Using the Autospreaders as a Cutting Guide for Component Hump Reduction in Rhinoplasty

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INTRODUCTION
Dorsal hump takedown is an integral part of most cosmetic rhinoplasty operations. There are two mainstay methods for hump take-down: the classic Joseph hump takedown technique and dorsal preservation methods.1

Classic hump takedown methods are associated with narrowing of the internal nasal valve, inverted V deformities, and disrupted dorsal aesthetic lines. These complications can be prevented by placement of spreader grafts or the use of autospreader flaps.2

Dorsal preservation techniques as a means of addressing the dorsal hump have been popularized recently to avoid midvault disruption or dorsal resection. However, the pitfall of these techniques is the higher rate of dorsal hump recurrence of up to 15%.3–5

We present the use of the upper lateral cartilages (ULCs) as a turn-in flap and as a cutting guide during classic dorsal hump takedown. The cutting guide provides the optimal dorsal angulation and dictates the amount of resection needed. This translates to aesthetically pleasing dorsal lines (Fig. 1).

Patient Selection
This technique can be utilized in all open primary rhinoplasties with a component of hump takedown. It may be performed in all hump takedowns, including the ones that are 1 mm, as the horizontal portion of the ULC will be turned in and sutured in a slightly higher position due to the extended open dissection enabling movement of the upper lateral cartilage superiorly. Contraindications are prior dorsal hump takedown, where the ULC is not available.

Technique
An external approach or extended external approach is utilized for this technique. The bony cap is resected using piezosurgery or rasps to expose the underlying ULC. Dorsal septal tunnels are developed. The ULC is separated from the dorsal septum up to the level of bone. Without scoring, the ULCs are turn-in, and the turn-in flap is sutured on itself using a running horizontal mattress 5-0 PDS. The ULCs will only turn in at the optimal level of inflexion and will invariably create a straight dorsal cutting guide. The turn-in angle is used as a cutting guide to resect the cartilaginous septum, using a blade or dorsal scissors. The ULC is then sutured to the septum.

The optimal level of inflexion is identified in two ways. First, the surgeon identifies the point where the upper lateral cartilage reaches its maximal length, when going from superior to inferior. If the cartilage is turned in at a point that is too high, the cartilage length will not be sufficient to span the dorsal septum. Second, the level of inflexion is also identified, where the cartilages have a point of minimal resistance where the cartilage seems to rest in a natural position.

Osteotomies are performed as needed. Our osteotomies are usually performed in a standardized fashion using an ultrasonic microvibration tool named Piezosurgery (R) (Mectron Medical Technology, Carasco, Italy). Medial osteotomies are performed in a fading fashion, and lateral osteotomies are performed in a standardized fashion using an ultrasonic microvibration tool named Piezosurgery (R) (Mectron Medical Technology, Carasco, Italy). Medial osteotomies are performed in a standardized fashion using an ultrasonic microvibration tool named Piezosurgery (R) (Mectron Medical Technology, Carasco, Italy).

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osteotomies are performed in a high-low-high fashion, with no preference for the sequence of the osteotomies. Webster’s triangle is always preserved. The medial and lateral osteotomies are always joined to enable movement of the bones. In unilaterally deviated noses, the medial osteotomy on the side opposite to the deviation is not performed to leave a fixed bone bridge on which the remainder of the osteotomies are secured. Drill holes are performed using Piezosurgery, and the bones are secured to the upper lateral cartilage and septum using 5-0 PDS sutures. (See Video [online], which displays the technique for dorsal hump take down using the turn-in flap.) (See figure, Supplemental Digital Content 1, which displays patient’s preoperative and postoperative images using the turn-in flap as cutting guide technique, http://links.lww.com/PRSGO/C151.)

Fig. 1. Dorsal hump take-down technique. A, The bony cap is resected using piezosurgery to expose the underlying ULC. B, The ULC is separated from the dorsal septum up to the level of bone. C, The turn-in angle is used as a cutting guide to resect the cartilaginous septum, using a blade. D, The ULCs will only turn in at the optimal level of inflexion and will invariably create a straight dorsal cutting guide. E, The upper lateral cartilage is sutured to septum.

Attention is then turned to the nasal tip, and tip reconstruction is performed. Splints are inserted and sutured in place. The sepal and intercartilagenous incisions are closed. The cast is then applied.

A similar technique has previously been published regarding performing autospreaders before hump take-down. This technique is significantly different in the following fashion: (1) we do not perform an en-bloc hump takedown, as we perform bony hump reduction before reducing cartilaginous dorsum and (2) we utilize piezoelectric instrumentation for added precision during the component hump takedown process. Piezo also aids in the preservation of the upper lateral cartilages.

CONCLUSION
Using the turn-in flap as a cutting guide for dorsal hump takedown allows avoidance of dorsal irregularities and the risk of hump recurrence.

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PATIENT CONSENT
Patient consent for pictures and video publications were obtained.

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Takeaways
Question: Dorsal preservation techniques have a higher rate of dorsal hump recurrence of up to 15%. Can the use of turn-in flaps aid in determining the amount of hump resection and decrease the rate of hump recurrence?
Findings: Using the upper lateral cartilages as a cutting guide provides optimal guidance for the amount of dorsal resection needed during rhinoplasty.
Meaning: The turn-in flap translates to aesthetically pleasing dorsal lines, avoidance of dorsal irregularities, and decreased risk of hump recurrence.