbance of consciousness. Cerebellar infarction, particularly in the bilateral or median portion, often produces vertigo (Fig. 1). When this vertigo is induced and associated with PPV symptoms, it is important to differentiate between benign and malignant forms (Fig. 2) [2]. Thrombosis seldom produces symptoms as rapidly as does embolism or hemorrhage. In many cases, it progresses slowly after repeat transient ischemic attack and improves between episodes.

It should always be kept in mind that a space-occupying lesion may give rise to spontaneous or induced ver-



Figure 1. Cervical torsion due to abnormality of cervical soft tissue induces rotary vertigo.

Posterior fossa tumor (inclusive of metastatic) Degenerative diseases (inclusive of multiple microinfarction)

BPPV = benign paroxysmal positional vertigo: MPPV = malignant paroxysmal positional vertigo.



**Figure 2.** Vertigo associated with paroxysmal positional vertigo symptoms. Note that differentiating between malignant and benign forms is important.

tigo (e.g., metastatic carcinoma), such as into the posterior fossa median structure. Special attention should be paid to the presence of heart disease. Atrial fibrillation, among others, can be one of the major causes for cardiogenic embolism [3]. Heart fibrillation can also be a major cause for cardiogenic embolism.

Ménière's disease, which is well-known as one of the conditions that involve vertigo, seldom develops first in children younger than 15 or in adults older than 60 years. The rare onset of this disease after the retirement age of between 60 and 65 years has to do with the decline of internal ear function with aging. Another point to be heeded is the capacity for compensation. As compensation declines with aging, one usually becomes slower with age to recover from the same degree of disorder.

One point must be mentioned about diagnosis. Recall the familiar scene in which Robert Kennedy lay in the hotel lobby waiting for an ambulance immediately after he had been shot [4]. The leftward conjugated deviation of the eyes and right facial palsy were due to a pontine lesion. The prognosis for his life was very poor. Indeed, the eyes are the windows of the mind, they are more eloquent than lips, and they are a window for diagnosis. By a strange coincidence, like John F. Kennedy, Robert Kennedy's fatal bullet penetrated through the right mastoid to the right cerebellar hemisphere.

Also, a few points should be mentioned about treatment. Of course, treatment should be provided on a case-by-case basis, but what is essential is to improve blood circulation. The three keys are to facilitate blood circulation, prevent thrombosis, and improve blood rheology.

For oral drug treatment, it is important to use such agents as clonazepam, imipramine hydrochloride, and thyrotropin-releasing hormone. Vertical traction physical therapy is particularly effective in elderly patients. Starting with 7 kg, the weight may be increased by 1 kg per day up to 13 kg. This therapy should be continued for 10 consecutive days, followed by cessation for a subsequent 10 days.

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