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Supremacy of Local Nasolabial Flap Categories used in Intraoral Defects Formed after Oncological Resection and Oral Submucous Fibrosis

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Abstract:-
BACKGROUND: Tumor resection in the oral cavity results in mucosal defects leave the patient with noteworthy functional and esthetic defect & in OSF surgical management after releasing fibrotic bands defect created OSF surgical management in which after releasing fibrotic bands created a defect which needs to be reconstructed to avoid re-fibrosis. The flexibility of the nasolabial flap has been attributed to its reliable vascularity derived from numerous vessels within the vicinity.

AIM: This study is designed to compare the island NLF with pedicled NLF used in patient having intraoral defects after small oncological resection and oral submucous fibrosis.

METHOD: Study was conducted on patients undergoing treatment for intraoral lesions and oral submucous fibrosis requiring reconstruction using nasolabial flap on the patients reported to the department of Oral and Maxillofacial surgery in Rama dental college, Hospital and Research Centre, Kanpur.

RESULTS: In our study we had seen the island NLF showed superior results as compared with pedicled NLF in few of our chosen criteria and overall, also.

CONCLUSSION: Conclusions can be drawn from this study that both groups are more or less similar results with superiority towards island NLF.

Keywords:- *(Nasolabial flaps; Oral submucous fibrosis; Oral cancer; Ooncological resection).*

I. INTRODUCTION

Nasolabial flap began to seen in design during 1800s. Dieffenbach first used superiorly based nasolabial flap for the reconstruction of nasal alae in 1830. After that Von Lagenback used the nasolabial flap to reconstruct the nose. After 57 years, Esser describe the use of nasolabial flap to close palatal fistulae. After so many publications in which nasolabial flap described for the reconstruction of the floor of the mouth, lips, tongue, buccal mucosa, upper and lower alveolus, maxilla & oronasal defects.[9]

Tumor resection in the oral cavity results in mucosal defects and leave the patient with noteworthy functional and esthetic defect. Small defects like T1 tumor lesion resection do not root a problematic & in these cases primary closure of mucosal defect is treatment of choice. However, defects from resection of T2 tumor are often large enough and require distant or local flap.[20]

Oral submucous fibrosis is chronic insidious disease affecting any part of the oral cavity. OSF surgical management in which after releasing fibrotic bands created a defect which needs to be reconstructed to avoid fibrosis. The nasolabial flap is a versatile flap, which can be successfully used in the reconstruction of defects created after the release of fibrotic bands in OSMF. The versatility of the nasolabial flap has been attributed to its reliable vascularity derived from numerous vessels in the vicinity.

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II. METHODS

Study was conducted on patients undergoing treatment for intraoral lesions and oral submucous fibrosis requiring reconstruction using nasolabial flap. Among the patients reported to the department of Oral and Maxillofacial surgery in Rama dental college, Hospital and Research Centre, Kanpur between December 2019 to August 2021.

50 patients requiring reconstruction using nasolabial flap were included in our study. A detailed case history was taken from each patient followed by informed written consent. The patients underwent routine pre-operative Haematological, Biochemical, Microbiological, and required Radiological investigation. The patient was divided into two groups:

Group 1: single stage: - In this group we included 25patients in which single stage nasolabial flap was raised in island fashion for the reconstruction of intraoral defects.

Group 2: dual stage: - In this group we included 25 patients in which nasolabial flap was raised as a pedicled flap for the reconstruction, moreover additional surgery was performed after 21 days when the pedicle was divided & the flap revision was done by insetting the proximal end of the flap.

Pre-operative, intra-operative & post-operative pictures was taken during the entire course of procedure & follow-up. The comparison between pedicled flap and island flap was noted, all parameters were recorded periodically & were tabulated for statistical analysis.

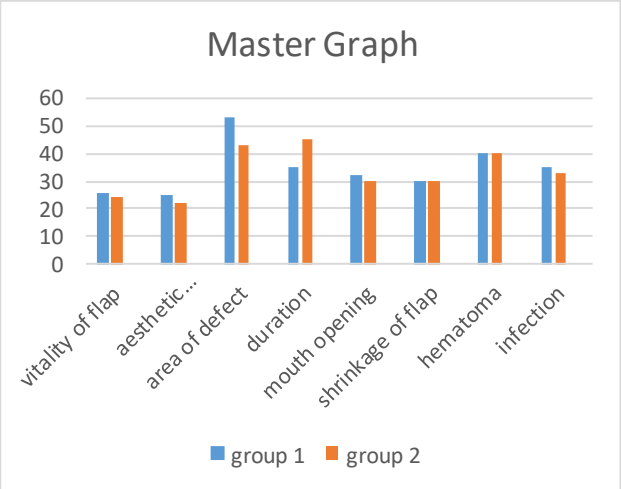
Postoperative follow up was done on the 3rd, 5th, 10th, 21st, & 30th day for evaluation on: Vitality of flap(intra/postop), Aesthetic appearance(postop), Area of defect(intra-op), Duration, Hematoma(postop), Mouth opening(intra/postop), Infection(postop), Shrinkage of the flap(postop).

III. RESULTS

We selected a group of 50 patients designed to compare the nasolabial island flap with nasolabial pedicle flap in patient having intraoral defects caused by oncological resection or after fibrotomy performed in oral submucous fibrosis case. Total of 35 males (75%) and 15 female (15%) selected randomly. In which we have included 15 male patients (60%) and 10 female patients (40%) in group 1 and 20 male patients (80%) and 5 female patients (20%) in group 2. There was no statistically difference in terms of sex distribution between the two groups. Interestingly majority of patients who accepted in the study fell in the age group of 30-50 year. Follow-up was done on 3rd 7th 15th 21st & 30th postoperatively.

We have evaluated patients on criteria including vitality of flap (postoperative), aesthetic appearance (postop), area of defect (intra-op), duration of flap surgery (intra-op), hematoma (postop), mouth opening (postop), infection (postop), & shrinkage of flap (postop).

Essentialness of the flap was recorded postoperatively on the criteria includes color, capillary refill, texture and temperature. In the rules of color, we discovered changes in flap tone on third and fourth postop follow-up day in 2 patients from group 1 which counts complete of 0.86% patients showed changes



towards lower end contrasted with group 2 in which 0.52% of flap showed changes towards lower end (graph 1). In the measures of capillary refill, we discovered slower capillary refill in average of 0.66% of total patients in group 1 contrasted with group 2 patient which tallies of normal of 0.54% (graph 1). In measures of texture there is no any significant changes noted in both the group with a very mild changes noted in group 2 patient with count of only 0.08% (graph 1). In comparison of temperature haven't tracked down any contrast in both the groups.

On assessing both the groups on standards of aesthetic appearance we had tracked down that most of patients was satisfied in both the groups with the exception of 3 patients that's count of 12% in group 2 who were not satisfied (graph 1).

Around of average length × width of 6cm × 2.5cm area present in the nasolabial flap which can be taken for the reconstruction of the intraoral defects. Subsequent to assessing patients on the criteria of area of defects intraoperatively we tracked down that in group 1(graph 1) patients there is more region accessible as far as length when contrasted with group 2, as in roughly 1 cm length was compromised on the grounds that pedicle needs to left set up according to prerequisite of strategy for flap reconstruction procedure in group 2 (graph 1).

Mean time taken for the length of flap surgery is 35min group 1 and 31min group 2 for the unilateral flap procedure (graph 1).

Normal of 30mm ± 5mm mouth opening accomplished postoperatively in both the groups with a mean rate of mouth opening achieved in group 1 is 31mm and in group 2 its 29mm. we found more unrivaled outcome in group 1, as in 2

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patients from grouped 2 we discovered mouth opening of under 19mm (graph 1).

There were no huge changes was seen in both the group as far as hematoma development postoperatively (graph 1).

We haven't tracked down any huge changes in terms of infection in both the groups with mild infection was noticed in 2 (8%) patients from group 2 and in 1 patient (4%) from group 1 which got overwhelmed by proper antibiotic coverage (graph 1).

There were no huge changes was seen as far as shrinkage of flap postoperatively in both the groups (graph 1).

Fig. 1: Group 1;Island NLF mouth opening
(a) preoperative

Fig. 1: Group1;Island NLF mouth opening
(b) postoperative

IV. DISCUSSION

This fold was first depicted in quite a while of Susruta (Pers, 1967) of 600 BC. Varieties since have incorporated a full thickness cheek flap burrowed through a buccal fat as portrayed by Thiersch in 1868. Esser (1918) was quick to portray a flap comprising of skin just, which accordingly required a subsequent methodology to separate the pedicle and inset the flap. The first stage, de-epithelialised nasolabial flap was depicted by Wallace (1966) for the conclusion of a palatal imperfection. To stay away from the greater part of the de-epithelialised pedicle in the passage and to give greater versatility, a one-step arterialised island fold was planned (Rose, 1981). Albeit numerous varieties have been described, there are not many enormous clinical series reported.1

Fig. 2: Group 2; pedicled NLF mouth opening
(a) preoperative

Fig. 2: Group 2; pedicled NLF mouth opening
(b)mouth opening during flap revision

Fig. 2: Group 2; pedicled NLF mouth opening
(c) postoperative

The nasolabial fold is an arterialised local flap in the head and neck area with a hub blood supply gave either by the facial artery (poorly based) or by the shallow fleeting course through its cross over facial branch and the infraorbital artery (superiorly based). It is utilized in an assortment of circumstances including recreation of the lower eyelid and little imperfections of the nose, lips and oral cavity. In malignant growth treatment its significant job is for reproduction of the floor of the mouth, palate and ala of the nose. The new development of folding the flap has additionally extended its job, as it is currently ready to give

lining and cover to a full thickness commissural imperfection.6

Resection of small malignancy brings about critical functional and aesthetic imperfections of the face and oral depression. Remaking of enormous deformities should be possible with free and pedicled folds. In light of majority of pedicled folds they may not give great restorative and practical outcomes. Little to-medium estimated deformities can be best overseen by different local flaps. The Nasolabial fold is a straightforward fold utilized for the remaking of little to-direct orofacial deserts made get-togethers extraction of essential harmful tumours, once in a while free to other pedicled and free flaps.8

Oral Submucous Fibrosis (OSMF) has a multi-factorial aetiology. Proposed contributory components incorporate areca nut chewing, ingestion of chilies, dietary insufficiencies, hereditary and immunologic cycles, and different variables. Introducing indications are consuming agony, reformist powerlessness to open the mouth, trouble in contemplation and swallowing. The surgeries for the executives of cutting edge oral submucous fibrosis incorporate extraction of stringy groups with or without inclusion of the carefully made imperfection. The adaptability of the nasolabial flap has been ascribed to its solid vascularity got from various vessels nearby. It is pushed due to simplicity.

V. SUMMARY AND CONCLUSION

The aim of the present clinical study was to evaluate the merits and demerits of 2 surgical procedure in treatment of reconstruction of oral defects using nasolabial flap in 50 patients from November 2019 to September 2021 in the Department of Oral and Maxillofacial Surgery, Rama Dental College, Hospital and Research Centre.

In our study we had seen the island nasolabial flap provides better cosmetic results and also conducted within a shorter time as compared with other approaches.

The area of defect coverage is more by island nasolabial flap compared to pedicle nasolabial flap as more length of flap is available by island nasolabial flap, because of compromised length present due to pedicle in nasolabial island flap.

The vitality of flap is well maintained in pedicle nasolabial flap as along with pedicle, the random blood supply is also included in the flap.

However, overall conclusions can be drawn from this study that both groups are more or less similar results but group 1(island nasolabial flap) is slightly better than group 2(pedicle nasolabial flap). So, we can always give preference to island nasolabial flap except in few cases where blood supply is compromised.

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