

Improving Nasal Tip Projection and Definition Using Interdomal Sutures and Open Approach Without Transcolumellar Incision

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Abstract. The object of this study was to maximally take advantage of the combination of two surgical techniques to manage the nasal tip. For this, an approach similar to the open tip approach without a transcolumellar incision was performed and the management of the alar cartilages with multiple combined sutures was carried out. This study represents more than two years of work where 57 primary and secondary rhinoplasty patients were operated on. In all of them, the nasal tip was managed by means of utilizing different types of sutures in the alar cartilages, according to the characteristics and needs of each patient. At the same time, an extensive lipectomy was performed on the nasal tip, if indicated. All of the nasal tip surgeries were performed with an open approach without transcolumellar incision. This approach has been previously described, is highly simple, and it eliminates the principal disadvantage of a transcolumellar scar that arises from the open approach technique. Although the scar is hardly noticeable in Caucasian patients, in non-Caucasians it could constitute an important undesirable effect. This approach permits us to manage the cartilages using sutures in many diverse types and variations in a more complete form, similar to which one could achieve using the classical open approach technique. The results are highly satisfactory and result in a definition and rotation of the nasal tip which would be difficult using the closed technique. Therefore, this study represents another alternative surgical technique in the surgical management of the nasal tip.

Key words: Nasal tip improvement—Open tip rhinoplasty

Undoubtedly, the nasal tip is one of the most delicate parts to manage during rhinoplasty [19]. This problem becomes worse if the nose has previously been operated on, or has significant deformities such as sequelae from a cleft lip [3,8]. To improve nasal tip management, Rethi described in 1929 an open approach with ample exposure utilizing a transcolumellar incision [16]. This approach has been recommended and utilized by numerous authors for a more complete management of the nasal tip [1,4,5,20]. At the same time, many authors recommend cartilaginous management using sutures for special problems of the nasal tip, instead of a large cartilaginous resection or sections of the same [2,5,7,10,12–15,18,20]. An external approach for this type of procedure is recommended in order to have more control and precise placement of the sutures [7,14,18,20]. The disadvantage of this technique, described by Rethi, is the presence of a transcolumellar scar, especially problematic in non-Caucasian patients. Guerrerosantos reported, in 1990, a large exposure of the nasal tip without a skin incision of the columella [6]. In this study we present our procedure of the nasal tip surgery utilizing sutures, as described by numerous authors, but using an open approach without a transcolumellar incision.

Material and Methods

Using the open approach technique for the nasal tip without a columellar incision, described by Guerrerosantos [6], 57 patients underwent rhinoplasty, from June 1999 to October 2001. Fifty-two were female and five male. Forty-one were undergoing their primary rhinoplasty and 16, secondary rhinoplasty. All the patients had the procedure performed on the nasal tip using sutures for alar cartilage management. On some patients, if indicated, a

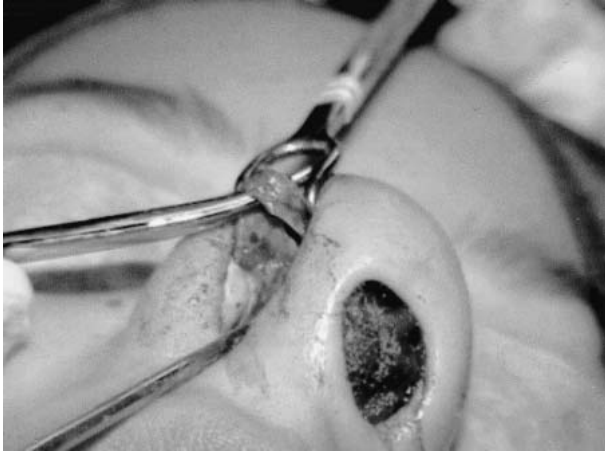


Fig. 1. Alar cartilages are totally freed with a broad dissection, ready to be manipulated using sutures.

lipectomy of the nasal tip was performed. The precise indication for managing the nasal tip using sutures was the presence of separated domes, a divergent angle of the same greater than 30° , or some congenital malformation with malposition of the alar cartilages. No cartilage grafts were used in any of the patients for the purpose of obtaining a better nasal tip definition.

Surgical Technique

Under general anesthesia or sedation, the nasal tip is infiltrated with 2% lidocaine and epinephrine 1:200,000. According to Guerrerosantos, a marginal incision is performed bilaterally and subsequently, the alar cartilages are separated from the nasal skin. This maneuver is performed with curved broad scissors. If needed, the incision is extended to the media crura, but if only the domes are manipulated, the incision is limited to the medial and lateral crura. At this point it is also possible to extensively lipectomize the nasal tip if required. It is also possible to resect the cephalic portion of the alar cartilage, to improve definition. At this moment, the exposure of the alar cartilage is full and extensive, similar to the one described by Rehti. Nevertheless, to acquire an adequate rotation and complete displacement of the alar cartilage, it is necessary to free them from the internal nasal lining. For this procedure, very fine scissors with a cutting point are carefully used (Fig. 1), employing traction of the internal nasal lying to favoring the dissection. With the alar cartilages freed, it is possible to realize their subsequent management utilizing one or several sutures (Fig. 2). Depending of the needs of each patient, we joined the domes in differing degrees with 5-0 non-absorbable sutures. Care must be taken as to not overcorrect, which could lead to nasal pinching. This maneuver can be repeated as many times as necessary until the desired effect is attained, without adding morbidity to the procedure. After finishing the procedure on the nasal tip,

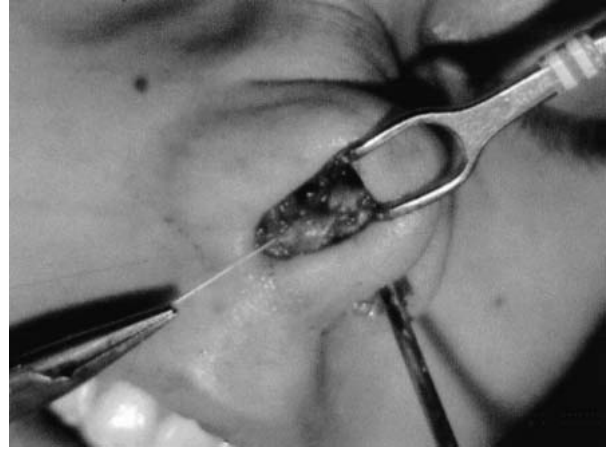


Fig. 2. Manipulated and sutured domes by means of an open approach without transcolumellar incision.

we proceeded to perform rhinoplasty according to the needs and indications of each individual case.

Results

All the patients who were operated on with this technique had high satisfaction. There were no complications secondary to the use of sutures on the alar cartilages, neither because the open approach. The swelling that the patients had was similar to the one that is present after a closed approach technique. They did not have more fibrosis or any skin vascular compromise. The tip rotation and tip definition obtained was very satisfactory without needing cartilage grafts.

Patients who have undergone the described procedure are presented in Figs. 3, 4, and 5.

Discussion

The management of the nasal tip is one of the most challenging goals for a plastic surgeon. Its manipulation is complex and variable, and it presents important differences according to each diverse ethnic group. The scarring, the behavior, the post-surgical evolution, and its concept of beauty and symmetry are the many factors and characteristics that make this surgical procedure so unique. With the medical field's eagerness to improve the management of the nasal tip, various surgical techniques have emerged, one the most utilized being an open approach [5,18,20], described by Rehti more than 80 years ago [16]. The defenders of this technique mention countless advantages such as: direct analysis of its deformity; excellent teaching and training method; the availability to choose the best surgical technique; the possibility to obtain adequate homeostasis; the facility to lipectomize, remove and manage cartilage; the placement and direct suturing of the graft; and an improved evaluation of the immediate postsurgical results. However, the principal inconvenience of this technique lies

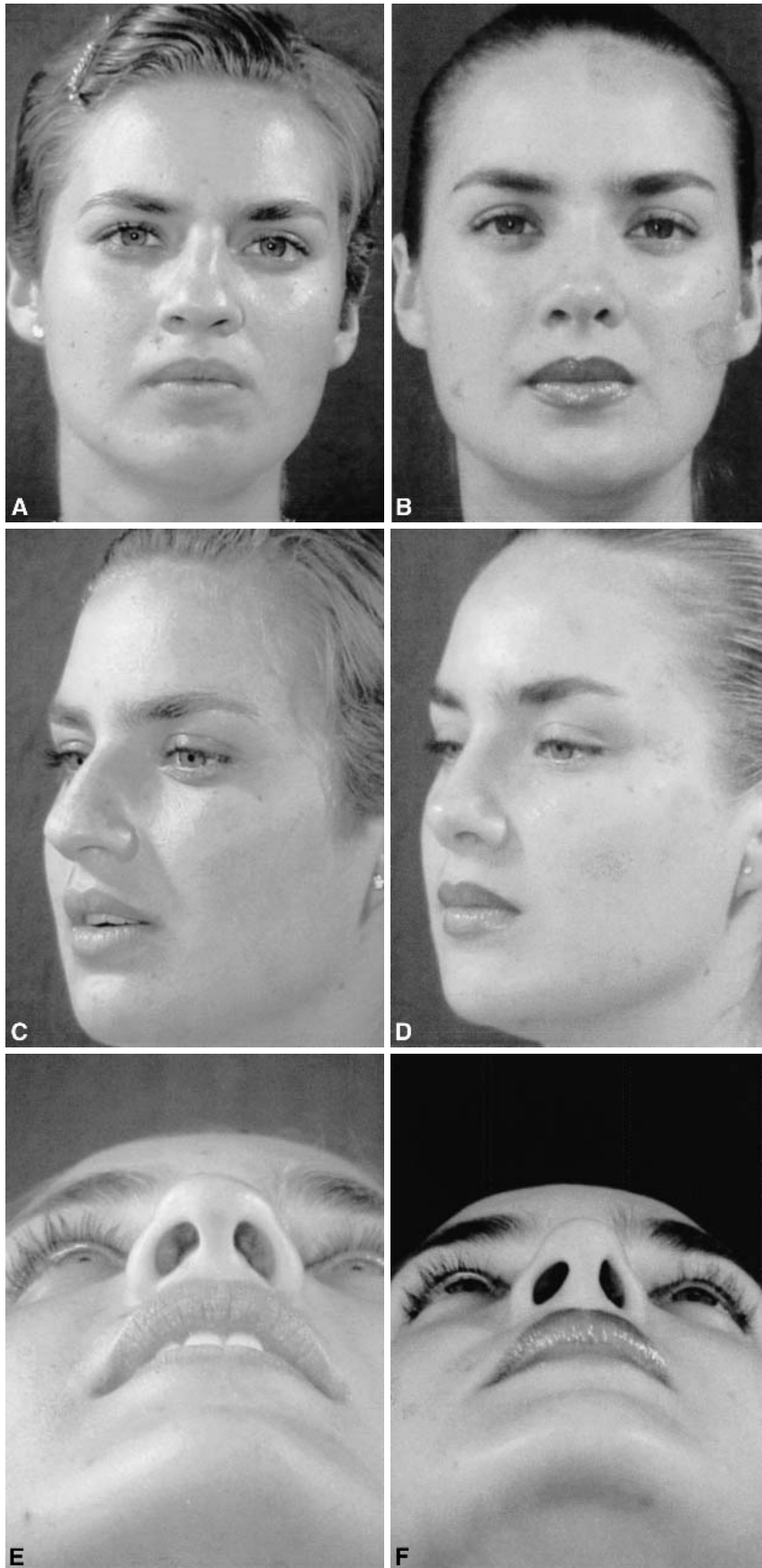


Fig. 3. A 21-year-old female. Nasal tip asymmetry due to previous trauma. A correction using domal sutures. Cephalic resection of the alar cartilages. Two years of evolution. (A) Presurgical frontal view. (B) Postsurgical frontal view. (C) Presurgical 3/4 view. (D) Postsurgical 3/4 view. (E) Presurgical basal view. (F) Postsurgical basal view.

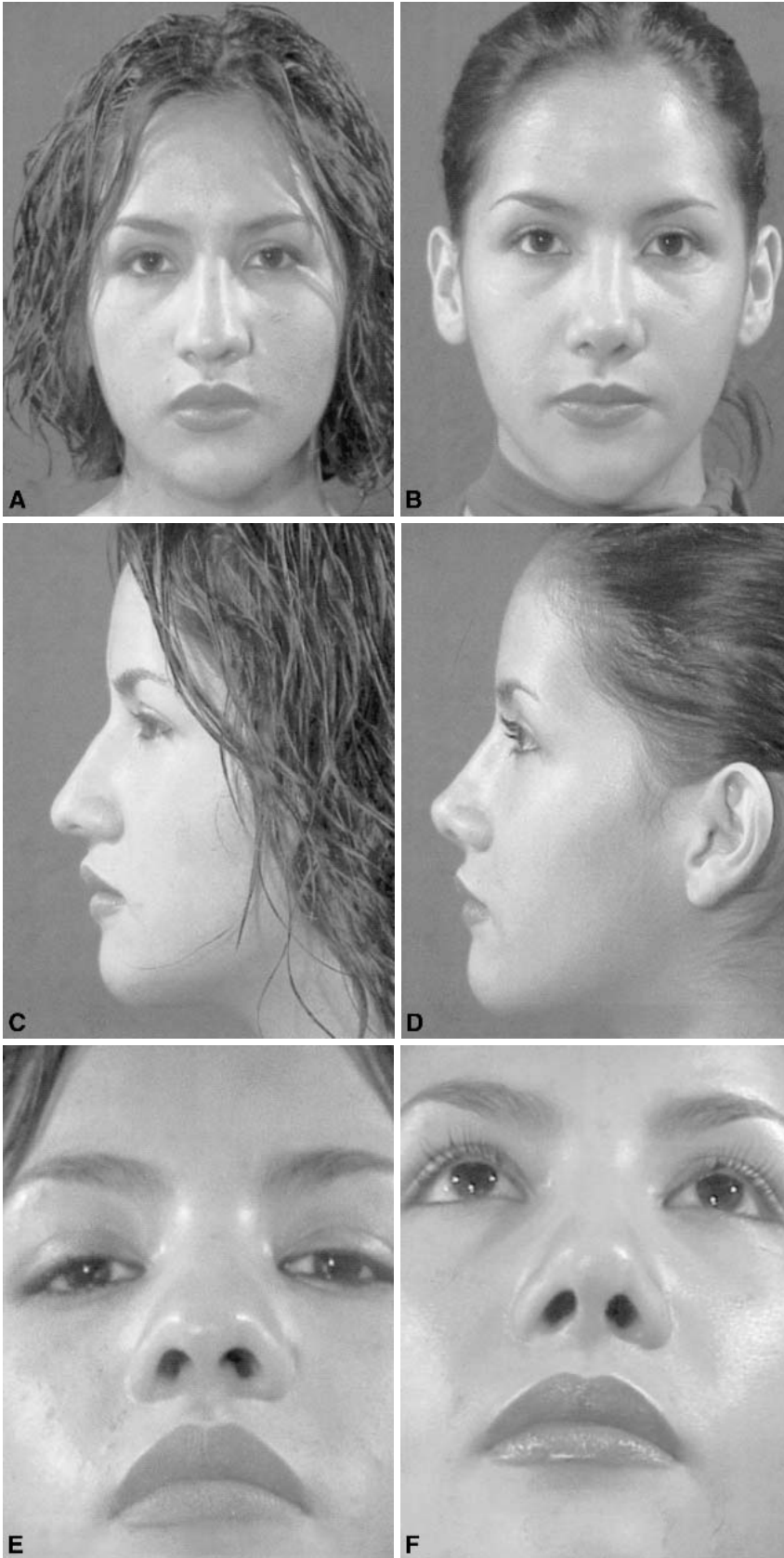


Fig. 4. A 24-year-old female. Lipectomy of the nasal tip and domal suturing. Cephalic resection of the alar Cartilages. Eighteen months of evolution. (A) Presurgical frontal view. (B) Postsurgical frontal view. (C) Presurgical profile view. (D) Postsurgical profile view. (E) Presurgical basal view. (F) Postsurgical basal view.

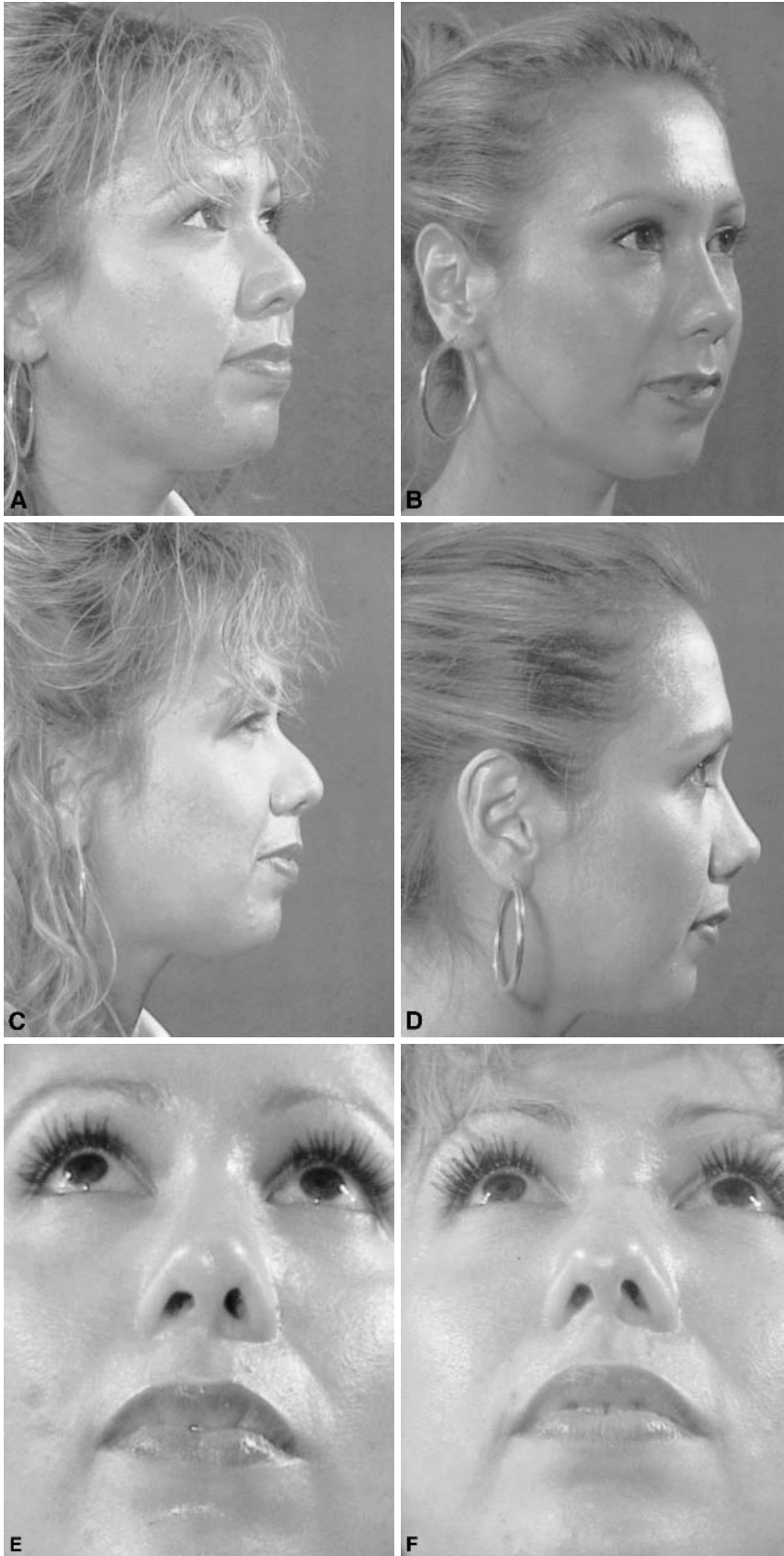


Fig. 5. A 27-year-old female. Secondary rhinoplasty with nasal tip asymmetry and a deviated septum. A correction of the nasal tip with domal sutures. Two years of evolution. **(A)** Presurgical 3/4 view. **(B)** Postsurgical 3/4 view. **(C)** Presurgical profile view. **(D)** Postsurgical profile view. **(E)** Presurgical basal view. **(F)** Postsurgical basal view.

within the residual scars that are left on the columella. It is less noticeable in Caucasian patients, but it is a problem in patients with different ethnic backgrounds, where the scars tend to be more noticeable. Besides the scar being a principal inconvenience with an open approach with transcolumellar incision, one must consider the different needs of the non-Caucasian. Many times the nasal tip needs more lipectomy to give it more definition [9,11]. Nevertheless, this leads to the risk of suffering a cutaneous vascular compromise [17], which could worsen if it is managed at the same time with an open tip approach. Although cutaneous necrosis may not occur, a prolonged inflammatory reaction condition can result from this decreased vascularity. In turn, this could result in slower elimination of inflammatory components, which could lead to undesirable fibrosis on the nasal tip. For this reason, different alternatives have been sought to obtain a large exposure of the structures of the nasal tip in non-Caucasian patients. One that is most employed is described by Guerrerosantos [6]. Through this approach it is possible to manage the nasal tip with a large exposure that permits the visualization of all the cartilaginous structures of the nose.

With this type of approach we are able to combine the management of the nasal tip with sutures, such as those described by the authors of the open tip technique, but avoiding the columellar incision. We agree with them that the management of the cartilaginous structure using sutures is very complete. Although it is possible to perform a closed technique with interdomal sutures [13], we prefer to do this in a more direct form, observing what we are doing, which considerably minimizes the risk of error and poor results. A great proportion of our nasal procedures are managed with sutures—we also perform extensive lipectomy of the nasal tip—and to the present time we haven't had any vascular complications. We also haven't had the problem of excessive fibrosis, the results being similar to those patients on which we have used the closed approach technique. In fact, the extensive lipectomy of the nasal tip comes from the need to surgically treat our non-Caucasian patients. Thanks to a combination of lipectomy and interdomal suturing with the open approach without an intercolumnellar incision, we have achieved better definition of the nasal tip with noses that have very separated or divergent domes. These results are very difficult to achieve with a closed approach technique. At the same time, the projection and rotation obtained by suturing the domes is quite important, due to the upward and backward displacement that the alar cartilages undergo. It is essential to mention that this displacement is basically achieved by the detachment that is realized of the alar cartilages from both, the internal nasal lying on the external skin. Without performing this procedure, the detachment is insufficient and there is risk of pinching the nasal tip at the moment of placing sutures on the marginal incision.

With the described procedure in this study we present another alternative to managing the difficult nasal tip, by employing the association of the surgical procedures described above, and by combining them all in one technique we can thus obtain the maximal benefit from each.

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