

## A study on effect of intra lesional steroid infiltration in oral sub mucous fibrosis in a tertiary care hospital

Satyajit Mishra<sup>1\*</sup>, Parthasarathi Sethy<sup>2</sup>

<sup>1</sup>Associate Professor, <sup>2</sup>Consultant E.N.T. Surgeon, <sup>1</sup>Dept. of ENT and Head and Neck Surgery, <sup>1</sup>S.L.N. Medical College, Koraput, Odisha, <sup>2</sup>H.A.L. Hospital, Sunabeda, Odisha, India

**Corresponding Author: Satyajit Mishra**

Email: dr.satyajitmishra@gmail.com

### Abstract

Oral sub mucous fibrosis is a common disease affecting all age groups in western Orissa. Because of rampant use of tobacco, gutka and betel chewing the disease has become a modern age epidemic. Various modality of treatments have been tried to ameliorate the consequences of the disease including Anti-oxidants, local and systemic steroid, physiotherapy with varying success rate. A study was conducted in Department of E.N.T. & Head and neck Surgery- V.S.S. Medical College, Burla, between January 2015 to July 2016 to gain a knowledge base about the efficacy of intralesional steroid injection in cases of Oral sub mucous fibrosis.

**Keywords:** Oral sub mucous fibrosis, Steroid injection.

### Introduction

Oral sub mucous fibrosis has been well established in Indian medical literature since the time of Susruta in about 2500 BC. This a chronic and painfully debilitating disease characterised by the presence of palpable fibrous bands, generalised fibrosis of oral cavity and trismus.<sup>1</sup> It is quite prevalent in the Indian sub-continent and especially in Orissa. It is divided into three

#### stages<sup>2</sup> clinically:

**Stage 1:** stomatitis, erythematous mucosa, vesicles and ulcers, mucosal petechiae.

**Stage 2:** Ruptured vesicles leading to fibrosis, vertical and circular fibrous bands. Trismus occurs.

**Stage 3:** Leucoplakia as a sequel, gradual involvement of tongue, palate etc.

The most important remedy is giving up the habit of chewing betel quid contain arecanut, avoiding other local irritants like hot and spicy food, alcohol and smoking. The most common mode of treatment has been use of steroid in various forms. Other modes of treatment are Antioxidant orally for several months, local injection of Placental extract, oral Zinc, Pentoxifylline etc.

Local injection of hyaluronidase (1500 IU) mixed with Dexamethasone (4mg) or Triamcinolone (10mg) bi-weekly had been used in various centres with satisfactory clinical improvement in the patients. The problem with the treatment is that dose and duration of treatment has not been standardised. Many centres use the above combination for at least three months. But, it becomes difficult to do a follow-up of the patients for three months and many patients lose the motivation to continue with treatment as the clinical improvement is slow to happen. So a study was planned to see the efficacy by increasing the dose and reducing the interval between injections. Treatment was compared between combinations of Hyaluronidase (1500 IU) with Triamcinolone (40mg/ ml) weekly once for 8 weeks versus

Hyaluronidase (1500 IU) mixed with Dexamethasone (8mg/ 1 ml) once a week for 8 weeks.

### Materials and Methods

Total of 40 number of patients presenting with oral sub mucous fibrosis to Department of E.N.T. & Head and neck Surgery- V.S.S. Medical College, Burla between January 2015 to July 2016 were included in the study.

After diagnosis, patients were classified as per Pindberg<sup>2</sup> staging (depicted in introduction). Trismus of stage 2 was graded as below after measuring by calliper

**Normal mouth opening:** > 50mm inter incisor gap

**Grade 1 (mild trismus):** 50 to 30 mm inter incisor gap

**Grade 2 (moderate trismus):** 29to 16 mm inter incisor gap

**Grade 3 (severe trismus):** < 15 mm inter incisor gap

In this study, only stage 2 patients with grade 2 & 3 trismus were included. Prior informed consent was taken from them. The patients after a through history collection regarding intake of chilli, areca nut, pan masala, betel quid, alcohol and smoking were clinically examined and punch biopsy was taken to confirm diagnosis as well as rule out leucoplakia and malignancy. They were divided into two groups of 20 patients each irrespective of age and sex.

**Group A:** Injection Hyaluronidase (1500 IU) mixed with Dexamethasone (8mg/ 1 ml) were injected sub-mucosally once a week for 8 weeks over the sites with Insulin syringe and needle.

**Group B:** Injection Hyaluronidase (1500 IU) mixed with Triamcinolone (40mg/ ml) were injected sub-mucosally once a week for 8 weeks over the sites with Insulin syringe and needle.

They were instructed not to rinse their mouth for at least 1 hour post injection.

The patients were followed up for 8-12 weeks at weekly intervals and then monthly once for one year.

**Observation**

The study revealed that a majority of patients to be in the age group of 26-35 years i.e. 16 were male and 4 were

females. The youngest patient being 17 years and the oldest being 50 years old.

**Table 1:** Age distribution

Age (years)	Male		Female		Total (n= 40)
	No.	%	No.	%	
15-25	13	32.5	0	0	13
26-35	16	40	4	10	20
36-45	5	12.5	0	0	5
46-55	2	5	0	0	2

Betel quid along with areca nut was the most common predisposing agents. Areca nut is taken lone or in the form of pan masala, gutka in this part of the country.

**Table 2:** Predisposing factors

Predisposing factors	Number of cases
Areca nut with Pan	21
Pan masala (Gutka)	15
Tobacco with areca nut	04

Burning sensation on taking food as well as decreasing mouth opening were the most common symptoms being noted in all case in this study. Dry sensation in mouth and ulcer were next predominant symptoms.

**Table 3:** Symptoms

Symptoms	No of patients	Percentage
Burning sensation	40	100
Reduced mouth opening	40	100
Dry mouth	26	65
Altered taste sensation	12	30
Earache	02	05
Nasal twang voice	-	-
Dysphagia	02	05
Ulcer and Vesicles	14	35

In our study, trismus, blanching of mucosa and fibrous bands were seen in all patients. Ulceration, fibrosis along faucial pillars, restricted tongue movement were found in 14%, 28% and 25% of cases respectively

**Table 4:** Signs

Signs	No of patients	Percentage
Trismus	40	100
Blanched mucosa	40	100
Fibrous bands	40	100
Ulcer & Vesicle	14	35
Fibrosed faucial pillars	28	70
Restricted tongue movement	25	62.5
Depigmentation of vermilion borders	19	47.5
Fibrotic ring around mouth	03	7.5

In our series 57% of the cases were anaemic. All the patients were biopsy proven as sub mucous fibrosis.

**Table 5:** Investigation

Investigation	No. Of cases	Percentage
Haemogram (Low Hb%)	23	57.5
VDRL	Negative (40 Pts.)	100
HIV	Negative (40 Pts.)	100
Routine Urine test	Normal (40 Pts.)	100
<b>Histopathology</b>		
OSMF	40 Pts.	100
OSMF with Leucoplakia	Nil	
OSMF with Malignancy	Nil	

The treatment modality was employed as noted above.

In the moderate grade of disease: Out of 36 patients, 18 were treated with Injection Hyaluronidase (1500 IU) mixed with Dexamethasone (8mg/ 1 ml) injected sub-mucosally once a week for 8 weeks over the sites. All of them reported relief of burning sensation while 89% (16 out of 18) had improved mouth opening.

Rest 18 were treated with Injection Hyaluronidase (1500 IU) mixed with Triamcinolone (40mg/ ml) sub-mucosally once a week for 8 weeks over the sites. Of them all reported relief of burning sensation while 95% (17 out of 18) had improved mouth opening.

In the severe grade of disease, 4 patients were treated with Injection Hyaluronidase (1500 IU) mixed with Dexamethasone (8mg/ 1 ml). All of them reported relief of burning sensation while 50% (2 out of 4) had improved mouth opening. Another 2 patients were treated with Injection Hyaluronidase (1500 IU) mixed with Triamcinolone (40mg/ ml) sub-mucosally. Both of them reported relief of burning sensation while 50% (1 pt.) had improved mouth opening.

**Table 6:** Treatment modality and results

Inter incisor distance	Modes of Treatment	No. of Pts.	Duration in weeks	Relief of symptoms and Signs			
				Burning sensation	Fibrous bands	Blanching	Mouth opening
Moderate Grade (16-30mm)	Group A	18	8	100%	100%	78%	89%
	Group B	18	8	100%	84%	61%	95%
Severe Grade (<15mm)	Group A	2	8	100%	100%	100%	50%
	Group B	2	8	100%	100%	100%	50%

Histopathological investigation was done in 30 willing patients post treatment (15 from each group) all of the in both groups revealed improvement of their histopathological grading. The staging was done according to the staging by Pindberg et al<sup>2</sup>.

**Table 7:** Histopathological Stging (pre and post Tt.)

HP Staging	Dexamithasone N= 15		Triamcinolone N= 15	
	Pre-treatment	Post-treatment	Pre-treatment	Post-treatment
Very early	0	2	0	2
Early	6	12	5	11
Moderate advanced	9	1	10	2
Advanced	0	0	0	0

## Discussion

In our study, the peak age incidence was found to be 26-35 years in both sexes. Borle and Borle<sup>3</sup> had reviewed 326 such cases over a 7 year period in 1991 and had found peak age incidence of 20-15 years. This could be loco regional variation in uptake of areca nut and gutka etc. The sex incidence wise male preponderance of 9: 1 was found in our study. This might be due to wide spread use of gutka and betel in male population as compared to female ones.

As regard predisposing factors, areca nuts was the most prevalent culprit in maximum of our cases. Pindberg et al<sup>2</sup> had similar finding. P R Murty<sup>4</sup> et al in 1995 studied reviewed 275 patients over a 5 year period and they had

compared results of various studies undertaken in India, Pakistan and South Africa and found areca nuts taken in isolation or with pan masala, gutka etc. as major predisposing factor. Similar was the finding of Mher et al.<sup>5</sup>

In a study by C.WVan Wyk et<sup>6</sup> al in 1994, out of 122 patients, burning sensation on taking food as well as dryness of mouth were the most common symptoms being noted in 39% and 43% case respectively. Similar was the finding in our study.

Khanna and Andre<sup>7</sup> had found trismus, blanching and fibrous strand in 97% of their cases. In our study trismus,

blanching of mucosa and fibrous bands were seen in all patients.

Anaemia was the significant haematological finding in our series.

O.R. Lai et al<sup>8</sup> (1995) had treated 50 patients with moderate OSMF with steroid-Hyaluronidase injections and found improvement in burning sensation in 95% and ulceration/ vesiculation in 90% cases. Mouth opening improved in 83.5% of their cases. Khanna and Andre<sup>7</sup> had treated 25 out of 100 of their cases (mod) with injection of Triamcinolone. The improvement was 92% in above symptoms and signs. Of our patients of moderate grade treated with Injection Hyaluronidase mixed with Dexamethasone showed 100% improvement in alleviation of burning sensation and 89% in mouth opening. Similarly, 100% improvement in alleviation of burning sensation and 95% in mouth opening was seen in those treated with Injection Hyaluronidase mixed with Triamcinolone. Of the severe grade, treated with dexamethasone and Hyaluronidase, 100% alleviation of burning sensation and 50% improvement of mouth opening was noted. Same observation was noted in the severe grade treated with injection of Hyaluronidase mixed with Triamcinolone.

### Conclusion

Sub mucous fibrosis is a debilitating disease assuming an endemic picture in western Odisha. Total of 40 patients presenting with oral sub mucous fibrosis in Department of E.N.T. & Head and neck Surgery- V.S.S. Medical College, Burla between January 2015 to July 2016. were included in the study. Male preponderance (9:1) with peak age incidence between 26-35 years was seen in our study. While burning sensation in mouth and reduced mouth opening was the commonest symptoms, trismus, blanched mucosa and fibrous band were common signs. The patients were divided in two groups depending upon their inter-incisor distance as moderate grade (<30mm) and severe grade (less than 15 mm). They were treated with combination of Hyaluronidase and Dexamithasone or Triamcinolone. All the patients

reported appreciable improvement in their symptoms and signs as well as histopathological grading.

As this is a potential pre-malignant condition and quite debilitating, early intervention with injection therapy as well as motivating the patients to give up consumption of arecanut, betel, gutka etc. will go a long way in improving their condition.

**Conflict of Interest:** None.

### References

1. GUPTA P.C., SINOR P.N., BHONSLE RB. Oral sub mucous fibrosis in India: A new epidemic: *National Med J India* 1998;11(3):113-6.
2. Pindberg JJ. : Oral sub mucous fibrosis: A review. *Ann Acad Med Singapore*.1989; 18:603-7
3. Borle R.M. and Borle S.R. Management of Oral sub mucous fibrosis. A conservative Approach. *Int J Oral Maxillofacial Surg* 1991;49:788-91.
4. Murti PR., Bhonsle RB., Gupta PC., Dafitary DK., Mehta Fali S. Aetiology of Oral sub mucous fibrosis with special reference to the role of areca nut chewing. *J Oral Pathol Med* 1995;24:145-52.
5. Maher R., LEE AJ., LEWIS JA: Role or areca nut in the causation of Oral sub mucous fibrosis- a case-control study in Pakistan. *J Oral Path Med* 1994;23:65-9.
6. VanWyk CW, Grobler Rabie, Martell RW., Hammond MG. HLA Antigen in Oral sub mucous fibrosis. *J Oral Pathol. Med* 1994;23:23-7.
7. Khanna JN, Andrade NN, Oral sub mucous fibrosis: A new concept in surgical management. *Int J Oral Maxillofacial surg* 1995;24:433-9.
8. Lai D.R. Chen HR, Un LM, Huang YL.Tsai CC: Clinical evaluation of different treatment methods for Oral sub mucous fibrosis: A 10 year experience with 150 cases. *J Oral Pathol Med* 1995;24:402-06.

**How to cite this article:** S Mishra, P Sethy. A study on effect of intra lesional steroid infiltration in oral sub mucuous fibrosis in a tertiary care hospital. *J Otorhinolaryngol Allied Sci* 2019;2(2):44-7.