Abstract

Oral Submucous Fibrosis is a disorder of the oral mucosa results in the progressive inability to open the mouth. This paper reports the management of Oral Submucous Fibrosis in a 35-year-old male patient by cessation of the chewing of Pan Parag, a preparation of betel nut and tobacco, and administration of antioxidants.

Keywords: Antioxidants; Beta-Carotene; Oral Submucous Fibrosis; Pan Parag

Introduction

Pindborg et al defined oral Submucous Fibrosis (OSMF) as an insidious chronic disease affecting any part of the oral cavity and sometimes the pharynx occasionally preceded by vesicle formation always associated with fibrous bands and junctional epithelial inflammatory reaction followed by a fibro elastic change of lamina propria with epithelial atrophy leading to stiffness of the oral mucosa, trismus and inability to open the mouth. OSMF has been well established in Indian medical literature since the time of Sushruta. It was first described in the modern literature by Schwartz in 1952. Joshi first described the condition in India and suggested the name Oral Submucous Fibrosis. This condition is seen predominantly in Indians in India or Indians living in Malaysia, South Africa, and England. This paper reports the management of Oral Submucous Fibrosis in a 35-year-old male patient by cessation of the chewing of Pan Parag, a preparation of betel nut and tobacco, and administration of antioxidants.

Case Report

A 35-year-old male patient attended the Department of Dental Surgery, King George Hospital, Andhra Pradesh, India, with a complaint of burning sensation of oral cavity and inability to open the mouth fully. History revealed that the patient has the habit of chewing ten packets of Pan Parag (a preparation of Betel nut and Tobacco) per day of for the last five years. On local examination there was a grayish white discoloration and thick fibrous bands on the buccal mucosa, soft palate and retromolar area. Stiffness of the Oral Mucosa was present. The mouth opening was restricted to 1.5 cms (Figure 1). Diagnosis of Oral Submucous fibrosis was confirmed by histopathological examination. The patient was advised to stop chewing pan parag immediately and in this case treatment was started with Anti-oxidants containing Beta Carotene. Beta Carotene 30mg/day in divided doses was given for three months, as that dose is entirely safe without side effects, followed by a reduction in dosage in the next three months. Treatment regime was as follows: one Capsule Anti-oxidant thrice daily for three months, followed by one Capsule Anti-oxidant twice daily for two months and one capsule Anti-oxidant once daily for last one month. The patient was able to consume hot and spicy food at the end of the second month. Slowly his mouth opening was improved. The whitish discoloration of the oral mucosa markedly changed and showed vascularity. A complete relief of burning sensation and mouth opening upto 3.5cm was established at the end of the sixth month (Figure 2). The mucosa was of normal consistency and colour by the end of the sixth month. After six months histopathological examination was done and it revealed a marked reduction of hyalisation of collagen bundles. The patient was observed for two years after the withdrawal of the Anti-oxidant therapy and there was no relapse.

Discussion

The role of Areca nut as an etiologic factor in OSMF has gained attention during recent years. The frequency of Areca nut chewing habit reported ranges from 84-100% in OSMF cases. Pan parag is held adjacent to the buccal mucosa and slowly chewed over a long period of time. It produces effects similar to those of smoking tobacco and is addictive. Areca nut chewing, tobacco smoking and hypersensitivity in children are the precipitating or causative agents in genetically predisposed patients. Oral submucous Fibrosis being a premalignant condition is associated with carcinogens like tobacco. So habit restriction should be there in clinically suspected cases, to retard the disease process.

Since the etiology of Oral Submucous Fibrosis is unknown various clinicians tried many drugs. Cortisones, Enzymes and place trex were generally used. Corticosteroids play a definite role in relieving the symptoms in the early stage of the disease but there is a relapse after the withdrawal of the drug. Hyaluronidase is a valuable drug but its prolonged use may cause degeneration of the neighboring tissues. The use of place trex has certainly proved effective in alleviating the symptoms with almost no side effects. But according to Gupta, place trex, too is not capable of providing complete relief. Lycopene considered an antioxidant, has anti proliferative properties in animal and laboratory studies, although activity in humans remains controversial. Hence Anti-Oxidant therapy containing Beta Carotene was tried in this case.

Human body has developed an arsenal of antioxidants to take care of free radicals. Drugs, Chemicals, Pesticides, Industrial pollution, Tobacco, Ionizing Radiation generate expressible free radicals. One important feature in tissues undergoing chronic oxidative damage is the presence of abnormally high amounts of collagen i.e., Fibro-genesis, a characteristic feature of Oral Submucous Fibrosis. Abnormal collagen accumulation may be due to abnormal collagenase activity. Collagenases are the proteases, which specifically cleave collagen in phys-
Figure 1. Preoperative mouth opening. Figure 2. Sixth month post-medication mouth opening

iological conditions of PH and temperature. Collagenases are inactivated during oxidative stress. The broken balance of anti/pro-oxidation leads to an increase in collagen transcription and subsequently in collagen synthesis and to a possible inactivation of collagenases producing collagen accumulation and Fibrogenesis progression.

Anti-oxidants can be defined as a substance whose presence in relatively low concentrations significantly inhibits the rate of oxidation. Anti-oxidants physically separate free oxygen radicals from susceptible molecules in the human body. They act as alternate molecules and are preferentially attacked themselves by the free radicals. They lyse and inactivate the free radicals. Finally the damage caused by the free radicals will be repaired rapidly by the Anti-oxidants. Hence Anti-Oxidant therapy containing Beta Carotene was used in the treatment of Oral Sub mucous Fibrosis.

Conclusion

In conclusion, Anti-Oxidant therapy containing Beta Carotene in the treatment of Oral Sub mucous Fibrosis was found to be satisfactory. It reduces the burning sensation and improves mouth opening. It is a safe, easily available, economical and noninvasive treatment.

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References


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