Invited Commentary

Comparing Methods for Repair of the External Valve
One More Step Toward a Unified View of Lateral Wall Insufficiency

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In the current issue, Barham and colleagues[1] present data comparing 2 techniques for repair of external valve dysfunction (EVD). These data represent the latest in a line of new studies designed to examine treatments for EVD using various quality-of-life (QOL) instruments, objective measurements of the nasal airway, physician-derived measurements, or some combination thereof.[2] In particular, this study is the latest to include the Nasal Obstruction Symptom Evaluation (NOSE) questionnaire as part of its analysis of patient-reported outcomes.[3] Over the past 10 years, the NOSE scale has been a mainstay of many studies of functional rhinoplasty maneuvers.[2-5] Barham and colleagues are correct that correlation between objection measures of the nasal airway, clinician findings, and patient-reported findings often do not correlate, as pointed out nicely by Lam et al.[6] To that end, they note similar findings in the current study.

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The authors point out that static and dynamic EVD are distinct entities that can coexist. Treatment for static EVD involves, first and foremost, expansion of the nasal airway. Treatment of dynamic EVD involves strengthening the wall against the negative pressure generated due to the Bernoulli effect. In addition, improvement of the intranasal space (ie, septolasty, turbinate reduction) will reduce the negative pressure generated. Thus, a 2-pronged approach is recommended for dynamic collapse, aimed at the 2 root causes of collapse: a weak lateral wall structure and negative pressure generated due to a narrow tube.

In the current study, an array of qualitative and quantitative measures were used to compare use of autologous rib for lateral crural grafting with the cephalic turn-in technique in patients undergoing primary rhinoplasty. The comparison of efficacy between the 2 is problematic when the patient groups (primary vs secondary) are so different. Still, the present study adds to our library of studies that examine methods to augment the lateral nasal wall. While multiple authors have studied methods to strengthen the lateral nasal wall, the only consistent measure that we have for comparison across studies is the NOSE questionnaire. The utility of the NOSE questionnaire in evaluation of nasal obstruction is well established, but it lacks any domains for measurement of aesthetic outcome. As noted by the authors, changes in aesthetics of the nose are a very real consequence of functional nasal surgery.

Barham and colleagues[1] have used nasal peak inspiratory flow (NPIF) to measure efficacy of treatment of EVD. Given the dynamic nature of the airway in patients with weak lateral nasal walls, static measures of the nasal airway may not give an accurate representation of airway status. A consistent physician-derived evaluation would be of paramount importance for better comparison between studies going forward. One requirement for the creation of a physician-derived scale is a consistent, descriptive nomenclature for the disease process. At Stanford, we have found a newer, more descriptive nomenclature for the EVD to be useful.[7] First, we now use the term *dynamic lateral wall insufficiency* (LWI) rather than "external valve collapse" to unambiguously localize the area at issue. Second, since movement of the soft tissue of the lateral nasal wall can occur anywhere between the nasal bones (fixed structure) and the most inferior soft tissue extent of the lateral nasal wall (the alar rim), we note 2 distinct zones of dynamic LWI. Specifically, we characterize movement of the lateral nasal wall occurring in the superior half of this domain zone 1 LWI and the lower half zone 2 LWI. Note that zone 1 LWI roughly corresponds to dynamic movement from the level of the scroll superiorly. Zone 2 LWI roughly corresponds to dynamic movement in the classically defined external valve. Moreover, treatment of LWI in each zone may be different. For example, zone 1 LWI may be treated with bone-anchored sutures, lateral crural grafting, or new techniques such as radiofrequency.[5] Zone 2 LWI may be best treated by strengthening the lower portion of the wall, nearer the ala, through methods such as lateral crural repositioning, lower lateral crural strut graft placement, or rim grafts.

Having established a nomenclature for LWI, the next step is to generate an easily learned physician-derived scale for severity of LWI. To that end, we have adopted a simple tool for notation in the clinic that allows assessment of LWI severity.[8] Specifically, movement of the lateral nasal wall toward the midline (ie, septum) is noted for each of zone 1 and zone 2. Movement of the wall 1% to 33% of the way toward the septum is graded as 1; 34% to 66%, 2; 67% to 100%, 3; and no movement, 0. This scale has been validated and is used for every patient (aesthetic or functional) in our clinic. We have already used this nomenclature in a randomized clinical trial examining 2 treatments for LWI.[5]

The study by Barham and colleagues[1] is 1 more step toward a more unified understanding of the complex nature of rhinoplasty for repair of the weak lateral nasal wall. The nomenclature of the past hinders us when we try to compare studies and ultimately perform meta-analyses. We hope that in the end, a unified, descriptive nomenclature for lateral wall pathology will be adopted, allowing clinicians to analyze their own results and compare treatments in well-conducted studies. Finally, while the utility of the NOSE questionnaire is evi-

denced by recent work using it to develop severity scores for nasal obstruction,[9,10] Barham and colleagues recognize that there are really no purely functional or aesthetic rhinoplasty surgeries. Both aspects must be respected in each individual patient. Measuring both aesthetic and functional outcome will be paramount in future rhinoplasty studies.

ARTICLE INFORMATION

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