

“Immediate Expansion and Cartilage Graft” for Correction of Severe Secondary Nasal Deformity

O. ONUR EROL, M.D.

PURPOSE

In severe secondary rhinoplasty skin and mucosal deficiencies, scarred skin contracture, as well as skeletal insufficiency, are some of the main problems. When attempting to augment and reshape the nose, this technique involves an immediate intraoperative expansion of the dorsal, columellar and alar skin and mucosa in order to obtain a sufficient pouch for skeletal augmentation without undue skin tension.

METHOD

Since 1990, 109 postrhinoplasty patients with short nose, cripple nose with scarred contracted skin, soft tissue and cartilage deficiencies and or with saddle nose deformity, were treated by using immediate expansion of skin, mucosa, soft tissue and simultaneous cartilage grafting.

French Foley catheters # 8 and #14 are prepared by cutting the distal end and preserving the balloon portion. An initial intraoral upper labial sulcus, 2-mm, incision is made and the columella is dissected up to tip through this incision. The balloon part of # 8 catheter is inserted in this pocket and the balloon inflated with 0.5-2.0 cc saline and three minutes later is deflated. This maneuver is repeated two or three times. Another small incisions are made in the vestibule of alar region bilaterally and pockets are prepared, # 8 catheter inserted in these pockets and inflated gradually by injecting 0.5-1.0 cc saline solution. In 3-5 minutes the balloon is deflated and five minutes later reinflated and this maneuver is repeated three or four times. After alar and columellar

expansion is performed a dorsal skin dissection is done, this time a # 14 balloon catheter is inserted, gradually inflated with 2-10 cc saline, maintaining expansion for five minutes, then deflated with three or four repeats. The balloon is then left inflated in place for 10 to 20 minutes.

During intraoperative expansion, cartilage grafts are harvested from either ear concha, septum, or costal cartilage. Septal cartilage is used in the expanded columellar pocket and conchal cartilage is employed in the alar region. Under the dorsal nasal skin a solid costal cartilage graft is carved and inserted if available; alternatively, costal, conchal, or septal cartilage segments can be cut into very small pieces wrapped with Surgicel.

So that a soft "pliable graft" mass is obtained. This graft is then placed under the expanded dorsal skin, allowing the dorsum to be externally molded between the fingers. In severe cases where the expansion need to be continuous, a block of carved costal cartilage is used to maintain lengthened size of the nose. In this situation, to prevent the late show of this cartilage a finely diced cartilage wrapped with Surgicel covers carved costal graft. Diced cartilage wrapped with surgicel (DCWS) is also inserted into lateral walls of the nose. To elongate septum towards the columella, a strip of costal cartilage is inserted into preprepared tunnel between base of columella and bony septum at the radix of the nose.

To elongate or reinforce the expended columella a DCWS is inserted first to the tip of the nose than a strong strut of cartilage is placed. This approach helps to shape the tip and prevent late show of cartilage strut.

Into expended alar rim an 8x2x0.5mm thin cartilage is inserted to enlarge the retracted ala, and give a support. This cartilage preferably is from septum and if this is not available from costal cartilage.

RESULTS

This technique has been used in a wide variety of nasal deformities, including 109 traumatic or post-secondary and tertiary rhinoplasty. This approach has allowed the comfortable placement of onlay grafts under the dorsal alar and columellar skin without excessive skin and mucosa tension, resulting in minimal to negligible complications including late resorption (follow-up of 1-24 years). No complications occurred pre or postoperatively.

CONCLUSION

When attempting to augment and reshape the nose, this technique involves an immediate intraoperative expansion of the dorsal, columellar and alar skin and mucosa in order to obtain a sufficient pouch for skeletal augmentation without undue skin tension.

This approach has allowed the comfortable placement of onlay grafts under the dorsal alar and columellar skin without excessive skin and mucosa tension, resulting in minimal to negligible complications including late resorption (follow-up of 1-24 years).

LEGEND FOR FIGURES

Fig. 1.

a. Distal ends of Foley catheters are cut and balloon parts are preserved.

b. The balloon is inflated with 2-10 cc saline solution.

- c. // 8 Foley catheter is inserted first to columella
- d. Then inflated for columella expansion.
- e. Dorsal nasal skin is expanded with // 14 Foley catheter.
- f. Harvested costal cartilage is ready to be inserted.
- g. Diced cartilage wrapped with Surgicel is prepared to be inserted into lateral wall of the nose.
- h. Termination of surgery after grafts insertion.

Fig. 2.

- a. Pre-op lateral view
- b. Post-op lateral view
- c. Post-op frontal view of the same patient