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Surgical Rhinoplasty

Dario Bertossi, Enrico Robotti, and Carlos Neves

We decided to make a short chapter on an extensive topic to give the reader who is familiar only with non-surgical treatments a brief outline of how a surgical nasal correction differs from the non-surgical approach [1–5]. This will make a clear statement for those who are not surgeons about the differences between a surgical and a non-surgical nasal correction—the posttreatment recovery time, the long-term results, and the possible complications—and we will discuss why sometimes, however rarely, we may have to use a filler injection to give a temporary solution for a necessary postsurgical touch-up. Finally, we will talk about how a non-surgical rhinoplasty may also convince some of our patient population to shift towards a surgical correction to obtain a proper and permanent aesthetic outcome.

Surgical rhinoplasty remains one of the most challenging techniques in plastic surgery and is still one of the most performed facial procedures. The surgical correction of the nose is performed sometimes alone or associated with other facial defect reshaping to achieve a balanced facial result.

Nasal defects can be addressed with different surgical accesses, but the main objective is that whenever a rhinoplasty is done, it must address both nasal function and aesthetics.

Since a normal nasal physiology is a necessary feature, aesthetic goals are primarily dependent on the patient's concerns and expectations. Only an accurate photographic and video documentation during patient consultation can help ensure we and the patients themselves understand the surgical project (see Figure 5.1). This is followed by a very candid discussion of what is and what is not achievable, thus setting realistic expectations for the patient and reducing the risk of postoperative patient dissatisfaction.

Clinical analysis is performed through a set of pictures and a simulation on a desktop computer to illustrate to the patient a possible surgical result. Then an internal analysis with speculum and eventual endoscopic analysis, as well

as a cone beam computerized tomography (CBCT), allow us to define the surgical project accurately.

SURGICAL TECHNIQUE

Surgical rhinoplasty is performed almost exclusively under general anesthesia to ensure patient comfort and protection of the airway. However, our surgical maneuvers can result in bleeding, causing secondary complications to upper and lower airways; when the patient is under general anesthesia, we place two nasal swabs (Merocell) deep posteriorly into both upper airways to prevent bleeding into the lower airway areas. We then start with nasal infiltration (see Figure 5.2) before draping to get 10–20 minutes of vasoconstriction through infiltration with cold (4°) 1% lidocaine containing 1:100,000 epinephrine targeting the main vascular network. Using a 27-gauge 13-mm needle, approximately 1 mL of the local solution is injected in the columella base (nasal labial angle area to target columellar arteries) with the same quantity injected along the nasal sidewalls (to target the lateral nasal arteries) and into each nasal base (pyriform aperture). We then proceed with the glabellar area, the nasal dorsum, and the marginal rims of the nose, as well as between the nasal domes. We then inject the internal mucosa of the nasal bones and of the nasal septum. If necessary, the nasal hair within the vestibule is trimmed. The nose is then packed bilaterally with pledges soaked in oxymetazoline. After 10–20 minutes we proceed with the closed-approach transcartilaginous or intracartilaginous incision (see Figure 5.3) or with the open approach, where we make a transcolumellar incision followed by a marginal mucosal incision.

Through these different nasal access routes, we undermine the nasal soft tissues to get to the bony-cartilaginous framework (see Figure 5.4), where during our consultation

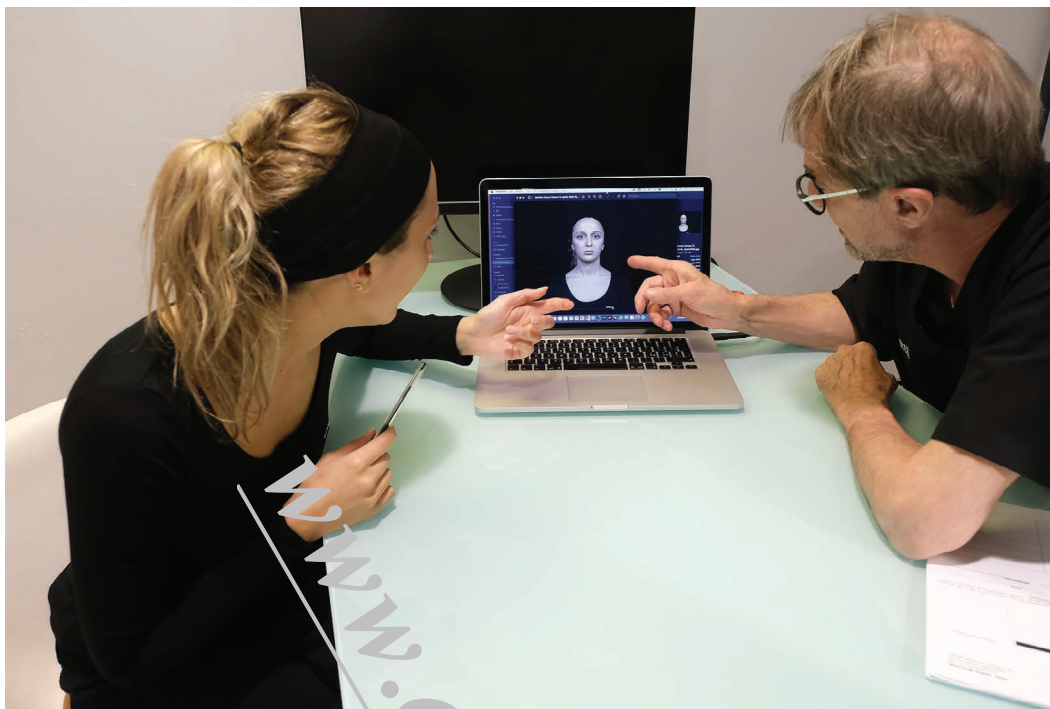


Figure 5.1 Simulation of the possible result with the Adobe Photoshop software.

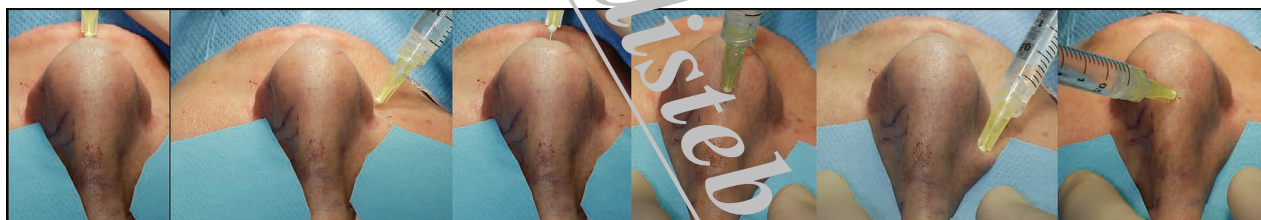


Figure 5.2 The sequence of different points of local anesthesia infiltration during a surgical rhinoplasty.

and surgical plan we have identified the areas to be corrected, whether through cartilaginous incisions and resections or bony rasping. There are also new devices to perform these specific maneuvers through a less traumatic option, such as Piezosurgery (see Figure 5.5) and the Er-Yag laser.

During this operation we may have to choose to reshape the nasal structure for functional or aesthetic purposes, and we can do this by removing some quantity of cartilage and bone or adding one or more cartilaginous grafts (see Figures 5.6 and 5.7) harvested from the nasal area itself, from the ear, or from the rib, which are going to be stabilized with PDS or nylon sutures. These grafts normally are positioned to open the internal nasal



Figure 5.3 After 10–20 minutes we proceed with the open approach. The picture shows a transcolumnellar incision followed by a marginal mucosal incision.



Figure 5.4 Nasal soft tissue undermining.

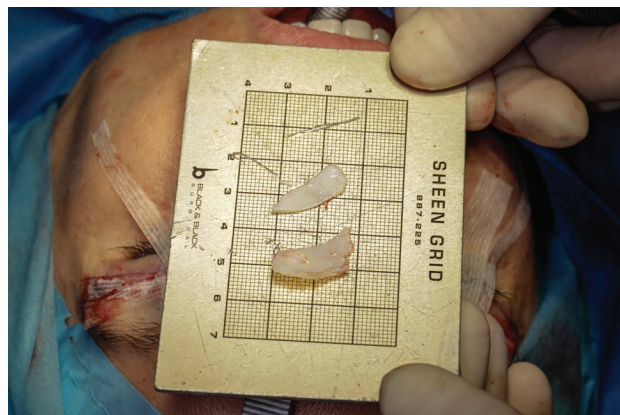


Figure 5.6 Cartilaginous grafts harvested from the nasal septum.

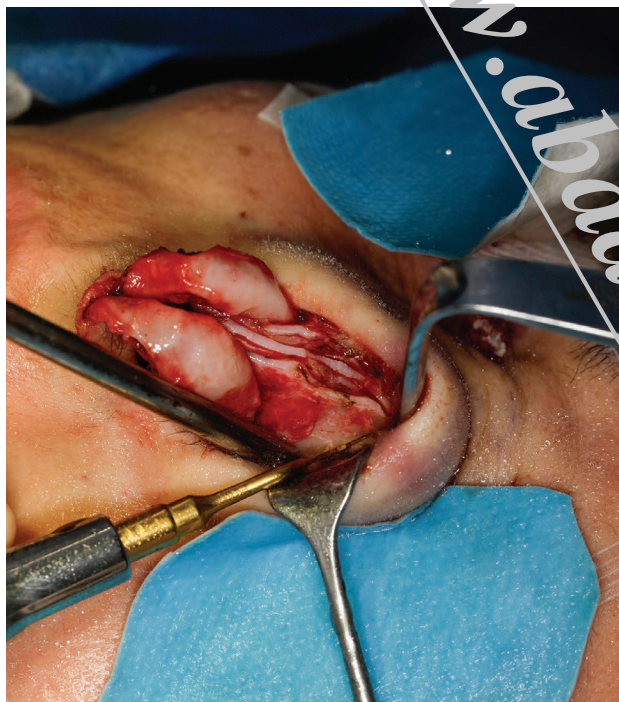


Figure 5.5 Nasal bone osteotomies with the Piezosurgical device.

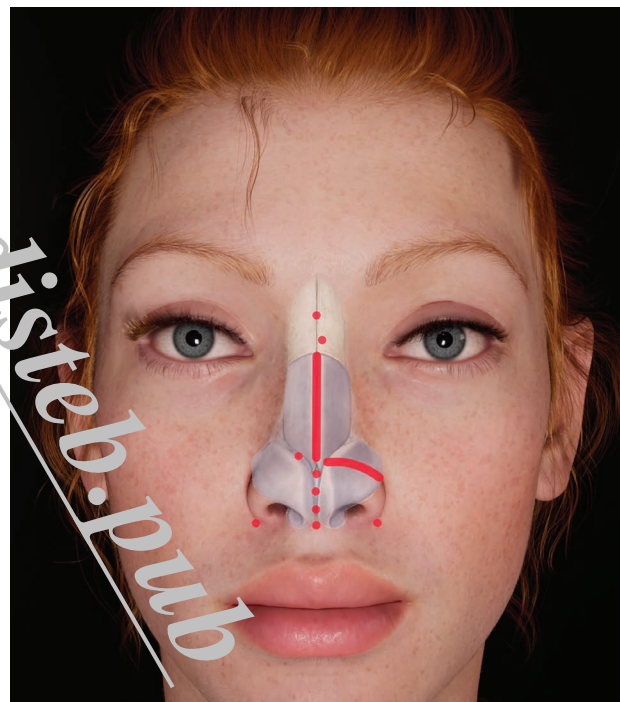


Figure 5.7 Areas of nasal cartilage grafting.

valve area, to correct nasal asymmetries, to give the nasal dorsum or tip support, or finally to achieve nasal finesse.

A more invasive maneuver is osteotomy to narrow the nose, to reduce the bony vault and to close a wide bony vault, and finally to straighten a deviated nasal structure.

Nasal tip refinement sutures or grafts are our last nasal technique for the skin and mucosa (see Figure

5.8). Sometimes skin surgery on the base of the nostril is performed after this final maneuver. We then put Steri-Strips on the nasal skin and a thermoplastic splint onto the Steri-Strips (see Figure 5.9). We control the acute healing phase with small rolls of Surgicell coated with Fucidin ointment that we position into the nostril apices to give support and control infections on



Figure 5.8 Intracartilaginous sutures with PDS 5-0.



Figure 5.9 Columellar suture.

wound closure. Sutures and Steri-Strips are removed at 7 days, internal splints if positioned are removed after 7 days, and nighttime taping in the supratip area is recommended for 4–6 weeks; alar skin sutures are removed after 10–14 days.

CLINICAL CASE

The patient has a slight nasal hump and right deviation of the nasal septum. The patient was treated with an open approach through a transcolumellar incision, cephalic crus remodeling, nasal hump resection, spreader graft positioning, and diced cartilage positioning. The result shows a harmonious nose with improved brow-tip aesthetic lines (see Figures 5.10–5.13).



Figure 5.10 Preoperative and postoperative front view of the patient.