

SUBMUCOUS FIBROSIS TREATMENT WITH HYNIDASE AND COMBINATION DRUGS IN KOSHI ZONAL HOSPITAL

Dr. C. P. Upadhyaya, Head & Consultant Dental Surgeon

Dr. Suprabhat Shrestha

Dept. of Dentistry, Koshi Zonal Hospita, Biratnagar, Nepal

E-mail : surita@ccsi.com.np

ABSTRACT

Oral submucous fibrosis; OSMF (ICD No. 528.8) is a disease of unknown etiology. In this retrospective study, a total number of 40 cases were studied irrespective of their age, sex, ethnicity and socio-economic status. Patients were divided into two groups for the reason they had been attending out-patients at their schedule but with the period ranging from three month to one year. The group treated with hynidase (hyaluronidase) and dexamethasone combination showed better result with quicker relief than the group treated with other regimen.

INTRODUCTION

OSMF is a precancerous condition arising due to diverse etiologic factors mainly involving the dietary and personal habits. The disease has been reported from different parts of the world but the cases have been documented mostly from the Asian countries predominantly the south Asian countries. As the name itself is an indication (Oral – mouth, Sub-under, Mucous-skin, Fibrosis – hardening or scarring), the disease results in a marked rigidity with progressive inability to open the mouth. There is a fibroelastic transformation of the juxta-epithelial connective tissues and an increased risk of oral carcinoma. The disease can affect any part of the oral cavity chiefly the buccal mucosa (the cheeks), lips, retromolar area, dorsal and ventral surface of the tongue, soft palate and occasionally the pharynx and esophagus also are affected.

The presenting features of the OSMF are the burning sensation, intolerance to spicy foods, diminished salivary flow and restricted mouth opening. On observation the mucosa appears blanched, mottled and marble like. Later the mucosa stiffens due to the development of palpable fibrous bands running vertically in the buccal mucosa and circular fashion around the lip leading to difficulty in eating and restriction of the mouth opening (trismus – partial or completed depending upon the functional staging of the disease). Progressive fibrosis and scarring leads to gradual decrease in the mouth opening and sinking of the cheek resembling as the patient is suffering from scleroderma. The involved tongue becomes rigid, stiffens and is diminished in size.

Histologically, the lesion presents chronic inflammatory cell infiltration in subepithelial connective tissue. Older lesion demonstrate a reduced vascularity, reduced numbers of inflammatory cells, and dense bundles and sheets of collagen immediately beneath the epithelium. Eventually thick band of hyalinized subepithelial collagen shows varying extension

into submucosal tissues, replacing the fatty of fibrovascular tissues normal to the site.

Minor salivary glands in the area of habitual quid placement often demonstrate a chronic inflammatory infiltrate and replacement of acinar structures by the hyalinized fibrosis.

The epithelium is atrophic, with or without excess surface keratin, and demonstrates intercellular edema. A fourth of the biopsied cases will demonstrate epithelial dysplasia or carcinoma in situ at the time of biopsy. When squamous cell carcinoma is seen, it has the same features of carcinoma as those seen in persons without the betel quid chewing habit.

METHODOLOGY

A total number of 40 (Forty) cases were studied for a period ranging from three months to one year in the out patient department of dentistry, Koshi zonal hospital, Biratnagar. History revealed that all forty patients were consumers of the beetle nut, quid, chewable tobacco, and pan masala. Three out of forty were occasional alcohol consumer. In one suspicious case (apart from 40 cases) biopsies were preformed and were found to be having carcinoma in situ. Patient was referred to better-equipped center for further management.

Patients were divided into two groups. During the treatment period the patients had refrained from their personal habits. One group was treated with lignocaine, hyaluronidase, dexamethasone combination and the other was treated with dexamethasone-lignocaine combination as following.

	1 week	2	3	4	5	6	7	8	9	10
1 st group	Lignocaine 2% Dexamethasone-1ml	} Biweekly for ten weeks								
II nd group	Lignocaine 2% Hynidase 1500IU	} 3 shots biweekly basis			Hynidase 1500IU dexamethasone			} 7 shots biweekly basis		

RESULTS

The results following the injections were categorized based on the following:

- a. intolerance to chilly, spicy food
- b. burning sensation
- c. blanching and suppleness of mucosa
- d. mouth opening

In the first group treated with the lignocaine and dexamethasone alone the result was as following

	Before Treatment	Relief after Treatment	Percentage
a. intolerance to chilly and spicy food	40 patients	18	45%
b. burning sensation	40 patients	18	45%
c. blanching and suppleness of mucosa	40 patients	17	42.5%
d. mouth opening	40 patients	15	37.5%

In the group treated with the combination of lignocaine, dexamethasone and the hydnidase the results were as following.

	Before treatment	Relief after treatment	Percentage
a. Intolerance to chilly and spicy food	40 patients	40	100%
b. burning sensation	40 patients	40	
c. blanching and suppleness of mucosa	40 patients	40	
d. mouth opening	40 patients	40	

The finding shows that the first group treated with dexamethasone and lignocaine got relieved from signs and symptoms by 42.5% where as in the second group receiving the treatment with hyaluronidase, dexamethasone and lignocaine the result was dramatic and very encouraging with relief from the signs and symptoms by third to fourth injection. All the patients are still under observation for any relapses of the condition.

DISCUSSION

Most scientists believe that the chemicals like capscicin (found in capsicum), arachidine and aracholine (found in betel nut) are the primary causative chemicals initiating the condition where as the copper present in areca nut (as many as ten times the normal value needed physiologically) decreases the permeability of the oral mucosa leading the deleterious effect, and finally the safrole (a known hepatocarcinogen)-like DNA adduct found on the oral mucosa following betel quid chewing renders the submucous fibrosis a precancerous potential.

As the result shows that the response to dexamethasone, hydnidase and lignocaine combination is better than lignocaine dexamethosone combination the result could be interpreted with the widely accepted theory into the etiopathogenesis of the disease that of immunological response to the local and systemic factors present in the oral mucosa. The beetle nut exerts genotoxic, cytotoxic effects and the immunologic effects such as decreased phagocytic activity, decreased antibody production delayed hypersensitivity reaction and inhibition in the production of IgM have been documented. Similarly the presence of increased amount of defensin in the epithelial langerhans cells adjacent to precancerous lesions and conditions, expression of P-53 protein in the epithelial cells in cases with OSMF and the

increased level of proinflammatory cytokines (IL-1 beta, IL-6, IL-8, TNF-alpha) and decreased level of antifibrotic interferon gamma in the patients with OSMF give the credence to the condition being immunological in nature.

The treatment regimen involving the dexamethasone (steroid) being an immunosuppressive and anti-inflammatory drug markedly reduces the inflammatory process and suppresses the exaggerated immunological response. At the same time the hyaluronidase reduces the viscosity of the ground substance facilitates the dispersal of the subcutaneous inflammatory exudate, reduces the collagen formation and resolution of the fibrotic bands. As the OSMF in the disease with chronic inflammation and fibrosis this study confirms that the multipronge treatment modality involving the lignocaine, dexamethasone and hyauronidase provides better and quicker relief to the patient than dexomethasone and lignocaine alone.

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