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Efficacy of mitomycin C in adjunct with intralesional steroids in the management of oral submucous fibrosis: A case report

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Abstract
A case of oral submucous fibrosis in a 45-year-old woman discusses its etiopathogenesis, clinical features of the condition and highlights the strong association of areca nut chewing as the potential factor in the etiology of this condition. Cessation of the areca nut chewing habit and submucosal administration of mitomycin and triamcinolone acetonide along with active physiotherapy exercises showed marked improvement of the condition.

Keywords: Mitomycin C, intralesional steroids, oral submucous fibrosis

Introduction
Oral submucous fibrosis (OSF) is a potentially malignant disorder of oral mucosa predominantly seen in people of South and South-East Asia. It was first reported by Schwartz in 1952 with the term "atrophia idiopathica [1]. It is characterised by juxta-epithelial inflammatory reaction and progressive fibrosis of the submucosal tissue which includes lamina propria and deeper connective tissue [2]. Various factors implicated in the etiology of OSMF are environmental agents, nutritional, genetic and autoimmune factors. Environmental agents such as, the amalgamated preparations of betel nut and betel quid have been observed to be associated with OSMF. The potential for malignant transformation in OSMF is high [3]. Excessive use of areca nut may cause fibrosis due to increased synthesis of collagen and induce the production of free radicals and reactive oxygen species, which are responsible for high rate of oxidation/peroxidation of polyunsaturated fatty acids which affect essential constituents of cell membrane and might be involved in tumour genesis [4]. The ingredients of areca nut induce excessive reactive oxygen species which potentially damages the cell structures, including lipids and membranes as well as proteins and nucleic acids [5]. A wide range of treatment including drug management, surgical therapy, and physiotherapy have been attempted till date, with varying degrees of benefit, but it still stands incurable.[6] This is mainly due to the fact that the etiology of the disease is not fully known and its progressive nature [7]. Thus instead of continuing with the limited and known modes of therapy, the idiopathic nature of this condition requires a new course for its treatment [8].

Case report
A 45-year-old female reported to the OPD of the Department of Oral and Maxillofacial Surgery, Jaipur Dental College, Maharaj Vinayak Global University with complain of difficulty in mouth opening, protrusion of the tongue and intolerance to spicy food. She had a habit of chewing betel nut (a proprietary preparation consisting of small pieces of roasted areca nut dusted with a powder containing slaked lime and unknown flavouring agents). She started the habit of chewing betel nut 5-years back once daily and continued it regularly since then. The interincisal distance of maximal mouth opening was 20mm. The oral mucosa appeared very pale. fibrotic bands were palpable on both side of buccal as well as retromolar area. She refused any surgical intervention.

Non-surgical intralesional administration of drug method was employed for increase the mouth opening and relieving the symptoms. Combination of triamcinolone acetonide and mitomycin C (KENACORT™ 40 mg + MITO™ 10mg) (Fig 1) was injected in fibrous bands at an interval of seven days for 4 weeks. At each visit a total of 2ml of solution was deposited into the fibrous bands bilaterally. (KENACORT™ 1ml + MITO™ 10mg was diluted with 1 ml normal saline). (Fig2) (Fig 3) The patient was advised to put an end to the betel chewing habit and to continue with active physiotherapy exercises which included ice cream sticks and opening of mouth with the help of heisters mouth gag. There was a remarkable improvement in the burning sensation of the mouth and considerable improvement in mouth opening at the end of 4th week. (Fig 4)

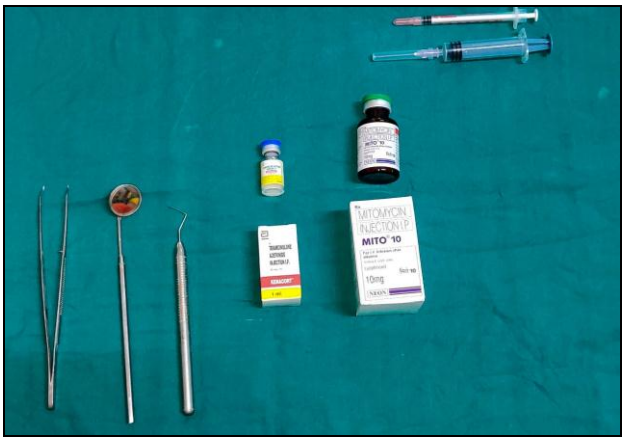

Fig 1: Combination of triamcinolone acetonide and mitomycin C (KENACORT™ 40 mg + MITO™ 10mg)

Fig 2: 2ml of solution of combination of triamcinolone acetonide and mitomycin deposited into the fibrous bands on the right side of the buccal mucosa

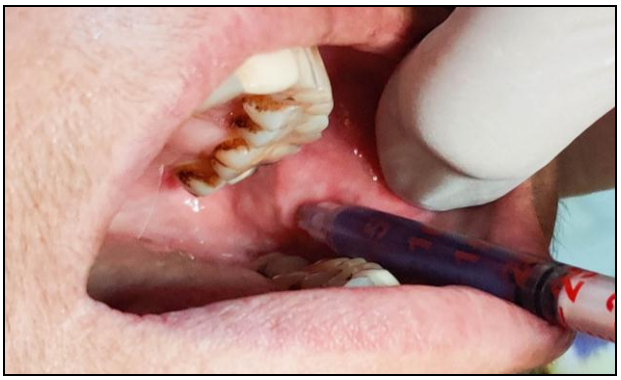

Fig 3: 2 ml of solution of combination of triamcinolone acetonide and mitomycin deposited into the fibrous bands on the left side of the buccal mucosa

Fig 4: 10 mm of increased mouth opening at the end of 4th week

Discussion

Schwartz in 1952 first reported OSMF in modern literature and Joshi in 1953 who coined the term submucous fibrosis of the palate and pillars in India [9]. Histopathologically it is always presents as a juxta epithelial inflammatory reaction followed by fibroelastic changes in the lamina propria with associated epithelial atrophy. As the disease progresses, submucosa and deeper tissues including muscles may get fibrosed [10]. Burning sensation of the oral cavity and mucosal ulcerations are the initial symptoms of OSF. Along with the progression of the disease patients may be presented with stiffening and blanching of oral mucosa along with the evidence of palpable fibrous bands in buccal and labial mucosae and soft palate which is the most distinctive feature of oral submucous fibrosis.

Triamcinolone acetonide is a better corticosteroid for intralesional injection as it has better local potency, long duration of action and lesser systemic absorption. The mechanism of action steroids is by opposing the action of soluble factors generated by sensitized lymphocytes after activation by specific antigens. Steroids also act as an immunosuppressive agent and suppress inflammatory reactions. This prevents fibrosis by decreasing fibroblastic proliferation and collagen deposition [11].

Mitomycins are a family of aziridine-containing natural products isolated from Streptomyces caespitosus or Streptomyces lavendulae. They include mitomycin A, mitomycin B, and mitomycin C. When the name mitomycin occurs alone, it usually refers to mitomycin C, its international nonproprietary name. Mitomycin C is used as a medicine for treating various disorders associated with the growth and spread of cells.

Mitonycin is usually used in the treatment of adenocarcinoma of the stomach or pancreas. Also used in treatment of anal, bladder, breast, cervical, colorectal, head and neck, and non-small cell lung cancer. Jun lui *et al.* in 2010 in their study concluded that MMC-PEG film reduces the severity of adhesion by decreasing the concentration of Hyp and increasing the apoptosis of fibroblasts. We thus treated our patient with Mitomycin C as well Kenacort in order to decrease the extensive collagen produced in OSMF [12].

Conclusion

The encouraging results should prompt a clinical trial on a greater number of OSF patients to broaden the therapeutic usefulness and applications of one of our most primitive treatment methods. This case report gives scope for further

studies with the systemic use of Triamcinolone acetonide and Mitomycin in the treatment of OSF as well as for research in the use of the drug as a formulation which can be administered locally into the fibrous bands to confirm the above results.

References

1. Tilakaratne WM, Ekanayaka RP, Herath M, Jayasinghe RD, Sitheeque M, Amarasinghe H. Intralesional corticosteroids as a treatment for restricted mouth opening in oral submucous fibrosis. Oral surgery, oral medicine, oral pathology and oral radiology. 2016 Aug 1;122(2):224-31.
2. Canniff JP, Harvey W, Harris M. Oral submucous fibrosis: its pathogenesis and management. British dental journal. 1986 Jun;160(12):429-34.
3. Singh D, Shashikanth MC, Misra N, Agrawal S. Lycopene and intralesional betamethasone injections in the management of oral submucous fibrosis. Journal of Indian Academy of Oral Medicine and Radiology. 2014 Jul 1;26(3):264.
4. Chole RH, Gondivkar SM, Gadbail AR, Balsaraf S, Chaudhary S, Dhore SV, Ghonmode S, Balwani S, Mankar M, Tiwari M, Parikh RV. Review of drug treatment of oral submucous fibrosis. Oral oncology. 2012 May 1;48(5):393-8.
5. Elizabeth N, Gurumani S, Tukalan G. A comparative study between management of oral submucous fibrosis. Journal of Evolution of Medical and Dental Sciences. 2014 Sep 25;3(47):11344-9.
6. Angadi PV, Rao S. Management of oral submucous fibrosis: an overview. Oral and maxillofacial surgery. 2010 Sep;14(3):133-42.
7. Borle RM, Borle SR. Management of oral submucous fibrosis: a conservative approach. Journal of oral and maxillofacial surgery. 1991 Aug 1;49(8):788-91.
8. Gupta DS, Gupta M, Oswal RH. Estimation of major immunoglobulin profile in oral submucous fibrosis by radial immunodiffusion. Int J Oral Surg 1985;14:533-7.
9. Pindborg JJ, Mehta FS, Daftary DK. Occurrence of epithelial atypia in 51 Indian villagers with oral submucous fibrosis. British journal of cancer. 1970 Mar;24(2):253-7.
10. Sirsat SM, Pindborg JJ. Subepithelial changes in oral submucous fibrosis. Acta pathologica et microbiologica Scandinavica. 1967;70(2):161-73.
11. Singh M, Niranjan HS, Mehrotra R, Sharma D, Gupta SC. Efficacy of hydrocortisone acetate/hyaluronidase vs triamcinolone acetonide/hyaluronidase in the treatment of oral submucous fibrosis. Indian Journal of Medical Research. 2010 May 1;131(5):665-70.
12. Liu J, Ni B, Zhu L, Yang J, Cao X, Zhou W. Mitomycin C-polyethylene glycol controlled-release film inhibits collagen secretion and induces apoptosis of fibroblasts in the early wound of a postlaminectomy rat model. Spine J. 2010 May;10(5):441-7