PROSTHODONTIC REHABILITATION OF HEMIMAXILLECTOMY PATIENT WITH PERMANENT SILICON BASED OBTURATOR

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ABSTRACT

One of the most rapidly growing areas of dentistry from the standpoint of both interest and need is maxillofacial prosthetics. The research on cancer has made understanding and treatment of this dreadful disease a possibility, still the rehabilitation of these patients is a daunting job, and is more so in post-surgical cases.

The factors which determine the prognosis of prosthetic reconstruction are size of defect, availability of hard and soft tissues in defect area, proximity of vital structures, systemic condition and the most important of all patients’ attitude and temperament.

This article describes the step by step clinical and laboratory procedure involved in the rehabilitation of a hemimaxillectomy patients using obturator lined with permanent silicone based liner to restore the functions such as esthetics, mastication, deglutition and speech.

KEYWORDS: Maxillofacial prostodontics, obturator, rehabilitation.

INTRODUCTION

Maxillectomy is treatment option for maxillary cancer that leaves the patient with a palatal defect, which may cause problem with swallowing, mastication and speech. These functional problems and changes in appearances may result in psychological problem.

The defect frequently is complex and involves the skin, bone, muscle, cartilage and multilayer of mucosa. Therefore reconstruction of such defect is often challenging. To rehabilitate such patient require multidisciplinary approach.

Palatal defects those are treated prosthetodontically seal congenital or acquired defects and contiguous structures. Obturators close or seal these defects allowing the restoration to fulfill esthetics and functions like mastication, deglutition and speech.

Materials and techniques used for fabrication of these obturator vary from patient to patient depending upon location and extent of defect. Treatment options are same as obturator is not a new concept, and in this patient it is advised due to its soft lining which is needed to comfortable act and to provide better retention, stability. Prosthetic rehabilitation not only restores esthetics and functions but also boosts patient’s moral. This case report describes the clinical and laboratory procedures involved in the rehabilitation of a similar patient.

CASE REPORT

A 65 years female patient reported at C.D.R.S, Ahmedabad with the surgical resection of right maxilla, with the chief complaint of difficulty in mastication, nasal regurgitation of fluids, compromised esthetics, disharmony and difficulty in speech since 6 month.

Review of her medical history revealed that right maxillectomy was done before 7 month for squamous cell carcinoma. Extraoral examination revealed gross facial asymmetry with collapsed right maxillary region. Her intraoral examination was significant for the following findings. Her right maxilla corresponding to alverolar ridge, anterior wall of maxillary sinus and considerable portion of her nasal septum was found to be resected leaving...
Figure 1: Intraoral defect on the right side of maxilla

Figure 2: Retentive grooves for soft liners

Figure 3: Final Obturator with Soft Liner Application

Figure 4: Aesthetic effect of obturator
behind a residual portion of soft palate, temporal bone of infra temporal fossa and nasal septum and remaining hard palate.

The upper and lower arches were edentulous before maxillectomy resection.

**PROSTHETIC REHABILITATION**

- As both arches were edentulous preliminary impression was taken with impression compound after blocking all undesirable undercuts and primary cast was poured. A special tray of uniform thickness was fabricated with self-cured acrylic resin (DPI – RR – dental products of India) with uniform thickness of wax-spacer.

- Carry out border molding to record the functional anatomy of buccal and labial soft tissues surrounding the defect and remaining arch. To make the final impression, record gross extension of defect by using soft putty material and make the final wash impression using medium body addition Polyvinyl siloxane impression material (Reprosil-Dentsply USA). Also make final impression of lower arch using same material after border molding. Master casts were poured with type IV dental stone. Master cast was duplicated with reversible hydrocolloid material (agar agar) for the purpose of lining the defect with silicone based soft liner material (Molloplast – B).

- Maxillo-mandibular relation was recorded with a trial-base.

- Final trial was approved after verifying esthetics and phonetics. Waxed-up denture was sealed to master cast.

- The trial dentures of upper and lower jaw were flaked and dewaxed. Packing and curing was done with heat cure acrylic resin (DPI-heat and PR dental product of India). Finishing and polishing was done and obtained upper maxillary obturator and lower complete denture.

- The fitting surface of defect area of obturator was trimmed approximately 7-8 mm to line with soft liner material. Retentive grooves were made on surface of defect area for mechanical retention between soft liner and acrylic resin. Primer (adhesive) was applied on surface of defect area of obturator. Packing was done with silicone based permanent soft lining material (Molloplast–B, Germany) in the defect area of second master cast and curing was done as per manufacture’s instruction. After deflasking flushes of liner material were cut out and finishing and polishing was done with finishing burs and finally relined obturator was obtained.

- The finished obturator was inserted into the patient’s mouth. A permanent soft lining material (Molloplast-B) is used to reline the fitting surface of obturator portion, for additional retention, by engaging into soft tissue undercuts and providing cushioning layer between prosthesis and tissue by its viscoelastic property. Patient was very happy and satisfied with her comfortable functions and improved esthetics.

**DISCUSSION**

The following objectives were achieved by the rehabilitation of this patient by maxillary obturator.

1. Preservation of the health of oral tissue, by obturator lined with permanent silicone liners which provide cushioning effect on remaining tissues.

2. Support by anatomic structures like firm base of temporal bone of infra temporal fossa and nasal septum and remaining hard palate.

3. Retention- the intrinsic structure within and around the defect that can provide retention are residual soft palate, anterior nasal aperture, lateral scar band and height of lateral walls. The retention is achieved by engaging soft tissue undercuts with the help of soft liner material.

4. For maximum support and stability prosthesis was extended in all lateral direction of the defect.

Heat polymerzing acrylic resin was used for the
fabrication has been proven to be one of the most durable tissue compatible material till date. The use of permanent soft lining material (Molloplast-B) to engage the soft tissue undercuts (by relining) is well tolerated by the patient and also added to retention.

CONCLUSION

To conclude, living with such a defect causes a lot of psychological trauma to the patients due to impaired esthetics and functions. Hence we as prosthodontists must try to restore the lost form and function of the oral and peri-oral structures that will enable the patients to gain his comfort and confidence.

REFERENCES