

New Adjuvant Technique for Correction of Drooped Nasal Tip

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ABSTRACT

Aim of the Study: To evaluate a new adjuvant technique for correction of drooped nasal tip, this technique depends on using the cephalic part of lateral crura as a perichondro-cartilage flap that rotated to the tip to create a new alar dome with resection of the caudal portion of the septum which used as tip cartilage graft.

Material and Methods: 20 patients reviewed in this study, had variable degrees of droopy nasal tip. The mean age was 26.5 years, with female-to-male ratio 2:1.

The cause of the droopy tip deformity was studied by correlating the clinical and intraoperative findings in each patient. It was common to find more than one factor in the same patient contributing to the droopiness of the nasal tip.

Results: This study proved that for the repositioned tip to permanently maintain its final position, a strong nasal tip support is essential. Therefore, whenever indicated, the posterior two thirds of medial crura were sutured together with cartilage strata graft, the medial crura were splinted to a columellar strut to increase the strength and stability of the alar cartilage complex.

Key Words: *Adjuvant technique – Drooped nasal tip.*

INTRODUCTION

The dropped nasal tip is a deformity in which the nasal tip is inferiorly rotated, leading to an increase in the length of the nose with contraction of the nasolabial angle [2].

The pathogenesis of the droopy tip may be due to “abnormal” alar cartilage with excessively long lateral crura, vertically oriented lateral crura, or short, weak medial crura. Some cases may be due to “normal” alar cartilage complex that is inferiorly displaced by the effect of extrinsic forces. These forces pushing from above, as in the case of long upper lateral cartilages, high anterior septal angle, and over developed caudal septum, or forces pulling from below, as in the case of thick, heavy nasal skin, overactive depressor septi muscle, or the effect of gravity as in cases with compromised nasal tip support as a result of aging or previous operations [3-5].

Correction of the droopy tip varies according to the cause of the problem; however, the ultimate goal of any corrective technique is repositioning of the alar cartilages to attain a more cephalic orientation. This can be achieved through directly modifying the alar cartilages or by using complementary procedures depending on manipulating structures closely related to the alar cartilages. These procedures include excision of the caudal end of upper lateral cartilages, lowering of the anterior septal angle, and caudal septal cartilage excisions [1,2,3].

MATERIAL AND METHODS

The study involved 20 patients that were operated for rhinoplasty. All cases presented with drooped nasal tip deformity, and their preoperative reports and their intraoperative findings were reviewed to detect the main factors responsible for the deformity.

The external rhinoplasty approach connected by an inverted V-shaped trans-columellar incision 10-13 was used in all patients. The exposure provided by this approach allows direct exposure of tip cartilages in their natural, undistorted position and permits the alar cartilage-modifying techniques to be conducted in a precise manner under direct vision, columellar skin flap is elevated off the medial crura and the skin elevation is continued, in the supra perichondrial avascular plane, upward over the bony cartilaginous framework until the naso-frontal angle is reached (Fig. 1).

Any dorsal modifications needed are made before modification of the tip cartilages to avoid disruption of the delicate reconstructed alar cartilages.

If the medial crura are found to be weak and buckled, they are strengthened by splinting them to a strong columellar strut, with care taken to ensure that the strut goes down to the anterior nasal

spine and does not extend beyond the posterior half of the columella (Fig. 2).

In patients with wide lateral crura, a conservative lateral crural cephalic elevation of perichondro cartilage flap is performed instead of trimming of this part which is rotated to the tip to be used in traction and elevation of drooped nasal tip, proline



Fig. (1): This diagram showing site of elevation of perichondrocartilage flap to elevate the drooped nasal tip.

RESULTS

20 patients reviewed in this study, had variable degrees of droopy nasal tip. The mean age was 26.5 years, with female-to-male ratio 2:1.

The cause of the droopy tip deformity was studied by correlating the clinical and intraoperative findings in each patient. It was common to find more than one factor in the same patient contributing to the droopiness of the nasal tip.

These factors included inferiorly oriented alar cartilages in 16 cases, overdeveloped scrolls of

5-0 was used to suture the two flaps at top of the tip strata, leaving a strong intact caudal strip of 5 to 6mm.

At this stage, any projecting caudal ends (scrolls) of upper lateral cartilages are trimmed, to facilitate the upward movement of the tip cartilages.

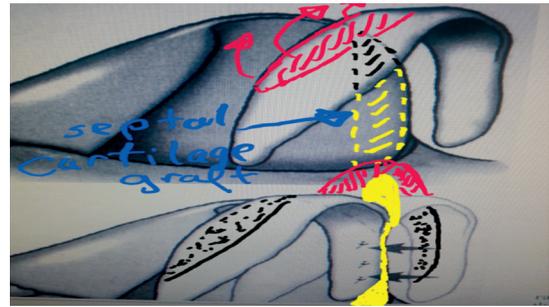


Fig. (2): Strengthening of weak medial crura by splinting them to a strong columellar strata and suturing the perichondrocartilage flap at its cephalic part.

upper lateral cartilages in 14 cases, high anterior septal angle in 12 cases, and thick heavy skin of the nasal lobule in 10 cases.

The effects of this alar cartilage modifying technique on the degree of nasal tip rotation and projection were evaluated by comparing the pre-operative and postoperative values of the nasolabial angle.

This technique resulted in an increase in the degree of nasal tip rotation as evidenced by the significant increase in the postoperative values of the nasolabial angle (Figs. 3-6).



Fig. (3): Preoperative left and postoperative right photo of drooped nasal tip.



Fig. (4): Preoperative left and postoperative right photo of drooped nasal tip.



Fig. (5): Preoperative left and postoperative right photo of drooped nasal tip.



Fig. (6): Preoperative left and postoperative right photo of drooped nasal tip.

DISCUSSION

The droopy nasal tip is a common nasal deformity. Essential to the repair of any form of drooped nasal tip is the accurate diagnosis of the Underlying

anatomic abnormalities contributing to the development of such deformity. More than one contributing factor was found in most of the patients with severe tip ptosis, but the most constant finding was the inferiorly oriented alar cartilages, which was present

in 85 percent of the patients with drooped nasal tip. This was mainly due to long lateral crura, weak buckled medial crura, or vertically oriented lateral crura with a high insertion on the pyriform aperture.

Other contributing factors that were frequently found included long upper lateral cartilages with projecting scrolls, high anterior septal angle, and thick heavy skin of the nasal lobule.

These contributing factors, whenever found, were corrected as the first step in the management of the drooped tip by, excision of the over developed scrolls of upper lateral cartilages, or lowering of the high anterior septal angle.

Such maneuvers used in 3 cases aim at eliminating the extrinsic forces pushing the tip downward, thus allowing the alar cartilages to move upward, during the healing phase, and to rest in a more cephalic orientation.

However, in the majority of cases (85 percent), use of an alar cartilage-modifying technique was necessary to achieve the desired degree of nasal tip repositioning performing a conservative reduction of the lateral crura by cephalic elevation of perichondro-cartilage flap instead of excision of the cephalic portion in the classic techniques.

There are many different alar cartilage-modifying techniques were used to correct the droopy nasal tip in other studies such as lateral crural steal technique, lateral crural over lay and tongue-in-groove technique [10].

The lateral crural steal technique [6,9], which shortens the lateral crura and lengthens the medial crura, should move the tip upward and forward, resulting in an increase in both tip rotation and tip projection. On the other hand, the lateral crural overlay technique [7,9], which shortens the lateral crura, should pull the tip upward and backward, leading to an increase in rotation and a decrease in projection. Finally, the tongue-in-groove technique [8,11,12], which moves both alar cartilages (the whole tripod) upward and fixes them to the caudal septum, will move the tip upward, thus increasing the amount of tip rotation.

The reevaluation of patients at a minimum of 6 months postoperatively showed that the position of the nasal tip was well maintained.

This study proved that for the repositioned tip to permanently maintain its final position, a strong nasal tip support is essential. Therefore, whenever indicated, the posterior two thirds of medial crura were sutured together with cartilage strata graft, the medial crura were splinted to a columellar strut to increase the strength and stability of the alar cartilage complex.

Conclusion:

Based on the objective evaluation of the technique used in this study in cases of droopy under projected nasal tip and in cases of droopy over projected nasal tip we recommend such technique in correction the droopy nose deformity.

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