

Tip Grafting for the Asian Nose



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KEYWORDS

• Asian rhinoplasty • Tip grafting • Tip onlay graft • Shield graft • Multilayer tip grafting

KEY POINTS

- Asian noses tend to have a weak cartilage framework, thick skin, and abundant soft tissue; major tip refinement with tip grafts is required to create more tip projection and definition.
- The best tip refinement approach in patients with thick skin and poorly developed tip cartilage is tip grafting with thick and rigid costal cartilage.
- The most important grafting techniques are tip onlay graft, shield graft, and multilayer tip graft.
- We classified Korean noses into 4 classes based on their alar cartilage shape and specify grafting procedures that will generate an acceptable tip in these different tip shapes.
- Because Asians vary in their cartilage configuration, skin thickness, and aesthetic desires, a tailored tip grafting strategy is needed to meet the aesthetic goal of the individual patient.



Video content accompanies this article at <http://www.facialplastic.theclinics.com>.

INTRODUCTION

Techniques for surgical refinement of the nasal tip include resection or division of the lower lateral cartilage,^{1–3} suturing of the lower lateral cartilage,³ and cartilage grafting.⁴ The latter 2 techniques are particularly commonly used for tip refinement.

Asian noses tend to have a weak cartilage framework, thick skin, and abundant soft tissue that yield a less refined nasal dorsum and tip.⁵ These anatomic features mean that tip surgery is the most difficult part of rhinoplasty in Asian patients. The thickness of the nasal skin in particular plays an important role in the success of tip refinement techniques. We previously reported that Koreans have thicker nasal skin than Caucasians.⁶ Specifically, Korean nasal skin is thickest over the nasofrontal angle, becomes thinner over the

rhinion, thickens again at the nasal tip, and then thins over the columella. We observed that thicker skin at the nasal tip and columella is associated with poor tip refinement outcomes. Thus, regional skin thickness may be an important prognostic factor for the success of tip surgery.

Although the tip suture technique can effectively improve the shape of the nasal tip in subjects with relatively well-developed lower lateral cartilage and thin skin,^{7,8} it often does not provide sufficient tip projection in Asian noses when it is used on its own. By contrast, tip grafting can effectively improve the tip projection, rotation, and definition in Asian noses because it is less affected by skin thickness than the tip suture technique.⁵ As a result, we mostly use the tip grafting technique to refine the tip of Asian noses. Herein, we discuss the most common types of tip graft materials, the

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various tip grafting methods, and which of these methods is best suited for specific tip shapes. The complications that can arise after tip grafting and how to manage them are also discussed.

TIP GRAFTING MATERIALS

The most important factors when selecting the material for tip grafting are the quantity and quality of the available cartilage and the thickness of the skin.

Septal Cartilage

If there is sufficient septal cartilage with reasonable thickness and rigidity, tip grafting with this material is readily performed. In fact, this tip grafting material is ideal because it obviates the additional morbidity associated with obtaining cartilage from the ear or chest. However, in Asians, the quantity and quality of the septal cartilage are often very limited.⁹ This finding is particularly true for female East Asian patients; in these patients, the rhinoplasty surgeon often encounters extremely thin and weak cartilage that cannot bear the weight and tension of the skin that covers the graft. As a result, the nose tip loses its grafted shape after the skin is closed (**Fig. 1**). Furthermore, when tip surgery using weak septal cartilage is performed on patients with thick skin, the grafted cartilage only adds

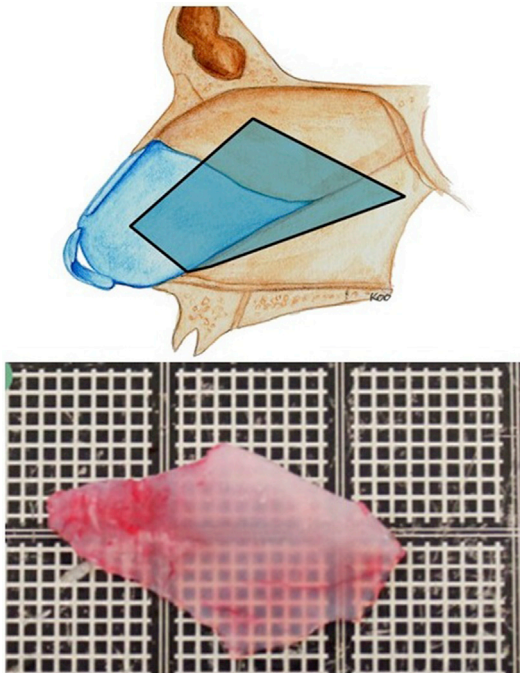


Fig. 1. Thin and weak septal cartilage that is not suitable for tip grafting.

volume to the tip. Thus, rather than promoting tip projection and definition, the surgery increases tip bulbosity. Consequently, the definition of the tip worsens after closing the skin. Another factor that hampers the use of septal cartilage for tip work is that the thin septal cartilage graft is easily lacerated by the suture material when the graft is fixed via sutures to the underlying lower lateral cartilages.

Conchal Cartilage

When using conchal cartilage for tip surgery, it is desirable to harvest it with the perichondrium attached to both sides, or at least on 1 side.¹⁰ This is because the perichondrium around the cartilage facilitates the suture-induced fixation of the tip graft to the lower lateral cartilage. Moreover, the support from the perichondrium adds to the strength of the conchal cartilage. It should be noted that the conchal cartilage has a natural curvature. The surgeon should ensure that this curvature does not influence the surgical results. If the intrinsic curvature of the conchal cartilage does hamper the achievement of the desired tip shape, a few cross-hatched incisions can eliminate the curvature. However, the natural curvature of the conchal cartilage can also be exploited in shield grafting (discussed elsewhere in this article); when the shield-shaped conchal cartilage is placed in the nasal tip lobule with its concave side facing the caudal direction, it can improve tip definition while preventing cephalic bending of the tip graft. This technique is especially useful in patients with thick skin (**Fig. 2**). When considering conchal cartilage for tip grafting, the surgeon must carefully consider the possibility of donor site complications such as hematoma and keloid formation.¹¹ The latter complication is particularly



Fig. 2. When using a conchal cartilage shield graft, cephalic bending of the tip graft can be prevented by ensuring that the concave part of the cartilage faces the caudal direction.

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