

COMPARATIVE ANALYSIS OF VELOPHARYNGEAL ACTIVITY ASSESSED BY ACOUSTIC RHINOMETRY AND NASOENDOSCOPY

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Objective: To compare velopharyngeal (VP) activity of subjects with VP dysfunction (VPD) by acoustic rhinometry, to the activity observed by nasoendoscopy. **Methods and Results:** This was a prospective clinical study conducted in 25 adults, both genders, with repaired cleft palate, with or without a previously repaired cleft lip, and residual VPD. The outcome measures were nasopharyngeal volume change (ΔV) during the production of the velar plosive [k] compared to the rest condition, measured by rhinometry, and VP closure pattern and VP movement, rated by blinded judges by observing nasoendoscopy recordings. A mean ΔV decrease of 15% was observed, which was significantly lower ($p < 0.05$) than the observed in subjects without cleft reference (30%). In 72% of patients reduction was $< 3 \text{ cm}^3$, compatible with VPD diagnosis, and in 28%, there was a change $\geq 3 \text{ cm}^3$, despite VPD. A circular gap (CI) was observed in 76% of patients and a coronal gap (CO) in 24%. The VP movement was judged to be adequate (A), moderate (M) and inadequate (I) in 64%, 24% and 18%, respectively. ΔV did not differ between CI and CO and between A, M and I. A tendency for a ΔV increase with increasing VP movement was observed. Absolute agreement between the two methods was observed in 56% of patients. **Conclusion:** Rhinometry was able to identify the impairment of VP activity in most subjects. However, ΔV changes showed no correlation with the pattern and range of VP movement, possibly due to methodological issues. Additional studies are needed to define the rhinometric test's accuracy in identifying VPD.