

CLINICAL REPORT

REHABILITATION OF PARTIALLY RESECTED MAXILLECTOMY PATIENT

Shilpa P,^a Narendra R.^b

ABSTRACT:

"Face is the mirror of the soul." Rehabilitation of the patient with congenital or acquired defect of the hard palate and soft palate is a new era in prosthodontics. Acquired maxillofacial defects due to tumors, surgical intervention, and trauma impair the stomatognathic system and aesthetics. Cancers of the head and neck have the potential for producing obvious disfigurement and dysfunction, which may be only partially compensated for by prosthesis and rehabilitation. Intraoral defects Like maxillectomy, mandibulectomy can be rehabilitated with a conventional removable dental prosthesis (cast partial denture) or newer advancements like implants retained prosthesis. This case report describes the fabrication of definitive prosthesis for an individual who underwent partial maxillectomy.

Keywords: Maxillofacial Prosthetics, Rehabilitation, Obturator

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INTRODUCTION

Maxillofacial prosthetics is the art and science of anatomic, functional, or cosmetic reconstruction. Prosthetics utilizes nonliving substitutes of those regions in the maxilla, mandible, and face that are missing or defective because of surgical intervention, trauma, pathology, or developmental or congenital malformation.^[1] The most important objectives of rehabilitation include the restoration of esthetics or the cosmetic appearance of the patient, restoration of function, protection of tissues, therapeutic or healing effect, psychologic therapy. The maxillofacial defect rehabilitation involves teamwork of surgeon, prosthodontist,

speech therapist, psychiatrist, physical therapist. Surgical repair of palatal defects extends from the suture of minor lacerations to reconstruction, using major regional flaps and free tissue transfers. Split thickness skin grafts are used to cover raw surfaces and to reduce scarring and contracture, but do not provide bulk or structural support. Tongue flaps and buccal mucosal flaps are useful to repair small medial defects and to reconstruct the free margin of the soft palate and the tonsillar pillars. Nasolabial flaps are well suited for anterolateral defects.

Hinged nasal septum flaps provide tissues for closure and support for abnormalities of the hard palate.^[2]

Even though surgical reconstructive procedures are performed, maxillofacial prosthetic treatment is also

indicated for the restoration of normal oral function in most maxillectomy patients.^[3,4,5] A successful prosthetic design for functional reconstruction of the maxillectomy defect utilizes the remaining palate and dentition to maximize the support, stability, and retention of the prosthesis^[6]

This case report describes the rehabilitation of a partial maxillectomy patient with a definitive prosthesis like cast partial denture.

Case Report

A 54 yrs. Old female patient resident of Kadapa came to the Department of Prosthodontics with a chief complaint to replace her missing teeth concerning the left front and back regions of the upper jaw. Her past dental history reveals tooth extraction followed by partial maxillectomy in the remaining anterior area because of carcinoma of

^a Post Graduate Student , Department Of Prosthodontics, Government Dental College And Hospital ,Kadapa, Andhrapradesh.

^b Professor and Head ,Department Of Prosthodontics,Government Dental College and Hospital, Kadapa ,Andhrapradesh.

the nasal cavity, surgical closure was done and underwent radiotherapy one year back. On extraoral examination, facial asymmetry in the middle third of the left side of the face with depression in the infraorbital region [figure 1],



Figure.1 Extraoral



Figure.2 Intraoral

No deviation of the mandible, no palpable or tender lymph nodes, and no abnormality with the TMJ are detected. Intra orally deficient ridge and sulcus depth concerning the left maxillary arch is present. The patient underwent surgical removal of the left-sided maxillary alveolar, palatine process, and the entire ipsilateral dentition from the midline, spanning from central incisor to 2nd molar [figure 2].

Prosthetic rehabilitation proceeded after adequate healing has taken place. Clinical and radiographic examinations were done accurately to evaluate the condition of the remaining natural dentition of the uninvolved contralateral side. The primary objective of the presenting clinical scenario was to distribute the occlusal forces among the remaining teeth synchronously. Hence a cast partial design was decided since it preserves and maintains harmony among the existing hard and soft tissues. The patient was explained about the procedure, and consent is taken.



Figure.3. Rest seat preparation on 15,16,17

Preliminary impressions of upper and lower arches were made with irreversible hydrocolloid (Algitex R Dpi.Mumbai) and poured with type III dental stone [Labstone, Kalabhai]. The maxillary cast was surveyed and designed to determine the position of occlusal rest, guiding plane, and necessary teeth alterations. Rest seat preparation done to 15, 16, 17 [figure 3].

A final impression was made with elastomeric impression material [GC Flexceed Putty And Light Body] and poured with type IV stone [Asian Chemicals Pearlstone Die stone Type IV]. The master cast was surveyed, and designing of the metal framework was done [Figure 4, 5]



Figure.4 Impression with putty and light body

Figure.5 Master cast



Figure 6.Wax pattern with spruing.

Figure.7 Metal framework

The wax pattern with spruing is made on the refractory cast, and casting was done [Figure 6, 7]. After casting, the metal framework was verified in the patient's mouth for proper seating.



Figure .8.Metal framework with occlusal rim

Figure .9 Bite registration



Figure10. Trial denture

Figure.11 Finished prosthesis

The maxillo-mandibular relationship was recorded using a bite block and bite registration material [Figure 8, 9]. Try in was verified [Figure 10], and the denture was processed, finished, and polished. [Figure 11].Denture insertion is done [Figure 14, 15].



Figure. 14.Finished prosthesis-frontal view

Figure.15 Extra oral view with the finished prosthesis

DISCUSSION

Aramany's classification system addresses removable partial framework design and prosthetic rehabilitation of the partially edentulous maxillectomy patient in 6 categories. [6] According to Aramany's classification, the case report described comes under Aramany's classification I. Aramany's classification system for acquired maxillary defects illustrates the basic principles in designing a removable cast framework for partially edentulous patients. Usually, a quadrilateral or tripod design is favored over a linear design because this allows a more favorable distribution of forces for enhancing the support, stabilization, and retention of the prosthesis.^[7,8]

Primary support was placed on the teeth nearest to the defect and the most posterior molar on the opposite side. An indirect retainer was positioned as perpendicular to the fulcrum line possible, and guiding planes are located proximally on the molar and premolar tooth. The connection between all the rest areas gives a wide triangular area, which prevents the prosthesis from the rotational movements from all the directions around its all the axis of triangular arms. In edentulous patients, the number and distribution of remaining teeth determine the primary retention, support, and stability of the prosthesis.^[9, 10] This case report discusses a simple method of fabricating a definitive prosthesis deriving support and retention from the remaining dentition by use of a cast partial metal framework for a partial maxillectomy following the design criteria from Aramany's class I defect.

CONCLUSION

The most challenging part of rehabilitating the patient with hemimaxillectomy is to obtain adequate retention and stability. Because of the presence of teeth rehabilitation with the cast, partial denture prosthesis in partial maxillectomy defects benefitted the patient Functionally Esthetically and Psychologically to lead a healthy life.

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Correspondence Author

Narendra R

Professor and Head Of The Department ,Department Of Prosthodontics, Government Dental College and Hospital, Kadapa ,Andhrapradesh ,India.

Contact No : 7013594438

Email address : dmarendra.prof@gmail.com

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