I. Basic nose anatomy for rhinoplasty

A successful rhinoplasty can only be based on a sound anatomical understanding of the nose. The nose is a three-dimensional facial structure that has considerable variations in external appearance and anatomical structure based on the race and individual. Rhinoplasty is in essence a surgical procedure aimed at altering the anatomical structure of the nose to achieve a desired aesthetic shape, and as such, a basic understanding on the anatomy of the nose is crucial to the procedure.

Though it seems to be relatively static, the nose is in fact a dynamic organ and any structural changes made during surgery will set off a three-dimensional chain of alterations. As such, rhinoplasty surgeons need to have an in-depth knowledge not only on the anatomical and structural map of the nose, but also on the potential three-dimensional changes that may occur as a result of the surgery.

1. Anatomical structure of the external nose

The most anterior point of the frontonasal suture in the midsagittal plane is referred to as the nasion, and its skin is referred to as the soft tissue nasion. The deepest concave area connecting from the nose to the forehead is called the nasal root, radix, sellion, or subnasion — and these areas do not necessarily coincide with soft tissue nasion (Fig. 1-1). Generally, the nasal root is considered to be the starting point of the nose.

The section below the nasal root along the midsagittal plane is referred to as the nasal dorsum, which ends at the tip-defining point. The nasal dorsum constitutes of the bony vault, cartilaginous vault, and supratip area. The nasal
**Fig. 1-1 External nose** Soft tissue nasion is not always correlated with nasal root.

**Fig. 1-2 Nasal lobule** Nasal lobule is composed of tip, supratip lobule and infratip lobule.

**Fig. 1-3 Columella** Columella is the area running from the line connecting both top of the nostril to the upper lip(subnasale), which divides the nostrils.
The nasal dorsum is at its narrowest at the level of medial canthus and gradually expands as it travels down, reaching its largest width at the rhinion where the bony vault joins the cartilaginous vault before narrowing again at the alar dome. The highest point on the nose is called the nasal tip or the pronasale.

The nasal lobule is marked by the line connecting the peak of both nostrils, the supratip breakpoint, and the front half of the lateral alar wall. Anatomically, the nasal lobule is divided into the tip, supratip lobule, and infratip lobule (Fig. 1-2).

The columella starts from the line that connects the peak of both nostrils and divides the nostril into right and left. The area where the columella and the upper lip meet at the midsagittal plane is referred to as the subnasale (Fig. 1-3).

The section that extends from the tip in both directions is called the nasal ala, and the boundary demarcating the ala and the cheeks is called the alar groove.

The transitional area extending from the dorsum to the tip where the lower lateral cartilage and upper lateral cartilage overlap is called the supratip break (Fig. 1-4, Fig. 1-18).

2. Soft tissues of the external nose

1) Skin and subcutaneous tissue

The external coverage of the nose consists of five layers: the skin, superficial fatty layer, fibromuscular layer, deep fatty layer, and the perichondrium or the periosteum (Fig. 1-5). The skin on the cephalic part of the nose tends to be thinner and more mobile, while the skin at the nasal tip is more adherent. The skin is thickest at the nasofrontal angle, thinnest at the rhinion, and becomes thick again at the tip and ala areas. However, the skins on the columella and ala margins are thin.

Asians tend to have thicker skin layers compared to Caucasians which is advantageous to the use of implants, and most Asian nasal skin tend to be oily. The superficial fatty layer and fibromuscular layer are the core layers found in the nasal SMAS, and play key roles in enabling movement of the skin and blood circulation. These are
Fig. 1-5 **Soft tissue envelope of nose** Soft tissue envelope of the nose is composed of skin, superficial fatty layer, fibromuscular layer, deep fatty layer, and periosteum (or perichondrium).

Fig. 1-6 **Soft triangle** Soft triangle is the area which consists of both only outer and inner skin. Incision in this area should be avoided.

Fig. 1-7 **Notching of soft triangle**
also the sites of most soft tissue alterations during rhinoplasty.

When dissecting the skin on the nose, it is important to lift off the skin below the deep fatty layer to minimize damages to important vessels and minimize bleeding. Soft triangle is the area of the top of the triangle-shaped nostrils which has no cartilage and only consists of skin (Fig. 1-6). Damaging this area during incisions on the nose can cause scarring and notching, and should be avoided (Fig. 1-7).

2) Muscles

Nasal muscles play a key role in making facial expressions and controlling respiration. Nasal muscles are divided into the following groups (Fig. 1-8):

a. Nasal elevator
   Shortens the nasion-nasal tip distance and expands the naris.
   Procerus, levator labii superioris alaeque nasi muscle
b. Nasal depressor
   Elongates the nasion-nasal tip distance and expands the naris
   Nasalis muscle (alar portion), depressor septi nasi muscle
c. Minor nasal dilators
   Dilator naris anterior muscle
d. Nasal compressors
   Nasalis muscle (transverse portion), compressor narium minor muscle

![Fig. 1-8 Nasal muscles](image-url)