

The Importance of Repeated Clinical Examination in Patients With Suspected Benign Paroxysmal Positional Vertigo

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Objective: We enable patients with recurrent vertigo, who were examined during an asymptomatic period, to be reexamined on an urgent basis when the symptoms reappear. In this study, we tried to establish the usefulness of this arrangement.

Study Design: Retrospective case review.

Setting: Outpatient clinic.

Intervention: We reviewed the medical records of patients treated at our dizziness clinic for benign paroxysmal positional vertigo (BPPV) during 1999–2008.

Main Outcome Measures: The rate and characteristics of patients with BPPV where the diagnosis was established on reexamination.

Results: Among 464 patients treated for BPPV, 364 were seen during asymptomatic period, whereas in 100 patients (21.5%), the diagnosis was established during reexamination. In 86 of them, BPPV was suspected during the first visit, and in the

remaining patients, another diagnosis was initially assumed. The mean period between the first visit to final diagnosis was 14.9 months. Seven percent of patients had to be examined repeatedly until signs of BPPV could be elicited. Seventy-nine percent of patients had a laboratory examination before the diagnosis was established.

Conclusion: At a specialized clinic, the method of reexamination in patients with recurrent vertigo and a normal neurotologic examination between attacks are useful for clarifying the diagnosis. A high confidence is justified when suspecting the diagnosis of BPPV between the attacks. Auxiliary examinations can be reserved for cases with an atypical history or abnormal findings on neurotologic testing. **Key Words:** Benign paroxysmal positional vertigo—Suspected—Repeated examination.

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Patients with recurrent vertigo constitute one of the most often encountered groups at dizziness clinics. The main differential diagnosis of recurrent vertigo with no findings between the attacks includes benign paroxysmal positional vertigo (BPPV), migraine-related vertigo, incipient Ménière's disease, vestibular paroxysmia, or perilymphatic fistula (1). The diagnosis of BPPV is usually easy if the patient gives a typical history of positioning-induced vertigo.

However, some patients with BPPV are not aware of the positional dependence of their vertigo, and they rather complain about disequilibrium, dizziness, or sustained vertigo (2). In these patients, the diagnosis might be difficult if they are examined during an asymptomatic period and becomes apparent only when the patient is examined during the vertigo attack.

We enable patients with recurrent vertigo, who were examined during an asymptomatic period, to be reexamined on an urgent basis when the symptoms reappear. In this study, we tried to establish the usefulness of this arrangement.

METHODS

We reviewed the medical records of patients treated at our dizziness clinic for BPPV during 1999–2008 to find cases where the diagnosis was established during reexamination.

The diagnosis was based on a history of recurrent positional vertigo and the presence of geotropic torsional nystagmus directed toward the undermost ear on Dix-Hallpike testing (posterior canal variant) or the presence of geotropic/ageotropic nystagmus on roll testing (horizontal canal variant of BPPV). Patients were treated with a particle-repositioning maneuver (Epley maneuver for the posterior canal variant and roll maneuver for the horizontal canal variant of BPPV) and retreated every 3 to 7 days thereafter until signs resolved (3–6).

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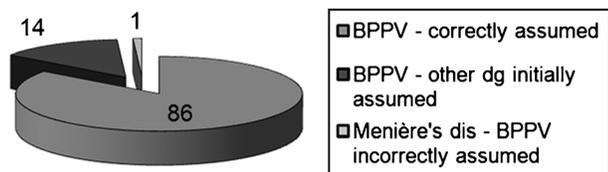


FIG. 1. Final diagnosis of patients with recurrent vertigo on reexamination (total, 101 patients).

Asymptomatic patients who reported attacks of positional vertigo in the past and in whom the neurotologic examination was normal were instructed to contact the clinic when symptoms reappeared (reexamination).

RESULTS

Among 464 patients treated for BPPV, 364 were seen during asymptomatic period, whereas in 100 patients (21.5%), the diagnosis was established on reexamination.

In 86 of them, BPPV was highly suspected during the first visit and was confirmed on repeated testing. In a further 14 patients, diagnosed as BPPV on reexamination, another diagnosis was initially assumed: migraine-related positional vertigo was suspected in 6 patients, nonvestibular dizziness in 3 patients, Ménière’s disease in 3, transient ischemic attack in 1, and parkinsonism with postural instability in another patient. One individual who was suspected to have BPPV revealed signs compatible with Ménière’s disease on reexamination (Fig. 1).

The characteristics of BPPV patients with a delayed diagnosis are summarized in Table 1. Their mean age was 55.9 years (range, 21–81 yr); 72 were women. Eighty patients had posterior canal-type BPPV, whereas 17 patients demonstrated horizontal canal and 3 bilateral posterior canal involvement.

The time from first presentation of symptoms until diagnosis was 3.7 years (range, 1 mo to 30 yr). The mean period between the first visit at the clinic and the final diagnosis was 14.9 months (range, 1 wk to 96 mo). Seven percent of patients had to be examined repeatedly (1–3 times) until signs of BPPV could be elicited.

The average number of particle repositioning maneuvers applied was 1.4 ± 0.8 (range, 1–6) (in bilateral posterior canal BPPV, each ear was treated separately). In 1 patient, the treatment was not effective. Recurrence was encountered in 29 patients within 4.4 ± 9.6 months (range, 0–36 mo) following treatment.

Seventy-nine percent of patients had an auxiliary examination before the diagnosis of BPPV was confirmed: audiometry was performed in 73 patients, brainstem au-

ditory evoked potentials in 61, and electronystagmography in 10 patients. Thirty-seven patients had a brain imaging study (computed tomography or magnetic resonance imaging), 8 patients underwent an ultrasound brain vessel flow examination, and 2 patients had cardiac examinations (Holter EKG and transthoracic echocardiogram).

In all but 4 patients with posttraumatic BPPV, the cause was idiopathic.

DISCUSSION

Most patients with BPPV become extremely anxious during a vertigo episode. They often develop anticipatory behavior and fear of severe medical conditions such as brain tumors (7,8). Moreover, in elderly patients, BPPV can lead to falls and associated trauma (2,9). Recognition of BPPV is therefore important because BPPV is usually an easily treatable condition (10–12).

Approximately one fifth of all BPPV patients at our clinic were diagnosed on repeated testing. In most of them (86%), the diagnosis was highly suspected during the first visit even in the absence of symptoms and signs. The time from the first visit to final diagnosis was 15 months, on average, but as little as 1 week or as much as 8 years. Seven percent of patients had to be reexamined more than once to prove the diagnosis of BPPV. Our data show that a high rate of BPPV patients can be revealed on repeated testing, even many years after their first vertigo attack (3.7 on average, up to 30 yr), if the doctor and the patient do not give up.

We registered that 79% of patients with BPPV, in whom the diagnosis was not finally established during their visit at a nonspecialized clinic, underwent auxiliary examinations, including electronystagmography and brain imaging. On the other hand, in 98.8% of patients seen at a dizziness clinic who were suspected to have BPPV, the diagnosis was confirmed on repeated testing. We think therefore that, in a general practice, where the history taking and examination are performed by a non-specialist, further workup in most patients with recurrent vertigo is certainly appropriate if no obvious explanation of symptoms (such as positive positioning testing) is found. However, at a specialized dizziness clinic, a high confidence is justified when suspecting the diagnosis of BPPV between the attacks. Laboratory testing or imaging can be kept for those patients where the history is not typical or who have abnormal findings on neurotologic examination to exclude other causes of recurrent positional vertigo (13,14).

TABLE 1. Characteristics of BPPV patients where the diagnosis was established on repeated testing

Total no.	Mean age (yr)	Sex (male/female)	Mean period since first attack (yr)	Mean time between first visit to diagnosis (mo)	Mean no. of treatments	Recurrence	
						No. of patients	Mean time after treatment (mo)
100	55.9 ± 41.7	28/72	3.7 ± 4.9	14.9 ± 16	1.38 ± 0.8	29	4.4 ± 9.6

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