

Original Research Article

DOI: <http://dx.doi.org/10.18203/issn.2454-5929.ijohns20173037>

Medical management of oral submucous fibrosis

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Received: 20 March 2017

Revised: 05 April 2017

Accepted: 06 April 2017

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ABSTRACT

Background: In 1952 Schwartz coined the term “atrophica idiopathica mucosa oris” to describe an oral fibrosing disease he discovered in 5 Indian women from Kenya. Oral submucous fibrosis of oral cavity is a chronic progressive debilitating disease and premalignant condition of oral cavity. The condition is well recognized for its malignant potential and it is particularly associated with arecanut chewing. It is characterized by burning sensation in mouth particularly while eating spicy food and progressive development of inability to open mouth. Worldwide estimate of oral submucous fibrosis indicate that 2.5 million people are affected with a higher incidence in Indian subcontinent.

Methods: This is an observational type of study of 100 patients with oral submucous fibrosis attending ENT OPD.

Results: We observed that with effective combination of treatment and avoiding predisposing factors and with long time follow-up we got markedly good results.

Conclusions: Although medical management does not completely cure the disease but optimal doses of injection corticosteroid with injection hyaluronidase with avoidance of predisposing factors and improvement of dietary habit with prolong follow up is effective in some extent.

Keywords: Submucous fibrosis, Arecanut, Injection Hyaluronidase, Injection triamcinolone

INTRODUCTION

Submucous fibrosis of oral cavity is chronic progressive disease which is characterized by burning sensation in mouth particularly while eating spicy food and progressive development of inability to open mouth.

Buccal mucosa, anterior faucial pillars are affected resulting in partial or complete trismus if left untreated. The exact etiology of OSMF is still obscure, etiological factors are being mentioned such as genetic, autoimmune, nutritional and environmental. The pathogenic mechanism of developing OSMF with chewing areca nut is not clear, but it is associated with OSMF.²

OSMF may be due to trauma caused by areca nut particles and there after a result of repair. During repair,

destroyed cells and tissues are replaced with live cells and new tissue component.

Worldwide, 2.5 million people are affected, with a higher incidence in the Indian subcontinent.² The highest incidence is found in South India.³

Our study is aimed to determine the clinical improvement by various existing medical methods of management.

The symptoms and signs are limited mouth opening, dryness, burning sensation, absent gustatory sensation, difficulty in chewing and swallowing and ulceration and vesication of mucous membrane.

Hyaluronidase in oral submucous fibrosis acts by breaking down hyaluronic acid (the ground substance in

connective tissue) lowers the viscosity of intercellular cement substance. Better results were observed with respect to trismus and fibrosis.⁴

Triamcinolone in OSM Facts as an immune suppressive agent by its antagonistic activity on the soluble factors released by the sensitized lymphocytes succeeding the activation by nonspecific antigens.⁵ It additionally muzzles the inflammatory reaction. Thus, fibrosis is prevented by a decrease in fibroblastic proliferation and deposition of collagen.

METHODS

This is an observational study conducted over period of one and half year from October 2014 to April 2016 in our institution. This study was conducted over 100 OPD patients in R.D. Gardi medical college, Ujjain. This study was conducted after taking patients informed consent with approval from institute research ethical committee.

A detailed personal history was taken regarding the use of areca nut, paan masala, betel quid, alcohol, smoking, tobacco chewing and any other addictive predisposing factor with frequency and duration.

Complaints were studied in detail are- burning sensation, difficulty in mouth opening, dryness of mouth, ulcer and vesiculation.

Local examination was studied in following points mouth opening, inter-incisor distance, measured with verniers caliper in mm, ulcers, vesicles in oral cavity.

Main focus of treatment was submucosal injections (intralesional injection of 1 ml Hyaluronidase 1500 IU and 1 ml of injection triamcinolone 40 mg) in buccal mucosa at multiple sites, once a week upto 8- 10 weeks and patients were followed up to 12 weeks.

Along with required supplements like beta- carotene and multivitamins, iron capsules, vitamin B complex, vitamin B12 injection, local ointment massaging and exercise with wooden moulds.

Inclusion criteria

Inclusion criteria were all cases of OSMF presented in our institution; a positive history of chewing of the areca nut or one of its commercial preparations, difficulty in chewing and swallowing, burning sensation; trismus and changes in oral mucous membrane.

Exclusion criteria

Exclusion criteria were patients with other malignant conditions of oral cavity, head and neck and severe trismus were excluded from this study; patients having systemic illness, undergoing surgery or under any drug therapy; patients previously undergone treatment for

OSMF; patients with trismus due to any other cause like TMJ problems, or h/o accident, pericoronitis of lower third molars.

RESULTS

The study was undertaken in 100 consecutively selected patients of oral submucous fibrosis. A protocol of therapy followed in all patients with local weekly injection of triamcinolone and hyaluronidase up to 8-10 weeks, and patients were followed for 12 weeks. The patients of OSMF are having addiction of areca nuts (98%). This included arecanut chewed alone or in combination with paanmasala, ghutka and betel quid and the other important associated factor was smoking in 47% of cases. In 67 cases patients were diagnosed as anemic in which over all 62% of patients got improvement up to 11-12 gm/dl. The percentage of improvement was 100% in burning in oral cavity, dryness of oral cavity, ulcers and vesicles in oral cavity. A definitive improvement was noted in all clinical features including in mouth opening. Mean improvement in inter-incisor distance in study of 100 cases of oral submucous fibrosis was 17.26 mm.



Figure 1: Mouth opening before treatment measured by vernier caliper.

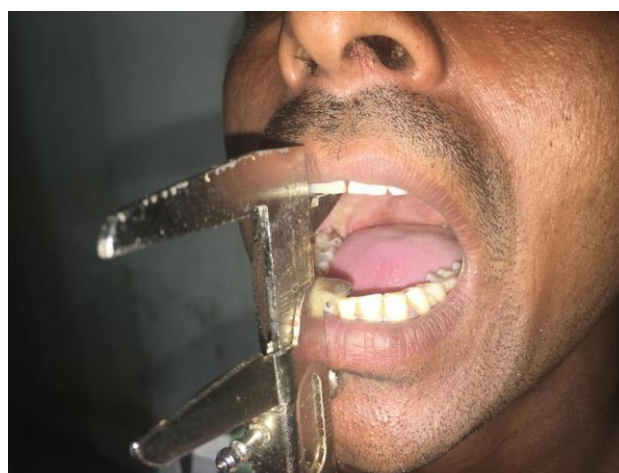


Figure 2: Mouth opening after the treatment measured by vernier caliper

Table 1: Improvement in signs and symptoms.

Signs and symptoms	Male	Percentage	Female	Percentage	Total percentage of improvement
Interincisor distance	29 cases got improvement in moderate group (15-30 mm) and 54 cases got improvement in severe group (less than 15 mm)	79%	6 cases got improvement in moderate group (15-30mm) and 15 cases got improvement in severe group (less than 15 mm)	21%	100%
Burning in oral cavity	89% of cases were having burning in which 73% got excellent results.				
Dryness of oral cavity	In 52 cases dryness was reported, 51 (98.07%) of them got relief.				
Ulcer in oral cavity	40 of cases were having ulcers, 100% of them got relief.				
Vesicles in oral cavity	12 of cases were having ulcers, 100% of them got relief.				
Anaemia in OSMF patients	55	55%	12	12%	-

67 Cases were anaemic in which 62% got Hb improved upto 11-12 gm/dl

Table 2: Improvement in mouth opening after 12 weeks.

Grading	Mean improvement in interincisor distance in male (mm)	Mean improvement in interincisor distance in female (mm)	Mean total improvement in interincisor distance in different groups (mm)
Mild group (more than 30 mm)	-	-	-
Moderate group (less than 15 mm -30 mm)	19.82	20	19.85
Severe group (less than 15 mm)	17.9	18.73	15.86
Mean total improvement in different sexes	18.6	12.19	17.26

Relief of trismus

The relief in the trismus was noted every week and at the end of 10 and 12 weeks of study.

Improvement in severe group (less than 15 mm) was noted as 15.86 mm. Improvement in moderate group (between 15-30 mm) was noted as 19.85 mm. Improvement in mild group (more than 30 mm) could not be noted as there were no cases.

DISCUSSION

OSMF is a morbid, crippling, and a premalignant condition of the oral mucosa associated with the areca nut chewing habit.^{6,7} It is common practice in various Indian states to use pan quid with tobacco and lime.⁸

OSMF leads to difficulty in mouth opening progressively. In our study of 100 patients, the peak incidence of OSMF, we observed was in age group of 16-50 years of age which was similar to that of Ghom et al and Bhuvana et al respectively.^{9,10} In our study the ratio of male female is 8:2. It is evident from the various studies that the peak incidence of OSMF is seen in the age group of 20-30

years. This could be because of local differences in the use of the various predisposing factors. The youngest patient in our study was of 16 years of age and oldest was 75 years of age. The common aetiological agents was found to be Areca nut, which was taken plain or with additional ingredients like chunna, kattha, peppermint or in some other form like paan masala, ghutka, or betel quid. Smoking was also seen in 47 percent of patients.

Burning and trismus was present in 89% of cases and 73% improved unlike Bhuvana et al and Anjum et al who got 31% and 53.5% improvement in burning and trismus respectively.¹¹ In our study dryness was seen in 52% of case and 51% improved, vesicles in 12 cases and ulcer in 40 cases and all got improved anemia was seen in 67% of patients and 62% got improved. Patients were divided into 3 groups on the basis of inter-incisor distance (mild, moderate and severe)

In our study Submucosal Injections (injection triamcinolone acetonide 40 mg mixed with Hyaluronidase 1500 IU) in buccal mucosa at multiple sites were given along with lycopene and vitamin B oral supplements.

On the other hand Bhuvana et al treated the patients in two groups one with hyaluronidase and hydrocortisone acetate.

Ghom et al also had done study in two groups one was triamcinolone acetonide with hyaluronidase and the other group was hyaluronidase with hydrocortisone.⁹

Leena et al had done study in two groups gave hyaluronidase with dexamethasone in one group and lignocaine HCL in another group.¹² Ara et al, done study of intralesional dexamethasone, hyaluronidase and oral pentoxifylline.

Mean Total improvement in Inter-incisor distance in different groups in our study was 17.26 mm.

In study done by Ghom et al the mean increase in mouth opening in group receiving hydrocortisone was 8.02 mm and other group receiving triamcinolone was 4.08 mm.

In study by Ara et al mean improvement in mouth opening was 5.2 mm. In study done by Ameer and others, significant improvement in mouth opening is observed following local triamcinolone injection therapy.¹³

Out of 50 patients in this study, treated 21 (42%) patients showed increase in mouth opening of greater than 11 mm and 19 (38%) patients showed an increase of 6-10 mm and the rest patients showed an increase of less than 5 mm.

The t value is 13.518, the t value is the difference between mean of inter incisor distance before and after treatment. And the p value is .000 which shows significant improvement in inter incisor distance.

CONCLUSION

We studied 100 patients of OSMF and observed, that one effective combination of treatment and follow up for long duration of time, depending on severity and improvements in sign and symptoms of patients along with additional supplements.

Patients should avoid the predisposing etiology factors and improvement in dietary habits along with orodental hygiene. We can get markedly good results in OSMF patients, importantly in mouth opening which is the major problem of OSMF patients. Restricted mouth opening leads to decrease in food intake, leads to weight loss, anemia.

Funding: No funding sources

Conflict of interest: None declared

Ethical approval: The study was approved by the Institutional Ethics Committee

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Cite this article as: Agrawal A, Kaushal Y, Vaidya S, Shrivastava K. Medical management of oral submucous fibrosis. Int J Otorhinolaryngol Head Neck Surg 2017;3:628-31.