A Comparative Clinical Evaluation of the Buccal Fat Pad and Extended Nasolabial Flap in the Reconstruction of the Surgical Defect in Oral Submucous Fibrosis Patients

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Purpose: The aim of this study was to compare the efficacy of locally available nasolabial and buccal fat pad flaps for increasing postoperative mouth opening in the reconstruction of the defect created after fiberotomy in surgically treated cases of oral submucous fibrosis (OSMF).

Materials and Methods: Of 32 patients selected for the study, 21 patients underwent closure of the surgical defect using the buccal fat pad (group 1) and 11 patients underwent closure of the surgical defect using a nasolabial flap (group 2). Histologically proven cases of OSMF with a mouth opening no larger than 25 mm were included in the study. Patients in groups 1 and 2 were evaluated at regular intervals and mouth opening was documented preoperatively, intraoperatively, and at 3 and 6 months of follow-up. The results were analyzed by paired and unpaired *t* tests.

Results: In groups 1 and 2, mouth opening differed substantially at all periods of follow-up from preoperative values. At 3-month follow-up, mean mouth opening increased to 32.41 mm in group 2 compared with 30.47 in group 1. No relevant difference was observed in mouth opening between groups 1 and 2 at the end of 6 months. The effective increase in mouth opening at the end of 6 months compared with the preoperative value was statistically different in group 2 (mean increase, 24.2 mm) compared with group 1 (mean increase, 19.2 mm).

Conclusion: Nasolabial flaps are a good option for the coverage of surgically treated defects in OSMF compared with the buccal fat pad.

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According to Pindborg and Sirsat,[1] oral submucous fibrosis (OSMF) is a chronic insidious disease that affects the entire oral cavity, sometimes the pharynx, and rarely the larynx. It is characterized by blanching and stiffness of the oral mucosa, which cause progressively limited mouth opening and intolerance to hot and spicy food. This disease is common in Asian countries, especially in India, and is strongly associated with areca nut chewing.[2]

Patients with OSMF complain of difficulty in opening their mouth, which is caused by the formation of fibrotic bands. The treatment for this condition requires the release of fibrosis to increase mouth opening. Medicinal therapy is beneficial in the early stages of the disease

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and includes injections with steroids and hyaluronidase, antioxidants, vitamins and iron supplements, and placental extracts. Surgery is the only option available for advanced stages of OSMF, which involves resection of the fibrotic bands and reconstruction of the defect using various techniques.

This study compared the efficacy of locally available nasolabial and buccal fat pad (BFP) flaps in the reconstruction of defects after fibrotomy or fiberotomy and bilateral coronoidectomy in surgically treated cases of OSMF. The null hypothesis was that there would be no relevant difference between the 2 techniques. The main objective of the study was to evaluate postoperative mouth opening in the 2 techniques.

Materials and Methods

A prospective study was carried out at the Department of Oral and Maxillofacial Surgery at the Government College of Dentistry (Indore, India). The study was approved by the local institutional review board. Histologically proven cases of OSMF with mouth opening no greater than 25 mm with palpable intraoral fibrotic bands were selected. The study population was divided in 2 groups; 21 patients underwent closure of the surgical defect with a BFP flap (group 1) and 11 patients underwent closure of the defect with a nasolabial flap (group 2).

Patients with malignant changes, medically compromised patients, patients not willing to quit the habit of areca nut chewing, and patients with suspected previous surgical intervention for the disease were excluded from the study.

The procedure in groups 1 and 2 was carried out under general anesthesia with fiberoptic intubation. Incisions were performed on each side of the buccal mucosa that began from inside the corner of the mouth and extended posteriorly to the pterygomandibular raphe depending on the location of fibrous bands. The wound created was further freed by finger dissection until no restriction was palpated and then bilateral coronoidectomy was carried out. The interincisal opening was recorded. The maxillary or mandibular third molars, if present, were extracted.

The BFP was approached through the posterosuperior margin of the created buccal defect with blunt dissection and the milking phenomenon. It was teased out gently until a sufficient amount was obtained to cover the defect without tension (Fig 1). It covered the buccal defects posteriorly to the soft palate and anteriorly to the canine region. It was secured in place with a horizontal mattress suture. A pre-sterilized collagen membrane was used to cover the anterior defect.

An elliptical nasolabial flap 1.5 to 2.5 cm wide was designed to be centered on the nasolabial groove

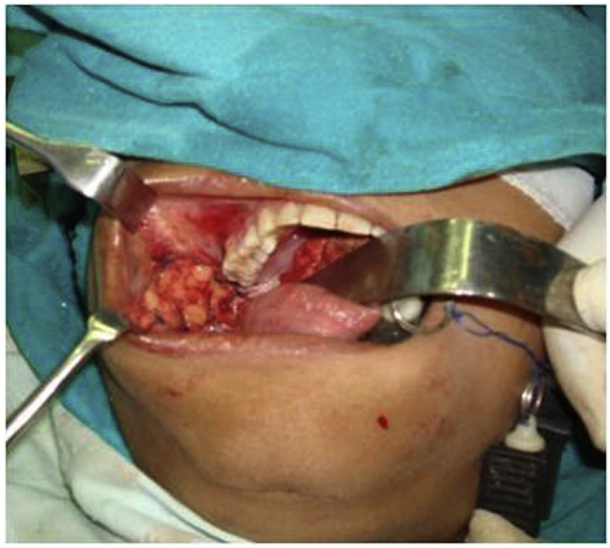

FIGURE 1. Excision and interposition of the buccal fat pad.

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(Fig 2). The medial incision line precisely followed the nasolabial folds on its inferior third, causing less distortion after flap transfer and allowing improved arc of rotation. The medial and lateral limbs of the incision were tapered together, superiorly approximately 0.5 to 0.65 cm and anteroinferiorly to the medial canthus. The distal tips of the flaps tapered at an acute angle no larger than 35°. A flap was raised superiorly to inferiorly in a supra-muscular plane. The transbuccal tunnel was made in the region of the modulus just medial to the pedicle and transferred into the oral cavity in a tension-free manner (Fig 3). The superior limb of the flap covered the distal defect and the inferior limb covered the anterior defect. The intraoral flap was sutured using 3-0 Vicryl. A layered closure of the

FIGURE 2. Elevation of nasolabial flap.

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