CASE REPORT

PROSTHETIC REHABILITATION OF HEMI-MAXILLECTOMY PATIENT – A CASE REPORT

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ABSTRACT

Prosthetic rehabilitation of a maxillofacial patient is a true challenge for a prosthodontist while fabricating prosthesis, which is functionally and esthetically acceptable by the patient. This paper reports the prosthetic rehabilitation of a 38 year old male patient underwent hemi-maxillectomy.

Keywords: Prosthetic Rehabilitation; Maxillectomy

Introduction
Maxillofacial Prosthodontics is the world of art and science, which is full of challenges. It is true that one has to strive for getting the natural function and lifelike appearance of the prosthesis. As we know “Every human has the divine right to look human”. Keeping this philosophy in mind, a prosthodontist has to work to return the affected individual back to the society. Advances in techniques and materials have been remarkable in the past several years. But the realization of the full potential and the utilization of maxillofacial prosthetics are still lagging behind. Sometimes, even if the disfigurement is slight, the psychological wound is so great, that the disfigured person himself avoids social contacts. It is very important to give special consideration to such patients. This paper reports the prosthetic rehabilitation of a 38 year old male patient underwent hemi-maxillectomy.

Case Report
A 33 year old male patient reported to the department of prosthodontics with chief complaint of loose maxillary prosthesis along with unsatisfactory appearance. His past medical history revealed that he had undergone right partial maxillectomy i.e., from incisors to 3rd molar followed by radiotherapy due to muco-epidermoid carcinoma of the right palate and antrum 6 years back. Five months following the hemi-maxillectomy an interim obturator was given to the patient to replace all missing teeth.

The patient’s maxilla on the right side was resected, which lead to hollowness of mouth and punched out appearance of face, disturbing the appearance of the patient (Fig 1). Intra-oral examination of the prosthesis revealed it to be loose and ill designed with grade I mobility in relation to Maxillary left central incisor. Speech was defective and hyper nasal. Soft palate motion was satisfactory and salivation was adequate. The defect was Aramany class I which was compromised by the presence of grade I mobile 21 and the presence of a long edentulous span on the non-defect side (Fig 2). Treatment plan for patient included splinting of anterior teeth, definitive two piece hollow bulb obturator replacing teeth 21, 22, 23, 24, 25, 26 and lip bumper on right side to enhance esthetics.

Procedure
Upper and lower alginate impressions were made by taking care to block out the defect undercuts with petrolatum laden gauze (Fig 5). Diagnostic casts were made following which the patient was referred to conservative department for splinting of anterior teeth as 21 was grade I mobile. Splinting was done with the help of fiber bond. The defect outlined on the diagnostic cast and was relieved. Two custom trays were fabricated. One tray to cover the defect and contained guiding pin on top and second tray was fabricated on top of first to cover the teeth. The defect site was border moulded and a final impression was made by the dual impression technique using an additional silicone impression material (Fig 6). A master cast was prepared and surveyed. The master cast was then arbitrarily blocked out and duplication was done using reversible hydrocolloid and a refractory cast was poured (Fig 7). Framework was waxed onto the refractory cast (Fig 8). The patient had inter dental diastemas where the proximal line angle was engaged to provide a guide plane. The pattern was cast in base metal Co-Cr alloy and the framework obtained (Fig 9). After finishing and polishing a metal try in of the framework was done (Fig 10). Auto polymerizing acrylic resin was used to fabricate a temporary denture base on the framework. A jaw relation record was taken. Patient esthetics was verified. Mounting was done on semi-adjustable articulator and teeth arrangement was done (Fig13). Wire type lip bumper was made and attached on the facial aspect of right side of the rim to support cheek (Fig 14). Complete trial was done. Hollow bulb and Hollow vestibule was made by placing putty on top of first layer thereafter second layer of resin was packed (Fig 15). After proper curing cycle, holes were drilled and putty was retrieved with help of tweezer. After removing all the putty holes were closed with auto polymerizing acrylic resin. Finishing and polishing was done and the prosthesis was delivered after occlusal adjustment (Fig 16). The patient’s speech showed remarkable improvement, weight of prosthesis was reduced and it is more comfortable and efficient. The decreases in pressure to the surrounding tissues aids in deglutition and encourages the regeneration of tissue. The patient was referred to the speech therapist for further rehabilitation. Post insertion check-up was done at one week, one-month intervals and the patient satisfaction was favorable.

Discussion
In aramany class I defect, the dentition and the alveolar bone are removed along midline. Preservation of bone adjacent to the teeth and the defect has been recommended. The Linear
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design is followed, as anterior teeth are not included in the design and diagonally opposed retention and stabilizing system was used. The prognosis improves with increase in the number of teeth and satisfactory retention, stability and support can be expected with minimized prosthesis movement. A palatal major connector design was used along with the use of guide planes and definitive rest seats on the abutment teeth. Wrought wire circumferential clasps were incorporated to minimize the horizontal forces acting on the abutments. The defect was aggressively engaged to obtain retention and support. Hollow bulb and hollow vestibule was made which further reduced the weight of the prosthesis while promoting a favorable palatal contour. Lip bumper of present intervention overcome prior known difficulties and are unique in that they are constructed to give better tissue tolerance and greater patient comfort which result in obtaining patient acceptance and cooperation. Furthermore, lip bumper of the invention provide increased surface area to engage musculature of lip evenly in order to provide improved esthetics.

Conclusion
Maxillofacial defects are highly individual and require the clinician to call upon all his knowledge and experience to fabricate a functional prosthesis. Without a definitive prosthesis, patients are not afforded the opportunity for complete rehabilitation. There are many individual presentations and varying challenges when providing patients with prostheses for palatal deficiency and the restorative dentist has to be imaginative and innovative. As with any other successful treatment, the important feature is to be aware of the principles and to stick to them.

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References


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