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CASE STUDY

ORAL SUBMUCOUS FIBROSIS - A NEW CONCEPT IN SURGICAL MANAGEMENT

***,[1]Dr. Suraj John Thomas, [2]Dr. Augustine Daniel, [3]Dr. Ajay Narayan, [3]Dr. Sabba Fatima and [3]Dr. Hisham M Ibrahim**

[1]Associate Professor, Al-Azhar Dental College, Thodupuzha
[2]Professor and Head, OMFS, Al Azhar Dental College, Thodupuzha
[3]Reader, Al Azhar Dental College, Thodupuzha

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ABSTRACT

Various surgeries have been used to release the fibrotic bands in oral submucous fibrosis but all of them are associated with complications and morbidities. The aim of our study is to evaluate the effect of coronoidectomy with excision of fibrotic bands. A total of 3histological proven cases of advanced oral Submucous fibrosis having a mouth opening of less than 20 mm were surgically treated. The procedure involved (Schwartz, 1952) bilateral release of fibrotic bands (Joshi, 1953) bilateral coronoidectomy (Canniff *et al*., 1986) covering the buccal defects with collagen membrane if required. Regular follow up was done and results were assessed by comparing the preoperative & postoperative Mean intraoperative interincisal distance after band excision and coronoidectomy increased up to 38.2mm.The procedure of coronoidectomy after fibrotic bands release had excellent results and adequate mouth opening with no recurrence till the last follow up.

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INTRODUCTION

In 1952, Schwartz coined the term atrophica idiopathica mucosa oris to describe an oral fibrosing disease he discovered in 5 Indian women from Kenya (Schwartz, 1952). Joshi subsequently coined the termed oral submucous fibrosis (OSF) for the condition in 1953. Caniff, *et al*., in 1986 described submucous fibrosis as a chronic progressive scarring disease of the oral cavity and oropharynx. Oral Submucous fibrosis is a chronic debilitating disease of the oral cavity characterized by inflammation and progressive fibrosis of the submucosal tissues (lamina propria and deeper connective tissues). Oral submucous fibrosis results in marked rigidity and an eventual inability to open the mouth. The buccal mucosa is the most commonly involved site, but any part of the oral cavity such as the soft palate, pterygomandibular raphe, the anterior pillars of fauces and even the pharynx can be involved. The condition is well associated with areca nut chewing; a habit practiced predominately in Southeast Asia and India. Worldwide, estimates of oral Submucous fibrosis indicate that 2.5 million people are affected, with most cases concentrated on the Indian subcontinent, especially southern India. The rate varies from 0.2-2.3% in males and 1.2-4.5% in females in Indian communities. The migration of endemic betel quid chewers has also made oral Submucous fibrosis a public health issue in many parts of the world, including the United Kingdom, South Africa, and many Southeast Asian countries. Oral submucous fibrosis has a high rate of morbidity because it causes a progressive inability to open the mouth, resulting in difficulty in eating and consequent nutritional deficiencies. Oral submucous fibrosis also has a significant mortality rate because it is a premalignant condition and malignant transformation has been noticed in 3-7.6% of cases

Oral submucous fibrosis is clinically divided into 3 stages:

Stage 1: Stomatitis
Stage 2: Fibrosis

a. Early lesions, blanching of the oral mucosa
b. Older lesions, vertical and circular palpable fibrous bands in and around the mouth or lips, resulting in a mottled, marble-like appearance of the buccal mucosa

Stage 3: Sequelae of oral submucous fibrosis

a- Leukoplakia
b- Speech and hearing deficits

Histologic findings in oral submucous fibrosis are generally characterized by diffuse hyalinization of the subepithelial

Corresponding author: Dr. Suraj John Thomas,
Associate Professor, Al-Azhar Dental College, Thodupuzha

stroma, atrophic epithelium and intercellular edema, with or without keratosis, epithelial dysplasia, chronic inflammation and fibrosis in the minor salivary glands in the area of quid placement; and atrophy of the underlying muscle.

Staging

Khanna and Andrade in 1995 developed a group classification system for the surgical management of trismus.

- Group I: Earliest stage without mouth opening limitations with an interincisal distance of greater than 35 mm.
- Group II: Patients with an interincisal distance of 26-35 mm.
- Group III: Moderately advanced cases with an interincisal distance of 15-26 mm. Fibrotic bands are visible at the soft palate, and pterygomandibular raphe and anterior pillars of fauces are present.
- Group IVA: Trismus is severe, with an interincisal distance of less than 15 mm and extensive fibrosis of all the oral mucosa.
- Group IVB: Disease is most advanced, with premalignant and malignant changes throughout the mucosa.
- Surgical treatment is indicated in severe cases. Surgery consists of bilateral fibrotic bands release with bilateral coronoidectomy which have their own complications and morbidities as well.

MATERIALS AND METHODS

A total of 3 patients of oral submucous fibrosis were admitted in our hospital. All these patients had advanced oral submucous fibrosis with interincisal distance not more than 20 mm. Patient's age, sex, etiology, history of gutkha chewing, and preoperative mouth opening were documented. All cases were histopathologically proven. Patients were subjected to surgical intervention. Patients were followed regularly for 1 year and maximum interincisal distance was measured with vernier calipers and noted.

Surgical Technique

Surgical technique involved (Schwartz, 1952) bilateral release of fibrotic bands (Joshi, 1953) bilateral coronoidectomy. The operation was performed under general anesthesia with nasal intubation. After opening the mouth, the buccal mucosa was incised transversely from just behind the commissure of the oral cavity to extending posteriorly at the level to 1 cm below the orifice of Stensen's duct depending upon the location of the fibrotic bands. All the bands were released by blunt dissection starting from the pterygomandibular raphe to the corner of the mouth, bilaterally. Confirmation was done by palpation that all the bands are dissected thoroughly. This incision was extended vertically along the coronoid process up to its tip. The overlying tissue was cleared by sharp dissection till the coronoid process was visible. Using a micromotor burr, chisel and mallet, the coronoid process was excised bilaterally. Interincisal distance was measured after coronoidectomy. Patients were put on Ryle's tube feedings the next day and continued for 7 days. After the oral mucosa has healed, the patients were given oral feedings. All Patients were instructed to stop chewing betel nuts or other addictive habits. Patients were taught mouth opening exercises using ice cream sticks and mouth props were instructed to carry out this exercise 5 times a day. Patients were followed at an interval of 2 months, 6 months and 1 year whereby interincisal distance was measured and documented.

RESULTS

A total of 3 patients were studied from age 16 years to 60 years (Mean 32 years) who were habitual betel nut chewers. The Mean maximum mouth opening of the patients preoperatively was 10.1 mm. The Mean intraoperative interincisal distance after band excision and coronoidectomy was 38.2mm.

RESULTS TABLE

SNO	AGE	PRE OP MOUTH OPENING	STAGE OF DISEASE	MEDICATION (Given 1week prior to surgery)	PREFERRED SURGERY	FOLLOW UP MOUTH OPENING
1	48	14 mm	Group IV A	Inj.Placentrex 1cc + 1cc LA	Release of bands with coronoidectomy	42 mm
2	28	15mm	Group III	Inj.Placentrex 1cc + 1cc LA	Release of bands with coronoidectomy	40 mm
3	42	16mm	Group III	Inj.Placentrex 1cc + 1cc LA	Release of bands with coronoidectomy	43mm

CASE-I

Pre operative profile **Pre operative mouthopening**

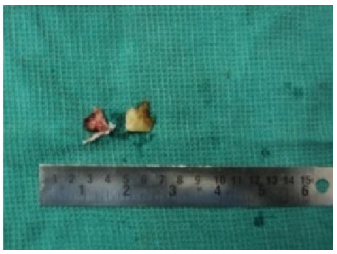

Intra oprative procedure **Resected coronoids**


Post operative mouth opening

CASE-II

Pre operative profile **Pre operative mouthopening**


Intra oprative procedure **Resected coronoids**

Post operative mouth opening

CASE-III

Pre operative profile **Pre operative mouthopening**


Intra oprative procedure **Resected coronoids**


Post operative mouth opening

DISCUSSION

Oral submucous fibrosis is a chronic debilitating disease associated with restricted mouth opening and poor oral hygiene. The treatment aims at good release of fibrosis and provides long term results in terms of mouth opening. The various conservative treatments with intralesional injections of steroids, hyaluronidase, placental extract and physiotherapy are not beneficial to provide a long-term effect in advanced cases of oral submucous fibrosis. Surgical intervention is required in these cases. The surgical treatment commonly followed is the release of bilateral fibrotic bands with bilateral coronoidectomy. Like any other wound, raw areas in the oral cavity are prone to infection, contraction and scarring so there is a need to cover the buccal defect after the fibrotic bands are released. A nasolabial flap has also been used by some surgeons and has a good survival rate, but sometimes it may be too small to cover the whole defect. It also causes a visible scar on the face and requires a second surgery for division. Tongue flaps are bulky and when used bilaterally causes disarticulation, dysphagia and increases the chance of aspiration. In addition, the tongue is involved with the disease.

The advantages of using coronoidectomy are as follows:

1. There are no adverse effects in removing the bilateral coronoids.
2. No morbidities which is associated with coronoidectomy.
3. No problems associated with post operative healing.
4. Simple easy procedure to perform.

Therefore, it can be advocated after bilateral fibrotic bands release along with coronoidectomy implicates adequate mouth opening.

Conclusion

In this study, cases with severe degree of oral sub mucous fibrosis was operated using bilateral fibrous band excision along with coronoidectomy and the functioning improved drastically with good range of motion and no degree of recurrence till the last follow up.

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