

Autogenous Buccal Fat Pad in the Treatment of Oral Submucous Fibrosis: A Case Report and Review of Literature

Shreyas Gupte¹,
Rakesh Sorathia²,
Angad Shetye³

¹MDS, Associate Professor, Department of Oral and Maxillofacial Surgery, Yerala Medical Trust's Dental College and Hospital, Navi Mumbai, Maharashtra, India, ²PG Student, Department of Oral and Maxillofacial Surgery, Yerala Medical Trust's Dental College and Hospital, Navi Mumbai, Maharashtra, India, ³PG Student, Department of Oral and Maxillofacial Surgery, Yerala Medical Trust's Dental College and Hospital, Navi Mumbai, Maharashtra, India

Corresponding Author: Dr. Shreyas Gupte, 29/C, Chaudhary House, 2nd Floor, Khotachi Wadi, VP Road, Mumbai - 400 004, Maharashtra, India. E-mail: gshreyas@rediffmail.com

Abstract

Oral submucous fibrosis is a chronic diseased condition characterized by gradually increasing fibrosis of the oral cavity, mainly the buccal mucosa, anterior faucal pillars resulting in partial and gradually tending towards complete trismus if left untreated. The incidence of the disease is mainly in the Indian subcontinent, with its highest incidence in South India due to various deleterious habits. There are numerous medical modalities that can be used for the management of oral submucous fibrosis, but sometimes surgical intervention becomes inevitable. Various types of flaps have been used to reconstruct the surgical defects following surgical excision of fibrous bands, but it was seen that the use of autogenous buccal fat pad remains the most versatile because of its excellent blood supply and minimal donor site morbidity. Here we present a case of oral submucous fibrosis surgically treated and which was reconstructed using autogenous buccal pad of fat.

Keywords: Oral submucous fibrosis (OSMF), Buccal fat pad, Autogenous

INTRODUCTION

Oral submucous fibrosis (OSMF) is a chronic, resistant disease which may involve the submucosal layer of any part of the oral cavity and may extend up to pharynx and oesophagus. In 1952, Schwartz introduced the term "atrophica idiopathica mucosa oris" to describe an oral fibrosing disease he discovered in 5 Indian women from Kenya.¹ Joshi subsequently termed it as oral submucous fibrosis (OSMF) in 1953.² This condition has been referred to, under a number of names such as diffuse oral submucous fibrosis, idiopathica scleroderma of the mouth, idiopathic palatal fibrosis.³ Worldwide, estimates of oral submucous fibrosis indicate that 2.5 million people are affected, with a higher incidence in the Indian subcontinent.⁴ The highest incidence is found in South India, with an overall prevalence rate of 2.5% in various states of the country.⁵

Clinical signs and symptoms include excessive salivation, limited mouth opening, burning sensation, absent gustatory sensation, etc. which subsequently results to difficulty in chewing and swallowing. It has also been reported with an

increased risk of malignancy and hence it is considered as one of pre-malignant condition.

Non surgical management of these patients includes discontinuation or reduction of the habit, to avoid consumption of spicy foods. Medicinal measures include use of local steroids, placental extracts, hyaluronidase injections singly or in combination with oral anti-oxidant supplements along with oral physiotherapy exercises. Surgical management measures include excision of fibrous bands and coverage of resultant defects with skin grafts, collagen or other dressing materials like, buccal pad of fat, local flaps, vascularized flaps, with or without coronoidectomy and post-operative active jaw physiotherapy.³

The buccal pad of fat was first described in 1977 by Egyedi for the closure of oroantral communications after oncological resections.⁶ There is rich vascular supply to buccal pad of fat through an abundant network of vascular anastomoses through the small branches of facial, internal maxillary and superficial temporal artery and veins.⁷ This

helps in accelerated wound healing as compared to other surgical modalities used for treatment of OSMF.

We employed the usage of autologous buccal pad of fat for the treatment of oral submucous fibrosis, which yielded excellent results.

CASE REPORT

A 23 year-old male patient presented to the Department of Oral and Maxillofacial Surgery with a 3-year history of progressive inability to open the mouth. He gave history of smoking tobacco for 1 year and intermittent pan chewing for the same period. On intraoral examination blanching was seen and on palpation dense fibrotic bands were present in the buccal and the retromolar pad areas, on both sides extending up to anterior faucial regions of the oral mucosa. The inter-incisal distance at the time of presentation was 14 mm (Figure 1). Diagnosis of Oral submucous fibrosis was made correlating clinical signs and symptoms with histopathological findings from incisional biopsy.

After routine laboratory and radiological investigations and written consent, pre anesthetic evaluation was done and the patient was taken under General Anaesthesia. The patient was prepared as per the routine aseptic protocol. Blind awake nasal intubation was done with no 6.5 ET tube.

Local anesthesia was infiltrated in area of buccal mucosa on both sides and bilateral incisions were made in the buccal mucosa at the level of the occlusal plane away from Stensen's duct orifice. Fibrous bands were broken and blunt dissection was done in supramuscular plane. Buccal artery was encountered exercises were started on the third and so it was ligated. Cautery was also used to control bleeding. The buccal fat pad was approached through the postero-superior margin of the surgical wound (Figure 2). The fat was gently

teased out, from lateral surface of buccinator muscle by gentle dissection and lateral pressure on the cheeks (Figure 3). The fat was then interposed in the raw area and was secured to the margins of the wound using 3-0 vicryl sutures. The same procedure was carried out on the contralateral side (Figure 4).



Figure 2: Buccal fat pad exposed

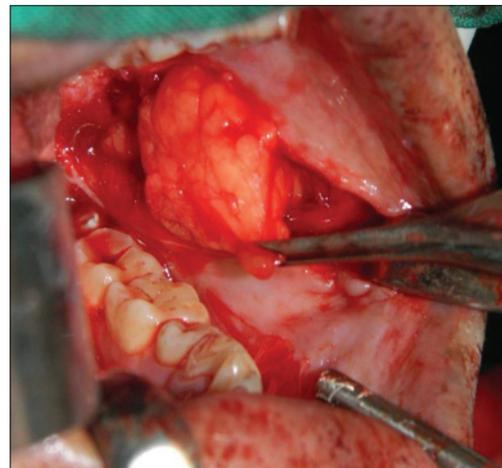


Figure 3: Buccal fat pad in situ



Figure 1: Pre operative pic

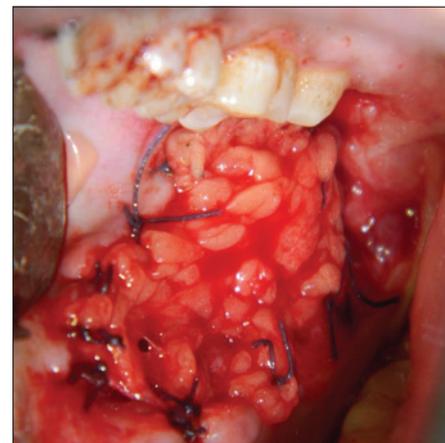


Figure 4: Buccal fat pad secured in to the defect with quilting sutures

Sofratule was placed on both sides and transbuccal suturing was done placing a button of gauze on the cheeks.

Postoperatively systemic antibiotics, analgesics were given and Ryles tube feeding for 3 days was given. Mouth opening exercises were started on the third day (Figure 5). The patient was discharged on the fourth day with instructions to maintain proper oral hygiene and to continue active oral physiotherapy. At 2 weeks follow-up, the oral wounds had healed well. There was an observational change in color from yellowish white to red indicating clinical epithelialization.⁸ The patient reported no pain or intolerance to spicy foods. A passive mouth opening of 27 mm and a forceful mouth opening of 32 mm has been maintained (Figure 6). The patient is currently under regular follow-up.

DISCUSSION

Oral submucous fibrosis is a chronic inflammatory disease affecting the oral mucosa and has a high risk of malignant transformation. Though the exact etiology is not known,



Figure 5: Immediate post operative inter incisal distance measurement



Figure 6: Post operative passive mouth opening

chronic irritation due to habit of chewing betel nut in various forms is considered as a major contributory factor. Experimentally, alkaloid component of the Arecanut, Arecoline and Capsaicin, the active irritant in chilies have been implicated.⁹

Most patients complain of burning sensation of oral mucosa during the early stage of the disease, especially when spicy food is consumed. Clinically, there are erosions and ulcerations; subsequently, the oral mucosa becomes blanched and loses its elasticity. Vertical bands appear in the buccal mucosa, the retromolar area, the soft palate, and the pterygomandibular raphe, and a fibrotic ring forms around the entire rima oris.¹⁰ Histopathological picture shows juxtaepithelial inflammatory reaction followed by fibroelastic changes in the lamina propria, with epithelial atrophy leading to stiffness of the oral mucosa causing trismus and difficulty in eating clinically.¹¹

Early on, the histopathology consists mostly of chronic inflammatory cells with an eosinophilic component infiltrating the subepithelial connective tissues. Older lesions demonstrate a reduced vascularity, reduced numbers of inflammatory cells, and dense bundles and sheets of collagen deposited immediately beneath the epithelium. The diffuse hyalinization of subepithelial stroma usually extends into the submucosal tissues, typically replacing the fatty and fibrovascular tissues.³ So the basic aim of the treatment modality has been relieving the symptoms which hamper function in the form of trismus, difficulty in mastication, deglutition and speech. The surgical procedures primarily aimed at the surgical elimination of fibrotic bands.

Buccal pad of fat was first described by Heister. The buccal fat pad is a supple and lobulated mass, easily accessible, and mobilized. Anatomically, the buccal fat pad is described as consisting of a central body and 4 extensions buccal, pterygoid, superficial and deep temporal. The main body is situated deeply along the posterior maxilla and upper fibers of the buccinator. The buccal extension lies superficially within the cheek and is mainly responsible for cheek fullness. The buccal extension and main body together constitute 55% to 70% of total weight. The average volume of the buccal fat pad is approximately 10 ml and mean thickness is 6mm. The blood supply of the buccal fat pad comes from 3 sources: maxillary artery (buccal and temporal branches), superficial temporal artery, and transverse facial artery.^{10, 12, 13} The buccal pad of fat is a specialized type of fatty tissue called as synsarcosis it enhances inter muscular motion.

Easy mobilization of the buccal fat pad, its excellent blood supply, minimal donor site morbidity, ease of harvesting, simplicity, versatility, low rate of complications, as well

as quick surgical technique make it an ideal flap.¹⁴ The operation can be performed in one incision, affecting neither appearance nor function of the area. It has been used as pedicled graft in facial augmentation procedures, for the repair of persistent oroantral fistulas after dental extractions and in the reconstruction of small and medium size maxillary defects after resection of a tumor.¹³

The rich vascularity of the pedicled graft ensures its vitality and resistance to infections compared to a free graft.⁷ Early return to function with normal eating can be commenced within 5 to 7 days with rapid and predictable wound healing expected confidently. Yeh reported elimination of symptoms such as painful ulceration, burning sensation and intolerance to spicy foods.¹⁵ Early, vigorous and sustained physiotherapy is of paramount importance in the outcome of treatment. The resilience of the graft encourages immediate commencement of mouth opening exercises. These factors make the buccal fat pad a logical, reliable and convenient technique for the treatment of oral submucous fibrosis.

CONCLUSION

Autogenous Buccal fat of pad is very easy and safe procedure for intraoral defects without any foreign body graft rejection and has given very good result in our case of oral submucous fibrosis without inducing any further fibrous band postoperatively. Literature also suggests that rich blood supply easy mobilization and fewer complications make it an ideal flap.

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