Commentary on: A Complete Subperichondrial Dissection With Management of the Nasal Ligaments

Ronald P. Gruber, MD; Kyle A. Belek, MD; and Ario Barzin, MD

The authors describe a new rhinoplasty operation that is entirely subperichondrial and preserves both Pitanguy’s ligament and the scroll ligament. They believe that dissection in the subperichondrial plane is less traumatic than in the sub-superficial musculoaponeurotic system (sub-SMAS) or subcutaneous plane and that restoring the integrity of the ligaments minimizes the potential for a supratip problem and helps restore valvular function. In 228 cases, they had only a 5% revision rate.

What is exciting about the subperichondrial approach is that it is theoretically the best plane for dissection. Since the subperichondrial approach is best for the septum, why should it not be best for the rest of the nose? Moreover, restoration of normal anatomy (repairing the ligaments) is one of the most fundamental tenets of surgery. The authors extend the known anatomy of the nose established by Daniel1,2 one step further and make us aware of the importance of the scroll ligament for valvular function, which has never been emphasized this much before.3,4 The authors also make us aware of the importance of Pitanguy’s ligament. Finally, we are impressed that they are able to perform this type of delicate surgery.

We do believe that most surgeons use a subperichondrial approach on the tip cartilages as they open the nose. However, as the upper lateral cartilages (ULC) are reached, the dissection becomes supraperichondrial because it has generally been considered too much effort to follow the perichondrium into the interstices of the scroll and get under the perichondrium of the ULC. We found that the authors are correct in that the scroll can be dissected out if one takes the time (Figure 1). The only time we remove the perichondrium of the ULC is if we want to be more precise with creation of the spreader flap5-7 (often referred to as autospreaders8) (Figure 2). We are not certain most surgeons will have the patience or technical skill to do so, as the authors suggest.

Assuming the scroll ligament is necessary for function because it allows the SMAS to pull the ULC open, there is no hard evidence that the ligament does not reattach and provide a comparable result. Clearly, it is wise to bring the skin and scroll region into apposition as the authors suggest. Although it is a “poor man’s” way of dealing with the authors’ concern, we do inspect the intercartilaginous region in the vestibule to be sure that the lateral crus “roof” has not fallen down. A simple horizontal mattress, through-and-through plain catgut suture is often placed to bring the tissues into apposition (Figure 3). Other surgeons pack the vestibule for several days to keep the lateral crus up against the skin. An actual trial comparing these techniques (and involving airflow measurements) would be necessary before we can be sure that the scroll ligament must actually be repaired.

Toward the end of their discussion, the authors mention that reconstruction of the internal nasal valve demands the subperichondrial approach and scroll reconstruction. That statement is a bit strong. The internal valve is most helped by restoring the distance between the ULC and the dorsal septum when that gap is disrupted following hump removal. Despite the usefulness of the scroll ligament, not much is going to replace the importance of spreader grafts and spreader flaps for internal valve function.9-14

The authors claim that Pitanguy’s ligament keeps the supratip down and secondarily results in more tip projection. If one is as skilled as the authors in preserving this ligament, it certainly makes sense to preserve it. Guyuron et al15 and H. S. Byrd (personal communication, 2004) recognized the importance of maintaining a supratip break by creating in effect their own Pitanguy’s ligament by incorporating a supratip suture. We have employed that technique as well, but we do have one case where, unfortunately, the suture that took a bite of the dermis caused a small superficial supratip necrosis. The authors’ approach to preserving Pitanguy’s ligament is certainly an ideal approach if one is capable of isolating it.
The authors claim that the subperichondrial approach results in less edema and improved sensory function. However, there would appear to be very few nerve fibers in the small amount of perichondrium on the ULC and scroll region to account for the numbness of which patients complain initially. Moreover, sensory loss is not a serious long-term problem. As for edema, we would respectfully request an actual comparative study (including postoperative photography of the edema) before that claim is made. One of the most important factors in the authors’ excellent results (in terms of reduced edema) may be related to their use of the closed approach in the majority of cases. The large vessels in the columella are probably much more relevant to edema than whatever vasculature courses through the perichondrium in the ULC and scroll region.

The authors provide 2 exceptional cases of which they can be proud. However, the techniques they employed (including their meticulous and minimal trauma dissection) may have much more to do with the results than the theoretical hypothesis that one must be entirely subperichondrial. In Case 2, the patient is described as having a high tip projection requiring a lateral crural steal procedure with subsequent reduction of tip projection. The result is wonderful. However, the preoperative tip appears to be deficient and hanging from the septum. A tip projection technique seems to be required. In fact, the beautiful postoperative result exhibits increased tip projection. We are
not certain, therefore, that the result is due to repair of Pitanguy's ligament. The fundamental problem of tip projection is generally best corrected by a fundamental change in the cartilaginous framework and may well have been due to the lateral crural steal procedure they employed. Sutures and ligaments are adjunctive techniques in our opinion. The only way to know, of course, is with an evidence-based comparative study, which it is hoped that the authors will conduct one day.

The authors would have us preserve the tip fat pad. Contrarily, we find it necessary on many occasions to pluck fat from the undersurface of the nasal flap with Brown forceps, especially when the flap is thick. We would not use scissors to trim any of that fat away because of the fear of devascularizing the dermal plexus. However, simple fat plucking should not contribute to increased postoperative edema. An evidence-based study would be necessary to prove us or the authors correct.

Overall, the authors’ subperichondrial technique with preservation of 2 ligaments is a procedure we should all admire. In principle, it is the correct thing to do. Whether or not it is practical for everyone and exactly how much improvement in airway and supratip appearance actually results from the extra effort remain to be seen. The new paradigm makes eminent sense, and we congratulate them for bringing it to our attention.

Disclosures
The authors declared no potential conflicts of interest with respect to the research, authorship, and publication of this article.

REFERENCES