Chapter 19. Increasing Tip Projection

- *Indications*: Patients who lack nasal tip projection may be candidates for techniques that increase tip projection via the placement of sutures or grafts into the nasal tip structures (Figure 19-1). It should be noted that inadequate tip projection cannot be improved simply by reducing the dorsum. A true lateral photograph will better elucidate the need to increase tip projection.
- *Markings*: No specific skin markings need to be made preoperatively. However, a well-thought-out plan for surgery should be created including a tiered approach to achieve the desired result.
- *Approach*: The nasal tip may be approached via an endonasal or open nasal approach.
  - With the endonasal approach, bilateral intercartilaginous and infracartilaginous incisions are performed to allow the lower lateral cartilages to be freed from the skin of the overlying nasal tip. As two bipedicle flaps, they are then reflected outside the envelope of the nasal tip skin to be better visualized and manipulated. Sutures may be placed within each lower lateral cartilage or passed from one lower lateral cartilage to the other.
  - With the open nasal approach, a standard incision is made across the columella, extended up either side, and continued caudal to the inferior margins of the lower lateral cartilages. The nasal tip is dissected out as previously described.

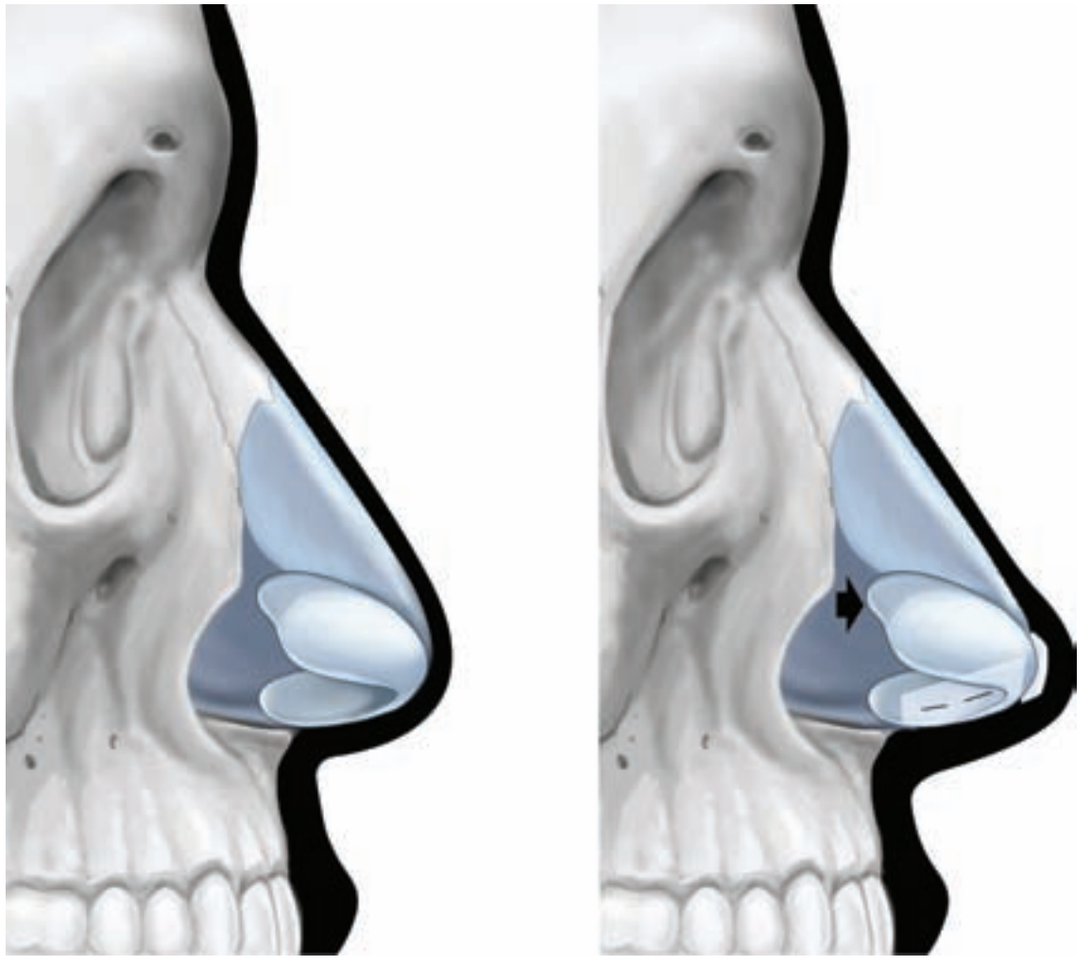

Figure 19-1. Underprojected nasal tip and its subsequent correction.

- *Techniques*: A graduated method of achieving increased tip projection is recommended and progresses from sutures to struts and grafts.[1, 2]
  - *Tip sutures*: The simplest means of increasing tip projection is removal of any intervening interdomal tissue and suturing the middle crura to one another with medial crural sutures. Further projection can be achieved with interdomal or intradomal sutures. The lower lateral cartilage complex can also be elevated and sutured to either the septum or an anterior septal extension graft.
  - *Columellar strut*: If greater projection is desired, a cartilage strut may be placed into a pocket between the medial crura of the lower lateral cartilages to provide a supporting structure onto which the lower lateral cartilages may be reattached. An appropriate-sized pocket at the base of the columella is created to seat the cartilage graft, which is situated between the lateral footplates. The graft can be temporarily held in place with two 1½-in 25-gauge needles passed horizontally from lateral crus to graft to the opposite lateral crus (Figure 19-2). They are then sutured with 4-0 clear nylon or PDS sutures passed through all three structures and the knots buried between the graft and the lateral crus on one side of the columella. Two to three sutures should be used to prevent unwanted rotation of either the superior or inferior extent of the graft.
  - *Tip grafts*: To even further increase projection, an onlay graft can be sutured over the tip. If an endonasal approach is chosen, the graft may be placed through a marginal incision caudal to the inferior rim of the medial crura. Via an open approach, the graft should be sutured into place to minimize postoperative malposition. The graft material may be taken from any number of sources, including nasal septum, rib cage, or conchal bowl. It is shaped to the surgeon's wishes. Often, a pentagonal "shield" is created that sits in the midline just caudal to the true nasal tip (Figure 19-3). A more superiorly placed graft may also be used. For stiffer cartilage, the graft may be morcellized to soften it. The edges should also be beveled to minimize visibility beneath the skin. Simple sutures are placed at the corners of the graft to the underlying tip framework. Onlay grafts may be added to suturing techniques or columellar struts and several grafts may be placed overlapping one another or juxtaposed to one another to achieve the optimal tip projection and definition.
- *Postoperative management*: The nose is closed in the standard fashion with care taken not to disrupt the structure of the nasal tip. A dressing consisting of gradually longer Steri-strips placed across the dorsum from the radix to the supratip break and a single long Steri-strip placed down one sidewall, across the columella, and back up the other sidewall suffices as a dressing to hold the nasal tip in place. If a splint is desired in concert with the tapes, it may be custom contoured and added on top.
- *Pitfalls*:
  - If a columellar strut is placed to the level of the anterior nasal spine, it may remain loose and create a clicking sensation as it moves across the anterior nasal spine. This can be avoided by using a floating strut that stops short of the spine or by securing the graft against the spine.
  - The skin in an open approach should be temporarily sutured while tip projection is assessed. If the tip is assessed with the skin pulled over the cartilage, but not completely closed, the surgeon will be disappointed by the loss of projection that occurs with complete skin closure.
- *Tips*:
  - Exposure of the lower lateral cartilages may be achieved via either an endonasal or open nasal approach. However, successful modification of the complex nasal tip may be better achieved via the open approach.
  - Avoiding violation of the underlying nasal mucosa when placing intradomal sutures within the middle crura may be difficult. Sutures may be more easily placed by flattening the arc of the middle crura with a finger before placing the suture.
  - To minimize displacement of a columellar strut, the pocket for the strut should not extend down to the anterior nasal spine unless a large amount of tip projection is required. In these cases, an intraoral buccal mucosal approach gives access to secure the base of the graft to the anterior nasal spine.
  - It is useful to save the fascial tissue removed from the tip cartilages. It can be useful to cover tip grafts and reduce the likelihood of graft visibility.

REFERENCES

1. Rohrich RJ, Muzaffar AR. Primary rhinoplasty. In: Achauer BM, Eriksson E, Vander Kolk C, et al., eds. *Plastic Surgery: Indications, Operations, and Outcomes*. Volume 5. St. Louis, MO: Mosby; 2000:2631–2672.
2. Tebbets JB. Shaping and positioning of the nasal tip without surgical disruption: A systematic approach. *Plast Reconstr Surg*. 1994;94(1):61–77.

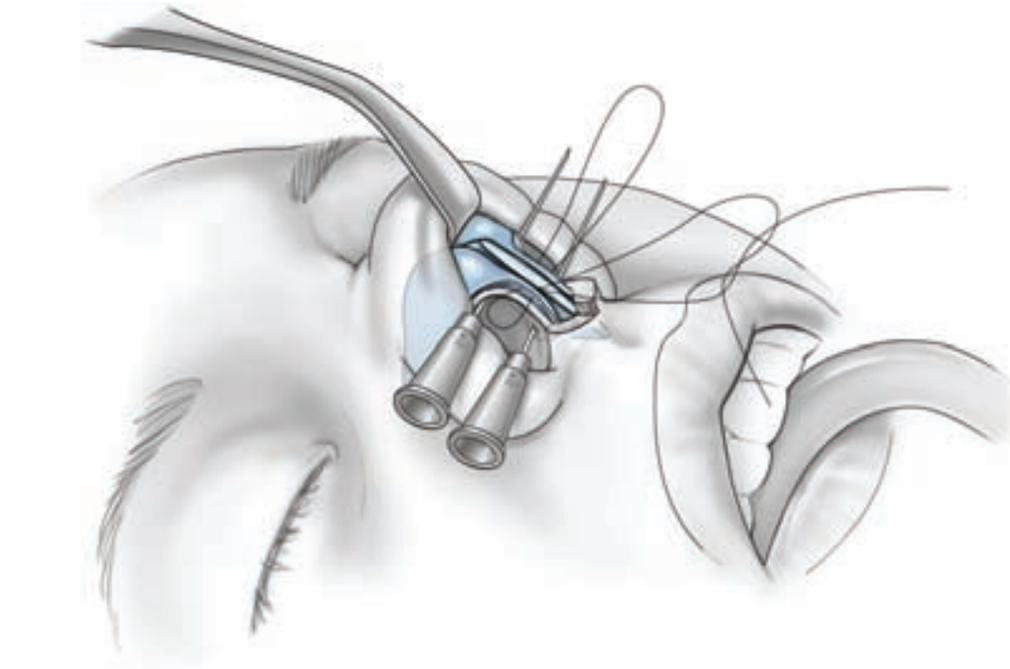

Figure 19-2. Temporary fixation of a columella strut with 35 gauge needles while sutures are placed.

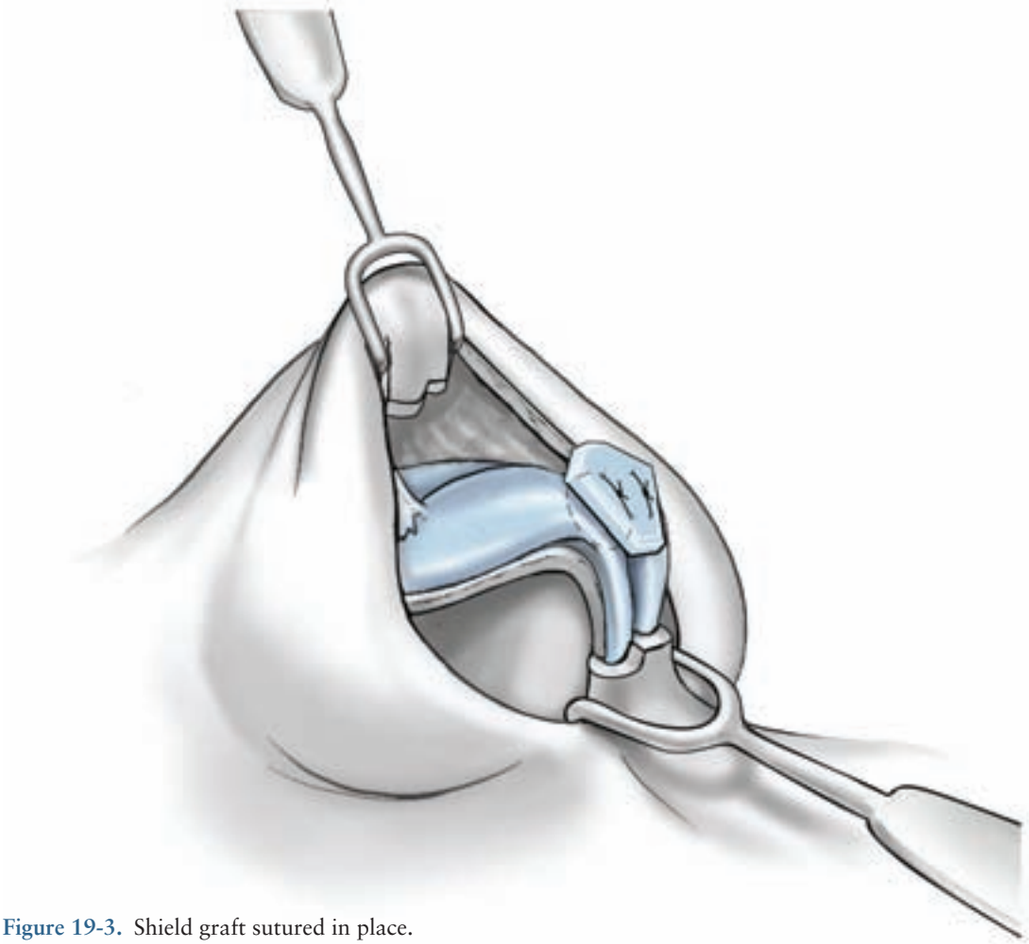

Figure 19-3. Shield graft sutured in place.