



Unique Journal of Medical and Dental Sciences

Available online: www.ujconline.net

Case Report

MANAGEMENT OF PARTIALLY EDENTULOUS PATIENTS WITH HEMIMAXILLECTOMY DEFECTS

Sikka Neha^{1*}, Garg Balram², Kaushik Ashutosh³, Bhatia Gouri⁴

¹Senior Lecturer, Dept. of Prosthodontics and Crown and Bridge, Eklavya Dental College, Kotputli, Jaipur (Rajasthan)

²Senior Lecturer, Dept. of Oral Surgery, Eklavya Dental College, Kotputli, Jaipur (Rajasthan)

³PG Student, Dept. of Orthodontics, SGT Dental College, Budhera, Gurgaon (Haryana)

⁴Senior Lecturer, Dept. of Periodontics, Eklavya Dental College, Kotputli, Jaipur (Rajasthan)

Received: 11-12-2013; Revised: 09-01-2014; Accepted: 08-02-2014

*Corresponding Author: **Dr. Neha Sikka**

Senior Lecturer, Dept. of Prosthodontics and Crown and Bridge, Eklavya Dental College Kotputli, Jaipur (Rajasthan) Email: neha.nehasikka@gmail.com

ABSTRACT

A wide range of techniques varying from surgical to prosthetic reconstruction have been advocated for reconstruction of Maxillectomy defects. The surgical closure of the defect may include the usage of titanium mesh, tantalum mesh, silicone mesh and/or acrylic implants covered by muscular flap. The patients with closed maxillectomy defects and well accomplished Prosthodontic rehabilitation are far more comfortable and compliant than the ones with oronasal communication rehabilitated with obturator prosthesis. The case report describes the management of two patients with maxillectomy defect using cast metal denture.

Keywords: Maxillectomy, Surgical reconstruction, Cast Metal Denture.

INTRODUCTION

With the advent of newer and very sensitive diagnostic aids greater number of patients are surviving following maxillofacial surgeries leading to rise in number of patients requiring reconstructive prosthetic treatment procedures.^[1] The Clinical presentation like extensive loss of supporting bone in partially edentulous maxillofacial patients is usually the result of extensive surgery for a tumour or traumatic injury. The rule of thumb in the management of partial denture patients is to preserve the health of the remaining teeth and tissues by proper stress distribution within the physiological limits.^[2,3] The aim of treatment in partially edentulous patients with maxillofacial defects is to provide a prosthesis that replaces most of the lost tissues and supports an obturator or stent if required.

Congenital malformations, traumatic injuries or surgical interventions may result in a communication between the oral and nasal cavities that creates difficulties in swallowing and speech. This may produce nasal reflux of oral solids and fluids.^[4,5] In addition to these difficulties unesthetic appearance due to loss of a part of body can be greatly psychologically debilitating to the patient. Several techniques

comprising of either surgical or prosthetic reconstruction or both have been advocated for management of these patients. The surgical closure of the defect may include the usage of titanium mesh, tantalum mesh, silicone mesh and/or acrylic implants covered by muscular flap. The patients with closed maxillectomy defects and well accomplished Prosthodontic rehabilitation are much more comfortable and compliant than the ones with oronasal communication rehabilitated with obturator prosthesis.

The case report describes the Prosthodontic management of two patients with a closed maxillectomy defect.

CASE REPORT

Case I

A 34 years old male patient reported with a chief complaint of unaesthetic appearance of the face due to loss of upper teeth on the right side. The History of the patient dates back to 2 years when the patient noticed a growth in the upper jaw on the right side. The patient was diagnosed of having Odontogenic Keratocyst (OKC) of the maxilla on right side. The enucleation of OKC was done followed by placement of a Titanium mesh (Figure 1) covered by Temporalis muscular flap.



Figure 1

After the healing was complete the patient was provided with an interim prosthesis which was worn by the patient for almost one and a half year. But the patient was not satisfied with the appliance as it was not retentive. On Extraoral examination, a collapsed appearance of the right side of the face could be appreciated which may attributed to the loss of lip and cheek support due to resection of teeth and bone(Figure 2).



Figure 2

On Intraoral examination, all the teeth in maxilla on the right side were missing except the third molar. The central incisor on the left side was also missing. The edentulous area was devoid of any residual ridge and was covered by muscular flap(Figure 3).



Figure 3

The remaining teeth were periodontally sound. The diagnostic impressions were taken in irreversible hydrocolloid (Algitex, DPI, India) and the models were fabricated. It was decided to fabricate a cast partial denture for the patient. Surveying and designing (Figure 4) was done on the cast which was followed by preparation of rest seats on maxillary third molar on the right side to receive circumferential clasp and first and second molar on the left side to receive embrasure clasps. Guide plane and lingual rest was prepared on maxillary lateral incisor on the left side. Rest seats for Indirect retainers were prepared on canine and first premolar.



Figure 4

The final impression was made in a custom tray using Putty wash (Express STD Putty 3M, ESPE, USA and Express Light body STD Quick Wash, 3M, ESPE, USA) technique.

A master cast was obtained on which the design was transferred. The master cast was blocked out properly, duplication was done using reversible hydrocolloid (Polyflex Duplicating Material DPI, India) and a refractory cast (Wirovest, Bego, Germany) was obtained. A frame work was waxed on to the refractory cast. The wax pattern was cast in Co-Cr alloy (Bego, Germany) and the frame work was obtained. After finishing and polishing a metal try-in of the framework was done to check the retentiveness, impingement or any interference in occlusion(Figure 5).



Figure 5

Occlusion rim was fabricated on the framework and recording of jaw relations was done followed by mounting and teeth arrangement. The esthetic try in was done along with testing of occlusion and phonetics.

The patient was satisfied with esthetics and speech. The acrylisation, finishing and polishing was done which was followed by insertion of the prosthesis (Figure 6,7). Post insertion check-up was done at one week, one month and three – month intervals and the patient was very much satisfied with the treatment.



Figure 6



Figure 7

Case II

A 29 -Year old female presented with similar findings (Figure 8). The patient had been operated for OKC in the maxilla on the left side. During surgery all her teeth in the above mentioned quadrant were removed except the third molar (Figure 9). She was extremely concerned about her appearance. A treatment procedure similar to that in case I was followed. A Cast Partial denture was fabricated (Figure 10). The patient was satisfied with the esthetic rehabilitation which is evident from the confidence during smiling (Figure 11).



Figure 8



Figure 9



Figure 10



Figure 11

DISCUSSION

The case report describes the management of two patients having maxillectomy defect without oronasal communication and multiple missing teeth. The objective of the treatment was to provide best possible esthetic outcomes alongwith retention and stability of the prosthesis without any adverse effect on the remaining dentition. So, it was decided to fabricate a cast metal partial denture for the patient which was designed

strictly following the principles of stress distribution so that the periodontium of abutment teeth is not overloaded. As no bone was present in the edentulous area so it was not capable of providing support thus the prosthesis was totally tooth supported. For maximum stress distribution maximum possible number of teeth were used as abutments. Provision of indirect retention was given where ever possible. Care was also taken to make the prosthesis light in weight to further reduce the stresses on the teeth. The patients were satisfied with the esthetics. The confidence and self-esteem was regained by the patients.

REFERENCES

1. Gay WD, King GE. Applying basic prosthodontic principles in the dentulous maxillectomy patient. *J Prosthet Dent.* 1980 Apr;43(4):433-5.
2. Laney WR. Maxillofacial applications of removable partial prosthodontics. *Mc Cracken's removable partial prosthodontics.* The CV Mosby Company 1985; 23:443-59.
3. Taylor T D. *Clinical maxillofacial prosthetics.* Quintessence Publishing Co,Inc. 2000 :85-102.
4. Chalian V.A., Drane J.B. & Standish S.M. *Maxillofacial Prosthetics. Multidisciplinary practice,* The Williams & Wilkins Co., Baltimore. 1971:133-148.
5. Beumer J, Curtis TA, Firtell DN. *Maxillofacial rehabilitation.* St. Louis: Mosby; 1979:188-243.

Source of support: Nil, Conflict of interest: None Declared