

# ORAL SUBMUCOUS FIBROSIS; USE OF COLLAGEN GRAFT AS A TREATMENT MODALITY

\*Vohra S., BDS, MDS, FPFA \*\*Vohra R, BDS, MDS, FAGE, FPFA, FIAOMS \*\*\*Thaiba R, BDS

## ABSTRACT

Oral Sub Mucous Fibrosis (OSMF) is a common premalignant condition almost always associated with smokeless tobacco. It is a common disease affecting population in India, Pakistan, Sri Lanka and Nepal. Arecanut which contains arecholine stimulates formation of collagen fibres resulting in OSMF. The disease is progressive and malignant transformation is seen in 5% of cases.

The Nepali population also has been affected with Gutkha chewing habit. Among the variety of cases encountered in the Dental out patient department at College Of Medical Sciences, Bharatpur, OSMF is one often come across. This case study is aimed to bring about awareness among people of Nepal regarding OSMF, its consequences and highlight upon the new technique of treatment modality i.e. Interpositional Allograft (Collagen) in OSMF.

**KEYWORDS:** OSMF, Collagen Grafting

## INTRODUCTION

The most widely accepted definition of oral submucous fibrosis as proposed by Pindborg and Sirsat is "Oral submucous fibrosis is an insidious, chronic disease affecting any part of oral cavity and sometimes the pharynx. Although occasionally preceded and or associated with vesicle formation, it is always associated with a juxtaepithelial inflammatory reaction, followed by a fibro-elastic change in the lamina propria with epithelial atrophy, leading to stiffness of the oral mucosa and causing trismus and inability to eat."

## CASE REPORT

A 27 year old male patient presented to the dental O.P.D. at CMSTH with chief complaints

of inability to open mouth for the past two and a half years. He also complained of burning sensation of the oral mucosa, decreased salivation, inability to blow cheeks, pain in ears and TMJ area.

Past history revealed gutkha chewing habit for 25 years, chewing 6 to 7 packets everyday and cigarette smoking for the past 15 years consuming 5 to 6 cigarettes each day.

Clinical examination revealed mouth opening of 10mm (compared to 35 to 45 mm in normal individuals), fibrous bands extending from the anterior commissure upto the retromolar trigone and soft palate bilaterally was palpable.

\*Dr. S. Vohra, BDS, MDS, FPFA, Asst. Professor, Dept. Dentistry

\*\*Dr. R. Vohra, BDS, MDS, FAGE, FPFA, FIAOMS, Asst. Professor & Head, Dept. Dentistry

\*\*\*Dr. Riza Thaiba, BDS, 1st Year Resident, Dept. Of Dentistry, CMSTH, College of Medical Sciences, Bharatpur, Chitwan, Nepal

The case was diagnosed as ORAL SUBMUCOUS FIBROSIS (TYPE III)

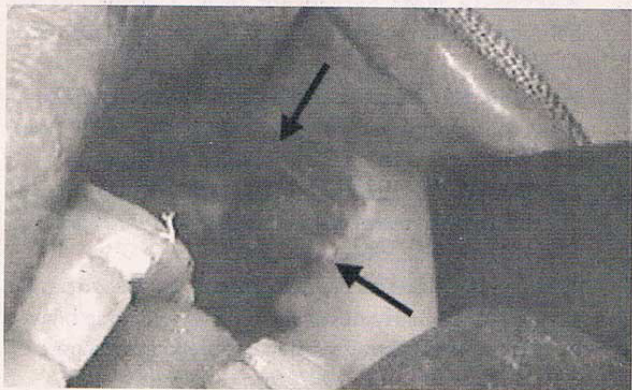


Fig. 1: Incised fibrotic bands before interpositional grafting. The arrows are pointing towards buccal incisions extending towards retromolar area.

### TREATMENT PLAN

Surgical mode of treatment was planned for this patient as medicinal treatment was unsuccessful which he had received elsewhere 3 years back.

The plan of treatment was to release the fibrosed bands and grafting collagen membrane on the denuded area.

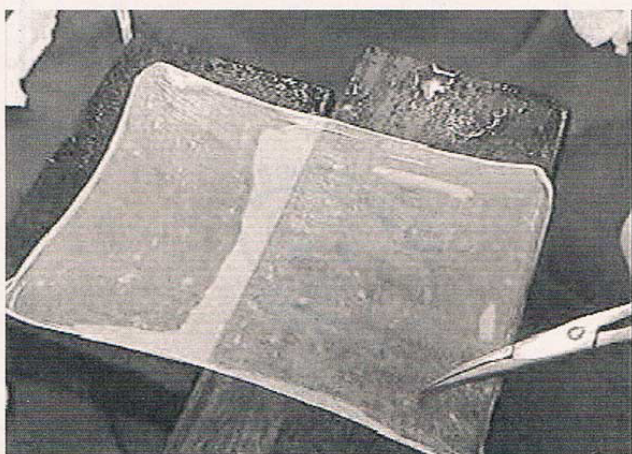


Fig2: Collagen sheet being prepared before insertion into the wound site.

### HIGHLIGHTS OF THIS TECHNIQUE

The highlights of this surgical technique as applied in the surgical management of Oral Submucous Fibrosis are as follows:

1. Active hemostasis collagen is responsible for aggregation, adherence and activation of platelets.

2. Stabilises the wound by its super absorbent and helps to flush the wound.
3. Protects against chemical, thermal and bacterial contamination.
4. Optimises the environment by formation of granulation bed and keeping wound moist.
5. Ability to obtain epithelization.
6. Excellent patient comfort and tolerance to the dressing.
7. When used over the raw exposed wounds, provides the coverage for sensitive nerve endings, thereby diminishing degree of pain.
8. Allergic Reactions: no systemic or local allergic manifestations were seen.
9. Preventing degree of contracture.

### CONDITION OF GRAFTED COLLAGEN

The grafted collagen sheet was sutured all along the periphery and if required few quilting sutures were taken. It remained supple and intact intraorally. It showed biodegradability on the 7<sup>th</sup> and 8<sup>th</sup> day of surgery probably by local collagenase enzymes. In the area where it separated it was peeled off and the remnants after 8-9 days, were flushed with saline irrigation. Raw area got covered with granulation tissue and the healing seen under the membrane was appreciable.



Fig.3: Collagen sheet being sutured into the retromolar area.

## POST OPERATIVE PHASE

- It showed biodegradability on the 7<sup>th</sup> and 8<sup>th</sup> day.
- The degree of epithelization was evident at the end of 1<sup>st</sup> week and complete at the end of 3<sup>rd</sup> week.
- Mouth opening isometric exercises were continued from 2<sup>nd</sup> post operative day for 2 months.
- At the end of 2 months the mouth opening was 28mm.
- Patient was advised not to take spicy food and quit the habit.

The follow up ranged from 1<sup>st</sup> week, 2<sup>nd</sup> week, 4<sup>th</sup> week to two and half months showed

- At the end of 2 weeks area was covered by thin epithelial layer and normal appearance of area of operation was seen to restore at the end of 3<sup>rd</sup> week.
- Improved mouth opening and mucosa appearing healthier.
- No complaints of burning sensation.
- The degree of relapse was not observed as the study was only for two and a half months and required patient co-operation.

## CONCLUSION

Various advocated treatment modalities of OSMF include

### 1. Medicinal:

Dexamethasone, Hyaluronidase, Chymotrypsin, Placental extract, Placental Graft placement.

### 2) Surgical:

- A: Nasolabial graft      B: Tongue flap  
C: Palatal island flap    D: Buccal pad of fat  
E: Collagen Allograft

Among the above mentioned treatment modalities, Collagen Graft is the most suitable one considering the outcome as mentioned in the post operative results and the highlights of the technique.

## BIBLIOGRAPHY

1. **Al-Khateeb, Marouf HA, Anwar MM:** Modified bovine type I collagen membrane as a wound graft material in oral surgery. *J Ir Dent Assoc*, 1996 42(3); 46-50.

2. **Borle-RM, Borle SK:** Management of Oral Submucous Fibrosis a conservative approach. *J Oral Max Surg* 1991 Aug., 49(8) 788-91.
3. **Karvarna NM:** Surgery for sever Trismus in Oral Submucous Fibrosis(letter) *Br J of Plasticsurgery* 1988 Sept 41(5)557.
4. **Khanna JN, Andrade NN:** Oral Submucous Fibrosis-a new concept in surgical management. Report of 100 cases. *Int J Oral Max Surg.* 1995 Dec 24(6) 433-9
5. **Levin MP, Tsaknis PJ, Cutright DE:** Healing of oral mucosa with use of collagen artificial skin. *J Periodontal* 1979 May; 50(5);250-3
6. **Omura S, Mizuki N, Horimoto S, Kawabe R, Fujita K:** A newly developed collagen/silicone bilayer membrane as a mucosal substitute; a preliminary report. *Br J Oral Maxiofac Surg.* 1997 April, 35(2);85-91.
7. **Pindborg JJ:** Oral Submucous Fibrosis as a precancerous condition. *J Dent Res.* 45:546-51, 1966
8. **Rajendra D, Shankaramba KV:** Role of collagen in preprosthetic surgery (vestibuloplasty). A study of 10 cases. *JIDA*, May 1998, Vol. 69.
9. **Schlegel AK, M Ohler H, Busch F, Mehl A:** Preclinical and clinical studies of a collagen membrane (Biogide). *Biomaterials*, 1997 April, 18(7), 535-8.
10. **Mitchell-R:** An evaluation of bone healing in cavities in the jaws implanted with a collagen matrix. *Br J Oral Maxillofac-Surg.* 1992. June; 30(3); 180-2.