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Comparative evaluation of nasolabial flap and buccal pad fat for oral submucous fibrosis

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Introduction

Oral submucous fibrosis is an insidious ,chronic disease affecting any part of oral cavity and sometimes pharynx [1].Although occasionally preceded by vesicle formation .It is always associated with juxta epithelial inflammatory reaction followed by fibroelastic changes in lamina propria[2].Most prevalent at the age of 15 to 35 years of age .Seen in 0.2-2.3%of males and 1.2-4.6%of females [3].Cause of oral submucous fibrosis is exactly unknown it can be multifactorial local factors effecting the condition can be chilli, areca nut systemic factors can be nutritional deficiency, autoimmunity [1].There are 4 stages in oral submucous fibrosis. Stage 1 and 2 give good response to medical line treatment but stage 3and 4 do not give enough response to medical treatment so surgical treatment need to be given .Restricted mouth opening is seen in stage 3 and 4 of oral submucous fibrosis so surgical elimination of fibrotic bands should be done which later causes scar formation and reoccurrence of trismus hence to prevent this different types of interposition grafts \flaps are used [2].Types of flaps/grafts used can be tongue flap ,buccal fat, nasolabial flap ,skin flap in all these most used one are nasolabial flap and buccal pad fat[1] .

Nasolabial flap is versatile flap, which can be used successfully in reconstruction of defects created after release of fibrotic bands in oral submucous fibrosis. Nasolabial flap is advocated because of ease of elevation, proximity of defect, suitable size for coverage of defect, minimal swallowing and speech difficulties and relatively cosmetic result as scar is in natural crease [4].

Buccal pad fat is supple and lobulated mass easily accessible and mobilized. It is simple and reliable flap because of its rich blood supply and location it is well accepted graft used for defects after incision of fibrotic bands [4].

Oral submucous fibrosis is a premalignant condition and enigma to oral and maxillofacial surgeons for its chronic ,progressive, recurrent and malignant transformation potential[1] .An attempt is made by me to attempt treatment modalities for stage 3 and 4 oral submucous fibrosis and flaps used for reconstruction after fibrotomy and comparative evaluation of nasolabial flap and buccal pad fat for reconstruction In oral submucous fibrosis and which flap can give more mouth opening post operatively [6]

Methodology

This prospective study was carried out at the Department of oral medicine and radiology. The study was approved by the institutional ethics and review board. Histologically proven cases of OSMF with mouth opening less than 25 mm with palpable intraoral fibrotic bands were selected [4]. Patients not willing to be a part of study and patients with malignant changes were excluded. 10 patients fulfilling the criteria were included in the study and were randomly divided into 2groups of 5 patients each based on type of graft material used for reconstruction [6]. Group 1 patients received Nasolabial flap; Group 2 patients received buccal pad fat [3]. Resection of fibrous bands, based on degree of involvement was done under general anaesthesia. Using Fergusson's mouth gag/Heister mouth gag, mouth was gently opened to an acceptable range. Interincisal opening was recorded [5]. Extraction of third molars was done and haemostasis was achieved. In Group 1 patients bilateral inferiorly based nasolabial flaps were raised as described by Kshirsagar [7]. A trans buccal tunnel was created near the region of modiolus, flap was then transposed intraorally and secured patients, split thickness skin grafts were harvested from anterolateral thigh as described by Braza et and secured into the defect [2]. Donor area was covered with 0.5% Chlorhexidine-soaked gauze (Bactigras) dressings. In Group 1 and 2 patients intraoral bolster dressing was placed to support the graft material [4]. All the patients received nasogastric feeding for 1 week. Initial physiotherapy was started within 48 hours post operatively with mouth opening exercises using wooden spatulas as described by Mehrotra et. Al[1]. After tenth postoperative day, intense physiotherapy was started using Heister's mouth gag. Patients were followed regularly for 3 months to document maximum mouth opening [4]. Healing of the surgical wound was observed for postoperative pain and infection. The results were analysed statistically for improvement in mouth opening at the end of 1 and 3 months and compared with preoperative values [7].

Results

This review article includes 5 clinical trials from the years 2018 to 2023.

Sn.	Author	Country	Sample Size	Mean Age	Follow up	Outcome Assessed	Conclusion
1.	Hossa Waleed Madhon 2023 [1]	Palestine	32 Patients	19 to 32 Years	6 Months	Intraoral Opening	More opening is seen in comparator.
2.	Deepak Agarwal 2018 [7]	Indore, India	32 Patients	21 to 70 Years	6 Months	Intraoral Opening	More Opening is seen in comparator

3.	Akilesh Kumar Singh 2023 [5]	USA	20 Patients	18 to 86 Years	12 Months	Esthetic Concern	Less scares are seen in intervention.
4.	Hidayat Ullah 2023 [4]	Pakistan	75 Patients	43 to 69 Years	6 Months	Intraoral Opening	More opening is seen in comparator.
5.	Venkatesh Anheuser 2020 [8]	India	30 Patients	19 to 51 years	12 Months	Interincisal mouth opening	More opening is seen in comparator

Study characteristics

This study consists of 5 studies the countries included are Palestine, Pakistan, USA and 2 studies from India the mean ages of all studies included are for the Palestine study the mean age included is 19 to32 years of age [4]

for the study in India the ages included are 21 to 70 years of age and other study included in India the age group is 19 to 51 years of age[5]. For the study conducted in USA the age group included is 18 to 86 years. The study conducted in Pakistan the age group used is 43 to 69 years[7]. The conclusion is assessed on the basis of intra oral opening and aesthetic concern [8]. The overall outcome of the 5 studies included is that when in concern with the functional aspect the comparator is better and when in concern with the aesthetic concern the intervention [5].

Discussion

OSMF, described by Schwartz in 1952 as cited by Sirsat and Khanolkar is a distressing condition caused by limited mouth opening, making the patient unable to consume a normal diet or maintain proper oral hygiene. Pindborg reported a prevalence of 0.2 to 0.5% in India[1].OSMF has many etiologic factors, amongst which chewing tobacco, betel nut is most common. All patients in our study have and had a positive history of chewing tobacco in some form [3]. According to Pindborg, the initial symptoms are an oral burning sensation, blisters, especially 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 whistle, and difficulty in swallowing [2].

Surgery is the only option available for advanced stages of OSMF. Various interposition materials have been used with variable results for coverage of the intraoral raw defect created after fibrosis release. These include local flaps, such as the tongue flap, Buccal pad fat, nasolabial flap, and palatal flap, and distant flaps, such as the split skin graft[1].

This study compared the nasolabial flap with the BFP for the closure of the defect created after the surgical resection of fibrotic bands. This study compared the nasolabial flap with the Buccal pad fat for the closure of the defect created after the surgical resection of fibrotic bands [2].

The Buccal pad fat, also known as the Bichat fat pad, has become a well-accepted graft for covering intraoral defects in recent years. It is a supple and lobulated mass that is easily accessible and mobilized [3]. The buccal pad fat has a constant blood supply through the small branches of the facial artery, internal maxillary artery, and superficial temporal artery and vein by an abundant net of vascular anastomoses. It can be approached through the same incision as the one used for fibrous band dissection. The only limitation of the flap is the

closure of anterior defects in OSMF cases in which an additional flap is required for coverage [7]assessed the use of nasolabial flaps in the treatment of OSMF is more suitable for juxtaposed defects, in particular those of the buccal mucosa, and has become increasingly popular [7]. It provides a good example of the principle of the transposition flap in which unavoidable tension is transferred from the defect to the donor area, where there is sufficient tissue elasticity to absorb it. It has good vascularity and the colour and texture match is excellent [7].

Hossa Waleed madho conducted study in the year 2023 on 32 patients from the age 19 to 32 years and that more intraoral opening in buccal pad fat [2].Study conducted by Deepak in the year 2018 on 32 patients from age group from 21 to 70 years to assessed more interloping with buccal pad flap[7].Hidayat performed study in the year 2023 on 75 patients of age group 43 to 69 years and assessed more intraoral opening in buccal pad fat[6].Venkatesh Anheuser conducted study in the year 2020 on 30 patients from age group 19 to 51 years concluded that buccal pad fat gave interincisal opening than nasolabial flap[4]. Akilesh Kumar Singh conducted study in the year 2023 on 20 patients from age group 18 to 86 years according to aesthetic study nasolabial flap formed less scares than buccal pad fat[6]. The present comparative study between efficiency of nasolabial flap and buccal pad fates reconstructive material after release of fibrotic bands in OSMF patients and reported that the mean pre and postoperative mouth opening was better in buccal pad fat than nasolabial flap. But aesthetically nasolabial flap has less scare healing than buccal pad fat patients of all studies included had satisfactory reduction in burning sensation of mouth and ulcerations. The overall mouth opening at the end of 6 months compared both groups showed that it was statistically it was significant with buccal pad fat better as in causes less scares after surgery.

Conclusion

In our study buccal pad has been proved to give better intraoral mouth opening, increased interincisal distance and less complications. Whereas nasolabial flap has been proved to cause less scare formation after surgery.

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8. Venkatesh anehosur, study done Clinical Evaluation of Buccal Fat Pad and Nasolabial Flap for Oral Submucous Fibrosis Intraoral Defects