

**Study on Effect of Intra Lesional Steroid Infiltration in Oral Sub-Mucous Fibrosis in a Tertiary Care Hospital**Ajit Kumar<sup>1</sup>, Khushbu Rani<sup>2</sup><sup>1</sup>Senior Resident, Department of ENT, Radha Devi Jageshwari Memorial Medical College & Hospital, Turki, Muzaffarpur, Bihar.<sup>2</sup>Assistant Professor, Department of ENT, Radha Devi Jageshwari Memorial Medical College & Hospital, Turki, Muzaffarpur, Bihar.

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**Abstract****Background:** All age groups are affected by the common condition known as oral submucous fibrosis. The disease has spread to be a modern-day epidemic due to the widespread usage of tobacco, gutka, and betel chewing. A variety of treatment modalities, with differing degrees of success, have been tried to lessen the effects of the condition, such as antioxidants, systemic and local steroids, and physiotherapy.**Methods:** From August 2023 to October 2023, the ENT Department at Radha Devi Jageshwari Memorial Medical College and Hospital in Turki, Muzaffarpur, Bihar, conducted this study to gather information regarding the effectiveness of intralesional steroid injection in instances of oral submucous fibrosis. There were forty individuals in total who had oral submucous fibrosis at presentation.**Results:** The study revealed that the greatest age incidence for both sexes was between 26 and 35 years old. There may be regional variations in the absorption of gutka and areca nut, among other factors. In terms of sex incidence, this study revealed a 9: 1 male preponderance. This could be as a result of men using gutka and betel more frequently than women do. All of the patients in this study had fibrous bands, mucosal blanching, and trismus. The most important haematological finding in this series was anemia.**Conclusion:** An efficient way to manage it and get rid of the morbidity is to inject hyaluronidase with dexamethasone. It relieves symptoms as well.**Keywords:** Oral sub mucous fibrosis, Steroid injection

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**Introduction**

A persistent, sneaky premalignant disease of the oral mucosa is called oral submucous fibrosis (OSMF). [1-3] It is a subtle, long-term alteration in fibroelasticity that is accompanied with trismus, blanching and stiffening of the oropharynx and oral mucosa, and a burning feeling inside the mouth. [4]

Atrophica idiopathica mucosa oris is the name Schwartz gave to the oral fibrosing condition he found in five Indian women living in Kenya.5. Joshi later referred to the state as OSMF. [5] The patient mostly complains of burning mouth and difficulty to handle spicy food. Clinically and histopathologically, it is characterized by diffusely blanched mucosa, presence of fibrous bands, depapillated tongue, and erosions in the mucosa. [1, 2]

Oral mucosa stiffness, trismus, and difficulty eating are caused by a combination of fibroelastic alterations in the lamina propria, a juxtapostaepithelial inflammatory reaction, and epithelial atrophy. [1,2] In the Indian subcontinent, this precancerous syndrome is prevalent.6 In India, the incidence ranges from 0.2

to 0.5%, with the south having a larger percentage. Six Although the precise cause of the disease is still unknown, a number of things have been suggested as potential contributors, including betel nut, tobacco, smoking, pan masala, and chillies. In advanced cases of OSMF, the chance of malignant transformation is relatively substantial if treatment is not received. [6]

Clinical diagnosis is made based on the following factors: (a) inability to tolerate hot and spicy foods; (b) trouble opening the mouth; (c) incapacity to protrude the tongue; (d) blanching of the oral mucosa; (e) decreased tissue elasticity and mobility; and (f) palpable fibrous bands.6 The tissue therapy approach is used in conjunction with intralesional injections of placental extract, which functions as a biogenic stimulant. [6] Hyaluronidase-infused intralesional corticosteroid injections are also utilized. [7]

**Material and Methods**

Total of 40 number of patients presenting with oral sub mucous fibrosis to Department of ENT, Radha

Devi Jageshwari Memorial Medical College and Hospital, Turki, Muzaffarpur, Bihar, between August 2023 to October 2023 were included in the study.

After diagnosis, patients were classified as per Pindberg staging<sup>1,2</sup>. Trismus of stage 2 was graded as below after measuring by calliper : Normal mouth opening: > 50 mm inter incisor gap, grade 1 (mild trismus): 50 to 30 mm inter incisor gap, grade 2 (moderate trismus): 29 to 16 mm inter incisor gap and grade 3 (severe trismus): < 15 mm inter incisor gap.

In this study, only stage 2 patients with grade 2 and 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.

### Results

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 of patients**

Age (years)	Male		Female		Total (n=40)
	Number	Percentage	Number	Percentage	
15-25	13	32.5%	0	0	13
26-35	16	40.0%	4	10.0%	20
36-45	5	12.5%	0	0	5
46-55	2	5.0%	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	Percentage
Areca nut with Pan	21	52.5%
Pan masala (Gutka)	15	37.5%
Tobacco with areca nut	04	10.0%

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 vermillion 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(40Pts.)	100%
HIV	Negative(40Pts.)	100%
Routine Urine test	Normal(40 Pts.)	100%
Histopathology		
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,2.

**Table 7 : Histopathological Staging (pre and post Treatment)**

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>8</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 [8] 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. [9]

In a study by C.WVan Wyk et al [10] 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 [11] 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 [13] (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 [12] 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

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.

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