



ORIGINAL RESEARCH PAPER

Dental Science

PROSTHETIC MANAGEMENT OF MICROSTOMIA- AN ALTERNATIVE APPROACH -CASE REPORT

KEY WORDS: microstomia, split tray, modified special tray.

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ABSTRACT

Reduced mouth opening or microstomia is a frequently encountered condition in the field of prosthodontics. Microstomia is a challenge for prosthodontist right from impression making till the insertion of the prosthesis. Making impressions in patients with Microstomia is often cumbersome for both patient and operator. Standard impression procedures are not of any help due to limited mouth opening, so the modification of standard impression procedure is often necessary while treating such patients. This article explains the technique used for making primary impression and tray modification for final impression procedure.

INTRODUCTION

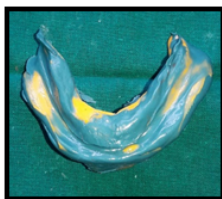
An abnormally small oral orifice with limited mouth opening is called microstomia¹. This condition holds etiology with cleft lips, orofacial neoplasms, maxillofacial trauma, surgical treatment of orofacial neoplasms, burns, plummer vinson syndrome, trismus, temporomandibular joint disorders, oral submucous fibrosis, any damage to the oral musculature or scleroderma². Prosthetic rehabilitation of microstomia patients presents challenges right from diagnosis to prosthesis fabrication. A modification of the standard impression procedure is often necessary to accomplish a successful prosthesis. This article describes an alternative technique for making primary impression and a modification in special tray of patients with limited mouth opening, where the smallest available stock tray cannot be used.

CASE REPORT

A 68 -year-old woman with limited mouth opening identified reported to the department of prosthodontics, CSI College of Dental Sciences and Research, Madurai for the replacement of missing teeth in the upper and lower arch. On intra oral examination, Mouth opening was measured and found to be 33mm and inter commissural length was 40 mm. Various treatment options were explained to the patient such as split dentures³ and flexible dentures. the patient was convinced for conventional denture.

PROCEDURE

Since the mouth opening was not adequate to accommodate even the available smallest stock tray, it was decided to customize the tray.



(Fig 1)

Intra oral molding of the tray with putty impression material was carried out. The wash impression was made with the monophasic impression material over the fabricated putty stock tray (Fig 1).

SPECIAL TRAY MODIFICATION

A 2mm spacer wax was adapted on the mandibular primary cast and sectioned vertically from the center. The custom tray was

fabricated using autopolymerising acrylic resin by sprinkle on technique in two segments. Two push buttons (tenon part) were inserted in the anterior region of both segments of the special tray (Fig 2). Autopolymerising acrylic resin was added to stabilize the buttons. Special tray was left undisturbed until the complete polymerization. Tray handle was fabricated with the autopolymerising acrylic resin and two push buttons (mortise part) were adapted to the base of the handle corresponding to the tenon part of buttons in the special tray (Fig 3). Addition stabilization of the tray was achieved with locks in anterior segment, both labially and lingually (Fig 4). Corresponding bars which were attached was useful in approximating both parts of the tray after border molding and secondary impression (Fig 5,6,7).



(Fig 2)



(Fig 3)



(Fig 5)



(Fig 6)



(Fig 6)

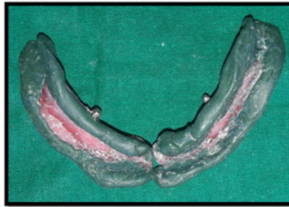


(Fig 7)

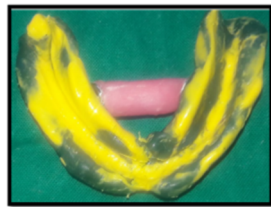
SECONDARY IMPRESSION

The tray was tried intraorally, fit and extensions were evaluated. Placement and removal of both the segments were practiced. Sectional border molding of both the segments was carried out with low fusing compound (Fig 8). The first segment was coated with tray adhesive and loaded with light body addition silicone impression material. Midline of both the segments were coated with petroleum jelly for easy separation as well as connecting the segmented parts. The second segment was loaded with the impression material as earlier and impression made. After setting of the impression material the two halves of the tray were separated. Excess impression material along the midline was trimmed with BP blade. The two segments were then joined outside the mouth (Fig 9). As the patient was not convinced in

receiving split denture, it was decided to fabricate the dentures in conventional manner.



(Fig 8)



(Fig 9)



(Fig 10)

FOLLOW UP

The denture was processed in the conventional manner (Fig 11). Insertion and removal of the denture was very difficult in initial phase. Parallel line of treatment to increase the mouth opening was stressed to the patient via physiotherapist¹⁵. Petroleum jelly was applied to the corners of the mouth during insertion of the dentures to avoid lacerations. Patient was recalled 24 hours after insertion (Fig 13) and subsequent recalls after 7 days and a month post insertion, to check the adaptability and any tissue response. But with time, patient was comfortable with insertion and removal of denture and her response towards the denture was satisfactory.



(Fig 11)



(Fig 12)



(Fig 13)

DISCUSSION

Limited mouth opening often complicates and compromises the treatment of patients. A method of overcoming impression difficulties that uses a sectional locking custom impression tray that results in an accurate impression for such patients is illustrated. This article describes a simple, cost-effective, time-saving method to fabricate custom sectional impression trays for making definitive impressions in patients with microstomia. This technique can be accomplished in any dental office or laboratory without using any complicated machinery or parts for sectioning and attaching sectional trays. Disadvantages are the additional time, materials, and labor required for precise fabrication of the sectional tray and secondary impression, and the requirement for correct fitting of the components to produce an accurate cast.

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