Some Less Usual, or Never Used, Technical Resources in Rhinoplasty for Nasal Base Improvement

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Abstract

To achieve an equilateral and stable nasal base, many technical resources have been traditionally used that transform this vital pyramidal nasal structure into a beautiful, equilateral and stable triangle that resists pressure on the nasal tip. Here we stress less usual resources, one of which has not yet been published: Z-plasty in naso-labial sulcus. We stress: Columella Trunk, Soft Triangles, filling the Nasolabial Angle, en-bloc excision of Alar and Vestibular Wedges, excision of longitudinal Alar Bands, in the Total Resection of Alar Cartilages and Temporal Fascia, and in Z-plasty of naso-labial sulcus. All this is done to achieve a Beautiful, Equilateral and Stable Nasal Base.

Keywords: Rhinoplasty; Nasal base; Resources in rhinoplasty; Equilateral nasal base; Z-plasty in naso-labial sulcus

Patients and Methods

When the nasal base structure is far from ideal because it is too flat or prominent, we normally resort to a series of technical resources to accomplish an Equilateral and Stable Nasal Base. These resources are traditionally known, but others have hardly, or never, been used. This work focuses on resorting to these unusual technical resources to transform an Anodyne Nasal Base into a Beautiful one.

We commence with an important casuistry in Rhinoplasty and employ all types of technical resources in many cases, as our Doctoral Dissertation shows: "Una Nueva Técnica de Remodelación de la Punta Nasal en Rinoplastia, para Casos Extremadamente Difíciles, Mediante la Resección Total de los Cartílagos Alares y Fascia Temporal" (Excellent Cum Laude).

We now provide details of the surgical sequence of some infrequently used technical resources.

Let’s go on to see what kind of technical resources have been used traditionally in Rhinoplasty in order to improve and beautify the nasal base to transform it into an Equilateral, Beautiful and Stable one [1-6].

- Reducing Converse Soft Triangles
- Resecting the trunk of the Septum’s Depressor Muscle
- Converse point on the columellar base
- Releasing the Columella
- Alar Wedges
- Vestibular Wedges
- Amputating Crus Medialis Feet
- Approaching Crus Medialis Feet
- Intercrus Mediales Tutor Graft
- Killian-type septoplasty [7]
- Luxation or Cauterization of Conchas
- Filling the Naso-Labial Angle with remains of Resected Cartilages wrapped in temporal fascia

Now the time has come to talk about our personal technique to treat a difficult nasal tip by
improving the nasal base at the same time and transforming it into an Equilateral and Stable one [8-31]: Total Resection of Alar Cartilages and Temporal Fascia, where we establish five groups which we call Types.

- **Resection type I:**
  
  Indicated for overprojecting noses with a long columella and large and elongated nostrils.
  
  This consists in totally amputating the alar cartilages, including the domes and the intermedial crus trunk. Crus ends are covered with a 2-layered temporal fascia seal and a temporal fascia layer on top.
  
  The technical resources employed to support this technique include: alar wedges, amputating crus medialis feet and a medial suture of their distal ends (Figures 1,2A and 2B).
  
- **Resection type II:**
  
  Indicated for noses with a slightly elongated base.
  
  This operation mode is defined by completely amputating alar cartilages, including domes, and covering them totally with a temporal fascia seal and layer (Figures 3,4A and 4B).
  
- **Resection type III:**
  
  Indicated for nose heights that come very close to the ideal equilateral nasal base objective.
The technical foundations are summarized as completely amputating alar cartilages, but respecting domes and covering them with a layer of temporal fascia (Figures 5, 6A and 6B).

- **Resection type IV:**
  
  Indicated for patients with an adequate nasal base height, but who require tip remodeling due to possible anatomical alterations, such as: bulbous tip, squared tip, irregular dome, asymmetries, caudal rotation, etc.

  Technically speaking, it consists in completely amputating alar cartilages, but respecting domes. In these cases, two small latero-caudal 6-8-mm-long alar cartilage wedges that are arrow head-shaped. Using a temporal fascia seal is not indicated for this type (Figures 7, 8A and 8B).

- **Resection type V:**
  
  This last type is indicated for extreme cases of flattened or negroid noses, for short columnellas, widely separated alae and wide nostrils.

  Patients undergo complete amputation of alar cartilages, but domes are respected and are brought together as distally as possible using a suture to project. The vast majority of cases require placing a
temporal fascia seal on the tip, used to increase projection.

It is generally necessary to resort to certain technical support procedures, such as approaching crus medialis feet by a couple of suture stitches, resecting vestibular wedges, Converse point, resecting soft triangles, releasing the columella from its base and resecting the trunk of the septum’s depressor muscle. It is also necessary to always place an intercrus mediales tutor graft taken from the nasal septum nasal to elongate and strengthen the columella by projecting the tip (Figures 9-22).

Results

Given our ample experience in Plastic Surgery (36 years), we have been fortunate to resort to such resources in many cases in Rhinoplasty with over 5000 operated cases. These technical resources have always proved useful to meet our objective: a Beautiful, Stable and Equilateral Nasal Base.

These technical procedures entail neither complications nor sequelae, so they are highly recommendable to complement more
complex Rhinoplasties. They esthetically improve nasal bases without altering the respiratory function (Figures 23A, 23B, 24A and 24B).

**Discussion**

The patients who attend consultations for Rhinoplasty are usually normal subjects who wish to improve the way they look and who attribute their lack of facial harmony to their nose, save some extreme dysmorphophobia cases that we have to decline. This seems reasonable bearing in mind the hegemony that the nasal pyramid has on the face as a whole [32-37]. Most of the patients in our series have been women (81.9%). Their mean age lies between 25 and 30 years, which coincides with those reported by other authors.

As regards races, logically in our particular setting the Caucasian race clearly predominates although we have had the chance to treat two black race cases. Almost 82% of the patients in our series have been female. This finding is highly consistent with what other authors have communicated. Thus by respecting the proportional variability communicated in each study, rhinoplasty is an operation more widely requested by females than by males.

Patient requirements vary vastly when they enquire about plastic surgery. The fascination they feel for acquiring an agreeable physical look has been currently generalized; indeed seeking a solution to correctable dysmorphies is increasingly prevalent. The reasons that lead them to consult plastic surgeons mainly include combinations of psychological and emotional factors, which are often conditioned by their social setting. Not only one’s body image and self-esteem lead them to enquire about plastic surgery, but their education and culture also play a considerable part in making this major decision.

Several studies conducted in Northern countries have analyzed the psychic and sociological factors that are associated with populations who request some esthetic correction types. They have concluded that these factors are related with self-esteem in childhood and adolescence, and that educational factors and personal relations of different kinds also play a key role in decision making to seek surgical solutions in the Esthetics domain [38-41].

Among our patients, the medium social range predominates the high one (85.5% for the former vs. 13.7% for the latter), while low social-range patients who have made enquiries is merely a token. Regarding their level of education, we observe that individuals who have completed Secondary Education (46.8%) predominate in our patient series, followed by the Higher Education group (29.4%). The patients who have completed Primary Education form a smaller group, but is not far behind the Higher Education group (23.8%). When we analyze the occupational situation of those patients who wish to undergo rhinoplasty for esthetical reasons, our experience indicates that most pertain to the working group (61.4%), followed by students (24.3%) and finally by patients in a passive occupational situation (14.3%). Regarding marital status, single persons predominate (61.3%) married individuals (37.2%).

A Rhinoplasty patient tends to prefer general anesthetic to local...
anesthetic, but the difference is minimum. Although plastic surgeons also prefer general anesthetic, well-controlled local anesthetic and minimum sedation (reflexes are maintained) is always desirable, provided the patient requests it and their psychological conditions allow it. In our series, 72.6% of patients were operated under general anesthetic, while the remaining 27.4% underwent local anesthetic. A recent meta-analysis has demonstrated that using general anesthetic in closed reductions of nasal bone fractures provides better functional and esthetic results, greater patient satisfaction and results in fewer sequelae than local anesthetic.

Most of the patients in our series underwent rhinoplasty for esthetic reasons (92.8%). In 6.25% of the cases, the reason was post-traumatic deformity, and a tumor or malformation etiology was the reason in less than 1% of our series. On most occasions, indication for rhinoplasty agrees with the findings obtained in our series.

From the technical viewpoint, Rhinoplasty can be performed in three different forms: endonasal or closed rhinoplasty, open rhinoplasty and transcutaneous rhinoplasty [42-49].

Endonasal or closed Rhinoplasty is done by means of a transfixante retro-columellar incision, and another intercartilaginous incision between alar cartilages, and lateral or triangular ones. The first technical guidelines of this approach are attributed to Roe (1887), although Joseph (1904) developed these concepts, and is considered by the vast majority as the father of modern closed Rhinoplasty.

Open Rhinoplasty was described by Rethi in 1934 by adding the incision that bears his name, and which allowed to lift the whole flap of soft tip cover to better view and treat cartilages. This incision is transcolllumolar cutaneous and ascends by both cololumellar edges by caudally surrounding the alar cartilages. GuerreroSantos [50] (1990) also provided an interesting contribution to open Rhinoplasty by his paramarginal cololumellar technical approach that avoids transcolllumolar cutaneous incisions.

Transcutaneous Rhinoplasty is much older and is attributed to Tagliacozzi (1597), who treated noses by making an incision on the dorsum to eliminate the gibbus. Dieffenbach (1845) published his technique for the first time to deal with the dorsum and tip by external incisions. This technique is still used today, but only for extreme Rhinomegalia cases with an extremely descending and hanging nasal tip, which very rarely occurs.

If the nose is the most important anatomical element of the face given its situation and projection in the center of the face, then the nasal tip is the most outstanding facial structure as it defines and distinguishes it, and contributes to or eliminates facial beauty. No anatomically attractive face exists if the nose is deformed, and no pretty nose exists if it is an ugly nose [52-54]. The nasal tip has historically been, and still is, the most complicated part of Rhinoplasty given its surgical difficulty and its multiple forms: pointed, flattened, bulbous, squared, wide, elongated, bifid, asymmetric, cephalically or caudally rotated, diverted, with fine skin or thick skin, luxated at a seaptal angle, etc., and all these anatomical variations implicitly involve at least one different technique.

Given the nasal tip’s complex anatomy, especially its quite singular cartilaginous structure on the nasal pyramid, and because the minimum defect can be seen by being transparent or by touch, surgery in most cases at this level is most complicated when skin is not too thick to disguise it. Even when taking great care in the diagnosis, treatment plan and execution, we sometimes face adverse results that are apparently difficult to explain. A tip that slightly descends or, conversely, over projects, slight asymmetry, a peak, a sharp edge, excessive alar retraction, a hanging columella, a bulging supratip area, an alteration to the internal valve, especially twisting, deviation, etc. Some of these post-surgical sequelae can appear quite incomprehensively in any Rhinoplasty conducted on a tip, and even in one that entails a low degree of difficulty.

All this makes nasal tip surgery the most complicated phase of Rhinoplasty. Remodeling the nasal tip’s cartilaginous structure is an extremely difficult maneuver; a millimeter gap can lead to a poorly acceptable, barely natural result, and can leave a surgical mark that means having to perform a second operation. The difficulty lies in the function, esthetics, statics and dynamics.

Temporal fascia was already employed in Rhinoplasty by GuerreroSantos [50] in 1984, but not for the nasal tip. This author began to use it to increase the dorsum and to fill in the naso-frontal angle. Autologous fascia is a material that is highly recommended as a graft in nose surgery when modeled soft tissue filling is required. Baker and Courtiiss [54] demonstrated in 1994 that temporal fascia is progressively revascularized and is included as a living structure in the remodeled area.

Conclusion

We conclude that as Rhinoplasty is the most difficult Plastic Surgery operation, it is worthwhile having all the available Technical Resources to resort to in really difficult nose cases.

From a clear perspective after 36 years experience in Rhinoplasty, we can certainly state that: No nose is easy and no Technical Resource is useless.

References


