

Long Term follow-up of Oral Submucous Fibrosis Grade IV Case with a Versatile Nasolabial Flap- A Case Report

^{1.} Dr. Suresh Bommaji
Cleft and Craniofacial surgeon
Associate Professor
Department of Oral and Maxillofacial Surgery
Coorg Institute of Dental Sciences
Virajpet
Karnataka

^{2.} Dr. Gururaj Arakeri
Professor and Head
Department of Oral and Maxillofacial Surgery
HKDET Dental College
Humnabad
Karnataka

^{3.} Dr. Yamini Narayan Ghatikar
Second year Postgraduate Student
Department of Oral and Maxillofacial Surgery
Coorg Institute of Dental Sciences
Virajpet
Karnataka

^{4.} Dr. Sandhya Rampati
Assistant Professor
Department of Prosthodontics and Implantology
Coorg Institute of Dental Sciences
Virajpet
Karnataka

Abstract:- Oral Submucous Fibrosis is a silent, persistent, crippling disease of uncertain aetiology that affects the entire oral cavity, pharynx and occasionally the larynx. It is a chronic disabling condition characterized by limited mouth opening and poor oral hygiene. The identification of cancers and maintaining nutrition are complicated by severe oral submucous fibrosis. Oral submucous fibrosis has been surgically treated with a variety of surgical methods, with varying degrees of success. The nasolabial flap has proven to be a versatile flap and effective technique for reconstructing head and neck deformities. In this article, we provide a case report of a 51 year old female with Grade IV OSMF who was treated with nasolabial flap graft.

Keywords:- OSMF, Nasolabial Flap, Trismus, Fibrotic Bands.

I. INTRODUCTION

Oral submucous fibrosis is a chronic disabling illness of the oral cavity that affects about 5 million Indians. ¹ It is distinguished by stiffening and blanching of the oral mucosa, resulting in increased limiting of mouth opening and burning sensation when consuming mild hot and spicy foods. It is linked with juxtaepithelial inflammatory reaction, which is followed by fibroelastic alterations in the lamina propria and epithelial atrophy, resulting in stiffness of oral mucosa.² Dry mouth, discomfort, taste issues, reduced tongue mobility, trismus, dysphagia and altered tone are some of the other symptoms of OSMF. Autoimmunity, a lack of vitamin B, C and iron, betal nut chewing, HPV infection and genetic abnormalities are all contributing causes to OSMF.³

One of the local flaps, known as "Nasolabial flaps," has been extensively discussed in literature for smaller defect restoration in the oral cavity. In particular for senior patients, this flap's incorporation of extra skin from the nasolabial crease and nasofacial groove helps to minimise donor site morbidity. It can be utilised to restore numerous oral cavity defects such as buccal mucosa, palate, floor of mouth, vestibule, tongue, and maxillary / mandibular alveolar deformities. ⁴

II. MATERIALS AND METHODS

➤ Case Report

A 51 years old female patient reported in the year 2015 with a chief complaint of restricted mouth opening and burning sensation on consuming mild spicy foods. On clinical examination, interincisal mouth opening was less than 4 mm and was classified as Grade IVa according to Khanna and Andrade classification. (Figure 1) Vertical fibrotic bands were palpable bilaterally on the buccal mucosa.

An ethical committee approval was obtained.

➤ Surgical Technique

According to standard surgical protocol, the patient was draped and painted with povidone-iodine. The surgery was performed under general anaesthesia with fibreoptic nasal intubation by the pulmonologist. The surgery was performed under general anaesthesia with fibreoptic nasal intubation. Vertical fibrotic bands were excised.

The fibrotomy incision continued vertically along the anterior margin of ramus until it reached the tip of the coronoid process. Overlying tissue and temporal muscle

fibres were separated until the coronoid process bone was seen. The condylar retractor was connected up to the sigmoid notch. To maintain the tip of the coronoid process exposed for additional manipulation, a pronged L-retractor was utilised. The saw was used to free the temporalis muscle by osteotomizing the coronoid process at its tip. Due to the temporalis muscle's pull and poor handling of the coronoid bone with Kocher's toothed artery forceps, the coronoid bone is occasionally not retrieved.

Following surgical excision, the design of the flap was first marked on the skin of the nasolabial region (Figure 2). Lignocaine with adrenaline (1:80,000) was administered to produce haemostasis and tissue ballooning for better and easier dissection. The flaps began roughly 2.0 cm antero-inferior to the medial canthi of the eye, with the width depending on the fibrotomy defect in mouth open posture spanning approximately 2.5-3.0 cm. The flap stretched inferiorly along the nasolabial crease. The length was kept constant at 8.0 cm. The elliptical shape of the flap prevented puckering or standing cutaneous deformity formation in the donor nasolabial region closure.

Using dissection scissors, the flap was elevated from superior to inferior in the plane of the superficial musculoaponeurotic system (Figure 3). Intraorally, a transbuccal tunnel was made using dissecting scissors at the level of the lateral commissure of the mouth, 2 cm distant from the corner of the mouth. The caudal base of the flap was de-epithelized in a rectangular pattern. Following tension-free transfer to the oral cavity, the flap was stitched into the defect with a series of interrupted sutures using 3-0 vicryl for a single layer and prolene 5-0 for skin. The maximal intraoperative mouth opening was determined to be 32 mm (Figure 4).

Physiotherapy was started from 3rd postoperative day with a trismus screw. For the next three months, the patient was evaluated once a week, then once a month, and once every six months.

The follow-up period was for 8 years. The current maximum interincisal mouth opening is 35mm. (Figure 5a, 5b) The patient had a lot of difficulty performing the mouth opening exercises in the first year because of pain, inelasticity and incorrect exercise technique.

III. DISCUSSION

Oral Submucous Fibrosis is treated surgically by releasing bilateral fibrous bands and repairing the mucosal defect. Nasolabial flaps, buccal pad of fat, radial forearm flaps, tongue flaps, palatal island flaps, mucosal grafts, skin grafts, temporalis pedicled flaps, superficial temporal fascia flaps, anterolateral thigh flaps, collagen sheets, and allografts are some reconstruction options.⁵

The nasolabial flap is a highly comprehensive flap that is used to restore various orofacial abnormalities.⁶ The various branches passing from the facial, transverse facial and angular, infraorbital and infratrochlear arteries, as well

as the free anastomosis between the terminal branches overlaying the nasolabial skin provide diversity in flap design. The main advantages are simplicity of elevation, proximity to the defect, suitable size for covering defects, reduced deglutition and articulation problems, and a largely aesthetic outcome because the resulting scar is located in a natural nasolabial crease. Additionally, it has a moveable pedicle that can be reciprocated in the mouth cavity without damage. The flap can be extended to the commissures region because of the pedicle's longer and greater adaptability.⁷ The survival rate of the flap is increased due to a robust vascular supply. Therefore, it may also be an appropriate alternative for reconstruction in patients with oral submucous fibrosis and oral cancer who require neck dissection.⁸

The downside of this grafting approach is the need for a second stage treatment. In some situations, a fistula develops as a result of tunnelling for the flap or/and commissural correction. Both of these errors are avoidable by de-epithelizing the modiolus in the buccal tunnel region. Other issues could include cheek biting or a bulky base of the flap going over the alveolus. Possible post-reconstruction consequences include flap necrosis owing to hematoma, infection, or stress on the suture line, which may necessitate additional surgery. Other typical post-operative problems following nasolabial flap surgery include facial scarring, obliteration of the natural depth of the nasolabial fold and growth of undesired hair intraorally in males. This can be avoided by correctly outlining the flap. There could also be a pin cushioning effect around the nasolabial fold, which could be prevented by employing a rhomboid shape.⁹

In our study, we advised the patient to continue oral physiotherapy for the rest of her life because she was experiencing stiffness when closing her mouth. Another disadvantage which we noted is that the surgeon's involvement in the restoration of the buccal defect is minimal, necessitating maximal cooperation from the patient's end.

IV. CONCLUSION

Nasolabial flaps can be utilised successfully for long term treatment of severe trismus in OSMF patients. It is a dependable flap that can be utilised to repair buccal defects. Our research found that patients had acceptable post-operative mouth opening and no post-operative problems. The foundation of the final outcome is patient cooperation, habit cessation and vigorous physiotherapy.

REFERENCES

- [1]. Kaur A, Ete G, Paul MK et al. Single-staged buccal reconstruction with facial artery-based bilateral nasolabial flaps for the management of severe trismus in oral submucous fibrosis. *Turk J Plast Surg* 2021; 29: 90-4
- [2]. Kesharwani P, Dayalan N, Bagavathy K et al. Bilateral Nasolabial Flap in Oral Submucous Fibrosis: A Case Report. *Saudi J Med*, 2019. 4(7): 489-492

- [3]. Shih YH, Wang TH et al. Oral Submucous Fibrosis: A Review on Etiopathogenesis, Diagnosis, and Therapy. *Int. J. Mol. Sci.* 2019, 20, 2940
- [4]. Goyal R, Singh C, Jain S et al. Our Experience with Nasolabial Flaps in Soft Tissue Reconstruction of Oral Malignancy; Feasible Option in Rural Set Up. *Indian J Otolaryngol Head Neck Surg.*
- [5]. Manjunath K, Pawar A, Parthipady K et al. Nasolabial flap in the management of the surgical defect in patients with oral submucous fibrosis. *Int. J. Appl. Dent. Sci* 2020; 6(3): 443-445
- [6]. Mudgal A, Pathak S, Gavali N et al. Surgical Management of Oral Submucous Fibrosis: A Contemporary Narrative Review. *International Medical Journal.* 2022 Vol. 29, No. 3, pp. 170 - 174 .
- [7]. Shetty S, Sarkar S. The Versatility of Nasolabial Flaps in Maxillofacial Surgery. *J. Maxillofac. Oral Surg.* 2018
- [8]. Pai P, Dutta A. Use of Bilateral Nasolabial Flaps with Coronoideotomy as a Novel Approach to a Case of Oral Cancer with Severe Trismus. *Indian J Surg Oncol.* 2019
- [9]. Mehta D, Madan S, Sharma N et al. Surgical management of oral submucous fibrosis with promising use of nasolabial flap. *Int. J. Appl. Dent. Sci.* 2021; 7(2): 293-300