

SECTIONAL COMPLETE DENTURES FOR A PATIENT WITH MICROSTOMIA - A CASE REPORT

M.sadish and P.prasanna

¹Department of Prosthodontics Sri Vengateshwara Dental College

²Department of Conservative Dentistry Sri Vengateshwara Dental College

ARTICLE INFO

Article History:

Received 4th March, 2019

Received in revised form 25th

April, 2019

Accepted 18th May, 2019

Published online 28th June, 2019

Key words:

Microstomia/limited mouth opening

Sectional Impression

Sectional Tray

Split denture

Sectional denture

ABSTRACT

The branch of Prosthodontics is not only a science but also an art of handling patients who present with limitations in continuing with normal treatment plan. One such limitation is the difficulty in mouth opening of the patient due to various reasons like oral sub mucous fibrosis, TMJ ankylosis, scleroderma, Plummer-vinson syndrome, Rheumatism or damage of the masticatory muscles^{1,3,6}. A maximal oral opening that is smaller than the size of the prosthesis needed for the patient makes prosthetic management challenging.

Prosthetic management of microstomia patients presents difficulties at every stages of the fabrication of a prosthesis, from the preliminary impression to insertion of the same. It requires various modification in the impression trays, techniques, materials required and also the denture design^{4,5,7}. This article deals with treatment of a female patient with limited mouth opening due to oral submucous fibrosis, who was completely edentulous and was prosthetically treated with modification of techniques for impression making and jaw relation so that a complete denture was made in sections which could be easily inserted and removed without compromising retention and esthetics.

Copyright © 2019 M.sadish and P.prasanna. This is an open access article distributed under the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.

INTRODUCTION

Prosthetic management of Microstomia patient is difficult due to restricted mouth opening. The smallest diameter of retentive prosthesis for microstomia patient is often larger than the mouth opening of the patient. After insertion of a maxillary complete denture, it further reduces the mouth opening and insertion of mandibular denture becomes more difficult. Making impression for a patient with restricted mouth opening is the initial problem encountered by a dentist. Numerous techniques based on modified sectioned impression trays and sectioned custom trays have been proposed. Sectional and collapsible dentures have been described for prosthodontic treatment for patients with limited intraoral access

The following case report illustrates successful management of a microstomia patient by the provision of sectional impression and foldable sectional denture.

Case Report

A 54 year old female edentulous patient with severe microstomia reported to the department of prosthodontics for complete denture. On examination the patients had severe restricted mouth opening due to Oral submucous fibrosis with firm mucosa and palpable dense fibrous bands and severe restriction in mouth opening. She was advised to stop tobacco

chewing and prescribed pharmacological management. After pharmacological management there was symptomatic improvement but there was little improvement in mouth opening.

Since the patient did not prefer surgical treatment to increase the mouth opening, various other treatment options was discussed to fabricate a complete denture and complete denture was fabricated based on the technique described below.

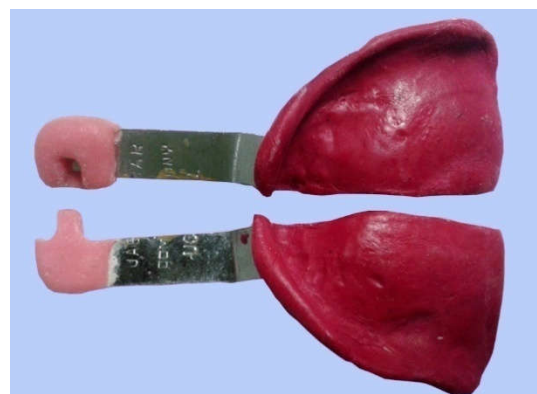


Fig-1, sectional primary impression

*Corresponding author: M.sadish

Department of Prosthodontics Sri Vengateshwara Dental College



Fig-2 sectional primary impression



Fig-6 sectional border moulding



Fig-3 sectional stock tray



Fig-7 sectional trays intraoral orientation



Fig-4 sectional stock tray



fig-8 sectional trays intraoral orientation



Fig-5 sectional border moulding



Fig-9 sectional final impression



Fig-10 sectional final impression



Fig-14 sectional denture



Fig-11 sectional record base

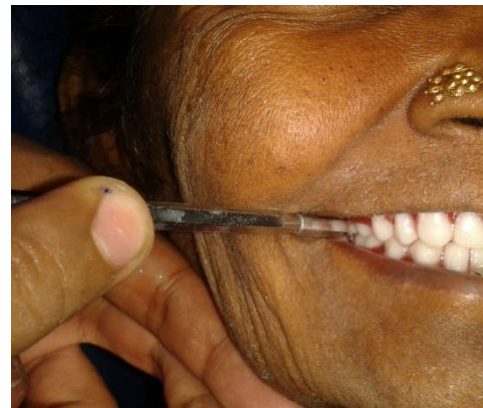


Fig-15 post prosthetic photograph



fig-12 sectional record base

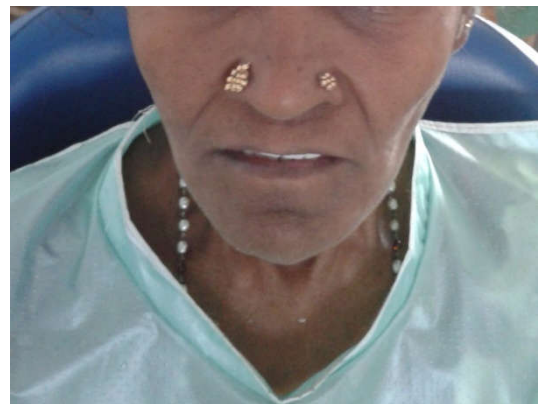


Fig-16 post prosthetic photograph



Fig-13 sectional denture

Clinical Procedure

Sectional primary impression?

Due to restricted mouth opening it is difficult to make impression in the patients mouth even with smallest size tray so sectional stock tray was planned. The width of dental arch is measured using a caliper and stock tray is selected, the maxillary and mandibular stock tray is split in the midline. A key and key way is fabricated in acrylic in the tray handle which helps in reorientation of the impression tray after making impression. Primary impression is made using impression compound(DPI modelling compound) in sections using the split tray(Fig-1, Fig-2). The primary impression is reoriented again with the help of key ways and fused with sticky wax(DPI) on back of the tray.

Sectional final impression^{9,10,11,12}

A preliminary cast is made and a sectional custom tray fabricated with cold cure acrylic(DPI) with anterior and posterior lock in maxilla and anterior lock in mandible (fig-3,fig-4). The anterior lock is made with orthodontic screws and the posterior lock is made with snap buttons.

Border moulding is carried out in sections with the help of sectional trays using green stick compound(DPI)(Fig-5, Fig-6) and sectional trays oriented intraorally(fig-7,fig-8). Final impression is made using non-eugenol impression paste(Image, primedent) to minimize mucosal irritation (Fig-9, Fig-10). The impression is disassembled in patients mouth and reassembled outside, checked for accuracy and master cast is made.

Sectional Denture base

The maxillary and mandibular denture bases were prepared in sections, these pieces were joined by overlapping one over the other by 2mm in the midline using snap buttons.

Sectional jaw Relation and try-in

Wax occlusal rims was fabricated in the sectional denture base (Fig-11,fig-12). The sectional record base was inserted into the patients mouth in sections and reoriented intraorally. Jaw relation record was obtained and final try-in of the trial denture was done in sections.

Fabrication of Sectional Denture^{3,4,5,6,9}

After wax up, flasking was carried out for maxillary and mandibular complete denture conventionally. Dewaxing was done and old denture base discarded. Snap buttons with tinfoil in between(for separation) was placed in the midline so that after acrylisation right and left halves of the denture will come in sections (Fig-13,fig-14). Heat cure acrylic resin(DPI heat cure) was packed and acrylisation done. The final denture is finished and polished.

Sectional Denture Insertion

Sectional denture is inserted in the patients mouth and checked for fit,esthetics, comfort and adjustments done were needed(fig-15,16). Home care instruction (oral hygiene instruction, insertion & removal of prosthesis) were imparted to the patient and routine follow-up appointments were scheduled.

DISCUSSION

Making good impression is an important step in the prosthetic management of microstomia patients. This can be accomplished by using sectional trays. The success of a prosthesis depends on how the patient is acquainted with the prosthesis. This feature is taken into account and a sectional complete denture prosthesis is designed to overcome the difficulties in wearing complete denture.

References

1. Geckili O *et al* T. Impression procedures and construction of a sectional denture for a patient with microstomia: A clinical report. *J Prosthet Dent* 2006;96:387-90.
2. Baker PS *et al*. Impression procedure for patients with severely limited mouth opening. *J Prosthet Dent* 2000;84:241-4.
3. Naylor WP *et al*. Fabrication of a flexible prosthesis for the edentulous scleroderma patient with microstomia. *J Prosthet Dent* 1983;50:536-8.
4. McCord JF, *et al* A sectional complete denture for a patient with microstomia. *J Prosthet Dent* 1989;61:645-7.
5. Cheng AC *et al* Hinged mandibular removable complete denture for post-mandibulectomy patients. *J Prosthet Dent*. 1999;82:103-6
6. Suzuki *Yet al*. Sectional collapsed denture for a partially edentulous patient with microstomia: A clinical report. *J Prosthet Dent*. 2000;84:256-9.
7. Prasad R *et al* Prosthodontic management of a patient with limited mouth opening: A Practical Approach. *JIPS* 2008;2:83-86
8. Chetan hedge *et al* Impression tray designs and techniques for complete dentures in cases of microstomia—A review *Journal of prosthodontic research* 2012;56: 142-146.
9. Winkler *et al* An improved split denture *J prosthet dent* 1984 ;51(2):276-279.
10. Ali Mirfazaelian Use of orthodontic expansion screw in fabricating section custom trays *J Prosthet Dent* 2000;83:474-5
11. Onnur geckli *et al* Impression procedures and construction of a sectional denture for a patient with microstomia: A clinical report *J prosthet dent* 2006;96(6) 387-389.
12. Benetti.R *et al* Prosthetic rehabilitation for a patient with microstomia: A clinical report *J Prosthet Dent* 2004;92:322-7.

How to cite this article:

M.sadish and P.prasanna (2019) 'Sectional Complete Dentures for A Patient with Microstomia - A Case Report', *International Journal of Current Medical And Pharmaceutical Research*, 05(06), pp 4293-4296.
