PERIPHERAL VESTIBULAR DISORDERS

Sun-Young Oh, MD, PhD

Department of Neurology, Jeonbuk National University Hospital, Korea

Email: ohsun@jbnu.ac.kr

Disclosure

- No relevant financial relationships or conflicts of interest to declare.
- No off-label use will be discussed.

Learning Objectives

- By the end of this lecture, participants will be able to:

1. Identify common peripheral vestibular disorders, their epidemiology, and clinical impact.
2. Describe the role of AI-enhanced video-oculography and machine learning in vestibular diagnosis.
3. Differentiate peripheral from central causes of acute vestibular syndrome using advanced oculomotor evaluation, AI tools, and neuroimaging.
4. Recognize the impact of vestibular disorders on spatial cognition in unilateral and bilateral vestibulopathy.
5. Discuss emerging therapeutic approaches, including neuromodulation, for peripheral vestibular disorders.

Key Messages

- Peripheral vestibular disorders are common, disabling, but often treatable with accurate diagnosis.
- AI-assisted oculomotor testing improves differentiation between peripheral and central vertigo.
- Multimodal diagnostic approaches integrating clinical, imaging, and AI tools enhance diagnostic accuracy.
- Beyond vertigo: spatial cognition in unilateral and bilateral vestibulopathy is increasingly recognized and should be assessed.
- New treatment modalities, such as galvanic vestibular stimulation, show promise for improving function.

Overview of Lecture Content

1. Diagnosis

- AI-enhanced oculomotor evaluation (BPPV, vestibular neuritis vs central vertigo, ocular myasthenia gravis)
- Neuroimaging: Meniere's disease vs vestibular migraine

2. Beyond Vertigo

- Spatial cognition in unilateral and bilateral vestibulopathy

3. Treatment

- Neuromodulation (GVS, tDCS)