

31. Postoperative Management of Rhinoplasty Patients

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ROUTINE MANAGEMENT

Preoperative Management

Postoperative management of rhinoplasty patients is a very significant part of the procedure and has a direct effect on the ultimate cosmetic and functional result. The most effective way of dealing with potential postoperative problems is to execute proper preoperative planning, beginning with a well-informed patient.

The *history* of the patient's concern with their nose is vital. What is it that concerns the patient, and how long has this been a concern? Why is the correction wanted and why at this time in life? Have there been any recent changes in the life setting that have precipitated the decision to undergo rhinoplasty? A detailed history of previous injuries and all previous surgical approaches to the nose is vital. Specific questions must be asked regarding history of airway obstruction, nasal allergies, hay fever, sinus concerns or problems, and headaches. A thorough review of the patient's general health, with specific attention to cardiovascular history, bleeding tendencies, acne or other skin problems, and abnormal menses, must be reviewed. A history of drug use or abuse must be taken, specifically with respect to the use of aspirin, ibuprofen, and betablockers. Questions regarding history of drug use must be asked in lay terms and in a nonthreatening manner.

Preoperative examination of the nose and the patient is also vital in preventing postoperative problems. The nose should be examined by both visualization and palpation, and a thorough assessment should be made of the nose with respect to its relationship to the entire face and indeed to the body statute in general. It is important that the height of the patient be recorded. The nasal airways should be examined directly with a light, both with and without a speculum and while watching the patient breathe, both on inspiration and expiration. The nasal valves should be visualized and observed without a speculum during quiet respiration.

A thorough *discussion of surgical possibilities* should be held with the patient at the time of the first visit, after a thorough history and examination have been completed. The patient's expectations must be discussed with respect to the possibilities for surgical correction. If the patient's expectations are unrealistic, they must be discussed openly at this point, and if the surgeon remains concerned about the patient's expectations, a decision must be made either to refer the patient directly for psychological or psychiatric evaluation or to reject the patient as a surgical

candidate. In all cases of revision rhinoplasty or twisted nose deformity, the possible need for a secondary revision procedure must be discussed openly with the patient at this time.

A *financial discussion* should be a part of the first visit with the patient. Accurate insurance information should be obtained, and an honest discussion with the patient should be held with respect to the possibility of insurance funding. Honesty at the first visit with respect to the possibility of coverage often diffuses unreal patient expectations with respect to coverage at a later time. The need for prior approval or a second opinion should be presented and appropriate steps taken. All costs, including surgeon's fee, anesthesiologist's fee, and hospital costs, must be precisely identified for the patient. We find it helpful to present the patient with a statement delineating these costs specifically; we give the patient one copy and retain one copy for the patient's clinical record.

Photographic documentation is an important part of the first visit so that any further contact with the patient by phone or in the examining room will be made possible with reference to the photographs. The photographs should be taken in a separate dedicated portion of the preoperative area, and a standard set of views should be obtained for all patients—both preoperatively and postoperatively. All views, with the exception of the basal view of the nose, should be obtained at a standard 6-foot distance, with at least a 100-mm lens to avoid the problems of perillax distortion. The 6 views we find most helpful are frontal, left lateral, left lateral smiling, right lateral, three-quarter view, and close-up basal view. One person in the office should take all photographs on a routine basis; we prefer that the surgeon obtain the photographs. The reasons for taking the photographs should be explained to the patient; they should be assured that they are a part of the clinical record and that they will not be used for publicity purposes without specific written permission from the patient.

As soon as the photographs are developed they should be reviewed, and notes and plans should be made based on that review. Many defects are often noted in the photograph that were not clear at the time of the original evaluation of the patient. Photographic transparencies are the accepted standard, but reviewing them with the patient does require the use of a projector. Prints may be used but are somewhat cumbersome and, if drawn on, may increase the possibility of misleading the patient with respect to expectations. Videotape or computer imaging of patients is used by some surgeons, but lack of standardization of views and the possibility of misleading the patient make these recording techniques unacceptable to other surgeons.

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A thorough discussion of the operating room setting, the outpatient hospital setting, and the entire agenda for the day of surgery is an important part of the review during the first visit. All the expected postoperative visits should also be discussed with the patient. Most importantly, a general discussion of postoperative progression with respect to airway obstruction, swelling, ecchymosis, and work and exercise limitations should take place at this time.

The final discussion during the first visit should be a review of the planning steps needed to prepare for surgery. The need for advance scheduling for the surgery and the setting for the preoperative visit should be discussed. A specific discussion regarding avoidance of aspirin and ibuprofen should also take place, as well as a discussion regarding the possible need for antibiotics or vitamin C.

A second preoperative visit to the office prior to surgery is imperative. This visit should be held if at all possible the day prior to surgery. The visit should begin with a review of the patient's expectations and the surgeon's plans for surgical changes in the nose. The entire chronology of the day of surgery should be reviewed with the patient in more specific detail. In addition, a discussion of the entire postoperative period and all visits to the office should take place. We find it very helpful to review with a specifically written postoperative booklet (see Appendix A and B). A review of financial commitments and insurance coverage should be a part of this visit with the appropriate office personnel. A thorough informed consent form should be presented, reviewed, and signed by both patient and surgeon. We find a tour of the day surgery unit and the operating room setting very helpful in reducing patient anxieties and enhancing patient rapport. Even more helpful is introduction to all personnel who will be present in the operating room on the day of surgery. Some familiarity with these people is extremely helpful in reducing overall anxiety. Indicated laboratory work should be obtained during this second preoperative visit; the only routine requirement is a coagulogram.

Intraoperative Management

There are many considerations needing attention with regard to the intraoperative setting and the steps during rhinoplasty surgery to minimize postoperative problems. Every effort needs to be made to make the entire procedure as smooth and unchallenging to the patient as possible. Particular attention should be paid to keeping the setting quiet, calm, and soothing. An anesthesiologist or a nurse anesthetist should be involved in patient monitoring and intraoperative care, regardless of whether general anesthesia or heavy intravenous analgesia and sedation are used.

Careful attention should be given to accomplishing topical intranasal anesthesia and infiltrative external anesthesia, regardless of whether general anesthesia or intravenous sedation and analgesia are used. Adequate topical and local anesthesia will minimize both intraoperative bleeding and postoperative edema. Topical cocaine for intranasal anesthesia and vasoconstriction is by far the best agent, but care must be taken to assure that a total of only 300 mg is used. Both regional block and infiltrative anesthesia over the entire dorsum of the nose may be accomplished with 4 mL of 1% Xylocaine with 1:100,000 epinephrine. There is no need for any greater concentration of either Xylocaine or

epinephrine; limiting the amount of anesthetic used to 4 mL will minimize both intraoperative distortion of tissues and postoperative rebound edema.

Multiple surveys have shown that the incidence of postoperative epistaxis and other complications is directly proportional to the length of time taken for the operative procedure [6]. It is therefore important for the surgeon to proceed meticulously and orderly while still taking adequate time to complete all surgery necessary. As a general rule, the less soft-tissue elevation performed, the less the postoperative edema occurs. Every attempt should be made to maintain the periosteum intact wherever possible. Septal surgery should be as complete as necessary to accomplish complete straightening of the septum prior to any suturing or packing. The mucoperichondrial leaflets should be coapted back onto the septum with absorbable suture materials, and septal splints and packing must not be depended on to secure mucoperichondrium to the septum. If turbinate surgery is performed, good hemostasis using electrocautery should be accomplished prior to completing the rest of the nasal surgery. We strongly prefer use of loose temporary packing in both nasal passages during surgery to prevent blood spillage into the posterior pharynx.

Intraoperative and postoperative antibiotics are not routinely used during standard septorhinoplasty [2, 13]. Antistaphylococcal antibiotics are necessary, however, for patients in whom the nasal packing will be left longer than a few hours, or if any type of grafting material has been used in the nose (i.e., autogenous ear cartilage, irradiated rib cartilage, or alloplastic implants). Other indications for perioperative antibiotic use are known cardiac valvular disease and in patients who have mild concurrent bout of facial acne or recent nasal folliculitis.

A single dose of steroids is always administered near termination of the rhinoplasty procedure unless medically contraindicated. The usual dose is 10 mg dexamethasone given intravenously. We have found that this approach greatly reduces postoperative swelling and discomfort [5]. Another method of preventing postoperative edema involves gentle pressure over the nasal dorsum laterally at the osteotomy site for a few minutes immediately following completion of the lateral osteotomies.

At the completion of the procedure, all incisions, with the exception of the lateral osteotomy perforation incisions, are closed using absorbable sutures. We believe that absorbable sutures may be used in the transcolumellar incision utilized during external rhinoplasty to minimize tenderness during suture removal during the postoperative period. The temporary packing is removed, and the nose and the nasal pharynx are thoroughly suctioned out. Very small anterior packs consisting of Telfa rolls impregnated with antibiotic ointment are inserted. These packs are small and are necessary to absorb ooze during the first hour postoperatively. These packs are removed within 1 to 2 hours of the completion of surgery. Any additional oozing during the first 12 to 24 hours of the postoperative period may be managed with an external nasal tip dressing. Meticulous septal suturing makes it unnecessary to use nasal packs any longer than the immediate 1- to 2-hour postoperative period.

Once suturing is completed and the packing is in place, the nasal splint is applied. A skin adhesive (Mastisol is preferred) is placed over the skin of the nasal dorsum, and double layer taping of the nose is completed with paper tape followed by a second layer of cloth tape. The first strip is placed across the

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supratip area; additional taping or padding is used to minimize supratip swelling. The tip is then suspended by a sling of tape around the upper two thirds of the tip that is draped along the lateral wall of the nose. The remainder of the dorsum is covered in the same double-layer fashion. This external adhesive taping helps to eliminate the dead space between the soft tissue of the nose and the underlying osseocartilaginous vault and to redrape the skin laterally to the facial skin. Aquaplast is a thermoplastic material that can then be placed over the tape. The Aquaplast becomes flexible when placed in hot water, molds very nicely to the taped nasal dorsum, and adheres very well to the underlying cloth tape. The material hardens and becomes opaque within approximately 1 to 2 minutes at room temperature. The Aquaplast is perforated, which helps to minimize maceration of nasal skin during the postoperative period. The dorsal splinting protects the newly shaped nose from inadvertent trauma and prevents widening of the lateral nasal walls, which may occur secondary to intranasal edema. There is no need to extend the Aquaplast dressing beyond the lateral osteotomy sites or up beyond the nasal frontal angle.

The splint and tape dressing are removed within 1 week. Once the splint is removed, the adhesive over the skin is removed using a solvent such as Detachol. Cotton-tipped applicators covered with hydrogen peroxide are used to carefully remove crusting from the nasal vestibule. The nasal cavity is examined under direct light and thoroughly suctioned to remove any mucous from the nose.

Postoperative Management

Postoperative care in the day surgery unit the *day* of surgery focuses on minimizing swelling in the nose. Nurses elevate the head of the bed 30 degrees and keep constant ice packs over the nose and periorbital area. Drip pads are changed as frequently as needed, and ambulation is begun as soon as the patient is alert enough. Despite intraoperative posterior nasal packing, hematemesis is a relatively common problem. Adequate oral hydration should be emphasized.

On *discharge* from the day surgery unit, patients are given a second copy of the postoperative care booklet because the first copy is frequently lost. The patient is discharged with ibuprofen for postoperative analgesia and with antibiotics if indicated. Routine antihistamines are not given unless the patient has had a preoperative history of allergic rhinitis.

It is mandatory that an adult friend or relative stay with the patient the *night of surgery* following discharge from the hospital. Out-of-town patients should not be allowed to leave town until the day after surgery. Patients should sleep in a semirecumbent position and continue to use ice packs on the dorsum of the nose until going to sleep. Drip pads are frequently needed until the morning after surgery, and high fluid intake is encouraged. Routine early evening phone contact from the surgeon or some member of the office staff is important.

The *first postoperative visit* to the office is usually after 1 week. The dorsal splint is removed. Occasionally, the nasal bones will migrate laterally after the splint has been removed, especially in patients with a crooked nose (even after adequate osteotomies). To prevent this movement, we instruct our patients to perform digital "nasal exercises" 10 times a day for 3 weeks after surgery. Using both index fingers, the patient is instructed to apply gentle, even pressure along the osteotomy sites for approximately 1

minute. These exercises are continued for the first postoperative month. At the time of the first postoperative visit, the nose is carefully and thoroughly cleaned, and any residual columellar sutures are removed.

Patients should be made aware that their active participation in postoperative care is as important as the surgery itself. Strenuous physical exercise is restricted for 3 weeks following surgery. Patients are advised to avoid straining, bending, lifting any heavy objects, or excessive physical activity. Contact sports, such as basketball, football, karate, and hockey, are not allowed until at least 2 months after surgery. Patients may return to work, depending on the type of physical activity involved in employment, 10 days after surgery. Direct sunlight should be avoided for at least 1 month after surgery, at which point the patient is advised to wear sun block and a covering hat to minimize sun exposure. Excess sun exposure may cause swelling of the nose and even blistering of the dorsal skin.

Glasses may be worn if absolutely needed while the cast is in place, but they should be suspended from the forehead with a single piece of tape in the midline. If trauma to the nose does occur in the immediate postoperative period, the patient is advised to contact the surgeon as soon as possible. Subsequent routine postoperative visits are at 1, 3, and 6 months. Postoperative photographs are taken during the 3 and 6 month visits.

COMPLICATIONS

Intraoperative Complications

Rhinoplasty, which is performed under local anesthesia with controlled intravenous analgesia, must be performed in a very controlled setting. Sound and conversation levels in the operating room must be kept low and nonthreatening to avoid elevating the patient's anxiety levels. Even with excellent amnesic medications, patients may focus on loud, unexpected conversation. Quiet background music and touching the patient's hands are very helpful in controlling anxiety levels. The patient airway is somewhat compromised because of loose packing present in the posterior nasal airway; therefore, an intraoral oxygen catheter supplemented by observation of the patient's airway is imperative.

Intraoperative bleeding should be minimal with use of good local and topical anesthetics. Good suction with bright headlight visualization and direct electrocautery should control any excess bleeding that does occur.

Inadvertent surgical tears in mucoperichondrial leaflets may be repaired with absorbable suture material at completion of the septal work and should present no long-term problems. Avulsions of quadrilateral cartilage, especially in the more caudal portions of the septum, should be replaced between the leaflets, sandwiched into place, and secured by absorbable suture material. Uncontrolled medial osteotomy back-fractures, rocker formations, and uneven osteotomies in the nasal frontal angle may be modified using a 2-mm percutaneous osteotome through a single puncture wound. Small puncture wounds in the nasal dorsal skin, which may occur during intranasal work and skin elevation, should be secured with tape dressing applied over the dorsum of the nose. It is very unusual for a skin puncture wound to need suture repair.

Early Postoperative Complications

Dorsal swelling, nasal skin edema, and general changes in the skin, especially over the tip of the nose, are relatively common. These problems are generally somewhat worse in association with rhinoplasty, which is performed using the external approach. Intraoperative steroids and good postoperative nasal dressings will minimize these problems; however, they are very common and should not be considered complications. Good patient reassurance is needed. Monthly subcutaneous injections of 10 mg/mL (Kenalog) in the supratip area may be begun as early as 1 month after surgery.

Ecchymosis in the perinasal and periocular areas is extremely common until approximately 10 days after surgery. Similarly, edema in the periocular area is very common and should not be considered a complication during this period. Prolonged ecchymosis in the periocular area (beyond 2 months after surgery) is much less common. If discoloration and ecchymosis persist beyond 2 months after surgery, routine application of hydroxyquinone to the involved area should resolve these complications.

Intranasal mucosal swelling for the first month after rhinoplasty surgery is a very common phenomenon, especially in patients who have history of vasomotor problems or allergic rhinitis. Return of normal autonomic control of intranasal mucosal vascularity may take as long as 6 or 12 months after rhinoplasty or septoplasty surgery. Intermittent use of newer generation antihistamines in these patients is frequently needed to control swelling.

Postoperative intranasal mucosal dryness is extremely common after rhinoplasty. It is seen more commonly in dry environments and during the winter months, when indoor relative humidity is low. Virtually all our patients are given a physiologic moisturizing spray solution, such as Ocean or Ayr, during the first postoperative visit and are encouraged to use this spray solution for at least 2 or 3 months after surgery. Patients should be advised to use the spray frequently when flying in commercial aircraft.

Postoperative *hematoma* formation is seen very rarely because of good septal suturing. Suturing is believed to more directly prevent hematoma formation than indiscriminate packing. If a hematoma is seen, it should be drained immediately, and direct septal suturing and anterior packing should be applied.

Infections after rhinoplasty surgery may occur in several forms. The most commonly seen infection is an intranasal infection involving mucosa and subcutaneous tissues

in the form of vestibulitis. These infections respond quickly to antistaphylococcal medications, but do not occur frequently enough to warrant administration of prophylactic postoperative antibiotics. The most feared postoperative infection is toxic shock syndrome. This problem has rarely been reported when nasal packing is removed before 24 hours postoperatively, and it is believed by many that avoidance of nasal packing should eliminate this complication. Infections involving the skin underneath the nasal dressing may occur, and are associated with weeping and pruritus under the dressing. At the first indication of these symptoms, the patient should be seen, the dressing should be removed, and antistaphylococcal medications should be started immediately. Toxic shock syndrome is a potentially lethal complication that is heralded by the onset of nausea, vomiting, diarrhea, and hypotension. Adequate management requires elimination of the source of infection (usually by removal of packing), aggressive intravenous fluid replacement, and intravenous administration of [3-lactamase-resistant antibiotic [8, 12].

Graft infection, rejection, and potential extrusion may be seen as early as the first week after surgery, but may also occur years after rhinoplasty surgery. If the graft is an autogenous graft, immediate administration of antibiotics and trimming of the extruded portion of the graft will almost always control the problem. If the graft is an alloplastic material, however, it will almost inevitably require removal. Antibiotics should be begun and the graft removed within 1 week. We prefer to replace the alloplastic graft immediately with an autogenous material.

Epistaxis is becoming an increasingly less common postoperative problem as a result of adequate septal suturing and minimal nasal packing [11]. Excessive bleeding is most commonly seen in the 7 to 10 day period after surgery and usually occurs from the anterior/inferior portion of the nasal mucosa along the nasal spine or from the lateral osteotomy perforation sites. If turbinate reduction surgery was performed, the more common site of bleeding is from the posterior portion of the resected inferior turbinate. Control of excessive hemorrhage involves careful examination of the nasal passages in controlled, well-lit settings. The nasal passages should be adequately suctioned and the anatomy should be evaluated before administration of topical anesthetics used to attempt localization of the bleeding site. The site, if directly visualized, may then be cauterized either with silver nitrate or needle-tip electrocautery. Light anterior packing with biodegradable hemostatic material, such as

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Oxycil or Surgicil, will enhance clot formation.

For *posterior epistaxis* for which a specific site cannot be identified anteriorly and anterior packing is unsuccessful, posterior packing is usually required for control. This packing is adequately accomplished using ointment and gauze or a balloon tampon as a semirigid posterior buttress against which an anterior packing can be placed. Posterior packing has very certain morbidity associated with it because of decreased blood oxygenation. Patients with posterior packing should be hospitalized and maintained on broad-spectrum antibiotics and supplemental oxygenation. The packs should be left in place for 3 to 5 days before attempting removal. In rare circumstances in which posterior packing is unsuccessful in controlling the bleeding, transantral ligation of the internal maxillary artery with concomitant ligation of the anterior ethmoid arteries must be performed [10].

Mucoperichondrial defects may occur as a result of disruption during surgery or maceration from prolonged packing. As a general rule, if the mucoperichondrial trauma is only on one side, blood supply to the cartilage will be maintained and disruption will not result in a perforation. If the mucosal disruption on the septum is matched by a mucosal disruption on the lateral wall of the nose from turbinate surgery or prolonged packing, a synechial band will occur between the lateral wall of the nose and the septum. These synechial bands should be released within 1 to 2 months after surgery. This release can be performed under local anesthesia in the office. The resultant raw surfaces should be covered by a light roll of Gelfilm or some temporary covering to prevent reattachment. If the mucoperichondrial disruption is on both sides of the septum, a perforation will likely occur. Postoperative perforations should be treated with abundant intranasal moisturization, as discussed. A perforation should not be repaired until at least 6 months after surgery.

Flowers and Anderson [3] demonstrated the proximity of the lacrimal apparatus to the lateral osteotomy sites during rhinoplasty by studying cadaver heads, and they believe that lacrimal sac damage is not common during rhinoplasty surgery. These authors concluded that if damage did occur to the lacrimal system, it was of short duration and without significant sequela. Another study involving bilateral dacryocystorhinostomy immediately following lateral osteotomies in 15 patients revealed no evidence of lacrimal injury in 30 consecutive examinations [19].

Intracranial complications from trauma to the nasal roof, although quite devastating, are extremely rare. However, complaints of an altered sense of smell and even total

anosmia following rhinoplasty are more common. The olfactory area and the cribriform plate are superior to the operative field and are rarely directly injured; however, other factors, such as mucosal edema, nasal obstruction from retained clots, and drug reactions, can cause transient posterior anosmia. In a review of 200 rhinoplasty patients, Champion [1] noted that 10% complained of temporary anosmia for 6 to 18 months after surgery, and one patient had permanent anosmia.

The most potentially disruptive postoperative complication is *depressive rejection* of the image change resulting from the rhinoplasty. This problem is usually avoided by adequate discussion of patient expectations and surgeon perceptions of the patient image problem. Some patients, however, most frequently women, are threatened by the image transformation they see in themselves. This problem inevitably occurs as soon as the dressings are removed, and the patient is not reassured by friends and the surgeon that overall improvement is successful. In fact, these patients often attest that their overall improvement is quite good, but that they are unwilling or unable to accept the change in their personal image. These patients require intensive assistance from a qualified psychotherapist, hopefully one with which the patient had good preoperative contact. Constant interaction and open interchange of thoughts between the surgeon, the patient, and the therapist are imperative in treating this problem.

Late Postoperative Complications

Dorsal scarring of the bony dorsum and the periosteum is a relatively common postoperative problem. This scarring usually occurs at the caudal end of the nasal bones near the midline. It is believed that this scarring can be minimized by avoiding excess periosteal trauma, and particularly by not leaving bone or cartilage remnants over the dorsum of the nose or other irregularities along the entire dorsum of the bony and cartilaginous junction. These irregularities or scarring accumulations may be treated by direct injection of 10 mg/mL Kenalog mixtures. Care and caution must be taken while administering this injection in patients with very thin skin. Sometimes the only available resolution to this problem is intravestibular surgical resection of the scarring. This approach should only be made at least 6 months after surgery, and extremely conservative surgical judgment is necessary.

The most commonly reported postoperative result of rhinoplasty surgery is the polybeak deformity. Polybeak

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deformities are commonly divided into the “true polybeak” or the “pseudo-polybeak.” True polybeak results from the surgical error of leaving the caudal dorsal septum high. This error usually results from poor or no visualization of the caudal angle of the septum. This type of polybeak is easily remedied by resection of the caudal-most portion of the dorsal septum, which causes the polybeak deformity. Perhaps more common than true polybeak, however, is “pseudo-polybeak.” This deformity results from scar tissue in the supratip dorsal area and should be vigorously treated with intralesional Kenalog injections. This injection may be administered as early as 1 month after surgery and should be continued at monthly intervals. If the deformity does not resolve by 1 year after surgery, it should be resected using the same approach as for treatment of the true polybeak.

Recurvature and *retwisting* of the nasal dorsum and the suprastructure in twisted noses are relatively common complications and should be anticipated after rhinoplasty in patients with twisted noses. Recurvature is most commonly associated with inadequate straightening of the septum. The only treatment for this deformity is revision rhinoplasty or septoplasty with emphasis on more vigorous and accurate septal straightening. In the rare instance where this problem is secondary to retwisting of the dorsum alone, repeat osteotomies, adequate splinting, and prolonged nasal exercises provide proper treatment.

External skin incisional scars are frequently reported as problems after external rhinoplasties. The columellar incision used for external rhinoplasty, however, is rarely if ever a problem. Any possible scar in this area is easily resolved by dermabrasion. In actual practice, the most commonly seen incisional scar after rhinoplasty surgery is the alar facial groove scar resulting from poorly designed nostril narrowing incisions. These scars, usually in sebaceous skin areas, are very easily treated by dermabrasion alone and rarely if ever require direct surgical revision.

Nasal airway obstruction during the postoperative period almost invariably resolves over time. It may require 6 to 12 months to resolve and does require constant patient reassurance. The majority of these problems are secondary to mucosal dryness and swelling, but some may persist because of contractural scarring in the area of the vestibular incision. Every attempt must be made to support the patient and to avoid surgical intervention [6].

Patient dissatisfaction with the surgical result is occasionally seen, even when the procedure is technically well

done and the surgeon and all other observers are pleased with the result. This problem is usually the result of an inadequately thorough preoperative evaluation of the patient and an inability to fully understand the patient's goals and expectations. It is the surgeon's responsibility to focus on those expectations and perspectives and to determine which patients are not good candidates for cosmetic surgical procedures. Photographic documentation is mandatory for good patient rapport and for potential legal documentation when needed. Fortunately, prolonged patient dissatisfaction with rhinoplasty results is a rare postoperative problem.

By far the more common problem with the prolonged result is *surgeon dissatisfaction*. Rhinoplasty surgeons by definition are demanding perfectionists. Moreover, the surgeon has a more well defined perspective of “ideal” facial image. The surgeon must constantly fight against this distorted expectation of the ideal and provide reassurance to the patient, who is almost inevitably more satisfied with their postoperative results than the surgeon. The only possible long-term problem associated with surgeon dissatisfaction is transferring this feeling of dissatisfaction to the patient.

REVISIONS

The timing of revisional postoperative rhinoplasty surgery is essential. Revisional surgery should never be undertaken before 12 months after the original rhinoplasty surgery. Delaying this surgery often requires constant support and reassurance of the patient. Most early problems that seem to require surgical revision will resolve by 12 months after the primary surgery. In addition, surgeons are unable to perform precise revision rhinoplasty until at least 12 months have elapsed after the original surgery. Specific revisions of rhinoplasty surgery have already been discussed, including treatment of dorsal and polybeak deformities. Twisted dorsum or twisted septums require specific revisional surgery for resolution.

A *distorted tip* as a result of rhinoplasty surgery should be corrected using an external rhinoplasty [4]. Complete, undistorted exposure of the nasal tip is required for surgical revision of the nasal tip. The only approach that can accomplish this precise correction is the external rhinoplasty. Tip revisional work will often need to be covered by a tip graft for structural stability, tip symmetry, and overall stability [7].

The problem of valve collapse in nasal airway obstruction is not a simple one to treat. Thorough preoperative evalu-

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ation must be combined with intraoperative observation to provide the answer for correction. If overly vigorous dorsal resection has resulted in upper lateral cartilage collapse against the septum, spreader grafts between the septum and the upper lateral cartilages along the dorsum will provide an adequate solution to the problem. If, however, the problem is contracture in the vestibular skin incision or loss of the caudal margin of the upper lateral cartilages, a composite graft to provide cartilage support in the area of the caudal upper lateral cartilages and additional vestibular skin lining are mandatory for resolution of the problem.

Solid postoperative management of rhinoplasty patients requires excellent patient care during the preoperative and operative periods. Planned and expective postoperative care will result in less prolonged postoperative problems and eventual need for revisional rhinoplasty surgery. Because of the current sophisticated level of rhinoplasty surgery, the need for postoperative revisional surgery is diminishing and should decrease even further in the years to come. As in all aspects of rhinoplasty surgery, thorough and adequate evaluation of the patient, preparation of the patient for surgery, and reasoned, conservative surgery will prevent many postoperative problems.

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