Nonsurgical Rhinoplasty Using Dermal Fillers

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KEYWORDS

• Nonsurgical rhinoplasty • Dermal fillers • Calcium hydroxylapatite • Hyaluronic acid
• Correction of nasal defects • Injectables • Semipermanent duration

KEY POINTS

- Nonsurgical rhinoplasty can be appropriate for patients who are reluctant to undergo surgical intervention.
- Effects are long lasting but not permanent.
- Posttreatment downtime is minimal.
- Calcium hydroxylapatite is the dermal filler of choice for nonsurgical rhinoplasty, because of its duration, moldability, high viscosity, and elasticity.
- Hyaluronic acids with high viscosity and elasticity are acceptable alternatives.

INTRODUCTION

We are in the middle of a new era of rhinoplasty, in which surgery is not the only means to address nasal defects. Nonsurgical options seem more viable than they would have been before the advent of various synthetic injectable fillers. These fillers have greater longevity and rheological properties more conducive to facial contouring than earlier nonsurgical products. As a consequence, nonsurgical rhinoplasty is becoming increasingly more popular. Many patients are now choosing to bypass permanent surgical correction in favor of a noninvasive, albeit impermanent, method for nasal recontouring.

This article outlines the evolution of nonsurgical rhinoplasty and identifies properties to consider when selecting which dermal filler to use. It includes a description of the types of nasal deformities that can be treated with injectables, as well as the role of nonsurgical rhinoplasty in a comprehensive regimen for correction of nasal deformities.

THE EVOLUTION OF NONSURGICAL RHINOPLASTY

Initial reports of injectable contouring or nonsurgical rhinoplasty date back to the middle of the 1980s. At the time, treatment options were limited to bovine collagen and silicone. However, since that time, semipermanent dermal fillers have increasingly been noted in the literature as acceptable formulations for nonsurgical rhinoplasty. Although use of dermal fillers in nonsurgical rhinoplasty remains an off-label application of hyaluronic acids (HA) and calcium hydroxylapatite (CaHA), their use in correction of nasal deformities has been widely reported in the clinical literature over the years, as shown in **Table 1**.

SELECTING THE APPROPRIATE FILLER FOR NONSURGICAL RHINOPLASTY

The available choices of fillers for nonsurgical rhinoplasty primarily include cross-linked HA

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Table 1
Clinical literature overview of use of dermal fillers in nonsurgical rhinoplasty

Reference	Filler/Procedure	Key Points of Study
Knapp and Vistnes,[1] 1985	Bovine collagen/surgical depressions resulting from rhinoplasty	Short-term filler may retain correction indefinitely
Webster et al,[2] 1986	Medical grade silicone/injected subdermally for postrhinoplasty defects	347 patients/1937 treatments; recommended undercorrection because filler stimulates indigenous collagen growth
Han et al,[3] 2006	Restylane (Q-Med, Uppsala, Sweden) coupled with autologous fibroblasts from harvested dermis/ augmentation rhinoplasty	11 patients; 10%–40% resorption in the first 6 mo in 6 patients; stabilization at 6 mo. Minor surgery rather than noninvasive as a result of epidermal flap necessary for harvesting. Used fibroblasts to increase longevity
Beer,[4] 2006	Restylane/postrhinoplasty defect of nasal dorsum	Case report of 1 patient: safe, inexpensive, well-tolerated; mention of CaHA as alternative
Becker,[5] 2006	Radiesse (Merz Aesthetics, San Mateo, CA)/Nonsurgical rhinoplasty	25 patients, 15 with previous surgical rhinoplasty; viable alternative to surgery; preferred CaHA caused by moldability and durability; mean patient satisfaction 7.9/10
Rokhasar and Ciocon,[6] 2008	Radiesse/primary correction of nasal deformities	14 patients; no significant complications, high patient satisfaction
De Lacerda and Zancannaro,[7] 2007	Porcine collagens and HAs/filler rhinoplasty vs augmentation rhinoplasty	Filler rhinoplasty perhaps more accurate term than augmentation because of creating illusion of smaller nose through augmentation
Cassuto,[8] 2009	Evolence (Ortho Dermatologics, Skillman, NJ)/nonsurgical rhinoplasty	12 patients; mean follow-up of 8 mo with stable correction
Siclovan and Jomah,[9] 2009	Evolence/nasal deformities and postrhinoplasty irregularities	Correction for up to 1 y
Humphrey et al,[10] 2009	HAs, CaHA, silicone review article	HA/CaHA safest available agents for nasal dorsum and sidewall deformities. Caution against filler in tip of nose
Rivkin and Solieman-zadeh,[11] 2009	CaHA in nonsurgical rhinoplasty	4-y retrospective study of 385 patients (295 for follow-up). 46% required touch-up 2 mo after initial treatment; 28% touch-up 2–6 mo after initial treatment; 18% touch-up 6 mo to 1 y after initial treatment. AE: prolonged erythema (more prevalent in postsurgical rhinoplasty patients) with 2 cases of partial skin necrosis and 6 cases of cellulitis
Bray et al,[12] 2010	Restylane/nonsurgical nasal augmentation and postrhinoplasty asymmetry	Duration up to 18 mo; mention of CaHA to treat internal valve collapse
Dayan and Kempiners, 2005[13]	Botulinum toxin either alone or with injectable fillers/nasal tip ptosis and acute nasolabial angle	5 units of botulinum toxin in depressor septi muscle bilaterally and 3 units into each levator labii superioris alaeque nasi muscle
Monreal,[14] 2011	Autologous fat transfer/stand-alone correction or with surgical rhinoplasty	33 patients, 36 treatments; grafting to radix, glabella, pyriform aperture. Volume decrease first 15–30 d, stable thereafter. Duration unknown
Kim and Ahn,[15] 2012	Radiesse/nonsurgical augmentation in Asian population	87 patients, 4 complications: 1 dorsal asymmetry (corrected), 1 overinjection of columella-labial angle causing intraoral submucosal nodule, 1 self-limited dermatitis, 1 inflammation/ erythema at injection site; plane was subdermal with CaHA and intradermal with HA for tip