

Outcomes And Complications of Alar-Base Reduction

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Abstract

1.1 Background: alar -base reduction requiring three dimensional manipulations of nasal tissues is one of the most challenging rhinological procedures facing surgeons. Because of it's unique anatomical configuration no standard reduction procedures exist.

1.2, Aim of study: To assesses post operative outcomes and complications of alar-base reduction.

1.3, Patient and method: A randomized case series prospective study conducted on 124 patients undergoing open rhinoplasty operation with alar-base reduction (sill excision, wedge excision or combination of both) in Sulaimaniyah teaching center and Azmar private hospital from October 2014 to November 2015, patients were assessed post-operatively for nasal obstruction, lose of alar creases, visible external incision and nostril asymmetry at seven days, 1month, 3 month and 6 month, collected data analyzed statistically using SPSS version.

1.4, Results:

Among included patients all had alar flaring, 109 patients (87.9%) had wide nasal base, 29 patients (23.4%) asymmetrical nostril, 17 patients (13.7%) had nasal obstruction due to anterior nasal valve, per operatively combination of sill and wedge resection were done for 109 patients (87.9%), wedge excision for 15 patients (12.1%), base narrowing suture for 9 patients (7.3%). Post operatively nasal obstruction occur in 11 patients (8.9%). Asymmetrical nostril and visible external incision in 5 patients (4.0%) for each, lose of alar creases in 3 patients (3.4%).

1.5, Conclusions:

Combined alar-base reduction is a meticulous single corrective technique in narrowing both the wide nasal base and excessive alar flare without significant complications, rewarding satisfactory results to both the patients and the surgeons.

Keywords: Alar-Base reduction, Sill-excision, Wedge resection, Asymmetrical nostril.

I. Introduction

Alar base reduction is a part of rhinoplasty which is done at the end of the operation to correct wide nasal base and alar flaring and had a great effect on appearance of the nasal base. Wier who's first describe wedge resection in order to reduce the alar flaring.[1] After that many technique developed by the rhinoplastic surgeon to reduce alar base all of them try to avoid external scar follows the classical Wier excision.

In late 1900s rhinoplastic surgeon developed cinching suture and bunching sutures by Michelson, Peck, Planas, AG Ship, W.B.Sunders all of them attempted to avoid notching of the alar rims, the main advantage of cinching sutures to avoid the external incision but late also these sutures failed because of in case of wide noses with excessive flaring it may lead to bunching of the floor of the nostrils and excessive rounding of the alae another important limitation of the cinching suture technique is that it can only result in symmetric medialization of the alae, which makes it inapplicable in cases with asymmetric flaring because of these limitations cinching sutures failed to replace standard alar base excision. [2-7] In 1980s, Tardy, Bennett and Lessow return back to the external cutaneous excision was noticed in order to avoid the risk of notching of the alar rims that may follow vestibular skin excisions.[8-10] In 2014 boomerang-shaped excision (for case of wide nasal base and alar flaring) developed by Foda which made effective technique to narrow the nasal base and alar flaring. [11]

Preoperatively should be taken into account the skin and soft tissue covering the nasal base carefully because any aggressive excisions can be disastrous and virtually irreparable and the result depend on the thickness, texture and sebaceous nature of the skin. [12] Assessment of alar base is the most important step in establishing relationship between the base, the rest of the nose, and the face. The normal distance from the lateral limits of one alar base to the opposite side is approximately 2 mm wider than the intercanthal distance in

a harmonious face. This is true as long as the intercanthal distance is normal (normally 31–33 mm) (**Figure1**). If the intercanthal abnormal (broad or narrow) the orbital fissure (the distance from the medial to lateral canthus) can be used as a guide to decide the width of the alar base. For analysis of this zone, a vertical line drawing from the medial canthus in a nose with an optimal alar base should pass 1 mm medial to the outer boundary on each side of the alar base, as long as the intercanthal distance is normal.[12]



Figure(1) Two vertical lines pass the intercanthal distance

The vertical alar base position is readily determined on the profile view (**Fig''2**). Point N (nasion) is connected to point S (stomion) and the distance is divided equally into three. The caudal border of the alar base is located 2 mm caudal to the junction of the middle and lower thirds.[12]

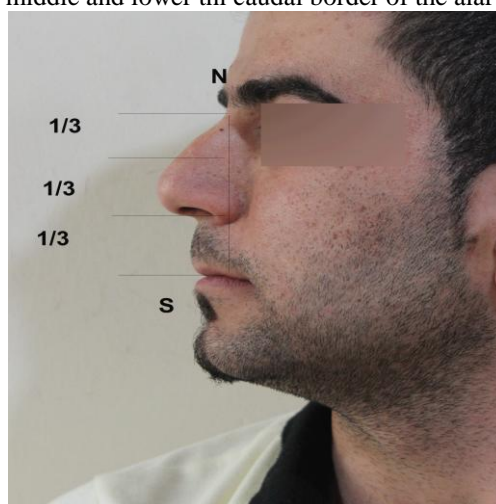
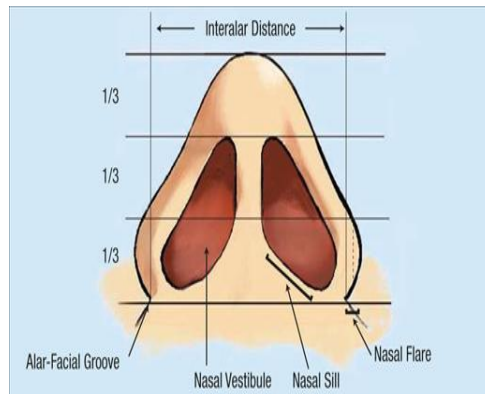


Figure (2) Point N (nasion) is connected to point S (stomion) and the distance is divided equally into three. The caudal border of the alar base is located 2 mm caudal to the junction of the middle and lower thirds

2.1, Anatomy:

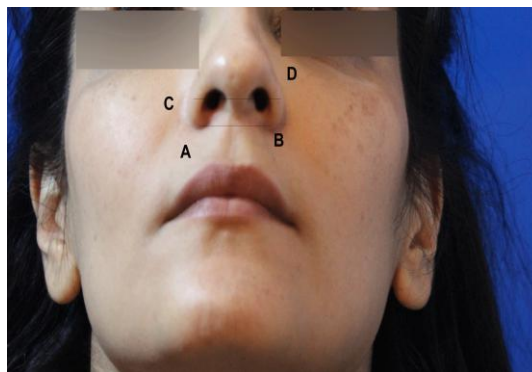
The alar base is a complex three dimensional shape, with intimate relationships with the medial cheek, nostril, columella, and upper lip. The alar base is typically composed of fibro fatty tissues and may assume a variety of shapes and sizes. The nasal sill, as defined by Tardy, refers to the intra nostril region between the medial crural footplate/ columella complex and the alar facial groove. [8]

The nasal sill may be notched or smooth depending on the interface with the alar facial groove. The alar crease (alar facial groove) is the junction between the nose and cheek and is an important landmark to be preserved in rhinoplasty surgery. A cephalically positioned alar facial junction will lead to a snarled appearance to the nose, while a caudally positioned alar facial junction can lead to alar hooding. The columella or the feet of the medial crus comprises the most medial portion of the nostril and may significantly narrow the nostril aperture.



Figure(3) Alar-base terminology. [13]

Lengths of several distances are calculated in order to individually optimize alar base reduction. The base width refers to the width of the nostril on base view at the alar facial junction. Fig(4)



Figure(4): Alar base width (A-B); Alar flare (C-D)

The flare width refers to the lateral aspect of the ala extending beyond the alar-facial groove, often the widest point of the nostril on base view. [9]

These two components of analysis should be viewed as distinct aesthetic concerns. In addition, which can be divergent, straight or convergent. Sheen defined the alar axis length of the alar sidewall should be measured and analyzed. [10]

2.2, Aim of study: To assesses post operative functional, cosmetic outcomes and complications of alar-base reduction.