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**Dr. KS Manjunath**  
Department of Oral and  
Maxillofacial Surgery, Sri  
Hasanamba Dental College and  
Hospital, Vidyanaagar, Hassan,  
Karnataka, India

**Dr. Adarsh L Pawar**  
Department of Oral and  
Maxillofacial Surgery, Sri  
Hasanamba Dental College and  
Hospital, Vidyanaagar, Hassan,  
Karnataka, India

**Dr. Kirash Parthipady**  
Department of Oral and  
Maxillofacial Surgery, Sri  
Hasanamba Dental College and  
Hospital, Vidyanaagar, Hassan,  
Karnataka, India

**Dr. Bindhu Ghorpade**  
Department of Oral and  
Maxillofacial Surgery, Sri  
Hasanamba Dental College and  
Hospital, Vidyanaagar, Hassan,  
Karnataka, India

**Dr. Fathima Shamra**  
Department of Oral and  
Maxillofacial Surgery, Sri  
Hasanamba Dental College and  
Hospital, Vidyanaagar, Hassan,  
Karnataka, India

**Dr. Nivedita Sajeev**  
Department of Oral and  
Maxillofacial Surgery, Sri  
Hasanamba Dental College and  
Hospital, Vidyanaagar, Hassan,  
Karnataka, India

**Corresponding Author:**  
**Dr. KS Manjunath**  
Department of Oral and  
Maxillofacial Surgery, Sri  
Hasanamba Dental College and  
Hospital, Vidyanaagar, Hassan,  
Karnataka, India

### Nasolabial flap in the management of the surgical defect in patients with oral submucous fibrosis

**Dr. KS Manjunath, Dr. Adarsh L Pawar, Dr. Kirash Parthipady,  
Dr. Bindhu Ghorpade, Dr. Fathima Shamra and Dr. Nivedita Sajeev**

#### Abstract

Nasolabial Flaps are the most favoured and routinely used flap for reconstruction of the defect following fibrous band excision in developing countries like India, The use of the nasolabial flap in reconstruction of head and neck defects has manifested to be very efficacious and genuine, The versatility of the nasolabial flap has been imputed due to its vascularity derived from innumerable vessels in close vicinity. It is recommended because of effortless elevation, proximity to the defect, similar size for defect coverage, minimal difficulties in swallowing and speech and a relatively better cosmetic result as the scar is predominantly in natural crease, Major ancillary measures are habit abandonment, lifestyle changes, and excessive physiotherapy.

**Keywords:** Nasolabial flap, oral submucous fibrosis, surgical defect, buccal fat pad

#### 1. Introduction

The term “oral submucous fibrosis” was formulated by Joshi <sup>[1]</sup>. According to Pindborg and Sirsat, oral submucous fibrosis (OSMF) is a chronic insidious disease that involves the oral cavity, the pharynx, and rarely the larynx. It is distinguished by blanching and stiffness of the oral mucosa, which cause gradual limited mouth opening and is sensitive to hot and spicy food <sup>[2]</sup>. It has a multi-factorial etiology. Recommended contributory factors comprises areca nut chewing, intake of chilies, nutritional deficiencies, genetic and immunologic processes, and other factors. Most common symptoms are burning pain, progressive inability to open the mouth, inability to masticate and swallowing <sup>[3]</sup>.

#### 2. Materials and Methods

**2.1 Case Report:** A 42 years old male patient reported to our unit with chief complaint of decreased mouth opening since 2-3years, and burning sensation in the mouth, excessive irritation while taking spicy food ,patient had no co morbidities. On clinical examination Interincisal mouth opening was recorded to be 10mm whereas the normal interincisal mouth opening to be 40-45 mm, vertical fibrotic bands were palpated in the buccal mucosa and periorally as well. Patient was informed about the condition and the importance of surgery in the treatment of the lesion, the surgeries was carried out under general anesthesia with nasal intubation. Preoperative consent for emergency tracheostomy was obtained if in case of failure of nasal intubation; however, this procedure was not required as nasal intubation was successful, By placing intraoral incision for releasing the fibrous band along the buccal mucosa at the level of occlusal plane away from Stenson's duct orifice, the incision was extended posteriorly up to the anterior faucial pillars and soft palate, mouth opening was increase upto a range of 35-40mm was achieved using mouth gags, An elliptical shaped nasolabial flap of width approximately 1.5 to 2cm at the base and gradually tapered to around 0.25 to 0.5cm superiorly was raised from the tip of nasolabial fold to corner of the mouth were raised bilaterally in the superficial aponeurotic plane after marking, In single stage procedure, medial incision follows the nasofacial folds on its inferior third ,it was made longer than lateral incision, The elliptical design of the flap eliminates the dog ear formation, The flap was translocated intraorally through a transbuccal tunnel which was made in the region of the modiolus just medial to the pedicle, undermining of the donor site was performed in the subcutaneous plane and was closed to be done with minimal tension, The extraoral defect was

closed primarily in layers to prevent tension across the incision line. Patient was advised to use mouthwash four times a day for the first three weeks postoperatively and irrigation of the donor site done regularly, Mouth opening exercises were started from the 1<sup>st</sup> week postoperative day using ice cream wooden sticks three times a day. The frequency and duration of these mouth opening exercises were increased to attain the 35-mm interincisal mouth opening subsequently.

### 3. Results and Discussion

The surgical treatment of Oral Submucous Fibrosis entails bilateral fibrous band release and reconstructing the mucosal defect. Various options to reconstruct the area/defect include nasolabial flap, buccal fat pad, radial forearm flap, tongue flap, palatal island flap, mucosal grafts, skin grafts, placental grafts, lingual pedicle flaps<sup>[4]</sup>, temporalis pedicled flaps, superficial temporal fascia flaps, anterolateral thigh flaps, collagen sheets, and allografts. The nasolabial flap is the most commonly used flap for reconstruction as it is versatile due to its reliable vascularity, ease of elevation, proximity to defect, suitable size for coverage of defect, minimal swallowing and speech difficulties, relative cosmetic result as scar is in natural crease and one stage reconstruction of the defect<sup>[4]</sup>. This flap is a very reliable axial pattern flap with a mobile pedicle that can be transposed intraorally. Disadvantages of nasolabial flap are intraoral hair growth and scarring in some patients. According to Pindborg reported a prevalence of 0.2 to 0.5% in India, the prodromal symptoms are oral burning sensation, blisters, predominantly over the palate, ulceration or recurrent stomatitis, and xerostomia. Subsequent symptoms are stiffening of certain areas of the oral mucosa leading to decreased mouth opening, an inability to blow or move the tongue, and difficulty in swallowing<sup>5</sup>. Khanna and Andrade<sup>6</sup> have classified OSF based on maximal interincisal opening (MIO): Stage I, early OSF without trismus (MIO >35mm); Stage II, mild to moderate disease (MIO 26-35mm); Stage III, moderate to severe disease (MIO 15-25 mm); Stage IVa, severe disease (MIO <15 mm); and Stage IVb, extremely severe malignant/premalignant lesions noted intraorally. Cases in Stage I and Stage II (Khanna and Andrade) are treated medically (conservative treatment), while Stages III and IV are managed surgically. Conservative treatment includes cessation of chewing of areca nut, gutka etc. followed by vitamins, iron supplements, intralesional injections of placental extracts, steroids and hyaluronidase. Medical treatment is indicated at an early stage but mostly patients approach for surgery in moderate or severe form of the disease.<sup>7</sup> In some cases, conservative treatment have produced relief which is temporary in most of the cases.<sup>8</sup> Intraoperative complications of harvesting nasolabial flap can be damage to facial vessels, branches of facial nerve and parotid duct, postoperative Complications can be flap loss, flap avulsion, obstructive sialadenopathy, infection or wound dehiscence and intraoral hair growth can be observed on the 3<sup>rd</sup>-4<sup>th</sup> postoperative days, which can be managed by regular trimming.

### 4. Conclusion

Numerous treatment modalities (both medical and surgical) have been employed for the management of OSMF. Nasolabial flap has been the most viable and reliable option for reconstruction of intraoral defects in OSMF. The cornerstone of a successful postoperative result lies in habit cessation, lifestyle changes, and aggressive physiotherapy.



Fig 1: Extra oral marking done



Fig 2: Harvesting nasolabial flap



Fig 3: Transbuccal tunnel created



Fig 4: Nasolabial flap secured intraorally



**Fig 5:** Nasolabial flap secured intraorally



**Fig 6:** Extraoral sutures placed

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