



## TO STUDY USEFULNESS OF ISLANDED NASOLABIAL FLAP RECONSTRUCTION FOR CARCINOMA BUCCAL MUCOSA DEFECT

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**ABSTRACT** **BACKGROUND** :- Nasolabial flap (NLF) cover is one of the oldest techniques to replace orofacial soft tissue defects. Intraoral reconstruction with a nasolabial flap is a simple and fast procedure with minimum donor defect and complications.

**AIMS**:- To assess the usefulness and advantage of nasolabial flap in reconstruction of buccal mucosal cancer defect.

**Study design**:- prospective study

**Method** The study was conducted from December 2019 to October 2021 on 45 patients of ca buccal mucosa with average age 48.2+/-10.1 years whose underwent wide local excision with defect reconstruction by nasolabial flap. Pre operative assessment(fig 1) and outcome and complication of flap was evaluated.

**RESULTS** In our study , 45 patient underwent nasolabial flap reconstruction with maximum 41 flaps are superiorly based and 4 were inferiorly based. Local hematoma was most common early complication, only 4.44% cases have distal flap tip necrosis and oro-cutaneous fistula(fig 4).

**CONCLUSION** Nasolabial flaps(fig 1, 3) can be simple, effective and safe reconstruction flap option with less complication rate for small and medium size intraoral defect created after excision of Carcinoma buccal mucosa(fig 2)

**KEYWORDS** : nasolabial flaps , seroma/hematoma ,oro-cutaneous fistula

### INTRODUCTION

The nasolabial flap is a very simple flap used for reconstruction of intraoral defects in the floor of the mouth, the tongue, cheek, commissures, nose tip, nasal ala, and lower eyelids. It is a reliable, versatile, and easy to raise flap for a variety of small to intermediate defects in the orofacial region. The first nasolabial flap for intraoral reconstruction was reported at the end of the nineteenth century. The nasolabial flap may be superiorly or inferiorly based. An inferiorly based flap is useful in reconstruction of the lip, oral commissure, and anterior aspect of the floor of the mouth, while superiorly based flaps are utilized for reconstruction of the ala and tip of the nose, and the lower eye-lids and cheeks. The choice of pedicle is based on the site of the defect and any need for rotation or advancement of tissue to the site of the defect. The flap may be thick or thin, depending on the requirement of the defect and the thickness of the donor tissues. Intraoral reconstruction with a nasolabial flap is a simple and fast procedure with minimum donor defect and complications. This study presents our clinical experience with nasolabial flaps for reconstruction of mucosal defects due to ablative tumor surgery. We analyzed the utility of this flap for the oral cavity cancer defect reconstruction done in 45 consecutive cases.

### AIM AND OBJECTIVES

To assess the usefulness of nasolabial flap in reconstruction of buccal mucosal cancer defect.

### MATERIAL AND METHODS

The study would be conducted in the department of general surgery, LLR & Associated Hospitals, GSVM Medical College, Kanpur from December 2019 to October 2021 on all patients of ca buccal mucosa who would be admitted in our ward. The study was approved by institutional ethical committee.

### Criteria for selection of patients will be based on –

#### Inclusion Criteria

- T1-T3 buccal mucosal lesions

#### Exclusion Criteria

- T4 lesions
- Post radiotherapy lesions
- Metastatic lesions

After admission to LLR hospital, a detailed clinical history and examination of the patient will taken. Relevant investigation undertaken to make a diagnosis. Patients for surgery assessed pre-operatively for the fitness for surgery . Patients and attendants of all patients in study signed an informed consent.

Evaluation of these patients would be done on basis of patients characteristics comprehensive history hematological examination (CBC, KFT, LFT, PTINR, Serum Electrolyte pathological examination (scrap cytology of the lesion) Radiological examination (CECT of face and neck)

Those patients who are not fit or not willing for flap reconstruction were excluding from our study. Post operatively patient's condition were assessed. Flap condition and local complications were documented.



**Fig 1. Design Of Flap To Be Raised(marked)**

**Fig 2. Flap Reconstruction After BM Defect**



**Fig 3. Closer Of Donor Site**

**Fig 4. Follow Up After 6 Month With Oro-cut Fistula**

### OBSERVATION AND DISCUSSION

The study was conducted in the department of general surgery, LLR & Associated Hospitals, GSVM Medical College, Kanpur from December 2019 to October 2021 on all patients of ca buccal mucosa whose underwent wide local excision with defect reconstruction by nasolabial flap. Pre operative assessment and outcome and complication of flap was evaluated and tabulated as follow:-

#### Age Group Distribution (in years)

In our study 45 no cases were taken age ranges from 30 to 70 years with

a mean age of 50 year old majority of cases were taken from 40 to 60 year age which were 66.6%. same as our study Sujeeth et al (2018 )10 patient were taken for study age ranges from 21 to 60 year of age with a mean age of 40 years. Lekawale et al (2016) also studied total 18 cases were taken in which age range from 36 to 70 years with a mean age of 54 years.

**Sex Distribution**

In our study total no of patient were taken 45 in no in which 25 were male and 20 were female male specially chew the areca nut/pan masala, tobacco, smoking and alcoholism prominent in males so that oral cavity cancer more prominent in case of male. similar to our study, seema singh et al(2012) in their study 11 patients were taken in which 9 were male 2 were female. Shetty et al (2012) 10 patients were taken where 6 were male and 4 were female. Rodrigauge et al (between 2004-12)15 patients were taken in this study 9 were male and 6 were female . Hemant eta(2016) in their study 18 patients were taken out of which 14 were male and 4 were female. Eckardt et al 2011 total no of patients were taken 22 in which 15 were male and 7 were female

**TNM staging of Buccal mucosa carcinoma**

Staging	No of cases	Percentage
pT1 N0	3	6.66
pT1 N1	2	4.44
pT2 N0	16	35.55
pT2 N1	24	53.33
Total	45	100

In our study total no of cases taken 45 in which majority of cases taken T1 to T2 with N0 -N1. Relationship between T1-T2 lesion and nasolabial flap reconstruction is smaller the defect of oral cavity reconstruction option for the smaller defect of the oral cavity are ranging from primary closure ,secondary healing from mucosalisation on covering the defect site with split thickness skin graft most of the technique may results in speech and swallowing problems intraoral reconstruction with the nasolabial flap is a simple and fast procedure and minimizes the morbidity relating to the speech and swallowing impairment to a great extent .Andre et al (2011) also studied 22 case in which majority of cases were taken from T2 lesion . similar to our study, Singh et al (2012) also reported a series of 26 case in which majority of cases were taken T2 /T3 with N0/N1 status on clinical and on CT scan.

In our study total no of cases were 45 in which 26 cases underwent with neck dissection and 19 underwent without neck dissection (supra omohyoid neck dissection). The lymph node were recognized on the basis of clinically, ultrasonography neck and computer tomography scan of face and neck A case series of 18 case by Zindgaade et al (2016) where all patient underwent neck dissection An another study done by Rajesh et al(2012) also done 2 case of neck dissection out of 26 cases. Horst Kobemuller et al (2011) also studied a series of 22 cases in which 16 were with neck dissection. Nizin et al (2019) also reported a series of 21 cases in which all were with neck dissection.

**Orientation of flap**

**Table 1: distribution of case according to use of orientation base of nasolabial flap**

Use of NLF	No of case	Percentage
Inferiorly based	4	8.88
Superiorly based	41	91.11
Total	45	100

In our study, 48 nasolabial flap of 45patient were reconstructed in which 44 were superiorly based and 4 were inferiorly based. Superiorly based flap are utilized for reconstruction of the ala and tip of the nose and the lower eyelid and cheeks. An inferiorly based flap is useful in reconstruction of the lip, oral commissure and anterior aspect of the floor of the mouth. Like to our study, Nikolaos et al (2008) were performed 9 patients nasolabial flap reconstruction in which 66% are superiorly based.

**Table 2 : Early complication after flap reconstruction**

Complications	No of case	Percentage
Surgical site infection	02	4.44
Hematoma/seroma	05	11.11
Distal flap tip necrosis	02	4.44
Wound dehiscence	02	4.44

**Table 3: Late complication of flap.**

Late complication	No of case	Percentage
Bulky appearance	9	20%
Oro cutaneous fistulas	2	4.44%

In our study 45 cases were studied in which 48 flaps were reconstructed in which 2 cases develop infection which was resolved by antibiotics. Hematoma developed in only 5 cases. Hematoma may result from inadequate hemostasis, drug induced coagulopathy eg. acetylsalicylic acid (NSAIDS) & vitamin E should be avoided at least 2 week prior and 1 week after surgery. Hematoma may resolve itself or by steam inhalation. Distal flap tip necrosis in 2 cases (4.44%). this were developed due to insufficient arterial flow or venous drainage .Flap survival depends on the early recognition of flap compromise such as ischemia and necrosis. Smoking also associated with an increased risk of flap failure smoking aggravates hypoxemia and vasoconstriction. Congestion is most common problem associated with facial flap venous congestion can lead to arterial compromise and flap necrosis. Hemant et al (2016) also reported 18 cases of nasolabial flap reconstruction in which only 2 cases were infected .out of 18, only 3 cases had distal flap tip necrosis. an another study of Varghese et al (2001) reported distal flap necrosis rate and complete flap necrosis was 5.5% and 6.3% respectively in their series of 238 patients Von wijk et al (2000) distal flap tip loss of 5% cases were reported. Andre et al (2011) also reported that out of 22 flap reconstruction only in 7% were partial or complete loss .Shetty et al (2019) reported that in 18 flap reconstructed, only 2 flap infection and 1 flap distal tip necrosis were observed. This study also reported bulky appearance of flap in one case. Oro-cutaneous fistula was observed in 2 flaps. Seema et al(2012) stated in their study that 22 reconstructed flap wound dehiscence developed in only in 3 patients. Oro-cutaneous fistula develop in 1 patient and recurrence occur in 1 patient. Kallapa et al(2019) reported that out of 24 cases, almost all cases had good cosmetic and functional result, distal flap tip necrosis was noted in only 2 cases. Oro-cutaneous fistula was observed in 2 cases.

Singh et al(2006-2010) also studied 26 patient , out of which 3 patient develop wound dehiscence and 1 develop oro-cutaneous fistula,1 patient develop wound infection, 1 patient develop recurrence, 2 patient develop distal flap necrosis. Rokonzaman et al (2018) also studied 20 patient in which 3 patients developed infection which was resolved by antibiotics and 3 patients developed dehiscence.

In our study bulky appearance of a flap occurs in 9 out of 48 flap this complication did not causes much problem and did not effects the flap viability of flap survival so could be neglected .

In our study oro-cutaneous fistula occur in 2 cases. infection and hematoma which was due to anticoagulant used or inadequate hemostasis which causes arterial and venous congestion which causes insufficient arterial and venous flow this causes distal flap tip necrosis as a result oro-cutaneous fistula occur.

**Table4. Correlation of defect size with functional out come**

Defect size	Functional outcome		
	Good	Satisfactory	Poor
< 2cm	07	02	00
2-4 cm	18	15	06
>4cm	00	00	00
Total	25	17	06

In our study,poor functional outcome noted only 6 patient. all 6 patients are belonging to 2-4cm defect .25 out of 45 patients had good functional outcome and 17 patients had satisfactory functional outcome.

**CONCLUSION**

**We conclude :-**

- Nasolabial flaps for simple, effective and safe reconstruction flap for intraoral defect created after excision of Carcinoma buccal mucosa.
- Nasolabial flap is ideal reconstructive option small to medium size intraoral defects. Use of nasolabial flap facilitates a fast and simple procedures coupled with a very high success rate and less complication rate.
- The nasolabial flap is used in oral reconstruction allow good wound closure without tension and maintain oral function.
- Intraoral reconstruction with the nasolabial flap is a simple and fast procedure and minimizes the morbidity relating to speech and

swallowing impairment to a great extent.

- Nasolabial flap have very limited use when there is scar over surgical site.
- Nasolabial flap also not be used in case of previously treated by radiotherapy.
- Nasolabial flap was not suited large size defect.
- Nasolabial flap was also not used in case of recurrence

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