

CLINICAL REPORT

Rehabilitation of maxillary surgical defect with a cast partial denture obturator

- A Clinical Report

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ABSTRACT

Rehabilitating missing dentition may pose several hurdles and difficulties. These are amplified if the retention, support and stability offered by the remaining oral structures are minimized, like a case of a unilateral or a bilateral maxillary defect. The goal in such cases is to provide optimum function and esthetics such that the patient can lead a normal life without compromises. This paper deals with prosthodontic rehabilitation of Class-1 Aramany defect

Keywords: *Aramany Class 1, Cast Partial Denture, Maxillary Defect, Maxillary obturator, Rehabilitation*

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INTRODUCTION

The most important objective of prosthodontic care, emphasized by DeVan,¹ is the preservation of the remaining teeth and tissue. A successful prosthetic design for functional restoration of defects utilizes the remaining dentition and palate to maximize retention,² stability, and support of an obturator bulb. Maxillary defects are created by surgical treatment of benign or malignant neoplasms, congenital malformation, and trauma. The size and location of the defects influence the degree of impairment and difficulty in prosthetic rehabilitation.³ Defects in the maxilla may be divided into these defects resulting from congenital malformations and the acquired defects resulting from surgery for oral neoplasms.⁴

The Glossary of Prosthodontics Terms⁵ defines maxillofacial prosthodontics as “the branch of prosthodontics concerned with the restoration and/or replacement of the stomatognathic system an associated facial structure with prostheses that may or may not be removed on a regular or elective basis”. The obturator prosthesis is used to restore masticatory function and improve speech, deglutition, and cosmetics for maxillary defect patients.⁶ In 1978, late Dr. Mohammed Aramany presented the first published system of classification of postsurgical maxillary defects.⁷ He divided the defects into six categories based on the relationship of defect to the remaining teeth and frequency of

occurrence of a defect in a relatively small patient population that he observed over six years at Regional Center for Maxillofacial Rehabilitation in Pittsburg eye and ear hospital.⁸

A comfortable, cosmetically acceptable prosthesis that restores the impaired physiologic activities of speech, deglutition, and mastication is a basic objective of prosthodontic care.⁹ For the patient with an acquired maxillary defect, it is often necessary to modify, and sometimes violate, some of the basic principles of prosthesis design because of the basic nature of the defect.⁹

CASE REPORT

A patient aged 32 years attended the Department of Prosthodontics, Government Dental College and Hospital, Hyderabad with the complaint of inability to chew and drink. He also complained of impaired speech. (*Fig.1*) On clinical examination, a maxillary defect was seen which resulted from subtotal maxillectomy on the right side. (*Fig.2*)

On taking medical history, the patient underwent a surgery for odontogenic myxoma 2 years ago (from the date he reported in government dental college, Hyderabad). The case presented here is Aramany class I case of a patient who underwent surgery for odontogenic myxoma. The surgical resection was done on right maxilla with teeth from the midline. The teeth present after surgery are 21, 22, 23, 24, 25, 26, 27.

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Figure 1: Pre-operative photograph



Figure 4: Surveying the primary cast



Figure 2: Pre-operative intraoral photograph



Figure 5: Mouth Preparation

TECHNIQUE:

- 1) A proper primary impression was made in irreversible hydrocolloid using a stock tray. (Fig. 3)



Figure 3: Primary Impression

- 2) A primary cast was poured into the impression using dental stone.
- 3) Surveying was carried out on a dental surveyor to know about the favorable undercuts and also to block out any unnecessary interferences. (Fig. 4)
- 4) After surveying the mouth preparation was carried out. The support was taken by placing occlusal rest seats in between the 2

molars and 2 pre-molars (for an embrasure clasp) and also a cingulum rest on the canine. (Fig. 5)

- 5) After mouth preparation was done, the secondary impression was made by using a custom tray fabricated from the primary cast. A 2mm spacer was placed on the teeth before fabricating the special tray. The defect portion was initially recorded with an impression compound upon which the elastomer is placed to record the finer details. (Fig. 6)



Figure 6: Secondary Impression



Figure 7: Wax patterns

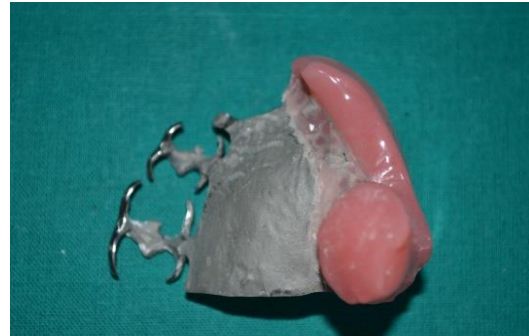


Figure 10: Processed prosthesis (tissue surface)



Figure 8: Try-In



Figure 11: Post-Operative view showing prosthesis covering the defect

- 6) Wax patterns were fabricated for the prosthesis, which was casted later.(Fig.7)
- 7) On the casting obtained, acrylic denture base was adapted and jaw relations were taken.
- 8) On the jaw relation, obtained teeth were arranged and try in was done.(Fig.8)
- 9) After try-in was done. Definitive cast partial prosthesis was fabricated by acrylizing the trial prosthesis.(Fig.9 to Fig.13)



Figure 12: Post-Operative view showing labial surface



Figure 9: Pre-Processed Prosthesis (labial view)



Figure 13: Post-Operative extraoral view

CONFLICT OF INTEREST

There is no conflict of interest

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