



# Psychological evaluation of the patients with vertigo due to otolith organ

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## Introduction

The otolith function has been able to be evaluated by vestibular evoked myogenic potential (VEMP), then a new clinical entity as disequilibrium due to the otolith dysfunction has been established. Some cases of them complained of severe psychological problems. We studied the psychological examinations for the patients with otolith vertigo,

## Subjects and Methods

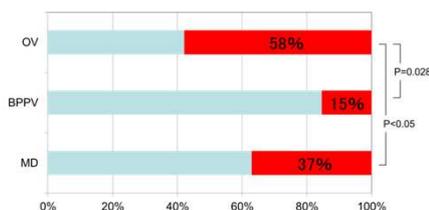
Subjects were 19 patients who were diagnosed as vertigo due to otolith organs (otolith vertigo: OV). The tentative diagnostic criteria is shown in figure. Their psychological conditions were evaluated using Cornell Medical Index (CMI), State-Trait Anxiety Inventory (STAI) and a self-evaluation dejection standard (SDS). In addition, 13 patients with benign paroxysmal positional vertigo (BPPV) and 27 patients with Meniere's disease were also evaluated.

The tentative diagnostic criteria for OV

- 1) The complaint was of non-rotatory disequilibrium.
- 2) Abnormal results were shown on cVEMP and/or oVEMP.
- 3) There were no abnormal results from routine examinations.
- 4) There were no cerebellar signs or intracranial lesions detected by brain MRI.

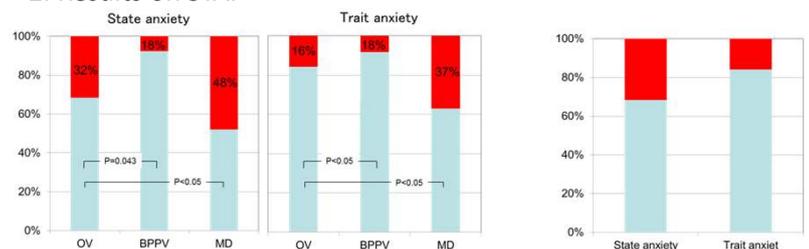
## Results

### 1. Result on CMI



Abnormal results on CMI (category 3 and 4 on Fukamachi's classification) were shown in 58%, 15% and 37% of the subject with otolith vertigo, BPPV and Meniere's disease respectively.

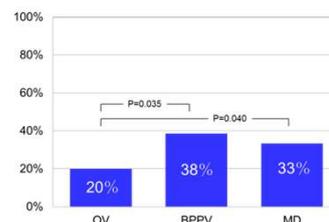
### 2. Results on STAI



The subjects with otolith vertigo resulted in higher state anxiety than trait anxiety in STAI.

### 3. Results on SDS

Depressive tendency (>48 in SDS) was shown in 20%, 38% and 33% of subjects with otolith vertigo, BPPV and Meniere's disease respectively.



## Discussions

The subjects with OV had following physiological features; high anxiety but less depression tendency. Especially state anxiety was higher than trait anxiety. This may indicate their anxiety did not originate from their instinct but consequence of symptoms. Although the symptoms of OV was milder than those of MD and BPPV, OV had high anxiety. The subjects with OV complained of recurrent symptoms without any trigger and had be diagnosed as the unknown origin in another clinic. This may cause the high anxiety in the subjects with OV. Also, their daily livings were not limited thus the tendency of depression was less in the subjects with OV.

## Conclusions

One of the origin of the high anxiety of subjects with OV may be previous uncertain diagnoses. OV could not be diagnosed without VEMP. We should examine VEMP for the subjects who showed high anxiety but less depression tendency.