



Is buccal fat pad a better option than nasolabial flap for reconstruction of intraoral defects after surgical release of fibrous bands in patients with oral submucous fibrosis? A pilot study: A protocol for the management of oral submucous fibrosis



Anshul Rai^{a,*}, Abhay Datarkar^b, Monika Rai^c

^a Department of Trauma and Emergency Medicine, AIMS, Bhopal, M.P., India

^b Department of Oral and Maxillofacial Surgery, Swargiya Dadasaheb Kalmegh Smruti Dental College and Hospital, Nagpur, M.H., India

^c Bhopal, M.P., India

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ABSTRACT

Purpose: The aim this study was to compare the buccal fat pad (BFP) and nasolabial flap for reconstruction of intraoral defects after release of fibrous bands in patients with oral submucous fibrosis (OSF).

Materials and methods: This is a comparative study. The study sample was derived from the population of patients who presented, with restricted mouth opening of less than 20 mm, to the Department of Oral and Maxillofacial Surgery, Swargiya Dada Saheb Kalmegh Dental College and Hospital Hingna Nagpur. The patients were divided into two groups. In Group I ($n = 10$) reconstruction was performed with a nasolabial flap and in Group II ($n = 10$) with BFP. Both groups were analysed separately for mouth opening (interincisal distance in millimetres) preoperatively and 20 months postoperatively, time taken for epithelialization of BFP and nasolabial flaps. Statistical analysis was performed with SPSS statistical software for Windows, version 8.0 (SPSS, Inc, Chicago, IL) using the χ^2 test and Student's t test.

Results: In all 20 patients the interincisal mouth opening was (mean) 11 mm (3–19 mm) preoperatively which improved to a mean of 42 mm (23–52 mm). In Group I there were more complications as compared to Group II such as partial flap necrosis particularly at the tips, temporary widening of oral commissure and subluxation of TMJ. The unsightly extraoral scar and intraoral growth of hairs were not seen in Group II.

Conclusion: BFP is the better choice for reconstruction in comparison to nasolabial flap.

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1. Introduction

Schwartz in 1952 first described Oral submucous fibrosis (OSF) as a chronic, premalignant condition of the oral mucosa (Angadi and Rekha, 2011). It is an established precancerous condition commonly seen in Indian subcontinent and in the patients who migrated to Western countries from the Indian subcontinent (Phatak, 1979). The condition predominantly affects women with a female:male ratio of 3:1 (Jayanthi et al., 1992).

In 1966, Pindborg and Sirsat defined it as 'a chronic insidious disease affecting any part of the oral cavity and may extend to the

pharynx and the oesophagus, and may be preceded or associated with vesicle formation. It is always associated with juxta-epithelial inflammation and followed by fibro-elastic change of the lamina propria with epithelial atrophy leading to stiffness (Pindborg and Sirsat, 1966). OSF represents features of juxta-epithelial fibrosis, mostly along with atrophy of the overlying epithelium, keratinizing metaplasia, accumulation of hyalinized collagen beneath the basement membrane, and a progressive loss of vascularity (Pindborg et al., 1965). Soft palate length was also reduced in the anterior–posterior direction in OSF patients (Shankar et al., 2013).

OSF causes reduction in the mouth opening, which needs to be corrected surgically. Various reconstruction modalities over the raw area created after surgical release of fibrous bands have been mentioned in the literature, these include nasolabial flap, buccal pad of fat, radial forearm flap, temporalis myocutaneous flap,

* Corresponding author. Tel.: +917869171413.

E-mail address: anshulrai007@yahoo.co.in (A. Rai).

palatal island flap, tongue flap, placental grafts, skin grafts, or lingual pedicle flaps (Borle et al., 2009; Wei et al., 2001; Yeh, 1996; Gupta and Sharma, 1988; Golhar et al., 1987).

The use of the nasolabial flap was first mentioned in Sushruta Samhita (Pers, 1967). Thiersch (1868) was the first to use a trans-buccal transfer of a nasolabial flap for closure of an oral cavity defect. The Buccal fat pad was first identified by Heister (Heister, 1732) in 1727. Egyedi (1977) first described the use of the buccal fat pad for closure of persistent oro-nasal or oro-antral communications in 1977. Stajcic (1992) too used BFP in closure of oro-antral communications.

The purpose of this study was to identify a better option than the nasolabial flap in reconstruction of intraoral defects after release of fibrous bands in patients with OSF. The investigators hypothesize that BFP is the ideal reconstructive material. The specific aim of this study was to compare the nasolabial flap to the BFP as a reconstruction material.

2. Material and methods

This was a comparative study. The study population was composed of all patients presenting to the Department of Oral and Maxillofacial Surgery, Swargiya Dada Saheb Kalmegh Dental College and Hospital Hingna Nagpur to evaluate the surgical results in OSF patients, excluding patients with reduced mouth opening in general.

The patients who had mouth opening of less than 20 mm, painful ulcerations, burning sensation, intolerance to spices, a habit of betel nut or tobacco chewing, and who were histologically confirmed cases of OSF were included in the study. Patients who had a mouth opening of more than 20 mm were excluded from the study. The first patient was treated with a nasolabial flap and was included in Group I. The second patient was treated with a BFP for reconstruction and included in Group II. The same procedure was followed in all 20 patients, who were allocated and treated accordingly into the 2 groups.

Approval for the study was obtained from our institution's Experimental Medical Research and Practicing Centre Ethical Committee. Informed consent was obtained from all patients who were enrolled in the study after they received an explanation of the advantages and disadvantages of use of nasolabial flap and BFP.

The patients were evaluated in this study for the following variables:

1. The preoperative and postoperative mouth opening in both the groups was evaluated in millimetres (mm).
2. The pre and postoperative oral commissural width was measured in mm.
3. The complications encountered during and after the surgery were analysed.
4. Extraoral scarring was evaluated in both groups.

Routine pre-anaesthetic investigations were done. Under aseptic precautions, a fibreoptic bronchoscope was used for intubation of the patients for administration of general anaesthesia. Incisions were made by using an electrosurgical knife extended from the corner of mouth to the soft palate at a level of the linea alba, avoiding injury to stensons duct. Fibrotomy of the bands was done and interincisal opening was recorded.

The coronoid processes were approached through the same incision and a bilateral coronoidectomy or coronoidotomy was carried out. The maxillary and mandibular third molars were extracted.

In Group I ($n = 10$) nasolabial flaps (Fig. 1) were raised for grafting from the tip of nasolabial fold to the inferior border of



Fig. 1. Harvesting of nasolabial flap.

mandible. The flaps were raised bilaterally in the plane of superficial muscular-aponeurotic system from both terminal points to the region of the central pedicle. The pedicle was 1 cm lateral to the corner of mouth and the diameter of the pedicle was roughly 1 cm. The flap was transposed intraorally through a small transbuccal tunnel near the commissure of mouth with no tension. The inferior wing of the flap was sutured to the anterior edge of the defect, while the superior wing was sutured to the posterior edge of defect (Fig. 2). The extraoral defect was closed primarily in layers after liberal undermining of the skin in the subcutaneous plane to prevent any tension across the suture line.

In Group II ($n = 10$) the BFP was harvested through the posterior–superior margin of the buccal defect that was created (raw area created after the fibrotomy procedure up to the retero molar trigone region). The defect was same in all the patients, averaging 1.5 cm. The average length of 3–5 cm and width of 4–6 cm was harvested depending on the size of the defect. The BFP was teased out gently until enough was obtained to cover the raw area without tension (Fig. 3). The flap was sutured to the defect with the help of

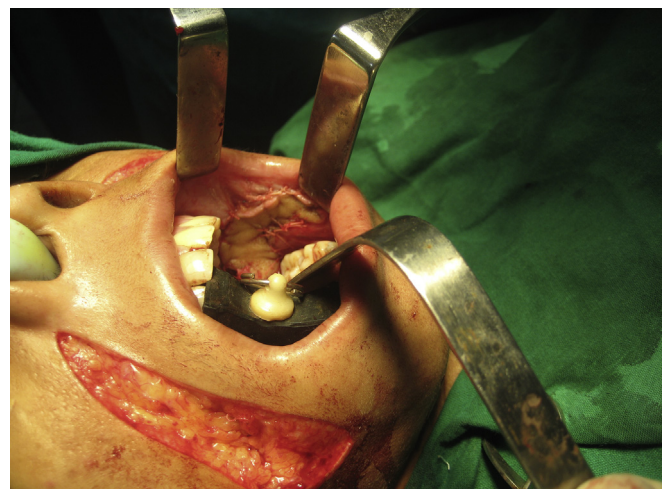


Fig. 2. Nasolabial flap sutured intraorally over the defect.

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