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### RESEARCH ARTICLE

#### EFFECTIVENESS OF INTRALESIONAL DEXAMETHASONE AND HYALURONIDASE IN ORAL SUBMUCOSAL FIBROSIS (A RETROSPECTIVE STUDY).

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#### Abstract

oral submucous fibrosis is an insidious progressive painless oral cavity disease which is characterized by juxtaepithelial deposition of fibrous tissue that sometimes even extend to pharynx. The majority of patients present with gradually progressive painless difficulty in opening the mouth. The disease may advance and cause difficulty in protruding out the tongue. Although the medical treatment is not completely systematised, optimal dose of its treatment with local injection of corticosteroids with hyaluronidase or placental extract is effective in some extent. However a combination of steroids and topical hyaluronidase shows better long term results than either agents used individually.

**Material and methods:** the study was conducted at Dr Ulhas patil medical college from jan 2017 to jan 2018. A total of 30 patients were included in the study. They were treated by administering an intralesional injection of dexamethasone 1.5 ml, hyaluronidase 1500 IU with 0.5ml lignocaine HCL, injected intralesionally biweekly for 4 weeks

**Results:** patients mouth opening was improved by net gain of 5+2mm, the range being 5-7mm. Definite reduction in the burning sensation, painful ulceration and blanching of oral mucosa and patient followed up for an average of one year.

**Conclusion:** injection of hyaluronidase with dexamethasone is an effective method of managing grade 111 OSMF

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#### Introduction:-

Oral submucous fibrosis is an insidious chronic disease affecting any part of oral cavity and sometimes the pharynx with epithelial atrophy leading to stiffness of oral mucosa causing trismus and inability to eat. However more serious complication of this disease is risk of development of oral carcinoma. Although occasionally preceded by and or associated with vesicle formation, it is always associated with juxtaepithelial inflammatory reaction followed by fibroelastic change of lamina propria, with epithelial atrophy leading to stiffness of oral mucosa, causing trismus and

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inability to eat. Oral submucosal fibrosis has a high rate of morbidity because it causes progressive inability to open the mouth, resulting in inability to eat and consequent nutritional deficiencies. Mortality rate is significant because it transforms into oral cancer, particularly squamous cell carcinoma at a rate of 7%-30%<sup>2</sup>. Management includes cessation of habit, intralesional injection of steroids, and surgical release of fibrous bands followed by forceful opening of mouth by coronoidectomy and coverage of surgical defects with nasolabial flap and postoperative active jaw physiotherapy for 6 months.<sup>3</sup> Hyaluronidase in OSMF

Hyaluronidase 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. Dexamethasone in OSMF

Dexamethasone acts as an immune suppressive agent by its antagonistic activity on the soluble factors released by sensitized lymphocytes succeeding the activation by non-specific antigens. It additionally muzzles the inflammatory reaction. Thus, fibrosis is prevented by a decrease in fibroblastic proliferation and deposition of collagen.

### Material and methods:-

The study was conducted in dept of ENT at Dr Ulhas patil medical college and hospital Jalgaon. About 30 patients all having grade 1-11 OSMF were included in the study. Proper consent was taken from all the patients for the study. Clinical diagnosis of OSMF was based on the symptoms of burning sensation in the mouth on consumption of spicy or hot food, dryness of mouth, presence of vesicles, oral ulcers in the mouth, restriction of mouth opening were observed. The patients were informed about the precancerous potential of the condition. All the patients were instructed to discontinue the use of areca nut with tobacco. Personal history like frequency of chews, duration of use and symptoms like burning sensation and mouth opening were recorded. The burning sensation was assessed using the visual analogue scale marked from 0-10 where 0 indicates no burning sensation and 10 indicates maximum burning sensation. Extraorally, the patients' mouth opening was measured with reference to interincisal points between upper and lower incisor teeth, the maximum mouth opening was assessed with geometric divider and metallic scale. Intraorally, the findings like blanching of oral mucosa, presence of vesicles and ulcers, palpable bands, limitation of tongue movements were observed. The patients were grouped based on their age: 21-30 (Group 1), 31-40 (Group 2), 41-50 (Group 3), and 51-60 (Group 4). 14 patients belonged to age group 1, where 8 were males and 4 were females, 7 patients Group 2 where 4 were males and 3 were females. 6 patients Group 3 where 4 were males and 2 females and 3 patients Group 4 where 2 were males and one female. The patients were administered hyaluronidase 1500iu mixed in 1.5ml of dexamethasone and 0.5 ml of lignocaine HCL injected intralesionally biweekly for 4 weeks. Assessment was done by measuring postoperative mouth opening each week and burning sensation using a visual analogue scale graph 1a and b

### Results:-

**Table 1:-**Percentage of relief of symptoms post treatment

Symptoms	Relief of symptoms	
Limited mouth opening	86.66	26/30
Burning sensation	83.33	25/30
Painful ulceration	73.33	22/30
Blanching of oral mucosa	66.66	20/30

**Table 2:-**Average mouth opening in four grouped patients before and after treatment

Groups	Before treatment mouth opening in percentage	After treatment mouth opening in percentage
Group 1	17	29.5
Group 2	15.5	26.3
Group 3	16.5	28.4
Group 4	15.35	27.8

**Discussion:-**

Oral submucous fibrosis is a precancerous condition and reports suggest that it is present since the time of Shushruta reported by Schwartz in 1962 and by JOSHI IN 1953, who described its singleton among the Indians. Many trials have been conducted but as such no definitive treatment is currently available. However improvement can be obtained passably by intralesional injection of cortisone and hyaluronidase alone showed a quicker improvement in burning sensation and painful ulceration produced by the effects of local by-products, although combination of dexamethasone and hyaluronidase gave long term results than other regimens. However, the addition of dexamethasone has its own advantages and contraindications and a slight improvement in the overall result observed in the combination group justifies the addition of dexamethasone to hyaluronidase. With the exceptions of individuals habit, the systemic conditions like chronic iron deficiency and vitamin B complex deficiency subsists. Study by Borle and Borle postulated that treatment following intralesional injections of various drugs leads to aggravated fibrosis and pronounced trismus. The resultant worsening of this condition with submucosal injections are attributable to repeated needle stick injury to the soft tissues at multiple sites, clinical irritation from the drugs being injected, and to progressive nature of the disease. The same outcome has been observed with some surgical methods employed to treat oral submucosal fibrosis. Conservative line of treatment like topical steroids, vitamins, antioxidants, physiotherapy would give expected symptomatic relief of pain and burning sensation. Treatment modalities like intralesional injections of placental extracts that acts essentially by biogenic stimulation based on the tissue therapy are also encouraged. Clinical trial by Haque et al, using gamma-interferon treatment has shown improvement in patients mouth opening (interincisal distance) with net gain of 8+\_4mm, the range being 4-15mm. Excision of fibrous bands is also managed by CO<sub>2</sub> and KTP laser, a potassium titanyl-phosphate that doubles the frequency of pulsed neodymium-yttrium-aluminium garnet laser energy to 532 nanometer wavelength.

**Conclusion:-**

In oral submucosal fibrosis, there is increased collagen production and decreased collagen degeneration. Injection of hyaluronidase with dexamethasone is an effective method of managing Grade 3 oral submucosal fibrosis and can possibly eliminate the morbidity associated with surgical management. It is a cost effective method of management. This study is an added effort in providing evidence based support to optimize patient care. The subjects falling prey to oral submucosal fibrosis can be reduced by educating the upcoming generation in schools and colleges.

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