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^{1,4}**Tenesaca Pintado, Walter;** ^{2*}Fernández Baíllo, Roberto;
^{1*}Cardoso López, Isabel; ^{1,3}*Rodríguez Paramas, Ángel,
^{1*}Martínez Martínez, Alfredo Francisco

¹Department of ENT and Head and Neck Surgery of Vithas Arturo Soria University Hospital of Madrid, Spain

²Department de Medicine, Faculty of Biomedical and Health Sciences, Faculty of Medicine and Surgery, Chair of Human Anatomy and Embryology, European University of Madrid, Spain.

³Department of ENT and Head and Neck Surgery of University Hospital of Guadalajara, Spain.

⁴Department of ENT and Head and Neck Surgery of Hospital Campo de Arañuelo, Navalmoral de la Mata, Cáceres, Spain

Scale for the Assessment of Mucosal Wave Dynamics of the Free Edges during Stroboscopic Examination; Clinical Validation Study and Results Analysis

Abstract:

Introduction: Identifying the mucosal wave (MW) is essential when studying the voice; however, its characterization and perceived measurement during laryngeal stroboscopy (LS) are not well defined or standardized because of the subjectivity of its interpretation. This article proposed and validated a scale that characterized and approximated MW measurement during LS, applied it to participants divided into a healthy group and groups with free edge conditions, and identified differences between them.

Methods: This is a descriptive and clinical validation study of the “VASQ (Vertical axis, Anteroposterior axis, Symmetry and Quantity) mucosal wave score” scale based on stroboscope images of 137 adult men and women divided into a control group and functional and organic pathology groups. The images were analyzed by three evaluators according to an established protocol. Measurements dictating the reproducibility and validity criteria as well as the MW score in each group were obtained.

Results: The reliability of the scale was $\alpha = 0.90$, internal consistency success rate was 91%, intra-observer reliability was 0.83, inter-observer reliability was 0.83, content validity coefficient was 0.92, and factor loading was 0.37–0.53. The MW total score values between 5 and 6 were established as a reference for normality ($P < 0.05$). Organic pathology showed lower MW score values ($P < 0.05$), and functional pathology to a lesser extent ($P > 0.05$).

Conclusions: The proposed scale is a consistent, valid, and reliable tool. Its widespread application would favor commonly used terminology and facilitate quantitative comparisons in future studies.

12