



Plastic Surgery

**OUTCOME ANALYSIS OF NASOLABIAL FLAPS - RECONSTRUCTION OF ALAR DEFECTS OF NOSE FOLLOWING TUMOR EXCISION - OUR EXPERIENCE**

<b>Dr.Oxy ts Dharsini</b>	Postgraduate (final year) dept of plastic surgery, Coimbatore medical college, Coimbatore
<b>DR.V.P.RAMANAN</b>	M.Ch plastic surgery, Associate professor , Dept of plastic surgery, Coimbatore medical college, Coimbatore
<b>Dr.M.Sundararaj</b>	M.Ch plastic surgery, Assistant professor, dept of plastic surgery,Coimbatore medical college,Coimbatore
<b>Dr.S.Prakash</b>	M.Ch plastic surgery, Assistant professor dept of plastic surgery,Coimbatore medical college,Coimbatore

**ABSTRACT**

**OBJECTIVE:** to share our experience of nasolabial flaps

**METHODS:** About 25 patients were diagnosed with carcinoma ala of the nose in the period of January 2015 - December 2016.Following confirmation of diagnosis pathologically, the patients were subjected to wide local excision,followed by reconstruction using nasolabial flaps .we followed the patients post operatively for 3 months and evaluated the outcome.

**RESULTS:** Of the 25 patients 10 patients were male and 15 were female. The age group was between 42 and 63 yrs and mean was 52.5 yrs. 21(84%) patients had basal cell carcinoma,4(16%)patients had squamous cell carcinoma. Superior based flap was used in 19 [76%] patients and islanded flap was used in 6[24%]patients. The flap settled well in all cases except in 3 cases which were bulkier,2 cases with flap tip necrosis.

**CONCLUSION:** In our experience ,the nasolabial flap appears to be the best choice for alar reconstruction with easier dissection ,good reliability, and better cosmetic outcome.

**KEYWORDS :** ala, nasolabial flaps, carcinoma

**INTRODUCTION:**

The reconstruction of nose especially ala is a challenging task due to the three dimensional aspect and aesthetic appeal[1]. The defects of the nose result from trauma, malignancy and other causes like infection and they tend to have effect on patient's psychology. Restoration of the defects especially full thickness defects of the nasal ala resulting from tumor excision are usually difficult[2]. The reconstruction of nose dates back to ancient India with use of forehead flaps or distant flaps from arm[3]. Reconstructive methods available are skin grafts, local flaps, distant flaps and free flaps [2]. The results of skin graft are less than satisfactory,distant flaps are bulky with a poor colour match. Nowadays local flaps are preferred ,of which nasolabial flaps has stood the test of time[4].

We share our experience in using nasolabial flaps for reconstruction of alar defects.

**MATERIALS AND METHODS:**

This is a retrospective review of 25 adult patients with carcinomatous lesion over the ala of the nose followed by reconstruction using nasolabial flap in the period of 2 years from January 2015 to December 2016. Histopathological examination was done to confirm the diagnosis before planning of surgery. There was no evidence of metastasis. The patients were operated under general anaesthesia after obtaining written informed consent . Wide local excision of the lesion was done with adequate clearance. The defect was covered by using ipsilateral nasolabial flaps . Superior based nasolabial flaps was used in 19 patients and islanded flap in 6 patients.

**RESULTS:**

10 [40%]patients were male and 15[60%] were female. The age group was between 42 and 63 yrs and mean age group was 52.5 yrs. 21(84%)patients had basal cell carcinoma,4 (16%)patients had squamous cell carcinoma.

SUPERIOR BASED NASO LABIAL FLAP	19 (76%)	Flap tip necrosis -1 Bulkier ala-1	15-excellent 2- good 2-satisfactory
ISLANDED NASOLABIAL FLAP	6 (24%)	Flap tip necrosis -1 Bulkier ala -2	3-excellent 2-good 1-satisfactory

**Fig 1-Islanded nasolabial flap**



Basal cell carcinoma left ala of nose excised and islanded nasolabial flap given

**Fig 2-superiorly based nasolabial flap**



Basal cell carcinoma right ala of nose excised and superiorly based nasolabial flap given

TYPE OF FLAP	NO. OF PATIENTS	COMPLICATIONS	AESTHETIC OUTCOME
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Fig 3-Superiorly based nasolabial flap



Squamous cell carcinoma right ala of nose excised and superior based nasolabial flap given

Superior based nasolabial flap was used in 19 [76%] patients and islanded flap was used in 6[24%]patients. The flap was used as transposition flap or turn over flap depending on whether it was a partial thickness or a full thickness defect. The flaps settled well except in two patients with flap tip necrosis and bulkier ala in 3 patients. The patients were reviewed 3mon following surgery. No recurrence at the primary tumor site was detected during the follow-up period. Aesthetic outcome was excellent in 18 patients, good in 4 patients, satisfactory in 3 patients. The colour matching with surrounding skin and contour was good. The histopathology of the excised lesion revealed free margins.

#### DISCUSSION:

The reconstruction of the nasal ala needs to be performed with a thin pliable flap which possesses a good texture and color match. The skin of the nasolabial area suits the texture and color and hence considered as an ideal donor site with least donor site morbidity [6]. Moreover this area is in proximity and easily accessible. due to the visibility and social importance of this area Optimal aesthetic and functional outcomes are desired.

The flap is supplied by angular branch of facial artery, the infraorbital artery and the transverse facial artery[7]. The superior based flap is used to reconstruct defects on the cheek, sidewall or dorsum of the nose, alae, columella and the lower eyelid. Inferiorly based flaps can be used to reconstruct defects in the upper lip, anterior floor of the mouth and the lower lip[2]. The nasolabial flaps are easy to dissect, elevate and inset and is a commonly done as single stage procedure. This flap has robust vascularity which allows it to withstand radiotherapy. The simplicity of the flap and the satisfactory contour created from the nasolabial fold[2] are more useful in reconstruction of the ala. The flap thickness was decided according to the needs of the defect. Although the extent of the flap is limited by the available redundant tissue, primary closure of the donor site upto 5 cm is possible with wide undermining of the surrounding cheek tissue. Most of the tumors were basal carcinomas (76%), due to the laxity of the donor cheek defects upto 3x2 cm in size could be restored.

The nasolabial flap has been extensively utilized for nasal reconstruction in many ways. It has also been used as an island flap based on the lateral nasal artery for nasal reconstruction[8].in our cases we have used both superior based and islanded flaps based on the defect size and type. The flap has also been based on the infraorbital arteries to cover the nasal defects[9]. In nasal reconstruction one of the goals is to give good lining and nasolabial flap is also used for this purpose with other flaps[10,11].

The turnover nasolabial flap has been described for reconstruction of full thickness alar defects. Massaoud[4] described the use of turnover nasolabial flap for reconstruction of full thickness alar defects and reported the temporary flap congestion and bulkiness as the common complications. Sohn et al[3] made use of the nasolabial perforator for full thickness alar defects and they also reported the temporary congestion as common complication.

Spear et al[14] and Kroll[15] described a modified application of the flap for total full-thickness defects of the alar margin. the flaps were designed superiorly or islanded with no modifications, the flaps settled well. Javaid et al[16] reported the use of nasolabial flap in reconstruction of nasal alar defect ;in their study, alar retrusion occurred in 5.71% of patients and flap tip necrosis in 2.86% patients. In our patients we had 2 cases out of 25 cases with flap tip necrosis Rohrich et al[6] in their study made use of non-anatomic alar strut grafts to prevent notching and cicatricial distortion of the nose after the reconstruction of the defect with nasolabial flap. In our patients the contour was maintained and no strut grafts was required. Some of the limitations of the study were: it is a single center study, observer bias could not be eliminated completely and we had only limited follow up of the patients.

#### CONCLUSIONS

1. Nasolabial flap is a very reliable flap for nasal defects.
2. The robust vascularity of the flap enables it to be used as pedicled or islanded flap.
3. The least donor site morbidity and a lesser conspicuous scar have made it the preferred choice for nasal ala reconstruction.

#### Declaration of patient consent

the authors certify that they have obtained all appropriate patient consent forms. In the form the patient(s) has/have given his/her/their consent for his/her/their images and other clinical information to be reported in the journal

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