Original Article

Surgical Tweak For Treatment Of Oral Submucous Fibrosis – A Clinical Study Technical Tweak In Surgry For Treatment Of Oral Submucous Fibrosis – A Clinical Study

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DOI: 10.47750/pnr.2022.13.S05.453

Abstract

Aim: The study was aimed at evaluating the efficacy of modified technique for treatment of Grade III and Grade IV oral submucous fibrosis. Postoperative mouth opening and cheek flexibility after surgical intervention was evaluated after 6 months.

Materials and Methods: A total of 5 patients with oral submucous fibrosis with reduced mouth opening were included in the study. The patients were operated and modified technique was incorporated to interpose the defect created after fibrotomy. The modified technique used buccal fat pad to cover the posterior defect and Split thickness skin graft to cover the defect anteriorly till the corner of mouth. The patients were evaluated for mouth opening and cheek flexibility postoperatively and followed up after 6 months. All these data were recorded and evaluated for success.

Results: The three-finger mouth opening was successfully achieved in all the five patients. The discomfort of the patient was minimum. Only 1 patient showed delayed healing out of 5 patients. Burning sensation of mouth along with other symptoms of OSMF were reduced.

Conclusion: The modification technique used for interposition after fibrotomy in OSMF is overall a better modality for treatment of oral lesions as it is more acceptable by the patient. The procedure though has shown to have faster recovery needs further comparison with gold standard nasolabial flap for interposition.

Introduction:

Oral submucous fibrosis is a potentially malignant disorder that has been actively researched from recent past.[1]The diagnosis of this disorder is often made clinically which mainly affects those who have a constant habit of tobacco chewing. The key clinical feature remains the restriction of mouth opening which is seen along with the burning sensation of the oral cavity.The patients also on intraoral examination revealed limited soft palate movement, deviated uvula andcheek flexibility along with the existence of palpable vertical fibrous bands.

Extensive study has recently been done by Passi D et. Al,Aninakonure and various other authors who have attempted to propose treatment protocol for OSMF in accordance to its grade.[2] All of the authors contend that Grade III and Grade IV OSMF patients need to undergo surgical treatment, during which fibrous bands are removed and the defect is then repaired using different flaps.The authors have recently reported that OSMF can develop into cancer.[3-7]

There are various reconstructive options for interposition after fibrotomy in management of Grade III and IV OSMF. Out of those options nasolabial flap has been considered gold standard whereas fat pad from buccal aspect and split thickness skin have been used separately as grafts after fibrotomy in the past.[8] Here, we've shown and examined a number of OSMF examples where the recipient defect was repaired using split thickness skingrafts in conjunction with buccal fat pads.

Aim:

In this paper, the effectiveness of a modified approach that was utilised to treat Grade III and IV oral submucous fibrosis is assessed in terms of postoperative mouth opening and cheek flexibility following surgical intervention. At six months, the surgical procedure's success was assessed.

Material And Methods

Five patients who came to the department of oral and maxillofacial surgery for treatment of their ailment were the subjects of the current study. We only included patients who were willing to consent to the trial.

Inclusion Criteria:

Patients with all age group who were diagnosed with Grade III or Grade IV OSMF followed by routine biopsy.

Exclusion Criteria:

Patient with history of earlier radiation therapy or trauma which can lead to fibrosis.

Patient with history of anemia.

Patient with vesicle and blister formation.

Patient with firm and non-mobile lymph nodes in the cervical region.

Clinical treatment was documented by photos of the patients taken by the operator. The mouth opening of the patient, cheek flexibility and burning sensation was evaluated and tabulated.

Standardized Surgical Technique that was followed during the study

Under general anaesthesia, fiber optic intubation was done. Following aseptic circumstances, fibrous bands were removed bilaterally from the buccal mucosa at the level of the occlusal plane, starting from the commissure of the mouth anteriorly to the retromolar pad area posteriorly. Bilateral coronoidotomy was performed to achieve a sufficient mouth opening. Buccal fat pad, which was removed bilaterally from the fibrotomy incision, covered the defect that was produced. The split thickness skin graft was then anteriorly implanted. 5cm x 5cm STSG was taken from the right/left thigh of the patient. Watson's modification of Humby knife was used for harvesting the graft. The split thickness skin graft was used as interposition material only in the anterior defect. The STSG was used separately not covering the posterior defect as shown in Fig 1. Meshing was done to prevent hematoma formation and for promoting vascularization. Quilting sutures were taken forperfect adaptation of the graft with 4-0 vicryl.The supportive therapy advised was appropriate diet and jaw opening exercises along with counselling regarding quitting the habit. Follow-up of the patient was taken at 1st month and 6thmonth. (Figure 2) Post operative data was recoded and tabulated.

Results:

Table 1 gives specifics about each patient. The patients were followed up on for another six months, and it was determined that the mouth opening was sufficient. The mouth opening of the patient was little reduced during the 1st month follow-up but it increased in subsequent follow up.

The cheek flexibility was also noted in the patient which showed significant increase and hence the procedure could be considered to be successful. It was also noted that the burning sensation of the patient also reduced drastically in all patient.

The comparative post operative results with the pre operative results have been depicted graphically. (Fig 3.4)

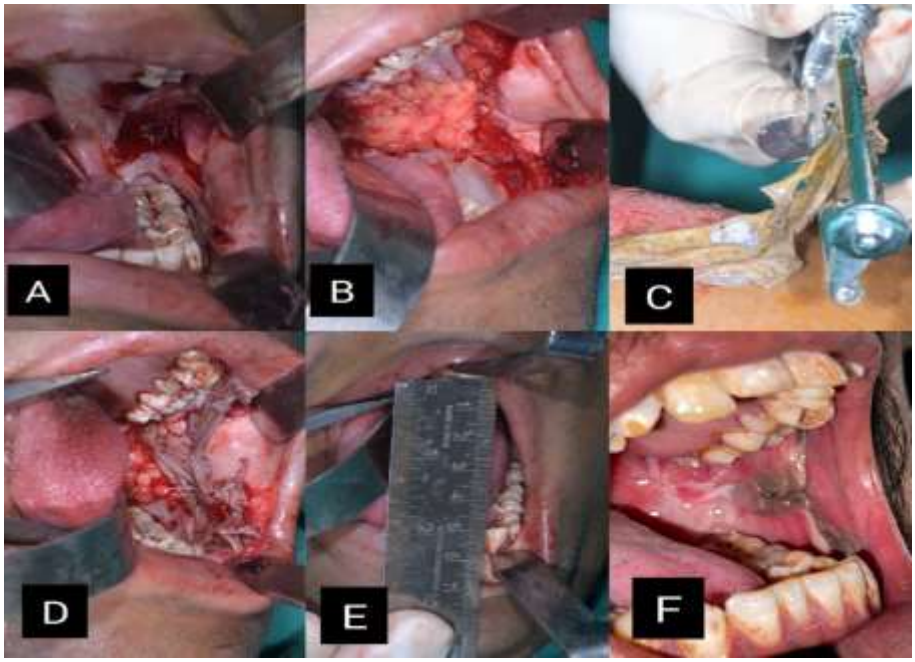

Figure 1: Surgical steps

(a) Excision of fibrous bands (b) Grafting buccal fat pad (c) Harvesting split thickness split graft (d) Reconstruction with split thickness skin graft and buccal fat pad (e) Intraoperative mouth opening (f) Post-operative mouth opening

TABLE 1: TABLE SHOWING COMPILED RESULTS OF MOUTH OPENING AND CHEEK FLEXIBILI

Figure 2: Post-Operative cheek flexibility

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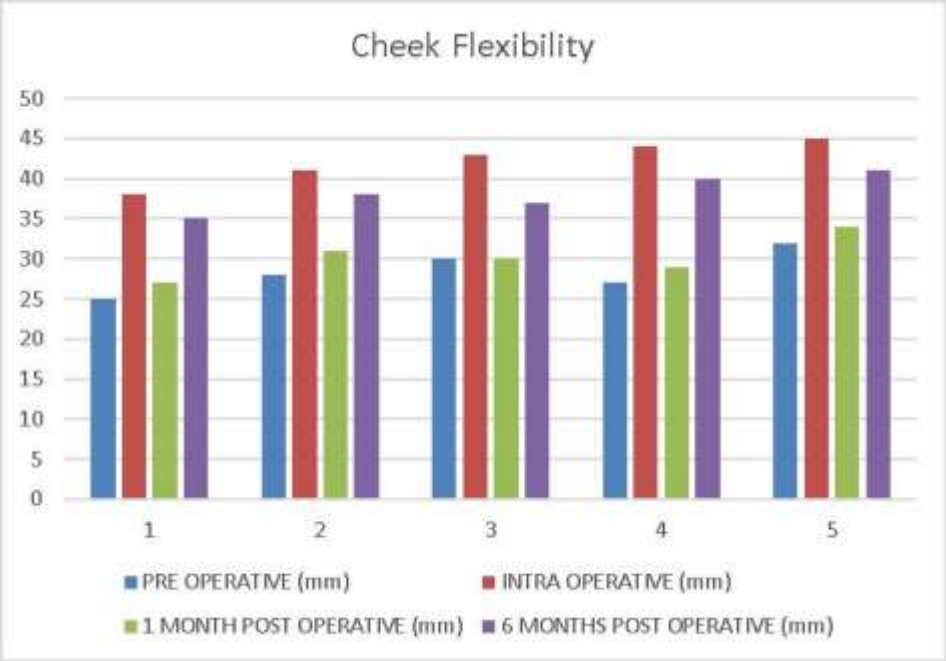
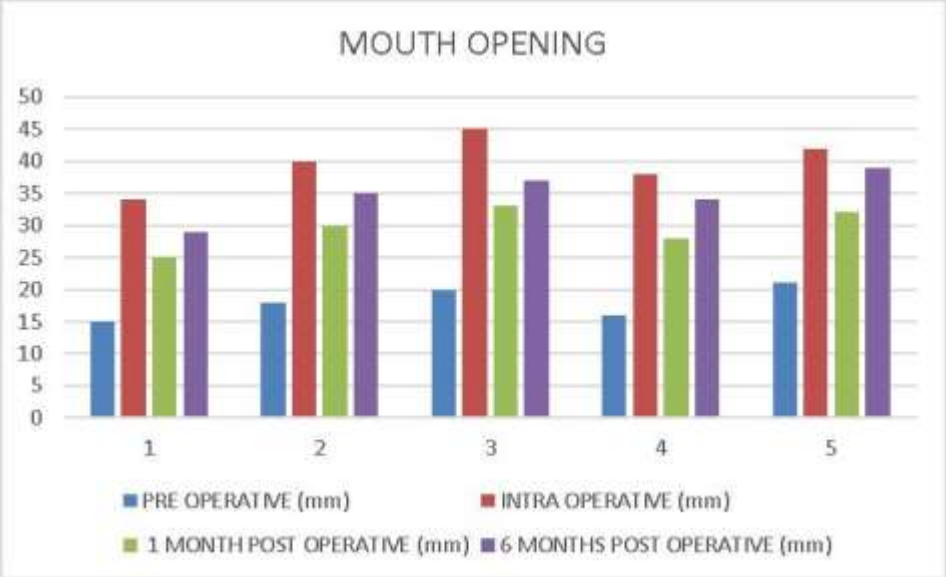
Case No.	Age	Gender	Etiology	PRE OPERATIVE (mm)	INTRA OPERATIVE (mm)	1 MONTH POST OPERATIVE (mm)	6 Month Postoperative (mm)
Mouth opening							
1	22	Male	Tobacco	15	34	25	29
2	18	Male	Beetle Nut	18	40	30	35
3	28	Female	Tobacco	20	45	33	37
4	26	Male	Tobacco and beetle nut	16	38	28	34
5	29	Male	Tobacco	21	42	32	39
Cheek Flexibility							
1	22	Male	Tobacco	25	38	27	35
2	18	Male	Beetle Nut	28	41	31	38
3	28	Female	Tobacco	30	43	30	37
4	26	Male	Tobacco and	27	44	29	40

			beetle nut				
5	29	Male	Tobacco	32	45	34	41



Graph 1: Comparison of cheek flexibility – preoperative, intraoperative, 1 and 6 months post-operative



Graph 2: Comparison of mouth opening – preoperative, intraoperative, 1 and 6 months post-operative

DISCUSSION

Recent years have seen a number of novel and promising developments in the treatment of oral submucous fibrosis. Surgical management options include coronoidectomy, excision of fibrous bands, covering the defect with skin grafts, collagen, or other dressing materials like buccal pad of fat, local flaps, vascularized flaps, with or without, and post-operative active jaw physiotherapy. [9-11]The recent advances in excision also includes the LASER excision of the fibers which has already been extensively studied.[13]

Yen was the first to successfully repair the buccal defect using a split-thickness skin graft, while Egyedi was the first to publicly describe the use of buccal fat pad as a grafting source in 1977.[11,13]However, in our cases, after removing the fibrous bands, we successfully combined the buccal fat pad with a split thickness skin transplant. Lateral thigh and trunk are the most usual sites, as they are easy to harvest because of larger surfaces which also have been used as site of donor skin in our patients. [14,15]The results suggest an average mouth opening of 45 mm during 6 month follow-up.

In a case series of 100 patients, Mehrotra et al. assessed buccal fat pad graft, tongue flap, nasolabial fold flap, and split skin graft for closure of mucosal gap formed after incising the fibrous bands. The split skin transplant offered good appearance and performance. Additionally, STSGs regenerate new skin the quickest and with the lowest donor site morbidity.[16]Some drawbacks of STSGs compared to other reconstructive methods (relative to flap closure) include poor similarity to surrounding recipient site skin (colour match and texture if meshed) and longer wound care of both the donor and recipient sites. In certain cases, recurrence occurred as a result of graft contracture.[17]

K. Saravanan and Vinod Narayanan (2012) examined eight cases with oral submucous fibrosis with mouth openings less than 20 millimetres that had been surgically repaired and then had buccal fat pads inserted.[18] The postoperative mouth openness was measured at 18–35 mm (mean 30 mm) during a 6-month follow-up period, demonstrating the effectiveness of the buccal fat pad. When compared to full thickness skin grafts, BFP has the advantages of being readily available, being easily mobilised, and having no morbidity to donor sites. Moreover, it has the advantage of improved vascularity, making it suitable for larger flap restoration. Buccal fat pad rotation was found to be better than other methods. Anatomical disadvantage of buccal fat pad pertains to its size limitation that wouldn't allow it to be pulled far anteriorly. Hematoma, partial necrosis, excessive scarring, infection, and facial nerve injury have all been described as other side effects of the BFP flap.[19] Hence combination of both the flaps overcomes the disadvantage of the either flap used alone, making it a better treatment modality to treat OSMF.

The results of our study also point towardsthe adequacy of the technique used. However,there is also need to compare the technique with the gold standard nasolabial flap which has been used since ages for reconstruction with noted success.

CONCLUSION

Oral submucous fibrosis is diagnosed using a combination of behavioural, clinical, and histopathological methods. Surgical techniques should only be used in cases where the disease is advanced. With this combination of 2 different types of reconstruction grafts alongwith the noticeable improvement in cheek flexibility, it can be safely stated that surgical intervention is essential to restore quality of life in a wholesome manner. Further studies are required to research and observe the effect of cheek flexibility in surgical management of OSMF.

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