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# Acoustic rhinometry for evaluation of velopharyngeal function in preschool children post palatoplasty

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**Purpose**: The aim of this study was to assess the feasibility of acoustic rhinometry for the evaluation of velopharyngeal function in preschool children by detecting changes in nasal cavity volume (NV) and minimal cross-sectional area (MCSA) after palatoplasty.

**Materials & Methods**: 61 preschool children with incomplete cleft palate who underwent Sommerlad palatoplasty were examined by acoustic rhinometry. MCSA, distance of the MCSA from the nostril (DMCA), NV, and nasopharyngeal volume (NPV) were measured. Patients were grouped according to velopharyngeal state and lateral cephalographic findings.

**Results**: MCSA, NV, and NPV showed a meaningful difference between the experimental and control groups. DMCA in the experimental group (7.09± 1.33 mm) was not markedly different between the two sides. NV, NPV, and MCSA in the velopharyngeal insufficiency (VPI) subgroup were obviously larger than those in the velopharyngeal competence (VPC) and marginal VPI subgroups. NV in the VPC group showed no relevant difference from that in the control group. No relevant difference in MCSA, DMCA, and NPV was observed among the 3 subgroups at radiographic evaluation. NV in the noncontact group was markedly larger than in the control group. The curve showed marked constriction in the anterior part but an elevation in the posterior part, especially at a distance of 7.09 cm.

**Conclusion**: Acoustic rhinometry is a rapid, noninvasive, and reproducible method that can be used in lieu of lateral cephalography for quantitative evaluation of the NV and MCSA. It can be used to assess postoperative velopharyngeal function in children and has good adaptability.

## Biography

Fan Li is an Associate Chief Physician at Guangzhou Women and Children's Medical Center, Oral and Maxillofacial Surgery Center. She graduated from Sun Yixian Medical University. She is a Member of Pediatric Orthopedic Surgery section of Plastic Surgery branch of Chinese Medical Association and Guangdong Provincial Association. Her main research directions are congenital cleft lip and palate sequence therapy, series reconstructive surgery, and pediatric oral and maxillofacial surgery.

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