Injection Rhinoplasty Using Filler

Hyoung Jin Moon, MD*

KEYWORDS

• Rhinoplasty • Filler • Injectables • Nose • Nonsurgical rhinoplasty • Injection rhinoplasty

KEY POINTS

- Filler must be injected into the deep fatty layer, between the perichondrium or periosteum and muscle layer, where important blood vessels are not located, to help avoid vascular compromise.
- Filler is usually injected in the order of the radix; rhinion; tip; and, finally, the supratip area.
- The surgeon should always mark the midline on the nasal bridge and perform the procedure without deviating from the midline to minimize asymmetry of the injected nasal dorsum.

INTRODUCTION

Rhinoplasty is among the most commonly performed operations in cosmetic surgery. It is performed more frequently among Asians owing to the low nasal bridge and flat tip. However surgical rhinoplasty using implants and autologous grafts require longer recovery time and have many complications; therefore, many patients hesitate to get the surgery.[1] Also, it is well-recognized that there is a steep learning curve for rhinoplasty. For these reasons, many doctors and patients prefer a simpler and cheaper procedure with fewer side effects and a shorter down time. Rhinoplasty using filler is the procedure that meets this demand.[2]

Fillers by definition, refers to all substances that can increase volume by injection. The most well-known types of fillers include hyaluronic acid products, collagen, paraffin, and liquid silicon. Fillers are usually classified by their components.

Fillers also can be classified by duration of their effects. Fillers with a duration of less than 2 years are called temporary fillers, those with a duration of 2 to 5 years are called semipermanent fillers, and those lasting no less than 5 years after injection are called permanent fillers.

Most of the fillers have a good safety profile. However, serious side effects, such as granuloma formation or inflammation, have been reported with several filler products; therefore, it is necessary to select the ideal filler by understanding the characteristics of each product. The ideal filler should have no tissue reaction; be long-lasting, safe, and easy to inject; and have no intratissue migration or allergic reaction.

ANATOMY FOR INJECTION RHINOPLASTY USING FILLER

Injection rhinoplasty using filler can only be successfully performed if the nasal anatomy is thoroughly understood. It is a procedure that sculpts the nasal shape by injecting materials in the space between the skin and nasal skeleton composed of cartilage and bone.

The solid frame of the nose is the supporting structure that maintains the shape of the injected filler and achieves an esthetic result. Therefore, a satisfactory result cannot be expected after the procedure if the frame of the nose is deformed or weakened. Rhinoplasty using filler can be said to reflect the personal ability of the surgeon, the anatomic characteristics of the patient's nose, and the surgeon's recognition of such individual variation. When performing rhinoplasty using filler, all aspects must be considered, including thickness and quality

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Beup Aesthetic Plastic Surgery Clinic, Seoul, Republic of Korea
* 4F, Dongyang Building, 591, Sinsa-dong, Gangnam-gu, Seoul 06025, Republic of Korea.
E-mail address: Beautymoon@hotmail.co.kr

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of the skin and the soft tissue; and the size, shape and strength of the cartilage and bone.

Nasal Soft Tissue

It is important to assess the nasal skin before performing filler rhinoplasty. In general, Asian patients have thicker, oilier skin and more subcutaneous tissue than white patients.

It may be more difficult to perform filler rhinoplasty on patients with thick, oily skin because they may experience severe postprocedure edema more often and because creating a pleasing 3-dimensional shape is challenging. On the other hand, in such patients, minute irregularities or asymmetry can be camouflaged more easily compared with patients with thin skin.

The soft tissue of the nasal bridge is the thickest at the nasion, and the thinnest is at the rhinion, which is the junction of the upper lateral cartilages and the nasal bones.[3]

The part of external nose between the skin and bone or cartilages consists of 4 layers: the superficial fatty layer, the fibromuscular layer (SMAS [superficial musculo-aponeurotic system] layer), the deep fatty layer, and the perichondrium or perichondrium.[4]

Major blood vessels of the external nose are in the SMAS layer or the superficial fatty layer.[5] Therefore, to minimize vascular injuries, the ideal and safe layer for filler injection is the deep fatty layer located between the SMAS and the perichondrium or periosteum (**Fig. 1**).

Sometimes some of nasal muscles are paralyzed using botulinum toxin to enhance the effect of rhinoplasty using filler. For example, the depressor septi nasi muscle originates from the orbicularis oris and terminates at the medial crura of the lower lateral cartilage. This muscle lowers the nasal tip when smiling or making a facial expression, and it is often paralyzed by injecting botulinum toxin to inhibit the function.[6]

Vascular Supply of the External Nose

The most feared complication of filler injection is intraarterial embolization into the blood vessel. To prevent this complication, the surgeon must be familiar with the blood supply of the nose.

Both the internal carotid artery and the external carotid artery supply blood to the external nose via the ophthalmic artery and the facial artery, respectively. The ophthalmic artery mainly supplies blood to the upper part of the nose via the external nasal

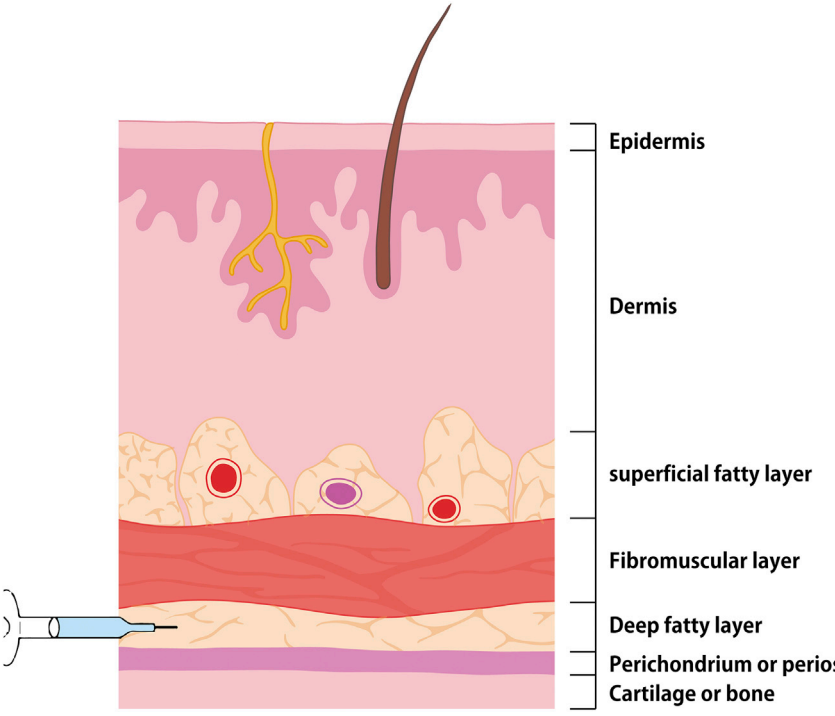

Fig. 1. The soft tissue of the nose consists of 4 layers: the superficial fatty layer, the fibromuscular layer (SMAS), the deep fatty layer, and the periosteum or perichondrium. Major blood vessels of the external nose are located in the superficial fatty layer (SMAS layer). Therefore, to minimize vascular injuries, the ideal and safe layer for filler injection is the deep fatty layer located between the SMAS and the perichondrium or periosteum. (*From* Moon HJ. Use of fillers in rhinoplasty. Clin Plast Surg 2016;43(1):307–17; with permission.)