

Suture Algorithm for the Broad or Bulbous Nasal Tip

by Ronald P. Gruber, M.D., and Gary D. Friedman, M.D.

Discussion by Rod J. Rohrich, M.D., and Jeffrey E. Janis, M.D.

The bulbous nasal tip and its cousin, the boxy tip, have long posed unique challenges for rhinoplasty surgeons. Dr. Gruber, a recognized expert in the field of rhinoplasty, has described his experience with the bulbous tip and has formulated an algorithm for management of this problem that is based on his experience. We welcome these insights, which further define the management of the bulbous nasal tip.

The bulbous nasal tip, like the boxy tip, is the outward result of underlying abnormalities in the angle of divergence and the domal width.¹ Whereas the boxy tip has a wider, squarer appearance, the bulbous tip is more rounded and poorly defined. Most of the differences are attributable to the underlying cartilaginous framework, specifically the lower lateral cartilages.² Skin thickness is also a factor, however, with a boxy appearance being more common among thinner-skinned patients.³

At the University of Texas Southwestern Medical Center, we have generated a management algorithm to address the boxy tip (Fig. 1). The algorithm involves preoperative assessment of the patient, use of an open rhinoplasty approach, intraoperative diagnostic confirmation of the underlying cartilaginous abnormality, and operative treatment techniques. Cephalic trimming serves as the first step for all branches of the algorithm. The remainder of the algorithm relies on the use of suture techniques, specifically, interdomal and transdomal tip sutures to mold the lower lateral cartilages, to achieve an optimal aesthetic result.

The authors have now added an algorithm to

address the bulbous tip. They use cephalic trimming as an initial step, and they emphasize the importance of carefully performing this step, leaving a 5- to 6-mm strip. Overresection of the lower lateral cartilages at this point would jeopardize any further attempts to use suture techniques to remold the cartilage, because it would be severely weakened. Although the authors do not describe different approaches to the cephalic trim, we think that the amount resected depends on the underlying cause of the deformity. If the predominant cause of the boxy tip is an increased angle of divergence, then we prefer to extend the cephalic trim to include not only the dome but also the middle crura (Fig. 2, *left*). If the predominant factor is a widened domal arc only, then we leave the cephalic portion of the middle crura intact (Fig. 2, *right*). This modification can be applied to the bulbous tip, in our experience.

The authors support the use of suture techniques, rather than excisional or resectional techniques, to modify the shape of the tip cartilages. This view is currently shared by most rhinoplasty surgeons and has proved to be safe, effective, nondestructive, incremental, and reversible.⁴⁻⁸ Like the authors, we have not encountered complications directly attributable to suture techniques, such as suture exposure and stitch abscess. We use long-lasting but dissolvable sutures (5-0 polydioxanone) to perform tip suturing, whereas the authors tend to use larger, permanent sutures (4-0 nylon and, occasionally, 5-0 nylon sutures). The fact that the permanent sutures do not lead to a higher

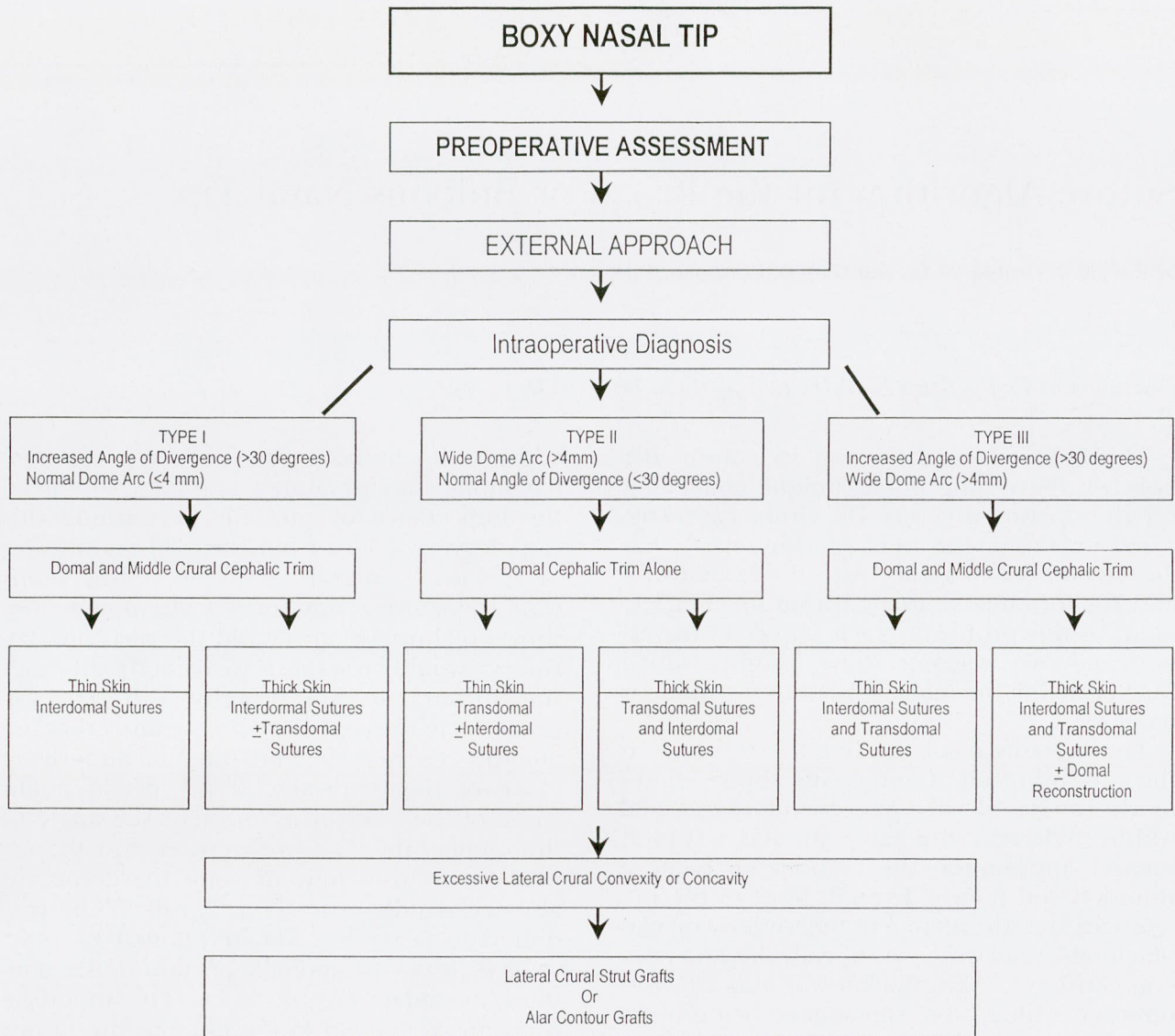


FIG. 1. Algorithm for management of the boxy nasal tip, including domal resection and suture reshaping of an excessively wide domal arch (>6 mm) and resilient lateral crura. From Rohrich, R. J., and Adams, Jr., W. P. The boxy nasal tip: Classification and management based on alar cartilage suturing techniques. *Plast. Reconstr. Surg.* 107: 1849, 2001.

incidence of complications supports the safety of these techniques.

The algorithm described by the authors relies on four types of suture techniques, namely, the transdomal suture, interdomal suture, columella-septal suture, and the newly described lateral crural mattress suture. The authors almost always use the transdomal suture to normalize the dome arc, improve dome angularity, and slightly increase tip projection. We have also found this suture to be uniformly helpful, but we caution that overtightening the transdomal suture can cause the alar rim to notch. The

second suture described by the authors is the interdomal suture, to correct domal asymmetry and reduce the interdomal width. A technique we use that is not described by the authors involves tying two transdomal sutures together to form, in essence, an interdomal suture. This is achieved by leaving one end long when applying the transdomal suture and then tying the long ends together. It is important to leave the long ends approximately 3 mm posterior to the dome, to allow for normal domal separation. The endpoint is reached when the distance between the tip-defining points is 5 to 6 mm.

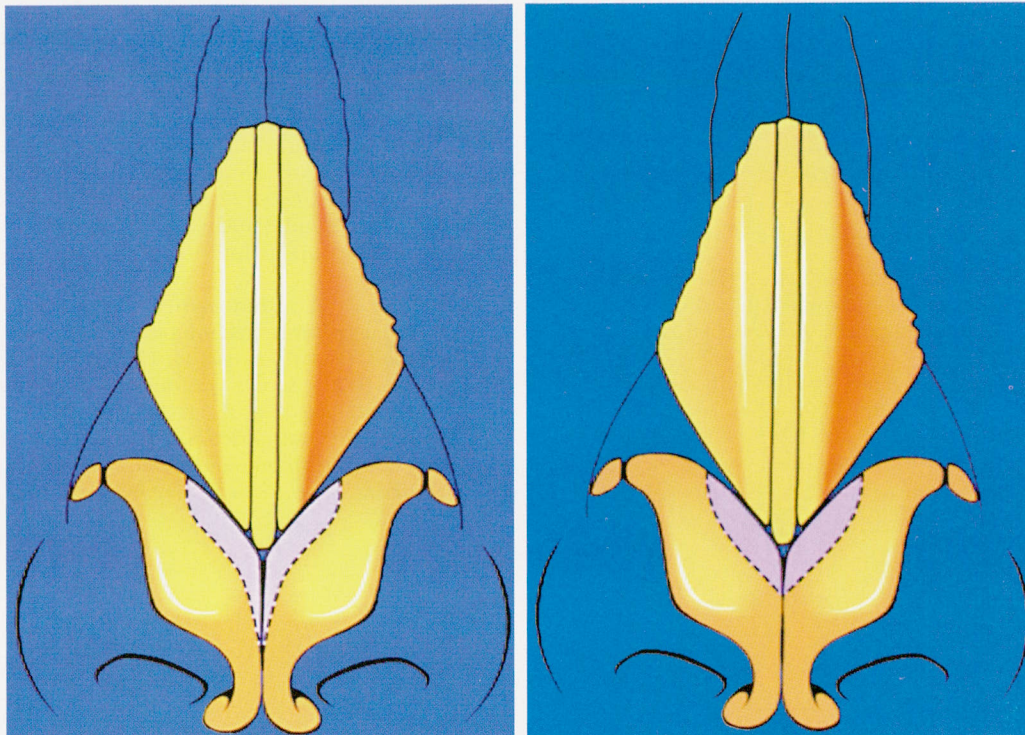


FIG. 2. (Left) Extended cephalic trim (to include the middle crura). (Right) Standard cephalic trim (with the middle crura intact).

The third suture in the algorithm described by the authors is the newly described lateral crural mattress suture, known as the Mustardé suture, as they correctly note. The purpose of this suture is to reduce the lateral crural convexity into a relatively flat appearance. We have used lateral crural strut grafts to reshape or reposition the lateral crura, if necessary,^{1,9} and have achieved excellent results with this technique. The lateral crural mattress suture represents an alternative, however. It is reasonable to combine the two algorithms, with the lateral crural mattress suture being first applied to correct cases of excessive lateral crural convexity. In severe cases, a lateral crural strut graft may be needed. Concavities may be more difficult to correct with the mattress suture technique, because the knot would have to face inward, posing a problem of palpability to the patient. In such cases, it is reasonable to proceed directly to the use of lateral crural strut grafts.

The fourth suture described is the columella-septal suture. The indications for this suture have been described previously and are not different in the report by the current authors or in our experience.

Although the algorithm described by the

authors was constructed to address the bulbous or broad tip, many of the same principles are involved in the treatment of the boxy tip, including the importance of thorough preoperative evaluation and intraoperative diagnostic assessment and the emphasis on suture techniques to correct the underlying problem. Whereas we specifically categorize the anatomical abnormalities of the boxy tip into three classes, the authors present a broader overview of the bulbous tip and offer a four-suture algorithm for its correction. Although they do not describe in detail how to classify the bulbous tip and, on the basis of those classifications, when to use this combination of suture techniques, we think that this algorithm certainly has merit. In most cases, it can be used in conjunction with our previously described algorithm. The lateral crural mattress suture is an important addition to the treatment methods of rhinoplasty surgeons. Drs. Gruber and Friedman should be commended for their recommendations regarding the treatment of the bulbous tip. We can all learn from Dr. Gruber's experience, and his insight continues to advance the art and science of rhinoplasty.

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REFERENCES

1. Rohrich, R. J., and Adams, W. P., Jr. The boxy nasal tip: Classification and management based on alar cartilage suturing techniques. *Plast. Reconstr. Surg.* 107: 1849, 2001.
2. McKinney, P. Management of the bulbous nose. *Plast. Reconstr. Surg.* 106: 906, 2000.
3. Rohrich, R. J., and Adams, W. P., Jr. Correction of the boxy nasal tip using the open approach. In J. P. Gunter, R. J. Rohrich, and W. P. Adams, Jr. (Eds.), *Dallas Rhinoplasty: Nasal Surgery by the Masters*. St. Louis: Quality Medical Publishing, 2002. Pp. 315-332.
4. Tebbets, J. B. Shaping and positioning the nasal tip without structural disruption: A new, systematic approach. *Plast. Reconstr. Surg.* 94: 61, 1994.
5. Tardy, M. E., Jr., Patt, B. S., and Walter, M. A. Transdomal suture refinement of the nasal tip: Long-term outcomes. *Facial Plast. Surg.* 9: 275, 1993.
6. Mocella, S., and Bianchi, N. Double interdomal suture in nasal tip sculpturing. *Facial Plast. Surg.* 13: 179, 1997.
7. Daniel, R. K. Rhinoplasty: A simplified, three-stitch, open tip suture technique. II. Secondary rhinoplasty. *Plast. Reconstr. Surg.* 103: 1503, 1999.
8. Baker, S. R. Suture contouring of the nasal tip. *Arch. Facial Plast. Surg.* 2: 34, 2000.
9. Gunter, J. P., and Friedman, R. M. Lateral crural strut graft: Technique and clinical applications in rhinoplasty. *Plast. Reconstr. Surg.* 99: 943, 1997.