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COMPARATIVE ANALYSIS OF VELOPHARYNGEAL ACTIVITY ASSESSED BY ACOUSTIC RHINOMETRY AND RHINOMANOMETRY

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OBJECTIVES: To analyze velopharyngeal activity in individuals with repaired cleft palate and clinical diagnosis of VP insufficiency (VPI) by means of acoustic rhinometry, as compared to the activity measured by modified anterior rhinomanometry, used as a reference method. MATERIALS AND METHODS: Thirty-six adults (mean age of 22 years), 25 women, with repaired CP±CL and residual VPI. Nasopharyngeal volume was determined by integrating the area under the rhinogram at a 5cm-long segment corresponding to the nasopharynx during voluntary interruption of breathing (rest) and during maximal velopharyngeal activity (speech) using an Eccovision Acoustic Rhinometer (Hoods). Changes in nasopharyngeal volume caused by VP activity were analyzed by calculating the absolute and relative difference between speech and rest volumes (ΔV=Vk-Vr and ΔV=Vk-Vr/Vr). Findings from acoustic rhinometry (ΔV<3cm3 and ΔV≥3cm3) were compared with findings from VP orifice areas measurements assessed by rhinomanometry (adequate or inadequate VP closure), using a PERCI-SARS system. **RESULTS:** The reduction in nasopharyngeal volume was <3 cm3 in 60% of the cases, suggesting poor VP activity, a result consistent with the diagnosis of VP dysfunction, and ≥ 3 cm3 in 40%, suggesting an unexpected good activity. VP closure measured by rhinomanometry was inadequate in 77% of the cases and adequate in 23%, respectively. Agreement between methods occurred for 54% of the cases. CONCLUSION: Rhinomanometry was more effective than acoustic rhinometry in identifying the impairment in VP activity. The poor correlation found between methods may be related to the speech samples used. Additional studies are needed to define the rhinometric test's accuracy in identifying VP dysfunction.