Vestibular Rehabilitation SIG
Archived Abstract of the Week
for the year 2021

January Topic: Horizontal Canal BPPV

January 5, 2022

Yu J, Gu Y, Meng G, et al. **Nystagmus Parameters of Supine Roll Test Correlates With Prognosis After Repositioning Maneuver in Horizontal Semicircular Canal Benign Paroxysmal Positional Vertigo.** Front Neurol. 2021;12:790430. Published 2021 Dec 6. doi:10.3389/fneur.2021.790430

Background: Positional nystagmus induced by supine roll test is characteristic for diagnosing horizontal semicircular canal benign paroxysmal positional vertigo (HC-BPPV). In this study, we aimed to explore the value of nystagmus parameters in by supine roll test (SRT) as prognostic factors in HC-BPPV.

Methods: We retrospectively analyzed the nystagmus parameters of 813 patients diagnosed with HC-BPPV by the SRT model in the SRM-IV system through video nystagmography. Then we used the computer-controlled canalith repositioning procedure (CCRP) mode for treatment. Based on the outcomes, patients were divided into either the cured group or the resistant group. The 1:1 propensity score matching (PSM) was applied to minimize potential selection bias. Then univariable and multivariable analyses were performed to identify the association of nystagmus parameters and the efficacy of CCRP.

Results: Among the 813 patients, 99 (12.2%) were classified in the resistant group. The right side of HC-BPPV patients was twice the number of the left side patients (537 vs. 276). PSM is used to pair resistant patients to the cured patients, in which 99 pairs were successfully matched. Results of univariate and multivariate analyses showed that patients in the resistant group have longer latency in the affected side [odds ratio (OR) = 1.231 (1.110-1.366); P < 0.001] and slower slow phase velocity (SPV) in the healthy side [OR = 0.957 (0.917-0.999); P = 0.045].

Conclusion: Nystagmus parameters may represent the characteristics of canalith. HC-BPPV patients with a longer latency in the affected side and slower SPV on the healthy side during SRT have a higher risk of HC-BPPV persisting after a single CCRP.
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January 12, 2022

Choi SY, Oh SW, Kim HJ, Kim JS. **Determinants for bedside lateralization of benign paroxysmal positional vertigo involving the horizontal semicircular canal**. J Neurol. 2020;267(6):1709-1714. doi:10.1007/s00415-020-09763-x

Objectives: This study aimed to define the factors affecting accuracy of bedside determination of the involved side in HC-BPPV.

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Interventions: We developed 44 video clips including the nystagmus induced during supine head-roll test from patients with apogeotropic (n = 23) or geotropic (n = 21) HC-BPPV. The intensity of nystagmus was also quantified using video-oculography. Each video clip was presented twice to 25 participants, 14 medical students, and 11 medical personnel trained in neurology or neurotology, and the participants reported the lesion side using an evaluation sheet after each presentation. From the quantified video-oculographic data, absolute difference and asymmetry (absolute difference divided by the sum) of nystagmus intensity were calculated.

Main outcomes and measures: The accuracy of bedside lateralization of HC-BPPV was 83.5% after the first presentation, and 86.0% after the second presentation, and was not different between the medical students and trained personnel after the second presentation. The accuracy was more closely correlated with the asymmetry than the absolute difference (Spearman's ρ = 0.627, $p < 0.001$). With a cut-off for the asymmetry at 30.8%, the accuracy was estimated at 93.8% with a sensitivity of 92.9%, and the area under the ROC curve of 0.779.

Conclusions and relevance: The accuracy of bedside lateralization of the affected side is acceptable in HC-BPPV when the nystagmus asymmetry is more than 30%.

Keywords: Benign paroxysmal positional vertigo; Horizontal semicircular canal; Nystagmus; Vertigo.

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