

Clinical Report

Prosthodontic rehabilitation of an edentulous patient affected with oral submucous fibrosis

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Oral Submucous Fibrosis is a disease condition considered to be pre-cancerous in nature. Its malignant predilection has been extensively studied by Pindborg and Sirsat. According to a study, this disease condition is found to be in 4 in 1000 adults in rural India with the incidence of malignant transformation ranging from 3-19%. As it occurs chiefly in southern India, we as dental surgeons specifically in Karnataka region often come across such patients, due to the prevalence of betel nut chewing and lack of awareness among the general population. A clinical case in which the patient presented with Oral Submucous Fibrosis along with complete edentulism and salivary gland hypo function is discussed. In this report, a patient with Oral Submucous Fibrosis and related problems in prosthodontic rehabilitation is presented and a technique that improves retention, stability and maximizes functional esthetic and comfort aspects with a conservative approach is highlighted.

Key words: Oral submucous fibrosis, soft liner

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INTRODUCTION

Oral Submucous Fibrosis (O.S.M.F.) is an insidious chronic condition affecting the oral cavity and sometimes the pharynx, first reported among 5 East African women of Indian origin by Schwartz under the term, *atrophia Idiopathica*.^[1]

It is characterized by a burning sensation of the mouth, accompanied or followed by the formation of vesicles. Mucosa eventually becomes blanched and fibrotic bands appear, involving buccal mucosa, soft palate, lips and tongue, leading to stiffness of the oral mucosa causing trismus.^[2]

It is most common between 20 to 40 years of age with a female to male ratio of 3:1.^[3] When it affects geriatric patients with partial or complete edentulism, the task of restoring function becomes all the more challenging.

CASE REPORT

A 52-year-old female patient reported to the Department of Prosthodontics including crown, bridge and implantology, A.B. Shetty Memorial Institute of Dental Sciences, Deralakatte, Mangalore, India, complaining of reduced mouth opening, inability to masticate and a burning sensation affecting the oral mucosa. The patient gave history of betel nut chewing since 30 years.

On intraoral examination the buccal and labial

mucosa were found to be pale and showed evidence of thickening [Figure 1]. Dense fibrous bands could be palpated within the oral cavity. Mouth opening was restricted to 27 mm measured from crest of the maxillary and mandibular alveolar ridges in the anterior region. The patient presented with edentulous resorbed maxillary and mandibular ridges, with fibers extending from buccal mucosa to the ridge resulting in shallow buccal vestibule, insufficient depth of lingual vestibule with atrophic mucosa and salivary gland hypo-function.

A clinical diagnosis of Oral Submucous Fibrosis with complete edentulism was made in consultation with clinicians from the Department of Oral Medicine and Radiology. The patient was advised physiotherapy (opening and closing the mouth wide with maximum effort for 15-20 minutes at least 4 times a day) along with cessation of the habit of chewing betel nut quid. Local topical corticosteroid, (Tenovate, Apex) application and intra lesional injection containing Dexamethasone, Placentrix, Lignocaine in the ratio of 2:2:1, multi vitamin capsules (Becosule-Z, Phyzer), along with Chlorhexidine mouth wash was administered. Following this conservative management for a period of 3 months, an increase in mouth opening was noticed.

After the required investigations and preliminary management, the definitive prosthetic treatment was



Figure 1: Intra oral view



Figure 2: Waxed up Balanced denture



Figure 3: Final relined complete denture prosthesis



Figure 4: Post treatment



Figure 5: Closed mouth impression with extra light body silicone

started in a conventional manner. The patient was made to use a saliva substitute (Wetmouth, ICPA, India) before making impressions. Small size stock trays were selected and primary impressions made with irreversible hydrocolloid (Tropicalgin, Zhermack, Italy).

Since the mouth opening was limited, single stage peripheral tracing was accomplished with putty vinyl polysiloxane impression material (3M ESPE, Express,

U.S.A.). Due to the patient's complaint of burning sensation in the mouth, light body vinyl polysiloxane impression material (3M ESPE, Express, U.S.A.) was preferred to make secondary impressions.

The next step constituted transfer of orientation relation using Artex Quickmount face bow and recording centric relation by interocclusal wax registration [Figure 2]. Jaw relations were secured on a semi adjustable articulator (Girrbach-TR). Artificial denture teeth (Acry-Rock, Ruthenium) of small mold size S60, I60, D33 were selected and arranged accordingly. The patient's jaw relation presented and recorded was Class II relation. Due to the deficiency of space in mandibular posterior residual ridge region and to facilitate arrangement of posterior teeth in desired class I relation, second premolars on either side (35, 45) were deleted from the teeth arrangement.

After the trial of waxed up denture, it was processed in a conventional manner.^[4] To achieve improved results for the patient with such compromised oral conditions, the conventional denture was modified.

The intaglio surface of the finished denture was trimmed around 1-2 mm. Once the borders and tissue surface were trimmed as well as roughened, another impression with extra light body vinyl polysiloxane impression material (3M ESPE, Express, U.S.A.), was made with closed mouth impression technique [Figure 5]. Maxillary and mandibular dentures with these impressions were thereafter flaked directly.

This elastomeric impression material was replaced by a permanent silicon soft liner^[5] [Figure 3] (G.C. Company, Japan) with the life expectancy of one year at the most. After a minimum of 2 hours of bench curing under clamp pressure, the flasks were placed in water at a constant temperature of 70°C for 3 hours according to the manufacturer's recommendations. The relined denture was tried in the patient's mouth and improvement in results was evident [Figure 4]. The patient was advised to change the permanent liner every 10-12 months to compensate for the changes in the material as well as the oral conditions.

DISCUSSION

Oral Submucous Fibrosis is a chronic, progressive disease condition which is pre-cancerous^[6] in nature with multifactorial etiology.^[7] There is currently no definitive treatment for this condition and with increase in general life expectancy, there is a higher percentage of individuals reaching old age with O.S.M.F. at different grades of intensity.

In spite of the high prevalence of this condition in geriatric patients in our country, there is a lacuna in literature regarding prosthetic management of completely edentulous patients suffering from O.S.M.F.

In the present case, a conventional complete denture prosthesis was fabricated. The finished denture when tried in the patient's mouth fulfilled esthetic criteria but the mandibular denture was not retentive and comfortable to the patient. Due to presence of salivary deficiency, the hard acrylic denture was not the ideal solution for the atrophic mucosa, thus the denture was modified.^[8] The subsequent use of a permanent relined material rendered a cushioning effect to the atrophied mucosa enhancing patient comfort to a

great extent- *A softer option.*^[9]

The soft liner did not abrade the tissues which had undergone atrophy, and adapted precisely onto the residual alveolar ridge for a better fit. This report highlights the benefits of relining a complete denture prosthesis with a permanent soft liner in O.S.M.F. cases. As seen in this case, using a permanent relined material made the patient much more comfortable and confident.

CONCLUSION

In the present case, taking into consideration the signs, symptoms and needs of the patient suffering from Oral Submucous Fibrosis, the conventional denture was modified by relining it with a permanent silicon soft liner using a closed mouth technique.

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