Asymmetric Facial Growth and Deviated Nose

A New Concept

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Abstract: Deviated nose correction is difficult and constitutes a very different issue from septal deviation. When correcting this deformity, traces of asymmetry can be detected. The authors demonstrate facial asymmetry accompanying deviated noses, and such asymmetry is usually ignored by surgeons who typically concentrate only on nose deformities.

A total of 5822 pre- and postrhinoplasty photographs related to 547 women and 124 men were reviewed. Out of the total population, the following 3 groups were selected: group A, gross nose and face asymmetry; group B, nose asymmetry with no facial deformity; group C, facial asymmetry with straight nose. Different measurements were applied to the selected photos, presented in Table 1. These included measurement from the lateral canthi to the lateral mouth corners (D1) and from the midface to each most lateral part of the zygomatic arch (D2). Measurements from one side were compared with those from the contralateral side to identify true anatomic differences, as presented in Figure 1.

There was a significant difference in the nose and face deformity group, as evidenced by a meaningful difference in both the D1 and D2 measurements.

We report a significant growth retardation of the midface and orbit on the concave side of the nose. This impediment may serve as the etiology for many asymmetries of the face and nose.

Key Words: asymmetric face, deviated nose, genetic control

(A Ann Plast Surg 2010;64: 47–51)

By reviewing preoperative photos of rhinoplasty cases, the authors sought to find asymmetric components of deviated noses. We found a high recurrence rate of facial asymmetry accompanied by a crooked nose, as seen in Figure 2. Interestingly, we found a mild contracted facial appearance on the concave side of the deviated nose. In our review of the literature, we could not find any articles referring to this subject. Therefore, we decided to review all rhinoplasty photos in our archive with the goal of detecting facial asymmetries. A total of 5822 pre- and postrhinoplasty photographs from 547 women and 124 men were assessed for this purpose. By measuring a few components of the face, we were able to prove that there is a strong relationship between crooked noses and facial growth retardation.

MATERIALS AND METHODS

Patients who underwent nasal esthetic surgery performed by the authors were included in this study. Exclusion criteria were

Received September 8, 2008, and accepted for publication, after revision, January 4, 2009.

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DOI: 10.1097/SAP.0b013e231819ae02d

patients with histories of facial trauma or nasal fracture. With regard to our hypothesized correlation between facial asymmetry and deviated noses, a total of 5822 pre- and postoperative photos of rhinoplasty cases performed between September 2002 and May 2008 were reviewed for gross deviation of the nose and facial asymmetry. The cases included 124 male patients (956 photos) and 547 female patients (4866 photos).

All photos were reviewed by 3 surgeons, and cases demonstrating nondeviated noses and symmetric faces were excluded.

Abnormal cases were divided into 3 categories (Table 1):
1. Group A: Deviated nose with asymmetric face, 77 female and 11 male.
2. Group B: Deviated nose only with normal face, 34 female and 4 male.
3. Group C: Asymmetric face only with straight nose, 27 female and 0 male.

Photos of patients were reviewed and analyzed by comparing the distances between the following points on both sides of the face (Fig. 1):
1. Lateral canthi to the corner of the mouth (D1).
2. Rhinion to the most prominent lateral check point (D2).

Preoperative frontal views of patients were selected, and the above distances were measured with a ruler on both sides of the face and recorded. After reviewing the findings, a database was prepared. All results were analyzed to compare differences between the 2 sides of the face. The measurements were analyzed to determine the significance (Figs. 2–7).

We send questionnaires or contacted the patients by telephone with available valid addresses. Of 88 group A patients, 61 (53 female and 8 male) responded to our contacts. In reviewing the charts, no record of significant craniofacial anomalies were noticed and none of the patients in all 3 groups had been diagnosed or treated for such anomalies. Of 88 patients, 25 (28%) needed revision rhinoplasty due to incomplete correction of nasal deformity; 23 cases required 2 times, and 2 cases underwent 3 operations. One of the female patients in this group had bimaxillary osteotomy operation to correct slanting of occlusal plane.

None of the 8 male patients had any orthodontic treatments but 17 of 53 female patients underwent some kind of orthodontic interventions during their life period, mostly due to minimal dental malalignment or jaw crowding, which were treated by wiring and second premolar teeth extraction.

Of 61 patients, 44 (72%) were satisfied with their new look and did not complain of any facial asymmetries. About 17 cases had some degree of dissatisfaction with their operation results, complaining of asymmetric nostrils, asymmetric alar rim, and remnant of deviated nose.

Statistical Analysis

We used a nonparametric statistical Mann-Whitney U test to determine significant differences (P < 0.05) between the 2 measurements (D1 and D2) in 2 groups of patients demonstrating