ISSN:0975-3583,0976-2833 VOL11,ISSUE04,2020

A comparative evaluation of mouth opening using different treatment modalities in OSMF

[1]Dr. Sweta, [2*]Dr. Sony Saraswati, [3]Dr. Saurav Kumar, [4]Dr. Nadira Hassan, [5]Dr, Smita, [6]Dr. Devleena Bhowmick

[1]Dr. Sweta, Senior Resident, Department of Dentistry, Sri Krishna Medical College & Hospital, Muzaffarpur, Bihar, India
sasysweet@gmail.com

[2] Dr. Sony Saraswati, Senior Resident, Department of Dentistry, Sri Krishna Medical College & Hospital, Muzaffarpur, Bihar, India*
sonysaraswati@yahoo.co.in

[3]Dr. Saurav Kumar, Senior Lecturer, Department of Orthodontics and Dentofacial Orthopaedics, MMDCH, Darbhanga, Bihar, India
dr.sauravmishra29@gmail.com

[4] Dr. Nadira Hassan, Private Practitioner, Ara, Bhojpur, Bihar, India
dr.nadirahassan29@gmail.com

[5] Dr. Smita, Consultant Endodontist, Nalanda, Bihar, India
smitapdch@gmail.com

[6] Dr. Devleena Bhowmick, Senior Lecturer, Department of Oral Medicine & Radiology, PDMDCRI, Bahadurgarh, Jhajjar, Haryana, India
devleena.bhowmick@gmail.com

Corresponding Author:
Dr. Sony Saraswati, Senior Resident, Department of Dentistry, Sri Krishna Medical College & Hospital, Muzaffarpur, Bihar, India
E-mail ID: sonysaraswati@yahoo.co.in

ABSTRACT:

Background: Oral submucous fibrosis is a chronic disease affecting the oral mucosa, as well as the pharynx and the upper two-thirds of the oesophagus. The present study compared conservative management of OSMF.

Materials & Methods: 45 clinically confirmed cases of OSMF were divided into 3 groups of 15 each. Group I were treated with topical application of kenacort twice a day, group II were given mixture of turmeric and jaggery application twice a day and group III were advised exercise such as use of ice cream stick to open the mouth and ballooning twice daily. Patient's mouth opening was compared with baseline at the interval of 4 weeks.

Results: Group I had 12 males and 3 females, group II had 10 males and 5 females and group III had 11 males and 4 females. The mean pre- operative mouth opening in group I was 20.3 mm and post- operative was 35.2 mm, in group I was 20.6 mm pre- operatively and 27.4 mm post- operatively and 20.2 mm pre- operatively and 25.2 mm post- operatively. The difference was significant ($P< 0.05$).

Conclusion: Topical application of kenacort found to be better in increasing maximum mouth opening as compared to use of jaggery and physiotherapy.

Keywords: Kenacort, OSMF, Mouth opening

INTRODUCTION:

Oral submucous fibrosis (OSMF) is a chronic, complex, irreversible precancerous condition characterised by juxta-epithelial inflammatory reaction and progressive fibrosis of the submucosal tissue i.e. lamina propria and deeper connective tissue.1 Oral submucous fibrosis is a chronic disease affecting the oral mucosa, as well as the pharynx and the upper two-thirds of the esophagus.2 There is substantial evidence that lends support to a critical role of areca nuts in the etiology behind oral submucous fibrosis. In initial phase of disease, mucosa feels leathery with palpable fibrotic bands. In advanced stage the oral mucosa loses its resiliency and becomes blanched and stiff.3 Other features of disease include xerostomia, recurrent ulceration

ISSN:0975-3583,0976-2833 VOL11,ISSUE04,2020

and pigmentation of oral mucosa, dryness of mouth, burning sensation, decreased mouth opening and tongue protrusion.

There are various treatments for OSMF including conservative therapy and surgical modalities.4 The pathogenesis of the disease is not well established, but the cause of oral submucous fibrosis is believed to be multifactorial. Factors include areca nut chewing, ingestion of chilies, genetic and immunologic processes, nutritional deficiencies, and other factors.5 Previous studies on the pathogenesis of OSF have suggested that the occurrence may be due to clonal selection of fibroblasts with a high amount of collagen production during the long-term exposure to areca quid ingredients etc.6 The present study compared conservative management of OSMF.

MATERIALS & METHODS:

The present study was conducted among 45 clinically confirmed cases of Stage- 2 OSMF of both genders. The study was conducted at a government medical college of Bihar after obtaining institutional ethical clearance. All the patients were informed regarding the study and their consent was obtained. Data such as name, age, gender etc. was recorded. Patients were divided into 3 groups of 15 each. Group I were treated with topical application of KenacortTM 0.1%(Abbott Healthcare Pvt. Ltd., Mumbai, Maharashtra, India) twice a day, group II patients were given mixture of turmeric and jaggery application twice a day and group III patients were advised mouth opening exercises such as use of ice cream stick to open the mouth and ballooning twice daily. Patient's mouth opening at 4th week was compared to baseline. Results thus obtained were subjected to statistical analysis. p value less than 0.05 was considered significant.

RESULTS:

Table I shows that group I had 12 males and 3 females, group II had 10 males and 5 females and group III had 11 males and 4 females.

Table I Distribution of subjects

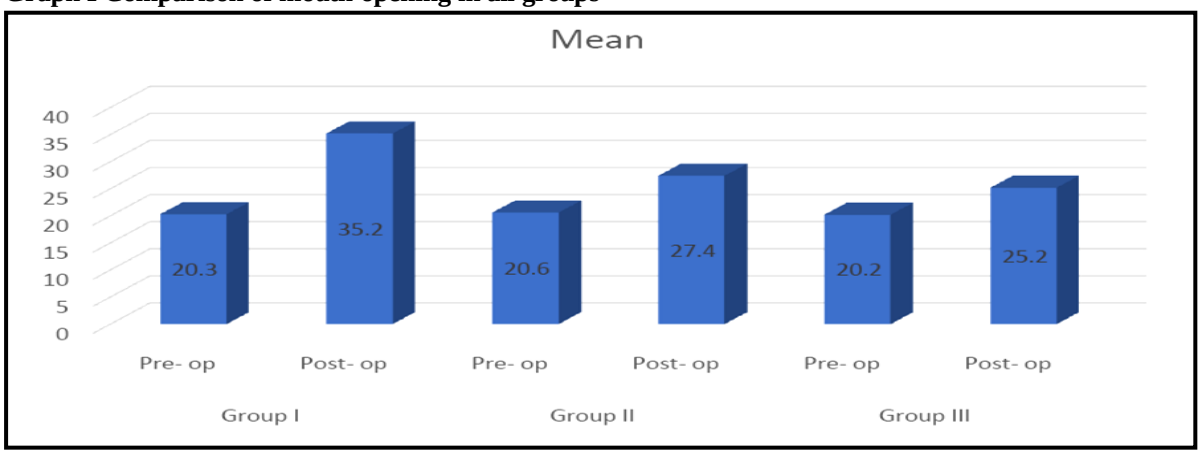
Groups	Group I	Group II	Group III
Method	Topical Kenacort	Turmeric & jaggery application	Physiotherapy
M:F	12:3	10:5	11:4

Table II, graph I shows that mean pre- operative mouth opening in group I was 20.3 mm and post- operative was 35.2 mm, in group I was 20.6 mm pre- operatively and 27.4 mm post- operatively and 20.2 mm pre- operatively and 25.2 mm post- operatively. The difference was significant (P< 0.05).

Table II Comparison of mouth opening in all groups

Mouth opening (mm)	Group – I		Group – II		Group – III		p-value
	Pre- op	Post- op	Pre- op	Post- op	Pre- op	Post- op	
Mean	20.3	35.2	20.6	27.4	20.2	25.2	0.01

Graph I Comparison of mouth opening in all groups



DISCUSSION:

ISSN:0975-3583,0976-2833 VOL11,ISSUE04,2020

OSMF is seen typically between the ages of 20 and 40 and is often associated with the habitual use of compounds containing areca (betel) nut and tobacco in various forms, including a quid form (paan) and a powdered form (gutka), where these are placed in the oral cavity for prolonged periods of time and often are substituted up to several times per day.7 Oral submucous fibrosis presents as a whitish yellow change that has a chronic, insidious biological course.8 It is characteristically seen in the oral cavity, but on occasion it may extend into the pharynx and the esophagus. Submucous fibrosis occasionally may be associated with vesicle formation. Over time, the affected mucosa, especially the soft palate and the buccal mucosa, loses its resilience and shows limited vascularity and elasticity.9 This process then progresses from the lamina propria to the underlying musculature. Fibrous bands are readily palpable in the soft palate and the buccal mucosa.10 The present study compared conservative management of OSMF.

In the present study, group I had 12 males and 3 females, group II had 10 males and 5 females and group III had 11 males and 4 females. Group I patients were treated with topical application of KenacortTM (Triamcinolone Acetonide I.P. 0.1% w/w) twice a day, group II were given mixture of turmeric and jaggery application twice a day and group III were advised exercise such as use of ice cream stick to open the mouth and ballooning twice daily. Karthik et al11 in age group 30-45 years found that kenacort application suited the best treatment modality for this age group as it showed a very good prognosis in the inter incisal mouth opening. 46-75 years showed that jaggery and turmeric application suited the best treatment modality for this age group as it showed a very good prognosis in the inter- incisal mouth opening. We observed that mean pre- operative mouth opening in group I was 20.3 mm and post- operative was 35.2 mm, in group I was 20.6 mm pre- operatively and 27.4 mm post- operatively and 20.2 mm pre- operatively and 25.2 mm post- operatively. Goel et al12 conducted a study on 270 patients and found that 223 (82.59%) were males and 47 (17.40%) were females which showed a male predominance and the ratio was 5:1. In stage I it was found that both the test groups, i.e., injection betamethasone and capsule lycopene had a significant improvement in mouth opening than control group. In stage II, it was found that the test group injection betamethasone showed 24 better results as compared to capsule lycopene this could be because of better accessibility of the fibrotic bands for injecting betamethasone solution at the site of the lesion and showed highly significant difference ($P < 0.0001$). In stage III, it was found that the capsule lycopene showed better results as compared to injection betamethasone and the difference was highly significant ($P < 0.0001$). This could be because of restricted mouth opening and inability to reach the site for injecting betamethasone solution. The shortcoming of the study is small sample size.

CONCLUSION:

Authors found that topical application of kenacort found to be better in increasing maximum mouth opening as compared to use of jaggery and physiotherapy.

REFERENCES:

1. Cannif JP, Harvey W, Harris M. Oral submous fibrosis: its pathogenesis and management. Br Dent J. 1986; 160(12):429-34.

2. Pindborg JJ, Sirsat SM. Oral submucous fibrosis. Oral Surg Oral Med Oral Pathol. 1966Dec; 22(6):764-79.

3. Pindborg JJ, Metha FS, Daftary DK. Occurrence of epithelial atypia in 51 Indian villagers with oral submucous fibrosis. Br J Cancer. 1970 June; 24(2); 253-7.

4. Lal D. Diffuse oral submucous fibrosis. All India Dent Assoc. 1953; 26:1-3.

5. Canniff J P, Harvey W. The aetiology of oral submucous fibrosis: The stimulation of collagen synthesis by extracts of areca nut. Int J of Oral Surg. 1981; 10(I):163-7.

6. Harvey W, Scutt A, Meghji S, Canniff J P. Stimulation of human Buccal mucosa fibroblasts in vitro by areca nut alkaloids. Arch oral boil. 1986; 31(1): 45-9.

7. Maher R, Lee A J, Warnakulasuriya KA, Lewis JA. Role of areca nut in the causation of oral submucous fibrosis: a case control study in Pakistan. J of Oral Pathol Med. 1994; 23: 65-9.

8. Lai D R, Chen HR, Lin L M. Clinical evaluation of different treatment methods for oral submucous fibrosis. A 10 year experience with 150 cases. J of Oral Pathol Med. 1995; 24: 402-6

9. Karkar PK, Puri RK,,Venkatachalam VP. Oral submucous fibrosis treatment with hyalase. J Laryngol Otol. 1985 Jan; 99(1):57-9.

10. Khanna JN, Andrade NN. Oral submucous fibrosis: A new concept in surgical management. Report of 100 cases. J Oral Maxillofac Surg. 1995 Dec; 24(6):433-9.

ISSN:0975-3583,0976-2833 VOL11,ISSUE04,2020

11. Karthik PM, Sande A, Ashwinirani SR, Nayak A, Pawar R, Patil P. Comparison of Mouth Opening with Different Non-Surgical Treatment Modalities in Oral Submucous Fibrosis. American Journal of Drug Delivery and Therapeutics. 2015;2(3):072-7.
12. Goel S, Ahmed J. A comparative study on efficacy of different treatment modalities of oral submucous fibrosis evaluated by clinical staging in population of Southern Rajasthan. J Can Res Ther 2015;11:113-8.