

Nasal Bones Anatomy and Analysis for Dorsal Preservation Rhinoplasty

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It is with delight that we read the original article entitled “Rhinoplasty: The Nasal Bones—Anatomy and Analysis.”¹ In this study, Lazovic et al excellently explained, and demonstrated through their dissections and anthropometric measurements, the different concepts regarding nasal analysis when it comes to clinical evaluation and bony dorsum analysis.

To describe patients and to aid in better understanding and teaching dorsal preservation techniques, Saban and de Salvador and Neves et al proposed a segmental analysis of the dorsal profile lines, dividing these into: radix, nasal keystone area, supratip segment, and nasal tip, the latter being beyond the scope of this Letter.^{2,3} These segments should be analyzed both individually as part of the surgical planning of the rhinoplasty and also together to better understand their relationship with the nose profile and the ideal aesthetic profile.

Saban and de Salvador categorized the most frequent morphotypes and most common dorsal profile lines into 4 groups that are suitable for dorsal preservation procedures: straight noses, in which the dorsal profile lines are rectilinear and the nasal bones consist of a V-shape, regardless of lateral deviations; tension noses (classic Roman or Semitic profiles), in which there’s a hump in the dorsal profile lines but the nasal bones can be either S- or V-shaped; “humpy” or kyphotic noses, representing patients where the nasal bones are themselves distorted and S-shaped; and challenging noses or W-shaped nasal dorsum. Another group, whose members not candidates for preservation techniques, consists of “lorgnette” or Assyrian noses.²

For a thorough understanding of both this classification and the anthropometric and clinical considerations of Lazovic et al, a number of insights were observed to be welcome to many surgeons who are starting their journey in the rhinoplasty field, for we have seen misunderstandings surrounding the following concepts: dorsal profile lines, nasal bone shape, anthropometric and clinical landmarks, and nose straightness. One should start by defining the radix, which represents a segment of the nose where all the bony structures meet, creating an intercanthal bony bloc in the cephalic part of the dorsum.³ This bony bloc contains important anatomic landmarks that are often a source of confusion between surgeons. Thus, the radix extends from the nasion to the sellion.¹ Anthropometrically, the nasion consists of the midpoint of the nasofrontal suture line where the frontal and nasal bones articulate. This is an important landmark because it represents the most cranial part of the nasal bones. However, it is important to note that the sellion is the point of lowest projection and the nasion the point where the frontal bone meets the

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nasal bones in the midline. These 2 concepts are often misused in clinical practice, with the term “nasion” being mistakenly used as the point of deepest projection in the radix or as a cutaneous landmark. Moreover, it is not uncommon for the point of deepest projection of the nasal bones not to meet with the deepest point of projection on clinical evaluation of the soft tissues in the radix area.

Regarding the nasal keystone area, other important anthropometric points highlighted in the study were the kyphion and rhinion. These are essential to understand the shape of the nasal bones and their relation to dorsal profile lines. As an opposition to the sellion, the kyphion is the point of highest projection of the nasal bones, and the rhinion is the midpoint of the osseocartilaginous junction between the nasal bones and the cartilaginous dorsum. In patients with straight nasal bones, the kyphion and rhinion are coincident because the point of highest projection is precisely where it meets the cartilaginous dorsum, at the caudal end of the keystone area. In other words, the kyphion is only existent in nonstraight nasal bones and is absent in straight ones.

As described in the article, the relationship between the kyphion and rhinion defines what we classify as S-shaped nasal bones or V-shaped nasal bones. Simplistically, S-shaped nasal bones are nasal bones with an important prominence or irregularity on their surface, and V-shaped nasal bones are relatively straight in shape. This is where misunderstandings may occur when these concepts are translated into clinical practice and this is important for surgical planning. Straight or V-shaped nasal bones are not necessarily correlated to straight dorsal profile lines. Patients may have straight nasal bones but a hump in profile view due to cartilaginous hypertrophy and do not require nasal bone resurfacing, with a Type 1 dorsal preservation procedure (without dorsal soft tissue elevation) being a good option for improving the dorsal profile lines.^{2,4}

In the supratip region, there are 3 important landmarks that deserve mentioning: the W point, the ASA point, and the W-ASA segment. The W point is the caudal point of separation of the upper lateral cartilages from the septum, and the ASA point is the anterior septal angle. These 2 landmarks are especially important in dorsal preservation procedures that require excision of a septal high strip because the starting point must be at the W point and not at the ASA point. Moreover, a distance of 6 to 8 mm between these two points is desired when planning the septal incision, which represents the W-ASA segment.^{5,6}

And finally, for a complete overview of the terminology of dorsal profile lines when describing nose straightness, the

authors prefer the term rectilinear to indicate a straight nose on profile. A rectilinear nose in profile view can be deviated to either right, left, or have no deviation at all when looking from the front view. That is why referring to the nose as straight to characterize dorsal profile lines could generate misunderstanding for both patients and surgeons.

Taking all the above into consideration, we can understand Saban's guidelines on dorsal preservation for correlation between nasal bone shape and dorsal profile lines. Patients with rectilinear noses usually have V-shaped nasal bones and a harmonious cartilaginous dorsum, leading to beautiful profile lines, even if they have a sideways deviation on profile view. Therefore, they are suitable candidates for Type 1 dorsal preservation procedures, with no soft tissue and skin elevation.^{2,4}

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REFERENCES

1. Lazovic GD, Daniel RK, Janosevic LB, Kosanovic RM, Colic MM, Kosins AM. Rhinoplasty: the nasal bones—anatomy and analysis. *Aesthet Surg J*. 2015;35(3):255-263. doi: [10.1093/asj/sju050](https://doi.org/10.1093/asj/sju050)
2. Saban Y, de Salvador S. Guidelines for dorsum preservation in primary rhinoplasty. *Facial Plast Surg*. 2021;37(1):53-64. doi: [10.1055/s-0041-1723827](https://doi.org/10.1055/s-0041-1723827)
3. Neves JC, Tagle DA, Dewes W, Ferraz M. A segmental approach in dorsal preservation rhinoplasty: the Tetris concept. *Facial Plast Surg Clin North Am*. 2021;29(1):85-99. doi: [10.1016/j.fsc.2020.09.010](https://doi.org/10.1016/j.fsc.2020.09.010)
4. Saban Y, Daniel RK, Polselli R, Trapasso M, Palhazi P. Dorsal preservation: the push down technique reassessed. *Aesthet Surg J*. 2018;38(2):117-131. doi: [10.1093/asj/sjx180](https://doi.org/10.1093/asj/sjx180)
5. Palhazi P, Daniel RK, Kosins AM. The osseocartilaginous vault of the nose: anatomy and surgical observations. *Aesthet Surg J*. 2015;35(3):242-251. doi: [10.1093/asj/sju079](https://doi.org/10.1093/asj/sju079)
6. Saban Y, Cakir B, Daniel RK, Palhazi P. *Preservation Rhinoplasty*. Septum Publications; 2018.