Intraoperative Measurement of the Anatomic Features of the Lower Lateral Cartilage and Nasal Tip Shape of the Asian Nose

Understanding the nasal tip structure is essential in using a tailored surgical technique for patients with different anatomic characteristics. The width of the alar cartilage determines columellar width and tip bulbosity. The profile contour of the alar cartilage is also a determining factor for rotation, projection, and definition of the nasal tip. Moreover, there is growing recognition of the result of cephalic malposition of the lateral crus in tip aesthetics in the noses of white individuals, thus leading to more frequent repositioning of the lateral crus during tip surgery for patients who are white.

The dimension of the alar cartilage can be measured from the cadaver or through intraoperative direct measurement. However, these studies focused on white patients, and studies on the Asian population are lacking.

Methods | In this case series study of 56 Asian patients (41 [73%] men; mean age, 27 [range, 18-61] years, the cartilaginous component of the columellar width was measured at the attachment point of both medial crura, the columellar junction, and the domal junction of the lower lateral cartilage (LLC). The width of the lateral crus was measured at the domal segment, midpoint, and 0.2 cm medial to the lateral end of the lateral crus. The length of the midline abutment of both lateral crura was also measured. The angles were measured and profile shapes were assessed from the acquired photographs of the alar cartilages. To investigate cephalic malposition of the lateral crus, using the Image J tool (https://imagej.nih.gov/ij/manual/tools.html), the angle from the adjoining line of the medial aspect of both lateral crura to a point halfway between the caudal and cephalic margins of the lateral crus was measured. The profile view of the alar cartilage was observed to find a distinctive pattern in the shape of the cartilage. As a result, we were able to classify the profile shape into 4 different types (type I, round contour; type II, LLC with...
Table. The Results of Measurement of LLC

<table>
<thead>
<tr>
<th>Intraoperative Measurement</th>
<th>Location</th>
<th>Value, Mean (SD), mm</th>
</tr>
</thead>
<tbody>
<tr>
<td>Width of the medial and middle crura</td>
<td>Length</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Attachment point of both medial crura of the LLC</td>
<td>4.8 (1.0)</td>
</tr>
<tr>
<td></td>
<td>Columellar junction of the LLC</td>
<td>6.8 (1.4)</td>
</tr>
<tr>
<td></td>
<td>Domal junction of the LLC</td>
<td>7.6 (1.7)</td>
</tr>
<tr>
<td>Width of the lateral crus</td>
<td>Length</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Domal segment of the LLC</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Midpoint of the lateral crus</td>
<td></td>
</tr>
<tr>
<td></td>
<td>0.2 cm medial to the lateral end of the lateral crus</td>
<td>6.5 (1.7)</td>
</tr>
<tr>
<td></td>
<td>Length of the midline abutment of both lateral crura</td>
<td>9.4 (2.1)</td>
</tr>
<tr>
<td>Anthropometric measurement of the LLC angle</td>
<td>Angle</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Both sides between the long axis of the lateral crus and the midline abutment</td>
<td>22 (8); left, 22 (7)</td>
</tr>
<tr>
<td></td>
<td>Domal point of the LLC</td>
<td>130 (10)</td>
</tr>
<tr>
<td></td>
<td>Columellar point of the LLC</td>
<td>146 (14)</td>
</tr>
</tbody>
</table>

Abbreviation: LLC, lower lateral cartilage.

Results | The results of measurements of the LLC component are described in the Table. Patients classified as either type I or II did not have any specific characteristics in terms of tip shape; 6 patients (11%) were classified as type I and had a round contour shape on the intraoperative profile view, whereas 13 patients (23%) had an LLC with 1 angulation and were classified as type II. In contrast, 29 patients (52%) were classified as type III and had an LLC with 2 angulations. Finally, 8 patients (14%) were classified as type IV; we were unable to measure the tip angle (hypoplastic LLC) in these patients.

Discussion | The shape and symmetry of the columella play a role in determining the shape of the nasal base and are the basis for evaluating nostril asymmetry. The attachment point of the bilateral medial crura, the narrowest part of columella, is used as a landmark for setting the incision site when performing rhinoplasty.\(^5\) The columellar junction of the LLC is the basis of the columellar lobular angle and a breakpoint in the double break of the columellar.

Cephalic malposition not only affects external features, such as the shape of the nasal tip and alar rim, but also results in nasal obstruction.\(^6\) Fifty (89%) patients in this study belonged to the group with cephalic alar malposition. However, they did not have a tip deformity. Analysis of the patients’ tip shape and anatomic characteristics shows that the tip shape varies according to the different shapes of the LLC.

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Psychometric Properties of the Standardized Cosmesis and Health Nasal Outcomes Survey: Item Response Theory Analysis

The Standardized Cosmesis and Health Nasal Outcomes Survey (SCHNOS) is a new 10-item questionnaire to evaluate the functional and cosmetic outcomes of rhinoplasty.\(^4\) The SCHNOS

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