



BILATERAL ISLAND NASOLABIAL FLAP: A RETROSPECTIVE STUDY FOR TACKLING ADVANCED ORAL SUBMUCOUS FIBROSIS

Maxillofacial Surgery

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ABSTRACT

Aims And Objective – The utilization of bilateral island nasolabial flap in the management of advance cases of oral submucous fibrosis. **Materials And Methods**- In this study 15 patient were selected 7 males and 8 females with an average age 46 years. Cases of oral sub-mucous fibrosis with mouth opening less than 15 mm underwent bilateral fibrotomy , anterior masseter myotomy , removal of all third molars and bilateral coronoidectomy. And defect was reconstructed with bilateral island nasolabial flap and follow up upto 2 years recorded. **Results**- The incidence of infection and dehiscence was not noted except for one flap where anterior 1 cm tip was necrosed. Apart from that, all patients had average more than 30mm mouth opening postoperatively on regular follow up for minimum of two years and maximum five years. 60% reduction in burning sensation in all patients. **Conclusion**- The island nasolabial flap is one of the successful procedure for the defects created by advanced OSMF because of its presence adjacent to the defect, versatility and provide elasticity after reconstruction. Another significant advantage is hidden scar with in natural skin fold which becomes more esthetically acceptable also to the patients.

KEYWORDS

Island nasolabial flap, Oral sub-mucous fibrosis, Fibrotomy

INTRODUCTION

Oral submucous fibrosis, an insidious, chronic change in fibro elasticity is characterized by burning sensation in oral cavity, blanching and stiffening of oral mucosa and oropharynx and trismus. Presentation of patient depends on the progression from sub-epithelialized lamina propria through entire submucosa to the muscle layer where thick inextensible vertical fibrous bands appear in the cheeks, faucial pillars and encircle the lips and balding of tongue is not only disfiguring , but also limits oral access, leading eventually to malnutrition and poor oral hygiene¹.

Nasolabial flap was first described in the works of Sushruta (Pers, 1967) of 600 B.C. Variations since have included a full thickness cheek flap tunneled through buccal incision. Essar 1918 was the first to describe flap consisting of skin only, which subsequently required 2nd procedure to divide the pedicle and insert the flap.

Although island nasolabial flap has been widely use for many years, literature review suggests a very few. Frequent use of island nasolabial flap by us was done and we are quite impressed with their versatility in young as well as in older patient for the repair of defect. This article presents our experience with the nasolabial flap used to cover intraoral defects after fibrotomy in oral submucous fibrosis over the two years and propose an effective regimen for the treatment of this disease².

MATERIALS AND METHODS

Fifteen patients with advanced oral submucous fibrosis who were treated in Oral and Maxillofacial Surgery Department during 2002-2007, all patients who reported with trismus, burning sensation, thick dense fibrous bands from corner of mouth involving buccal mucosa extending till pterygomandibular raphae and faucial pillars and less than 15 mm of inter-incisal distance, were selected for the study during this period and bilateral island nasolabial flap was used to cover the fibrotomy defect after achieving maximum mouth opening that is 40 mm interincisal distance under general anesthesia. In this article there were 7(46.66%) male and 8(53.33%) female patients with an

average age range of 46 years. Postoperative follow up for a minimum of two years and maximum five years within the interval of 6 months (Table 1) was done.

Surgical Technique

Extraction of all third molars was done in all cases and surgical lysis (fibrotomy) of fibrous bands from anterior faucial pillars to commissure of mouth was done, myotomy of anterior fibers of masseter followed by intraoral coronoidectomy was performed and defect created was about 10x2 cm.



Figure 1: (a) Pre operative Inter Incisal Opening 11 mm (b) Following excision of bands Inter Incisal Opening 40 mm (c) Nasolabial flap

raised (d) Transpositioning of flap

Island nasolabial flap was axial patterned flap with blood supply from branches of facial, transverse facial and angular vessels. Maximum 10x3 cm with base 1.5 x2.5 cm wide at oral commissure was taken and it was tapered superiorly 0.5x0.75 cm medial to medial canthus. The medial incision line was made to follow the nasolabial folds on superior thirds and is located 3-4 mm medial in inferior one third^{3,8,9}.

Surgical anatomy and landmarks – Nasolabial crease, oral commissure, orbicularis oris, zygomaticus major, facial artery and medial canthus.

External marking of island nasolabial flap randomly outlined and incision is given through the skin and subcutaneous tissue. Dissection was carried to identify muscles like risorius, levator anguli oris and zygomaticus major muscle, when the artery is identified below the muscle, it is ligated at the distal portion of the flap and dissection is carried to raise the flap. Tunnel was prepared by dissecting the fibers of buccinator near the oral commissure and the axial pedicle was rotated 180° through the tunnel intraorally, which was then used to reconstruct the fibrotomy defect with vicryl and then extraoral wound closure done in layers with vicryl and ethilon suture.^{2,3,8}

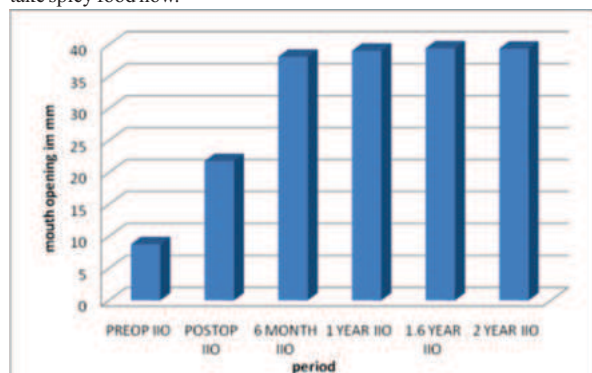
RESULT

Total 15 surgical procedures were performed, age and sex distribution shown in table 1. We used bilateral island nasolabial flap for

Patient No	OPD No	Sex	Age	Preop IIO(mm)	Postop IIO(mm)	6 Month IIO(mm)	1 Year IIO(mm)	1.6 Year IIO(mm)	2 Year IIO(mm)	Late Complication
1	1311/02	M	68	15	20	39	40	40	41	
2	1370/03	F	55	3	22	38	38	39	38	
3	1801/03	F	50	5	22	35	37	38	37	
4	397/04	M	45	8	24	42	42	40	42	Intraoral Hair Growth
5	302/04	F	28	13	25	44	41	43	44	Anterior 1 cm Flap Necrosed
6	1038/05	F	36	10	22	40	42	43	40	
7	264/05	F	30	7	18	38	40	41	40	
8	572/05	F	31	11	19	39	39	39	40	
9	1528/06	M	58	14	24	36	39	38	39	
10	1059/06	F	65	2	20	38	39	39	39	
11	1104/07	F	38	6	21	36	36	37	38	
12	1528/07	M	58	5	22	37	39	39	38	
13	3059/07	M	30	14	24	39	40	41	40	
14	1177/08	M	50	12	20	35	37	38	38	
15	1139/08	M	52	7	24	36	37	37	37	
		%	46.2	8.8	21.8	38.13	39.06	39.46	39.4	

All flaps healed without incidence of infection, dehiscence except one flap in which anteriorly, at the tip (1cm) was necrosed and in another one there was intraoral hair growth.

All the patient having 60% reduction in burning sensation and able to take spicy food now.



Graph 1: Mouth Opening with Follow up

DISCUSSION

Postoperatively, the flaps tended to 'pin cushion' but after 2 or 3 months there were no signs of flap shrinkage⁷.

Hagon and Warkerdidn't found any significant impairment of facial innervations.⁷ It provides coverage of small and intermediate sized defects easily.

reconstruction.



Figure 2: (a) Immediate Post operative picture (b) Inconspicuous scars

Flap design is quick, easy, simple and less cumbersome with minimum donor site morbidity with acceptable appearance, increased vascularity of the flap makes it versatile and more viable and can be easily transposed intraorally, there were no resultant swallowing and speech difficulties outside the areas of radiation portals and having suitable dimension for coverage of defects

Postoperatively all patient had more than 30 mm interincisal distance and follow-up up to 2 years (Table 1). **IIO- Inter-incisal opening of mouth**

The nasolabial flap sometimes can be used as a random pattern flap based on the supply from the facial, transverse facial and angular vessels. In our experience, we deepithelialized the base in all the flaps for one stage reconstruction. We did not encounter any complication related to vitality of flap.

Obstructive sialadenitis is one of the complications related to this procedure. This can be a worrisome problem because of the undetermined cause². But in our experience, proper care was taken to prevent the injury to the salivary gland duct which can prevent this complication.

When the surgical defect is extensive after lower eyelid trauma, carcinoma, cicatricial secondary healing, congenital defects or sequelae, the nasolabial flap may be considered for eyelid reconstruction⁶, and it can be used for various intraoral lesion and scar defect also.

The advantages with the use of nasolabial flaps are the inconspicuous donor scar concealed in the nasolabial fold, and the reliable vascularity of the flap. In contrast to the cheek rotation flap, particularly in the male patient, the medial displacement of the hair-bearing area is avoided by the use of nasolabial flaps⁶.

CONCLUSION

The island naso-labial flap is useful procedure for the defects created by advanced OSMF because of its presence adjacent to the defect, versatility and provide elasticity after reconstruction. Another significant advantage is hidden scar with in natural skin fold which becomes more esthetically acceptable also to the patients.

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