Editor’s note: My thanks to the moderator, James W. Fox IV, MD (board-certified plastic surgeon and ASAPS member, Philadelphia, PA), and to panelists Rollin K. Daniel, MD (board-certified plastic surgeon and ASAPS member, Newport Beach, CA); Stephen W. Perkins, MD (board-certified otolaryngologist, Indianapolis, IN); and Nicolas Tabbal, MD (board-certified plastic surgeon and ASAPS member, New York, NY), for sharing their opinions and clinical experience.

Dr. Fox: Rhinoplasty is the most difficult operation in aesthetic plastic surgery, and I think we would all agree that the most difficult part of the procedure involves the tip of the nose, our subject for this panel.

The first patient is a 16-year-old teenager with the familiar complaint, “I hate my nose, it is too big and blobby” (Figure 1). Doctor Tabbal, what would you recommend to this young woman with thick skin?

Dr. Tabbal: What strikes me is the disproportion in her nasal balance. The nasal lobule is significantly more prominent than the upper half of the nose, which is somewhat narrow. The nasal tip is slightly deviated to the left and is quite heavy looking with effaced lower lateral cartilages. I suspect that the tip volume is primarily related to the quality of the soft tissues rather than the volume or shape of the alar cartilages.

In order to achieve the desired tip refinement in this patient, I would rely on a reduction of the volume of the alar cartilages, combined with centralization of the tip and enhancement of the tip defining points through use of the open rhinoplasty approach and tip suture techniques. I see no need for cartilage grafting in this case because tip projection appears to be quite adequate.

Dr. Fox: Dr. Perkins, does the width of this patient’s nose at the base need to be addressed with regard to getting the tip into balance?

Dr. Perkins: Looking at her frontal view, she has fairly wide-set eyes. Her inner canthi are wide enough to accommodate the width of her alar base, which is one of the parameters to examine. But when you look at the nasal alar base in reference to the mid and upper portion of her nasal pyramid, it is out of balance and too wide. That is even more important when one looks at her profile and realizes that some tip deprojection would be advisable. She has a relatively short upper lip that would emphasize overprojection of the nasal tip, so when I consider tip deprojection, I have to also consider that the alar base flaring would be accentuated, and I would need to do an alar base narrowing procedure.

Dr. Fox: Dr. Tabbal, did you say that you would address her nasal tip with intradomal and interdomal suturing only?

Dr. Tabbal: That is correct.

Dr. Fox: Do you think that the footplates of her medial crura in profile turn up a bit, or is that a prominent anterior nasal spine? How would you manage what appears to be a “step
off” point? In the profile it appears as if the medial crura disappear.

Dr. Tabbal: The apparent retrusion of the base of the columella is partially related to the overhanging of the alar rims laterally. An alar base resection would be helpful in this regard. It could also possibly be overhanging of the columella, which is partially hiding the base of the medial crura. I think it would be a good situation for a nasal base reduction, which probably would help a bit with the redundancy in the overhanging element.

Dr. Fox: It appears that she is a little bit thick along the cephalic edge of the alar cartilage. If, in fact, you did a cephalic trim and lost any of that scroll interface, are you going to see a greater plunging of the tip complex in profile, Dr. Perkins?

Dr. Perkins: Yes, if you interrupt that connection between the upper and lower lateral cartilages, you will get some loss of support and possibly some loss of projection.

In addition, a complete transfixion incision is going to decrease tip support, but a suturing technique to the domal cartilage recreates tip support and would be ideal for her. When palpating her nasal cartilages one might find that they are soft, and by doing single dome and transdomal sutures you not only increase the strength and support of those cartilages, but you can actually recreate some degree of tip projection.

Dr. Fox: Can you describe how you perform interdomal suturing by means of an endonasal technique?

Dr. Perkins: Absolutely. I do it by passing the suture. I use a 5-0 clear Prolene (Ethicon Inc., Somerville, NJ) as the transdomal or interdomal suture. I pass the needle back and forth subcutaneously and then bring the 2 domes together. This is done after I have treated each dome individually.

Dr. Fox: So you would use an endonasal technique on this young woman?

Dr. Perkins: Yes. The only thing that would possibly change my opinion is if I palpated her natural cartilages and they were so extremely soft that I felt I needed to perform a tip graft. The only graft that I would do would be a strut between the media crura and possibly an additional graft plumping that retracted angle.

Dr. Fox: How about you, Dr.

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A suturing technique to the domal cartilages recreates tip support...by doing single dome and transdomal sutures you...increase the strength and support of those cartilages.

—Stephen W. Perkins, MD
Dr. Tabbal, would you treat this patient with the closed technique?

**Dr. Tabbal:** I would probably opt for an open approach. Although I agree with Dr. Perkins that the domes can be united through an endonasal approach, I find the outcome to be far more predictable though the open approach because of the benefit of direct visualization. The risk of creating an asymmetry is greatly reduced and the domal position is far better controlled.

**Dr. Fox:** And again, did you say that you do not think you would need a graft for this patient?

**Dr. Tabbal:** I think a reduction in tip volume with an enhancement and centralization of the domes would provide the desired improvement without the need for a graft.

**Dr. Fox:** Dr. Perkins, if you did use a strut graft and a plumping graft, could you describe the shape, surgical approach, placement, and attachment of these grafts?

**Dr. Perkins:** The first graft would be placed endonasally, but through the lateral side wall of the columella, literally incising and going through and behind the medial crura, dissecting anterior to the nasal spine and up between the medial crura. The shape of the graft is semitriangular, but it is really a small rectangular strut, two-thirds of the length of the actual columella. It slips in and pops upward as you put it in and supports the tip complex cephalically.

If I were to use a plumping graft to fill the nasolabial angle, I would first put the plumping graft in below that strut through the same incision.

**Dr. Fox:** Can you do an isolated tip rhinoplasty on this young lady or would you accompany that with any bony or cartilaginous resection? In what percentage of cases would you say that you are able to do just a tip rhinoplasty?

**Dr. Tabbal:** This patient needs some lowering of her nasal dorsum. In fact, I seldom perform an isolated tip procedure because surgical modifications of the alar cartilages will generally affect tip projection adversely and tend to mandate some changes in dorsal height.

**Dr. Fox:** Do any of the panelists handle patients with thick skin differently from those with thinner more delicate skin, after surgery, in terms of splinting techniques?

**Dr. Perkins:** I do not do anything differently. I leave the splint on for 1 week. I custom make each splint and dressing with a pliable metal splint and a ¼-inch Micropore tape (VWR Int., West Chester, PA), trimming it for each patient after the 1-week postoperative visit. I see the patient 3 to 4 weeks later. At that time, if I determine that the sponginess in the supra tip area is more than I like, I will not hesitate to inject that supraalar space (not intradermal) with Kenalog, 10 mg per mL, to help reduce the inflammation and potential scar tissue formation.

**Dr. Fox:** Dr. Tabbal, do you keep your patients dressed for a week?

**Dr. Tabbal:** I agree with Dr. Perkins, but I use Kenalog injections quite infrequently and only in the supratip area when it appears that the soft tissues are unusually edematous.

**Dr. Fox:** Dr. Daniel, do you have anything to add with regard to care of this patient’s nasal tip?

**Dr. Daniel:** Many surgeons feel that open tip suturing or tip grafts are mutually exclusive. Yet, the reality is that you can do extensive suturing and then add a tip graft if necessary; essentially, it is an “add-on” graft.

**Dr. Fox:** The second patient is a 23-year-old woman who had her first rhinoplasty at age 17 and her second at age 21 (Figure 2). She is now complaining about an unattractive tip and also has problems with nasal deviation. Keep in mind that her first 2 rhinoplasties were performed open. Dr. Perkins, how would you approach this patient?

**Dr. Perkins:** Obviously some things remain underdone. Some of the problems may have occurred with surgical intervention. I do not know what her preoperative deviation was, but now she has a significant deviation of the distal two-thirds of the nose to the left, including a slight caudal deflection of the septum, and some scarring in that area. The alar height on the left side seems short. The frontal view demonstrates nostril asymmetry. She is still very broad interdomally. It makes me wonder what was done to the tip after 2 rhinoplasties; were those tip cartilages brought together? In the base view she does not look too broad, but there is a bit of a pinch of nasal width on the left side. There are definitely some problems in the

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Panel Discussion

**Nasal Tip Grafting**

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midnasal vault. But our discussion is confined to the tip. The three-quarter view shows an unnatural flat look to the columella. Beyond that, the tip is somewhat amorphous, with a bulbous contour.

I would definitely approach this through an external inverted “V” columellar incision so I could see what was done before. I am fairly certain that the discrepancies in the length of the alar cartilages will have to be addressed by lengthening the left side, possibly shortening the right side, and straightening that deviation to the left. I would look at the septum and see if that contributes to the lower third of the nose. But in this case, I would expect that a tip graft

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Figure 2. This 23-year-old woman had her first rhinoplasty when she was 17 and her second when she was 21. They were both performed with the open technique. She is now complaining about an unattractive tip and is having problems with deviation.

In fact, I seldom perform an isolated tip procedure because surgical modifications of the alar cartilages will generally affect tip projection adversely and tend to mandate some changes in dorsal height.

—Nicolas Tabbal, MD
may assist in gaining the symmetry with a left alar strut graft.

**Dr. Fox:** Dr. Tabbal, might you consider a septal extension graft and a rehanging of all the alar components?

**Dr. Tabbal:** I do not know what the septum is like; it is conceivable that after 2 previous procedures it may not be available. She obviously has a residual septal deviation that is quite apparent in the middle vault area. The caudal border of the right nasal bone is prominent next to the adjacent middle vault collapse. This is an ideal situation for a right spreader graft, because septal procedures are unlikely to perfectly align the nasal dorsum.

The nasal tip lacks definition. But because this patient was operated twice through the open approach, it is very possible that her tip problems are a reflection of her soft tissues rather than some underlying structural issues. Manual palpation of the tip would be very helpful in assessing the nature of these problems. However, I am not inclined to deal aggressively with this tip primarily because of the condition of the soft tissues.

**Dr. Fox:** Let us say that, in this patient, you have no septum that you can harvest. As a result of previous surgeries, you have cephalic domal excisions, interdomal suture repair, with onlay grafts stuck on top. With that bit of information, Dr. Perkins, what would be your source of graft and where would you place it?

**Dr. Perkins:** Well, the source of the graft in that situation would be conchal cartilage. I would harvest ear cartilage and I would use a posterior approach. I would take the old grafts out and reconstruct the alar complex with a tip graft, strut graft, and bilateral alar grafts, if needed. As Dr. Tabbal noted, the deviation still has to be addressed in the middle vault. One might have to use both ears because a spreader graft is likely to be necessary to help straighten the nose. By releasing the scar contracture and replacing the structural integrity to the alar cartilages, you can reconstruct this nasal tip with ear cartilage without going to rib (costal) cartilage.

**Dr. Fox:** Dr. Tabbal, if you use auricular cartilage, do you double it up to increase the strength to match that of the septal cartilage? Or would you simply use rib costal cartilage instead?

**Dr. Tabbal:** I very seldom use costal cartilage. I ESTHETIC SURGERY JOURNAL ~ MARCH/APRIL 2002

Many surgeons feel that open tip suturing or tip grafts are mutually exclusive. Yet the reality is that you can do extensive suturing and then add a tip graft if necessary; essentially, it is an “add-on” graft.

—Rollin K. Daniel, MD
cartilage. If I am using the concha for a spreader graft or a columellar strut, 1 or 2 layers may be needed, depending on the thickness of the cartilage.

**Dr. Fox:** Dr. Daniel, what would you do for this patient?

**Dr. Daniel:** The deviation appears really quite marked, and so I would do a caudal septal relocation, totally mobilizing the septum off the anterior nasal spine and relocating it left to right. I believe this might be successful in correcting the deviation. I do not anticipate that I would need any kind of spreader grafts. If you look at the alar view, it is primarily a caudal septal deviation. For the tip correction, I would take concha and use a posterior approach, as Dr. Perkins has suggested. I would fold it, suture it together, and insert it in the columella. I would use a half-length conchal tip graft on top of everything. I imagine that when the nose is opened, the strut would provide the necessary support.

**Dr. Fox:** Dr. Daniel, you had said in the worm’s eye view, it is just caudal deflection. It would appear in the down view that it is the whole septum.

**Dr. Daniel:** Everybody has been talking about the middle third being collapsed, but the reality may be just a classic kind of total septal deviation.

**Dr. Fox:** The third patient complains, “I’ve always hated my nose, ever since I had it done when I was 16” (Figure 3). Now, at age 55, she is still saying that she hates her short nose. Dr. Tabbal, what would you do, keeping in mind that this is a secondary case?

**Dr. Tabbal:** Judging from these photographs, she has a significant degree of thickening of the dorsal skin in the supratip area. The bony dorsum seems to have been aggressively lowered. The tip is quite blunted and lacks definition. This is a typical case of supratip swelling caused by 3 factors: thick supratip skin, low dorsum, and lack of tip projection. One should not be tempted here to resect any soft tissues. Rather, she needs an increase in dorsal height with a cartilage graft, along with tip grafting. Several superimposed tip grafts may be needed to provide the necessary tip definition.

**Dr. Fox:** Dr. Perkins, do you think Dr. Tabbal’s double-thickness Sheen graft is going to give that blunted profile nose enough projection, and do you think that the septum must be addressed?

**Dr. Perkins:** The tip is actually 2 or 3 mm below the caudal septum. There is some resection of the caudal septal angle that could be performed in the profile to assist the restructuring. But clearly, a shield graft with projection—and it may need to be doubled so it does not fold or bend upward—is necessary. I agree with augmentation of the dorsal height. This patient exhibits the classic over-resection of the bony dorsum, under-resection of the cartilaginous septum, and loss of tip support, probably resulting from excess cartilage removal. With this type of problem, you frequently see, in the frontal view, an inverted “V” indicating dislocation or inward contraction of the upper lateral cartilages.

Onlay grafting, which you would use to augment the dorsal height, will probably camouflage this problem and add enough cartilage. One could consider spreader grafts, as well. For the tip, I would use at least a single shield-shaped graft with a blocking graft to keep it from rotating upward.

**Dr. Fox:** Dr. Daniel?

**Dr. Daniel:** I see it differently. Whether or not the dorsum needs augmentation may depend, to some extent, on the patient’s overall body type: if she is quite petite, then the dorsum may be okay as it is. Somebody taller than 5’6” or 5’7” needs a strong bridge; you do not want people to be able to look up your nose. However, at 5’2” and under it is probably okay to be a little more open. If the patient had her septum you could just put in an open structure tip graft. You could also perform osteotomies and put in some reverse type spreader grafts to take care of that middle vault; that is, to get the maximum width right under the keystone area.

**Dr. Fox:** In essence then, instead of an onlay dorsal graft, you would use a little spreader graft on either side?

**Dr. Daniel:** Yes, a spreader graft, about 3-mm wide at the bony cartilaginous junction.

**Dr. Perkins:** And you have not had any problem with those becoming palpable rather than putting an entire unigraft down along the dorsum?

**Dr. Daniel:** They are flush with the septum, not above the septum. I do a lot of criss-cross suturing on those
spreader grafts so they do not overlap and so they cannot ride up.

**Dr. Fox:** If you took down her caudal dorsum about 2.5 mm, would that relieve the appearance of the significant open angle in profile?

**Dr. Daniel:** If you were to ask someone looking at that lateral view to point out her tip, a lot of people would point to what we consider to be the supra tip. So you may move her actual tip point 6 or 7 mm inferior by putting that graft in. You are looking at a nasolabial or a tip angle of 110° or 115°, and just from the infralobular fullness from the tip graft, that angle should shrink down to 105° or another acceptable number.

**Dr. Fox:** In terms of balance and proportion, would you have mentioned anything to her about her chin?

**Dr. Daniel:** You bet.

**Dr. Tabbal:** It is really impossible, looking at the profile photograph, to tell whether this patient has a supratip problem that is caused by a high septal angle, which was inadequately lowered, or by thickened soft tissues after excessive dorsal septal resection. Only through manual palpation of nasal dorsum can one distinguish between these two vastly different entities.

**Dr. Fox:** And would you also concur that in most patients with a similar profile, it would, in fact, be a supratip soft tissue deformity rather than excess septum?

**Dr. Tabbal:** Right. That would be a more common scenario and this is what I would expect.

**Dr. Fox:** The fourth patient is a 38-year-old woman with a history of nasal trauma (Figure 4). When you look into the nostrils the crushed septum projects into the left airway. Her nasal tip is broad and boxy. Dr. Tabbal, what would you do about this tip?

**Dr. Tabbal:** This patient has prominently visible large alar cartilages through what appears to be thin nasal tissues. There is significant bifidity of the tip with a minor drift to the right. The large volume of these cartilages accentuates a cephalic malpositioning of the lateral crura. The deformity is certainly accentuated by the bulkiness of the lateral cartilages. It is going to be quite a challenge to soften this tip and get rid of these very obvious strong features in her alar cartilages.

**Dr. Fox:** How might you might try to soften the tip, and get rid of that bifidity?

**Dr. Tabbal:** I think this is an ideal tip for the open technique, which will enable us to reduce the volume of these cartilages, unify the domes, and eliminate the bifidity. The biggest challenge will be in dealing with this malpositioning element of the lateral crura. Considering the thinness of the skin and the curvature of the lateral crura, it is quite unlikely that we will get rid of this problem entirely by lateral crural reduction.

I would consider using some alar struts in addition to intercrural and intradomal sutures so as to restore continuity to the alar rim. I would place an extension graft from the lateral crus area toward the piriform aperture.

**Dr. Fox:** Are you referring to the alar extender graft that Jack Gunter describes?

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**Figure 4.** This 38-year-old woman has a history of nasal trauma and a broad, boxy nasal tip.
Dr. Tabbal: Yes.

Dr. Perkins: This technique really does work well if you make the pocket for the alar strut graft on the vestibular side of the alar cartilage, extending it out laterally and parallel with the alar rim. By placing the strut graft in the pocket between the vestibular lining and the alar cartilage, it literally straightens out that lateral crus and helps the “parentheses” appearance of the lateral alae while camouflaging the strut. The key point is in the position of that alar strut. I totally agree that you need to modify the domal cartilages with intradomal or single dome suture techniques as well as transdopal suture techniques and probably an infra tip lobular graft that fills in that bifidity that may not have been corrected by the transdopal suture alone. Another interesting suture that helps this lateral parentheses orientation is a spanning suture. You can place 1 or 2 cephalically positioned sutures, bringing the ala together without resection.

Dr. Fox: Please describe the width and length of the alar strut.

Dr. Perkins: It needs to be 4 to 6 mm wide; it is not narrow, not like a strut you put between the domes. It is a flat graft about 2 to 3 mm of thickness or septal cartilage thickness.

Dr. Tabbal: Also remember, the strut has to be long enough to have a mechanical advantage. If it is too short, then it is not going to bridge that gap that is in the lateral border of the lateral crus and the piriform aperture.

Dr. Fox: Laterally, does it have to sit on the piriform aperture?

Dr. Tabbal: No, I do not think so. I think it has to go far enough into the soft tissues to be buried there and act as a bridge, but I do not think it has to necessarily sit on the piriform aperture. Dr. Perkins also mentioned spanning sutures, and I think that is a very good idea. If one were to use spanning sutures, the struts could act as a support mechanism for the lateral crus in order to reduce its curvature.

Dr. Fox: Dr. Tabbal, what suture do you use?

Dr. Tabbal: I generally use PDS (Ethicon, Somerville, NJ). I used to use nonabsorbable sutures, especially clear nylon, but I think PDS works as well and does not have the liability of being a foreign body forever in the tip. I think it stays there long enough for scar tissue to form.

Dr. Daniel: Let us assume that part of the downward arching is that she does not have any caudal septal support. What may be needed is almost a total septoplasty. You could take out 80% of the septum and then put in a new L-shaped strut to hold up the septum a little better. Then, a columella strut would give her more support to get the columella down a bit.

Dr. Fox: And how would you manage the bifidity?

Dr. Daniel: One of the easiest ways to deal with bifidity is just to take whatever excised alar you have and use it like a little “concealer graft” and hide everything.

Dr. Fox: Thank you, panel, for your insightful expertise.

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