

Overcoming Obstacles In Oral Submucous Fibrosis- A Case Report

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ABSTRACT:- Oral submucous fibrosis (OSMF) is a precancerous condition. It causes difficulty in swallowing, chewing and speaking due to the presence of microstomia. Limited mouth opening is considered as a hindrance in prosthodontic rehabilitation of a patient. Special impression procedures and techniques should be considered for making an impression in such cases. This article describes the fabrication of a split impression tray to make a secondary impression, split occlusal rims, use of magnets and implant therapy for of an edentulous patient having OSMF

Key words: Microstomia, sectional impressions, Magnets, Implant therapy submucous fibrosis

I. INTRODUCTION

Oral submucous fibrosis (OSMF) is a chronic inflammatory disease that results in progressive juxtaepithelial inflammatory reaction followed by a fibroelastic change of lamina propria. This is accompanied with epithelial atrophy leading to stiffness of the oral mucosa, causing trismus. This condition is characterised by limited mouth opening in patients and fibrous inflammatory changes in the lamina propria of the oral mucosa. There are several etiological causative agents for this condition some of them are areca nut, chillies, HLA, nutritional deficiencies, and genetic predisposition. Other factors such a deficiency of iron and B — complex, play a significant role in the initiation of the disease. The most serious consequences of OSMF is malignant transformation or development of squamous cell carcinoma of affected tissues, which occurs in 3-6% of the cases.¹ Limited mouth opening in patients is a common occurrence in prosthodontic practice. Microstomia is defined as an abnormally small orifice.² Prosthetic rehabilitation of patients with limited mouth opening presents difficulties at all stages right from the preliminary impressions to insertion of prostheses. As such patients have small oral opening, it may be extremely difficult to make impressions and fabricate dentures using conventional methods.³ Different management techniques described are surgeries, use of dynamic opening devices and modification of diet, placental matrix, stem cells, and change of diet.

Right from the start of any prosthodontics treatment light should be shed on modifications in our conventional treatment approach. During our treatment the loaded impression tray is the largest item requiring intra oral placement. Impression procedures hence require wide mouth opening for proper tray insertion and alignment, which is not possible in patients with restricted mouth opening.⁴ This article describes a unique way of fabrication of a custom tray, making secondary impressions, modified occlusal rims and incorporation of dental magnets and implants for our final prosthesis for an OSMF patient.

II. CASE REPORT

A 45-year-old woman came to seek treatment at the D.Y Patil School of Dentistry, Mumbai to the department of prosthodontics with the chief complain of missing teeth, inability to chew and compromised esthetics and phonetics. Further history revealed she had been edentulous for the past 20 years, which resulted in severe resorption of both the maxillary and mandibular arches. On clinical examination, maxillary and mandibular arches were completely edentulous and she had a restricted mouth-opening was 3.5cm. Her Mucosa appeared blanched with palpable heavy fibrotic bands on both buccal mucosae extending to buccalfrenum vestibule involving buccalfrenum with a shallow or almost no sulcus in the mandibular left and right distobuccal regions.. She had a habit of chewing areca nuts 4-5 times a day for 20 years. Prior to her seeking treatment from us she was already diagnosed with grade B OSMF and was undergoing treatment for the same with intralesional corticosteroid and hyaluronidase injections in the department of Oral Surgery. A treatment plan for a sectional denture in the maxillary arch and an implant supported overdenture for the mandibular arch was proposed and patient's consent was obtained.

For the primary impression metal perforated stock trays were trimmed to ease their placement. upper and lower primary impressions were made using irreversible hydrocolloid (Imprint, Dental Products of India after which primary casts were poured. For making final impression, carrying the loaded custom tray intraorally

would be inconvenient due to limited mouth opening and excessive stretching of the mucosa would cause pain and discomfort to the patient.

Thus, it was decided to fabricate a sectional maxillary with grooves. A 2 mm spacer wax was adapted on the maxillary primary cast and sectioned vertically from the center [Figure 1].

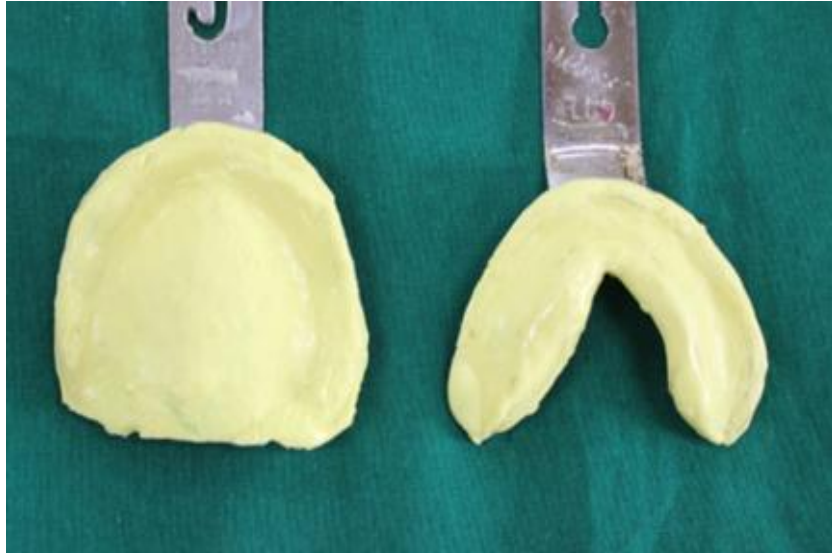


Fig.1- Primary impressions in irreversible hydrocolloid

The custom impression tray was fabricated using autopolymerizing acrylic resin in two segments. For the first segment, wax spacer was placed on the cast and autopolymerizing acrylic resin was adapted over it. In the midline, the tray was cut in a zigzag manner so that the second segment can be interlocked [Figure 2].



Fig.2- Orientation of custom tray of the mouth

Wax spacer was removed from the first segment and relief holes were made. The first segment was coated with tray adhesive loaded with light body addition silicone impression material (Aquasil addition silicone) and placed intraorally. The second segment coated with petroleum jelly along the midline was placed over to complete tray assembly with anterior lock in place. After setting of the impression material, the two halves of the tray were separated. Excess impression material along the midline was trimmed with sharp instrument. For mandibular impression conventional custom tray and spacer design was used and the impression was made using selective pressure technique [Fig- 3].⁵



Fig-3 Final impressions in addition silicone material

The final impressions were poured with type II dental stone (GoldStone, Asian chemicals) and master cast was prepared. Following this the final casts were poured and wax rims were prepared for recording the jaw relation. Sectional maxillary temporary denture base was fabricated with self-cure acrylic resin (Acralyn 'R', Asian Acrylates) and joined using dual die-pin and sleeve (M.R.TM Dual Pin and sleeves, Select Dental) were used to connect both sections of the rims [Fig-4].⁶



Fig-4 Occlusal rims with dowel pin

With the help of the sectional occlusal rims the vertical dimension and jaw relation of the patient was recorded. The jaw relation record was mounted on an articulator and Teeth arrangement was completed using non anatomic teeth (Dentek® cross linked acrylic teeth, S P Dental). Dentures were fabricated in a conventional manner using heat cure acrylic resin (Acralyn 'H', Asian Acrylates). Finished and polished dentures were sectioned from the midline using a thin carborandom disk. Melissa Alessandra⁷ has described the use Neodymium-fe-boron super magnets with dual magnetic fields (Ali magnets, New Delhi, India) were used to connect sectional dentures. In maxillary denture, two points were determined to place magnets- one rugae and another 2 to 3 mm anterior to fovea palatina.

After fabrication of the final prosthesis, we went about the final treatment for the mandible, which was an implant supported overdenture. The final prosthesis was duplicated to fabricate a radiographic stent for the CBCT which would eventually serve as a surgical guide as well [Fig-5]

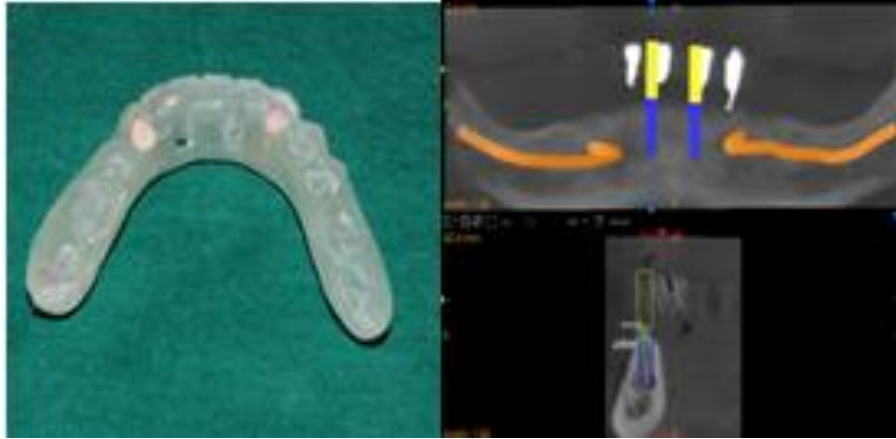


Fig. 5- Duplicated lower denture as a radiographic and surgical guide and CBCT Planning

After thoroughly studying the CBCTS and after remounting the dentures to check for adequate interarch space, we decided on placing single piece ball and socket (Osstem mini single piece implants). The surgery was uneventful and good primary stability of 35N was achieved. 24 hours post surgery the lower denture was relined. 3 months post insertion and after osseointegration a final pick up impression was made the OT caps and housing as per loading protocols given by Galucci.⁸[Fig-6]



Fig.6- Mandibular denture with OT housing

Patient was educated about insertion and removal of dentures along with post insertion and home care instructions. At the follow up visit after 7 days, the patient was satisfied with the dentures [Fig-7] and was able to place and remove the dentures easily due to the magnetic attachments. Periodic recall was done every month during which minor adjustments were required. Apart from that, the dentures have been functioning well and an acceptable fit has been established.



Fig.7- Final Maxillary and Mandibular Prosthesis



Fig.8- Pre and Post Operative Frontal Views of the patient

III. CONCLUSION

Limited mouth opening often complicates and compromises the treatment of patients. However, Careful treatment planning and prudent designing of sectional prosthesis should be done for overall well-being of the patient. Different methods of overcoming impression difficulties should be planned to obtain a better impression. Resultant prosthesis from such techniques should be stable, functional and easy to use.

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