

Medical Management of Oral Submucous Fibrosis Our Experience

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ABSTRACT

Introduction: Oral submucous fibrosis is a premalignant condition of oral cavity characterised by scarring of oral mucosa with restricted mouth opening and is caused by chewing of arecanut. The pathogenesis of the diseases is believed to be multifactorial. The paper presents a case of osmf in 43 yrs male patient who had arecanut chewing habit. The treatment we rendered was intralesional injection of dexamethasone and hyaluronidase. The effect of this treatment was studied.

Case report: The patient came with the chief complaint of limited mouth opening. He had undergone treatment for the same but there was no improvement. After obtaining informed consent patient was given intralesional injections of hyaluronidase and dexamethasone at regular interval. The progress in mouth opening was studied over an interval of 2 months. The net increase in mouth opening was 10+/- 2 mm (range of 8 to 12mm)

Conclusion: Injection of hyaluronidase and dexamethasone leads to significant improvement in mouth opening in OSMF patients provided the patient is complaint and follows habit restriction

Keywords: OSMF, Dexamethasone, Hyaluronidase, Betel quid

INTRODUCTION

The oral submucous fibrosis (OSMF) is defined as “an insidious chronic fibrotic disease that involves the oral mucosa and occasionally the pharynx and upper third of oesophagus. It is characterized by juxtraepithelial inflammatory reaction followed by fibroelastic changes in the submucosa and epithelial atrophy, hence leading to stiffness of the oral mucosa causing trismus and inability to eat” by Pindborg and Sirsat.¹ It is a multifactorial disease and its etiologies include consumption of arecanut, nutritional deficiency, genetic factors etc.² Alkaloids that are present in arecanut are thought to be responsible for stimulation of fibrous tissue formation with the decrease in collagen degradation.³ The sign and symptoms that patients generally present are burning sensation of mouth, ulceration, pain, reduced mouth opening and chewing due to formation of fibrous bands at various regions of oral cavity.⁴ OSMF patients present with many surgical difficulties like difficult laryngoscopy and intubation of the trachea.^{5,6} OSMF can be classified based on clinical features and functional mouth opening. This classification was given by Chandramani B. More et al.

According to Clinical staging, it can be classified as: Stage 1. (S1) – Stomatitis and/or blanching of oral mucosa, Stage 2. (S2) – Presence of palpable fibrous bands in buccal mucosa and/or oropharynx, with/without stomatitis, Stage 3. (S3) – Presence of palpable fibrous bands in buccal mucosa and/or oropharynx, and in any other parts of oral cavity, with/without stomatitis, Stage 4 (S4 A) Any one of the above stage along with other potentially malignant disorders e.g. oral leukoplakia, oral Erythroplakia, (S4 B) Any one of the above stage along with oral carcinoma. According to Functional staging, it can be classified as: M1 when

the Interincisal mouth opening is up to or >35 mm, M2 when the Interincisal mouth opening is between 25 mm and 35 mm; M3 when the Inter- incisal mouth opening between 15 mm and 25 mm and M4 when the Interincisal mouth opening is <15 mm. The present report describes a case of 43 years old male patient of OSMF and the results of treatment modality that was followed for its cure.

CASE REPORT

A 43 yrs old male patient, residing at Nayabazar, Kathmandu reported to the Department of Oral and Maxillofacial Surgery, Kantipur Dental College and Research Center, Basundhara Kathmandu, with chief complain of restricted mouth opening since 7 years. Patient also complained of ulcers on oral mucosa with burning sensation of mouth since three years which aggravated on having spicy food. Patient gave history of treatment for the same which improved burning sensation but mouth opening was not improved. He was chronic areca nut chewer and discontinued his habit 6 months back. On intra oral examination, blanching of oral mucosa with palpable vertical and circumoral fibrous bands (Figure 1), extending to soft palate and presence of ulceration on right buccal mucosa. Interinsical distance was 12mm which was measured from incisal end of 21 and 31 with metallic scale (Figure 2). According to Chandramani B. More et all classification patient is graded as a stage III patient. The patient and his wife were informed about the condition and its possibility of malignant transformation was also informed and he was motivated to discontinue the use of arecanut.

A written informed consent was obtained from the patient and intraoral injection of steroid and hyaluronidase were planned. Intralesional injection (inj. dexamethasone 10 unit/ml, inj. hyaluronidase 200unit/ml) was given once weekly for first four visits (Figure 6). Patient’s mouth opening was assessed as 1st, 2nd postoperative days (Figures 3 and 4). On fifth and sixth visit, injection was given once in two weeks duration and mouth opening was assessed (Figure 5). After injecting the medication, vigorous mouth opening exercises were performed and the patient was instructed to perform these exercises at home as well.

The patient was followed for duration of 2 months, a significant improvement in mouth opening and reduction in burning sensation and ulceration were seen. The net increase in mouth

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opening was 10+/- 2 mm (range of 8 to 12mm). Table 1 depicts the mouth opening of the patient during successive visits. On the day of last appointment there was marked improvement in mouth opening, symptoms improved considerably, oral and palatal mucosa changed to normal and fibrotic scar was noted all over the mouth.

DISCUSSION

Oral Submucous fibrosis is a chronic fibrotic disease and that affects majority of people residing in Indian and South eastern Asian population.⁸ OSMF is seen in 2%- 30% of the patients affected of oral squamous cell carcinoma.⁹ It is estimated that oral submucous fibrosis affects 2.5 million people world wide.¹⁰ The overall prevalence rate of the condition in India is estimated to be about 0.2% to 0.5%. It is more prevalent amongst females affecting 1.2-4.57% of females and 0.2-2.3% of males.¹¹ Nepal share close ties with India in relation to Geographical location and has similar culture and tradition. Betel nut chewing and smoking are also very common amongst Nepali population but there is lack of proper research facilities on the prevalence and incidence of oral cancer and precancerous condition. Studies like ours though conducted at small scale and on single patient can definitely aid help for larger studies.

Most of the treatment modalities for OSMF are aimed at providing symptomatic relief to the patient. Habit restriction should be the prime concern before starting with treatment. The basic action of hyaluronidase is breaking down of hyaluronic acid present in the ground substance in connective tissue. It also lowers the viscosity of intercellular cement. Coman et al and James et al conducted similar studies with Hyaluronidase and observed better results as far as trismus and fibrosis were concerned.⁴ This was the chief reason for selecting hyaluronidase in our study. Injection dexamethasone is also used in our study. It is a steroid that acts as an immune suppressive agent by its antagonistic activity on the soluble factors released by the sensitized lymphocytes succeeding the activation by nonspecific antigens.⁴

The anti-inflammatory role of Steroids has proven to be beneficial in many inflammatory conditions. Leena James et al in their study concluded that intralesional injection of corticosteroid and hyaluronidase shows better long term results.⁴ Various surgical treatment modalities are also followed for curing OSMF. They range from fibrotomy to coronoidectomy. Venkatesh V. Kamath et al suggested that excision of the fibrotic bands and use of interpositional grafts lead to increased oral opening.¹²

The findings of our study illustrate the advantages of using hyaluronidase with dexamethasone as intralesional injection, for the improvement of mouth opening. It is a cost effective method and offers minimal complications. However, further research is required in this field for providing evidence based



Figure-1: Blanching of right and left oral mucosa



Figure-2: preoperative mouth opening; **Figure-3:** mouth opening at second visit



Figure-4: mouth opening at third and fourth visit



Figure-5: mouth opening at fifth and sixth visit



Figure-6: Hyaluronidase and dexamethasone injections

Postoperative visit	Mouth opening
1 st	12mm
2 nd	15mm
3 rd	16mm
4 th	19mm
5 th	22 mm
6 th	24 mm

Table-1: Mouth opening during successive days

treatment modalities to optimize patient care, as our research is based on only one case study. We had few other patients also but most of them did not turn up for completion of treatment as the signs and symptoms improved consequently with two or three visits. Long term follow up is needed to come to a definitive conclusion. Medical management depends on patient compliance, so patient should be motivated. Mouth opening exercises act as a useful adjunct to medical therapy so it should not be neglected.

CONCLUSION

Injection of hyaluronidase and dexamethasone leads to significant improvement in mouth opening in OSMF patients provided the patient is compliant and follows habit restriction.

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