



Invited Discussion on “The Joint Tip Graft: A Joint Support for Rim, Facet and Infratip Lobule in Rhinoplasty”

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In this study, the authors describe the “joint tip graft” (JTG), a novel technique for providing structural support to the alar ridge and soft tissue facets, and for concealing contour imperfections associated with cartilaginous tip grafts. The JTG is harvested from a bilateral cephalic trim (leaving “6–8-mm” rim strips) that is resected in continuity with the midline (Pitanguy) inter-crural ligament. The result is a symmetric bilateral cartilaginous onlay graft that is connected by the intervening nasal SMAS tissue. The excised lateral crural strips are then sutured to the (outer) caudal margin of the intermediate and lateral crura for increased skeletal support, while the midline soft tissue component is used to conceal surface irregularities produced by the various underlying grafts of the central tip complex.

In a randomized prospective study of JTG efficacy, the authors measured grayscale brightness values from standardized black and white preoperative and (6-month) postoperative rhinoplasty photographs for a comparison between grafted patients and controls. Owing to the requirement for anatomically intact lateral crura and an intact Pitanguy ligament, study participants were restricted

to 30 primary rhinoplasty patients requiring increased tip projection. Luminance values for the facets and infratip lobule were then measured, and values for the darkest point of the facet and the brightest point of the infratip lobule were then expressed as a facet/infratip ratio. A higher luminance ratio indicates a more subtle and uniform transition between light (infratip) and dark (facet), thereby indicating a smoother and (presumably) more attractive surface contour. Fifteen randomly selected patients receiving the JTG were then compared to 15 “cartilage and skin”-matched controls who underwent identical cartilaginous tip grafting (by the same surgeon) but *without* placement of the JTG. Facet/infratip luminance ratios were observed to be statistically higher for the JTG treatment group and were cited as justification for its use.

I have long been an advocate for cartilage graft augmentation of the “alar ridge” in tip rhinoplasty—the transition zone just cephalad to the alar rim that separates the tip and alar lobule [1]. This often-neglected but important topographic feature is a common source of contour deformity in the misshapen tip complex, particularly after prior rhinoplasty [1–7]. Augmentation of the alar ridge with alar rim grafts [2], alar contour grafts [3], and articulated alar rim grafts [1] using strips of autologous cartilage has been shown to produce a more cosmetically pleasing contour, linearity, and stability to the alar ridge complex. However, contour and stability enhancements are typically more effective when grafts are fabricated from *rigid* donor cartilage such as septal or rib cartilage, and efficacy is further improved when the grafts are structurally integrated into the tip framework with suture fixation [1].

Ironically, secondary iatrogenic distortions of the alar ridge complex, such as retraction, collapse, and/or notching, are an all-too-common consequence of the cephalic trim technique—a widely used but arguably haphazard and

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unpredictable technique for lobular width reduction [1, 4–7]. The cephalic trim is predicated on resecting the cephalic border of the lateral crus leaving a residual “rim strip” of varying widths, often only 6 mm, which represents only about half of the typical lateral crural width [8, 9]. The development of postsurgical alar retraction (PSAR) is one of the most common and perhaps most problematic complications of the cephalic trim technique. Triggered by crural destabilization from over-resection, and then exacerbated by chronic shrink-wrap contracture, PSAR results in unsightly and conspicuously prominent nostril openings [1, 4–7]. However, a host of other stigmatic iatrogenic deformities such as bossae, lobular pinching, alar notching, and nostril asymmetry, are also common manifestations of crural over-resection [1, 4–7]. Consequently, the authors may be addressing one problem at the expense of creating another, and the adverse effects of cephalic resection may curtail the widespread use of the JTG. Whether or not the additional strength of the JTG can prevent deformation of the weakened crural remnant by the powerful and unremitting forces of shrink-wrap contracture is unknown, but in the high-risk patient with naturally weak crural cartilage and thin contracture-prone nasal skin, the modest support provided by the JTG (using crural cartilage that averages only 0.7 mm in thickness [9]), is unlikely to prevent long-term tip distortion. Because the ill effects of cephalic over-resection often require years to fully manifest, a considerably longer follow-up interval will also be needed to properly evaluate JTG outcomes. While I applaud the authors for their creativity, and their diligence in attempting to provide objective verification of JTG effectiveness, I fear that the long-term impact of crural destabilization will negate the initial benefits of the JTG in patients with naturally weak cartilage and thin contracture-prone skin—the very group for whom tip camouflage and rim support are most important. Restricting JTG use to patients with a low risk of epithelial contracture and rigid tip cartilage may help to avoid unforeseen long-term

complications of this otherwise clever rhinoplasty technique.

Compliance with Ethical Standards

Conflict of interest All authors declare that they have no conflict of interest.

Human and Animal Rights This editorial discussion is not a study with human participants or animals performed by the author; rather, it is a blinded editorial critique of manuscript APSU-D-18-00549R2.

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