# N-Modification of the Transcolumellar Incision as a Trial to Conceal the Resulting Scar in Open Rhinoplasty

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# ABSTRACT

Open rhinoplasty has become more common in recent years because it provides good exposure of the nasal skeleton, allowing precise correction of any deformity. One of the main disadvantages of the open approach is the columellar scar that results after transcolumellar incision. This incision may be V shaped, inverted V, or stair-step incision, and is located at the narrowest part in the middle of columella. All of these types usually leave visible scars in varying degrees including stepping or notching of the columella and irregularity of the medial border of the nostril rim.

The aim of this work is to refine this incision as a trial to conceal the resulting scar by the use of an N-shaped (or vertical Z) incision with a long middle and 2 short lateral limbs. It is located at a lower position in the columella so that the lower end of its middle limb reaches the columello-labial crease. In this study, 19 cases of open rhinoplasty were included. Postoperative follow-up ranged from 3 to 18 months. The results showed that in all cases, the scar is almost concealed at 3 months. No complications related to the incision were detected in any of the cases.

In conclusion, this modification helped to conceal the columellar incision and I recommend its use during open rhinoplasty.

# **INTRODUCTION**

The open approach in rhinoplasty has become more commonly practiced in recent years. This is because of many reasons [1,2]. It allows a direct visualization and assessment of the nasal osteocartilagenous framework in its natural, undistorted position, permits many cartilage-modifying techniques to be conducted in a precise manner under direct vision, and allows better stabilization of framework and grafts. In addition, septal surgery benefits significantly from the excellent exposure [1-3]. However, the external transcolumellar scar remains the main disadvantage of this approach [4].

There are many patterns of columellar incisions. These include; V-shaped incision [5,6], inverted V- shaped incision [3,10], stair-step incision [9,11], and running W-incision [7]. Most of these incisions may leave visible scars in variable degrees. Commonly, notching of the columella is seen especially on profile. This results from tension on the wound, as the tip is projected [4]. Irregularity (stepping) at the medial border of the nostril may also be seen, as a result of scar contracture at the meeting of the lateral ends of transcolumellar incision and the columellar component of the marginal incision. These deformities, until recently, made a significant number of surgeons afraid to use the open approach, thinking in the risk of undesired scar [7]. On the other hand, because of the advantages of the open approach, many surgeons started to think that with refinement of the technique and meticulous closure, the scar is accepted by the patient and it is a small price to pay for the added gain of exposure [1]. However, there should be a solution for the scar quality. For this reason, I shifted to use a modification for the transcolumellar incision, seeking for better scar quality, especially after I noticed some of the resultant scars after V-shaped and stair-step incisions in my earlier practice.

The aim of this paper is to introduce and evaluate a modification of the transcolumellar incision as a trial to conceal the resulting scar in open rhinoplasty.

# PATIENTS AND METHODS

Starting from July 2002, the author shifted to use a modification of the transcolumellar incision in open rhinoplasty. This was applied on 19 cases over a period of 2 years. Their age ranged from 18 to 39 years (average 22.5). All cases were subjected to external and internal nasal examination before surgery. They were selected as candidates for open rhinoplasty.



Fig. (1): The N-shaped incision:

- A- Schematic illustration of the N-shaped incision on the columella.
- 1- Imaginary line passing through the mid point of the middle limb, dividing the incision into 2 components.
- 2- The upper inverted V-component.
- 3- The lower upright V-component.
- B- The pre operative marking of the incision. Note its shape and low situation in the columella.



Fig. (2-A): Pre-operative basal view for the nose of a 20 years old case open rhinoplasty was done for a dorsal hump and a boxy tip.



Fig. (2-B): 10 days post-operative view for the same case. Note that some of the stitches are still there.



Fig. (2-C): The same case 3 months later, the scar is unnoticeable.



Fig. (3-A): Pre-operative view of 23 years old female with broad tip and a minimal hump.



(B) (C) Fig. (3-B,C): Post operative views of the same case at 15 days and 18 months.

# Surgical technique:

The transcolumellar incision is done having the shape of an oblique N (Fig. 1). The N has a relatively longer middle limb measuring about 4mm in length, vertical or slightly oblique in the mid-line of columella. It has two lateral limbs, each about 3-4mm. These limbs connect the upper and lower ends of the middle limb to the right and left marginal incisions respectively. The angle between the middle limb and each lateral limb is about 45 degrees. The site of the incision is low in the columella that the lower end of the middle limb reaches the columello-labial junction and this makes the lateral limb on the left side goes with the columello-labial crease. If an imaginary line passes transversely through the mid-point of the middle limb, it divides the incision into 2 Vs. One inverted V above and one V below; both are shared in its medial limb (Fig. 1). Then, the steps of exposure are followed as usual. After finishing the procedure, the transcolumellar incision is closed using interrupted 6-0 Prolene.

All of the cases were followed-up for a period ranging from 3 to 18 months. During follow-up period, the patients were subjected to periodic subjective evaluation by inspection of scar site. Surgeon notes, as well as patient opinions were recorded. Objectively, standard pre-operative and post-operative photographs documented the outcome at different postoperative times. The records and photographs of open rhinoplasty patients who were operated upon before this study were also reviewed for comparison.

#### RESULTS

In all cases the scar was almost concealed at 3 months. Before that time, only slight hyperemia or hyperpigmentation were found in 31.6% of cases. At 6 to 18 months the scars were totally not apparent in 80% of cases (12 among 15 patients who had this longer follow-up), while 20% (3 cases) still show a faint mark in the site of the right lateral limb of the incision only. This was noticed only at a close distance but not at conversation distance. This mark got improved by time. None of the cases had a complaint or a comment about the scar at any postoperative time. In comparison with the earlier cases scar was present in a considerable percentage (>40%) that represents a stigma of open rhinoplasty, although it was acceptable by most of the patients (>90%), and unnoticeable at conversation distance.

#### DISCUSSION

The idea of this technique is based on combination of the advantages of many of the practiced techniques, trying to avoid the disadvantages of each. Putting the incision at the base of columella helps to conceal at least 1/2 of the scar in the columello-labial crease. Although it became more distal from the blood supply, no vascular compromise had occurred even in the cases combined with alar or nostril reduction incisions. This finding is matched with what is noticed by many authors [5,6].

Putting the incision high aiming to preserve the blood supply of columellar skin, is probably the idea of the inverted V incision that is still practiced by many authors [3,10], but this is on expense of the scar appearance. This is because the inverted V incision is situated in the most apparent part of the columella (at its middle). The apex of V thus reaches more anterior in the columella. Besides, the limbs of the V are perpendicular to the columello-labial crease and the big angles of V incisions make the limbs more transversely oriented, which makes the wound more subjected to tension during heeling.

The upright V incision has the advantage of possibility of lengthening the columella when it is closed as Y. This may be needed in cases of lipnose deformity or when tip over projection is planed. In these cases it is positioned at the base of columella. Ugly scars were noticed when this incision is put in the middle of columella, the same as with transecting the columella at its middle with a transverse incision [8]. Avoiding contracture of a linear scar by making a stair step is definitely better. However, still in a considerable percent of cases, in my earlier practice, this incision left a signature scar because it was traditionally done in the mid-columella, (at the level of divergence of the foot plates of medial crura), and its transverse components are dominant, subjecting it to tension during heeling specially when tip projection was increased. In addition, it reaches the margin at 2 different levels (stair-step). The vertical component is the part that is not subjected to any tension. So, in N-modification, it is planned to make the incision lines more vertically oriented, and to redistribute the length of the incision making the vertical middle part longer. The lateral limbs reach the columellar margins nearly at the same level. Thus, all the disadvantages of stair-step incision are totally avoided. Combination of the 2 V components of the incision makes the angles narrower than a single V. This makes the incision lines more vertically oriented. This idea was also successfully achieved by some authors who tried running W incision, but I see that N is more simple and easier to close with saving of time. Another advantage of N is that each V component could be closed as Y if needed. However, this was not needed in any of the cases of the study.

*Conclusion:* In conclusion, this modification helped to conceal the columellar incision and I recommend its use during open rhinoplasty.

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