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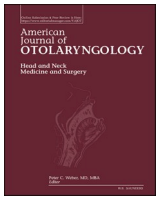

Versatile vertical alar resection technique for positioning of the nasal tip

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ABSTRACT

Background: In rhinoplasty, it is very important to adjust the rotation and projection of the tip together harmoniously with the nasal dorsum and face to achieve pleasing results.
Objective: In this study, our aim is to describe a new modification of the vertical alar resection technique that can effectively regulate nasal tip projection and rotation.
Materials and methods: Versatile vertical alar resection (V-VAR) technique was applied to 14 primary and 9 revision rhinoplasty cases with highly projected nasal tip. V-VAR technique consists of three steps. In the first step, the original dome point was marked. In patients with high tip projection and caudal rotation, resection was performed from the lateral crus of the original dome. In patients with high tip projection and cephalic rotation, resection was performed from the medial crus of the original dome. In patients with high nasal tip projection but adequate rotation, an equal amount of resections were performed from both the medial crus and lateral crus of the original dome. The patients were followed in average 18 months (between 12 and 24 months).
Results: The desired type of rotation and projection was achieved utilizing V-VAR technique in all patients. All patients had satisfactory esthetic results.
Conclusions: In highly projected nasal tips, the height can be reduced using the proposed V-VAR technique. Rotation in the nasal tip region was maintained, increased or decreased in accordance with the esthetic aims.
Level of evidence: 4.

1. Introduction

To achieve an esthetically pleasing result, many features of the nasal tip such as rotation, projection, definition, and symmetry need to be addressed [1,2]. For this purpose, many techniques have been described for the lower lateral cartilages and caudal septum, which form the nasal tip definition. For the lower lateral cartilages, techniques such as medial overlap, lateral overlap, dome division, vertical alar resection, vertical alar folding have been previously used for this purpose [3,4]. The vertical alar resection (VAR) technique has been previously used to lower the projection, equalize the dome, correct deformities in the lower lateral cartilages, and adjust the infratip lobule [3]. In the VAR technique, resection of the lateral crus provides a quick and easy symmetry for the nasal tip. For an over-projected nasal tip, it is possible to achieve deprojection with the VAR technique [5]. With the VAR technique, proper rotation can be achieved and losses in the nasal tip projection can be compensated. Shortening of the lateral crus can be performed as cutting and overlay suturing or segmental resection and end-to-end stitching [5].

In this study, we described a new modification of the VAR technique by pointing out that it is a technique that can effectively adjust nasal tip rotation in addition to these previously described benefits. We named this modification, which stands out in this aspect, as versatile vertical alar resection (V-VAR).

2. Methods

This study consisted of retrospective chart reviews of existing medical records and hence therefore did not require IRB approval. No identifiable patient data was reported, and consent was not required.

2.1. Technique

In this study, V-VAR surgical technique was applied to all patients under general anesthesia. Lidocaine (2 %) and Epinephrine (1:200,000) infiltration was chosen as local anesthesia and vasoconstruction. In open

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approach primary rhinoplasty, bilateral infracartilaginous incisions, transcolumellar and an inverted "V" shaped incision were made. In the nasal dorsum, the skin and subcutaneous were elevated by supraperichondrial and subperiosteal dissection. When other required surgical steps have been completed, nasal tip interventions are made. V-VAR technique was used for nasal tip surgery in patients with high projection.

First, the original dome point was marked. In patients with high tip projection and caudal rotation, after marking the new dome point from the original dome point to the lateral crus, the skin under the cartilage was elevated and protected, and resection was performed from the lateral crus from the original dome point to the new dome point. Thus, since the medial crus size remained the same and the lateral crus was shortened, the projection decreased and the rotation increased.

In patients with high tip projection and rotation, a new dome point was marked from the original dome point to the medial crus, and the skin underneath was elevated, and then resection was performed from the medial crus from the original dome to the new dome. Thus, as the medial crus shortened and the lateral crus remained the same, projection and rotation were reduced together.

In patients with high tip projection but normal rotation, equal amounts of resection were performed from both medial crus and lateral crus on both sides of the original dome. Thus, the tip projection was reduced and the rotation remained the same (Videos 1–2).

3. Results

Between September 2021 and September 2023, V-VAR technique was applied in a total of 23 patients (14 primary and 9 revision rhinoplasty) with highly projected nasal tips. The ages of the patients were between 19 and 42, consisting of eight male and 14 female patients. In 4 of the cases, the rotation and projections both were high and these patients were revision cases. In two revision cases, projection was high and rotation was normal. In the other 17 patients, projection was high and rotation was low. All patients were followed for 12–24 months. The desired nasal tip rotation and projection were achieved in all patients.

4. Discussion

In the VAR technique described by Seneldir et al., in patients with overdeveloped lateral crus, drooping noses, wide tips and congested tips, the lateral and medial crus are shortened, and the tip of the nose is repositioned [3]. To date, the VAR technique and dome division technique have been used mostly for purposes such as adjusting the tip projection, correcting deformities, asymmetries, and deformities in the tip, correcting the infratip lobule, and increasing rotation [3,5]. The VAR technique absolutely reduces the tip projection because it shortens the lower lateral cartilage [3,5]. However, its effective role in rotation adjustment has not been mentioned to date. The (V-VAR) modification we described is a novel technique that allows the VAR technique to change the rotation in any direction as desired and according to the patient's needs. To date versatility of the VAR technique has not been defined with the ability to adjust tip rotation effectively and as desired.

The V-VAR technique described in this study can be used in all patients with highly projected tip structure. Primary patients with high nasal tip projection generally have a tip structure that is also broad and bulbous. Therefore, it is important not to widen the tip of the nose further while lowering the tip projection. Alternatively, lowering the projection and adjusting the rotation can be performed with medial crus overlap and lateral crus overlap techniques. However, in these techniques, the crus thicken because they are overlapped. When the double layer of tip cartilages is added to the widening that increases with deprojection, a deprojection results in widening at the tip of the nose, which is not a situation that patients like.

The first thing to do when starting the V-VAR technique is to mark the patient's original tip point. While resection from the original tip point towards the lateral crus increases the rotation, resection towards the medial crus decreases the tip rotation. If it is not necessary to change the patient's tip rotation, equal resection can be performed from both sides of the original dome to lower the nasal tip projection. Thus, with this technique, tip projection is reduced and tip rotation is adjusted as desired according to the patient's needs.

5. Conclusions

In patients with high tip projection, the V-VAR technique, in which we can reduce the tip projection and adjust the tip rotation as desired according to the patient's needs, versatility of VAR can increase surgeon's ability in obtaining beautiful and appropriately positioned nasal tips.

Supplementary data to this article can be found online at https://doi.org/10.1016/j.amjoto.2024.104434.

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Ethical approval

All procedures performed in studies involving human participants were in accordance with the ethical standards of the institutional and/or national research committee and with the 1964 Helsinki Declaration and its later amendments or comparable ethical standards.

Informed consent

For this type of study informed consent is not required.

CRediT authorship contribution statement

Erkan Soylu: Investigation, Methodology, Project administration. **Alper Yenigun:** Investigation, Writing – original draft. **Orhan Ozturan:** Supervision.

Declaration of competing interest

None.

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