Case Report

Nasolabial Flap in Management of Oral Submucous Fibrosis

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Abstract

Oral submucous fibrosis (OSMF) is a chronic debilitating premalignant condition associated with restricted mouth opening. It affects the oral cavity, pharynx, and upper digestive tract with epithelial atrophy leading to stiffness of the oral mucosa, causing trismus, and inability to eat. The use of nasolabial flap for recovery of the raw area after fibrectomy in OSMF patients has drawn attention due to ease in elevation, proximity to the defect, similar size for defect coverage, and minimal difficulties in swallowing and speech. The present article describes a case of OSMF in a 25-year-old male patient where after fibrectomy, the raw area was covered with nasolabial flap and discussed the available literature.

Keywords: Oral submucous fibrosis, Nasolabial flap, Reduced mouth opening

Introduction

Joshi termed the condition oral submucous fibrosis (OSMF).[1] The predisposing factors for OSMF include areca nut chewing, intake of chilies, nutritional deficiencies, genetic, and immunologic process. This condition is distinguished by blanching and stiffness of the oral mucosa causing gradual limitation in mouth opening and sensitivity to hot and spicy food.[2,3]

Conservative management of OSMF involves administration of multivitamin drugs, intralesional injections, and aggressive physiotherapy. The surgical management involves the release of fibrous bands and repair of defect with buccal fat pad, split-thickness skin graft harvested from different site and nasolabial flaps.[4]

Case Report

A 25-year-old male patient complained of reduced mouth opening for 5 years, burning sensation while eating spicy food and difficulty in swallowing for 2 years. The patient did not have any underlying systemic condition. He had habit of chewing pan masala for 5 years.

On clinical examination, interincisal mouth opening was 6 mm (Figure 1), vertical fibrous bands were palpable in the right and left buccal mucosa and circumorally as well. Blanching was also present. The patient was explained about the surgical procedure and the placement of nasolabial flap after the excision of fibrous bands.

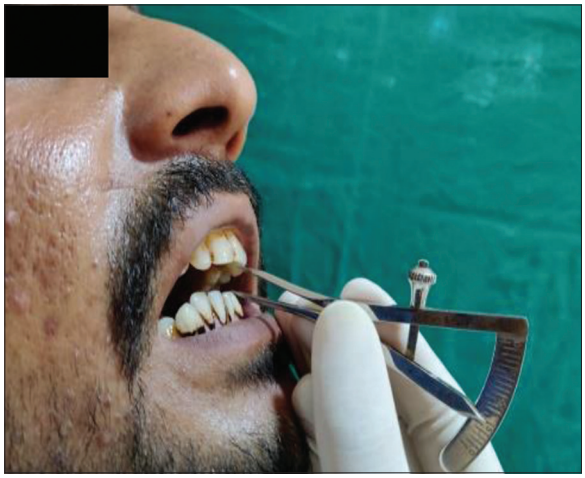

Figure 1: Pre-operative mouth opening

The surgery was performed under general anesthesia with fiber-optic nasal intubation. The wounds created after fibrectomy were undermined by blunt dissection until no resistance was felt. Using Fergusson's mouth gag, 26 mm of mouth opening was achieved. The incision was then extended backward and

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upward and coronoid process was exposed. Coronoidotomy was done and mouth opening achieved at this stage was 35 mm.

For reconstruction of the defect, single-stage nasolabial flap was planned. An elliptical-shaped nasolabial flap was designed and marked to be centered over the nasolabial groove (Figure 2). In this procedure, medial limb of incision was made longer than lateral limb. Width was kept as 1.5 cm–2.5 cm. It was largely limited to the laxity of the cheek, so as to avoid distortion of the angle of mouth. The medial incision line precisely followed the nasolabial folds on its inferior third, thus causing less distortion after flap transfer and allowed for improved arc of rotation. The medial and lateral limits of incision tapered superiorly together approx. 0.5–0.65 cm anteroinferiorly to medial canthus. Flap was raised from superior to inferior in a supramuscular plane using No. 15 blade. The flap was transferred intraorally through a transbuccal tunnel without a tension and fixed onto the defect with sutures (Figure 3).

Generous undermining of the donor site was performed in the subcutaneous plane and closure of donor defect was performed in layers without tension (Figure 4). The patient was advised to use mouthwash 3 times a day for the first 3–4 weeks postoperatively. Mouth opening exercises were started after the 1st week of surgery using wooden sticks 3 times a day. Follow up and suture removal was done after 7 days (Figure 5). The frequency and duration of these mouth opening exercises were increased to attain the 35 mm interincisal mouth opening subsequently. On the follow up after 6 months, adequate mouth opening was present (Figure 6).

Discussion

OSMF has been reported almost extensively, with a reported prevalence up to 0.4% in Indian rural population. Epidemiological studies have shown that chewing areca nut is the major etiological factor for OSMF.[4] Surgical excision of fibrous bands and achieving mouth opening allows for secondary epithelialization but causes rebound fibrosis during healing with variable success rates. After release of fibrous bands, the raw area can be covered with skin graft, collagen membrane, lingual pedicled flaps, bilateral tongue flap, buccal fat pad, temporalis fascia flap, platysma flap, nasolabial flap, and radial forearm free flap, but nasolabial flap has proved to be more effective and reliable.[5]

Nasolabial flap 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.[6]

In nasolabial flap, dermosubdermal plexus supplying the whole area and this plexus is not haphazard but may exhibit a degree of axiality ensuring good perfusion to the most distal parts of the flap.[4]

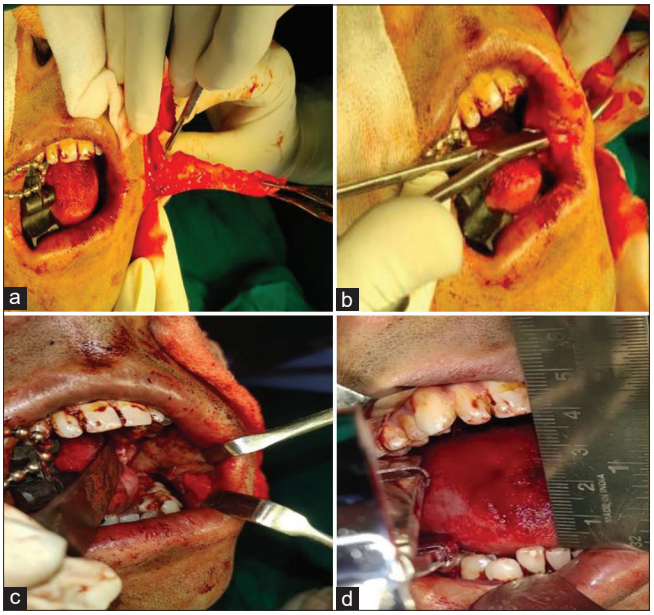

Figure 3: (a) Raising of nasolabial flap. (b) Flap transposed through a transbuccal tunnel. (c) Flap sutured to the margins of the defect intraorally. (d) Mouth opening postoperatively

Figure 2: Marking of nasolabial flap

Figure 4: Closure of donor site

Figure 5: Follow-up 7 days

Figure 6: Follow-up 6 months

Khanna and Andrade have described some limitations of bilateral tongue flap such as severe dysplasia, disarticulation, risk of post-operative aspiration, limited donor tissue for coverage of defect, and uncontrolled tongue movements leading to lack of stability and dehiscence.[7,8]

According to Yeh, use of buccal fat pad is convenient due to easy access and used to cover defect after excision of fibrous bands. The limitations of buccal fat pad are atrophy of the fat in chronic and recurrent disease. Any raw area heals by secondary intension and leads to secondary fibrosis and relapse.[7,9]

Wei *et al*. described that bilateral radial forearm free flaps are not ideal for defects <6–7 cm in diameter, also facility that the free tissue transfer is not universally available.[7,10]

Agarwal *et al*. evaluated the use of extended nasolabial flaps in the management of 27 randomly selected patients with histologically confirmed OSMF. All patients had interincisal opening of <20 mm and were treated by bilateral release of fibrous bands and extended grafting with a nasolabial flap. Their interincisal opening improved significantly from a mean of 11 mm (range 3–19) to a mean of 39 mm (range 23–48).

Kamal Kanthan Ravikumar also used bilateral nasolabial flap in surgical management of recurrent OSMF with nil mouth opening. After that, the patient had reached an acceptable mouth opening with no further recurrence and he concluded that nasolabial flap based on superiorly or inferiorly on the subcutaneous blood supply from the transverse, facial, and angular vessels can be successfully used for buccal mucosal defect reconstruction.[11]

Common minor complications are increase in intercommissure width and the intraoral hair growth.

Conclusion

The coverage of defect with nasolabial flap after release of fibrous bands in OSMF patient enables gaining desired mouth opening with minimal relapse but longer follow-up and patient compliance are required.

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Nil.

Conflicts of Interest

There are no conflicts of interest.

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