

PROSTHODONTIC REHABILITATION OF PATIENT POST MAXILLARY CARCINOMA: A CASE REPORT

Nitin Deora¹ , Pritam Mohanty² ,Gagandeep Sidhu³

1. Assistant Professor, Department Of Prosthodontics, Adesh Institute of Dental Sciences and Research, Barnala Road, Bathinda, Punjab
2. Assistant Professor, Department Of Orthodontics & Dentofacial Orthopaedics, Kalinga Institute of Dental Sciences, KiiT University ,Bhubaneswar, Odisha- 751024
3. Lecturer,Department Of Prosthodontics,Adesh Institute of Dental Sciences and Research,Barnala Road, Bathinda, Punjab

ABSTRACT:

Oral cancer is a mutilating disease. Post carcinoma (CA) Palate is a definite prosthetic hindrance in the construction of complete removable prosthesis. Defects are formed in the maxillary region after tumors are resected surgically. Maxillofacial defects can affect the patient's physical, psychological, and social status. The design of the obturator can improve the esthetics of the prosthesis and give it a more lifelike appearance. To rehabilitate a patient with carcinoma palate and undergone Hemi-maxillectomy, the methods and designs incorporated in the prosthesis have to be modified. This clinical report describes obturator prosthesis to provide a sense of well-being to the patient, offering improvements in speech, chewing, and swallowing.

Key words: Hemi-maxillectomy, Obturator, cast partial denture.



INTRODUCTION:

An obturator is an artificial substitute which replaces the surgical or congenital defective areas ^[1]. There are various case reports and studies of obturators available for congenital defects of the palate and for acquired defects of the oral cavity. Intraoral defects in the maxilla can cause an opening into the nasopharynx complex ^[2]. Thus the

retention and stabilization of the prosthesis become decisive factors for the success of the rehabilitation treatment ^[3]. This article addresses the step-by-step fabrication of a maxillary obturator that meets these goals. ^[4]

CASE DETAIL:

A 46-year-old male patient, named Rana Singh, was diagnosed with CA maxilla and

*Corresponding Author Address: Dr Nitin Deora, Assistant Professor, Department Of Prosthodontics'Adesh Institute of Dental Sciences and Research'Barnala Road,Bathinda,Punjab-151109 Email: drdeoranitin@gmail.com

underwent Hemi-maxillectomy. The patient reported with the complaint of difficulty in eating food, speaking and deglutition problems. On asking, patient revealed that he had surgical resection done 3 months back for CA Maxilla (right side). The remaining teeth were in good condition. . He had no other relevant medical history.

Clinical Examination:

Defect in right maxillary region as hemimaxillectomy was performed for resection of tumor in that region.

Boundaries:

Anteriorly: midline

Posteriorly: hamular notch

Laterally: buccal vestibule

Medially: nasal septum

Dimensions Of Defect:

Anteroposteriorly: 6cm

Mediolaterally: 3cm

Patient was offered with following treatment modalities:

1. Conventional cast partial denture with Obturator bulb
2. Zygomatic implant supported partial denture^[5]

Hollow bulb obturator option was not considered because of small size of defect.

Methods:

- The defect was examined and cleaned of the debris. (fig – 1)
- Petroleum jelly was applied on gauge, used to block the undercuts in the defect.
- Impression tray was selected and preliminary impression was made using alginate.
- Cast was poured and examined.
- Favorable undercuts on the remaining teeth were identified.
- Mouth preparation (rest seat preparation and guide planes) was done.
- Definitive impression using putty and light body was made with two step impression technique; necessary care was taken while blocking the undercuts before final impression. (fig – 2)
- Cast metal frame was fabricated and tried in the patient. (fig – 3)
- Bite rims were fabricated and bite was registered as in conventional method. (fig – 4)
- Wax try in was done, occlusion was checked and bilateral balance was achieved that improved stability of the prosthesis.
- Definitive prosthesis insertion was done and checked for occlusion. (fig – 5,6,7)

- Satisfactory aesthetics and function was achieved. (fig – 8)

Patient was recalled for 24 hour and weekly review. Minor adjustments were done on the recall appointments.

DISCUSSION:

This paper provides a simple method of treating a defect, created after tumor in the maxillary region are resected surgically ,by fabrication of a definitive maxillary obturator which is hygienic and easy to use by the patient. Surgery reduces the residual teeth and tissue's ability to provide optimal cross-arch support, stability, and retention. The obturator prosthesis fabricated by duplication of the presurgical appearance and contour may be more acceptable to the patient ^[6]. Consideration of background patient characteristics is important when interpreting both clinically obtained and patient-perceived outcomes.^[7]

This study describes the treatment of a 46-year-old male with a hemi-maxillectomy. Precise obturation requires an accurate impression of the resection defect ^[8]. In this fabricated prosthesis achieved its purpose by providing adequate functional and aesthetic conditions to the patient, promoting the reduction of airspace through the sealing of the Oronasal communication, with consequent improvement in the quality of life ^[9].

Maxillofacial defects affects a patient's physical, psychological, and social status

.The patient lacks the conventional support, stability and retention when fabrication of the prosthesis is planned ^[10].

The primary goal of the treatment of Hemi- maxillectomy defect is to give a prosthetic obturation which improves speech, deglutition, esthetics and function for the patient. The size and location of the defects influence the degree of impairment and difficulty in prosthetic rehabilitation. It utilizes the remaining palate and the dentition for maximum support, stability, and retention of an obturator bulb ^[11]. Patients with partial maxillectomy has a unilateral defect which replaces the residual tissue bearing area and remaining teeth are located on one side of the dental arch. The presence of teeth, the size, and configuration of the defect influenced the masticatory function of post-maxillectomy patients with obturator prostheses.

The patient was fully satisfied with the final prosthesis, as his previous condition was maximally restored for comfort, function, and esthetics. Patient was able to masticate adequately and speak comprehensively.^[12]

CONCLUSION:

Oral cancer can affect the patient's physical, psychological, and social status. The above described treatment modality has helped the patient achieve satisfactory function and aesthetics. Conventional cast partial obturator for maxillary defect has promised and long lasting psychological benefits to the

patient without hampering the socio – economic status of the patient.

REFERENCES:

1. Elangovan S, Loibi E. Two-piece hollow bulb obturator. *Indian J Dent Res.* 2011 May-Jun; 22(3):486-8.
2. Abadi BJ, Byron RJ Jr. Maxillary obturator: a clinical case report. *Gen Dent.* 2008 Nov-Dec; 56(7):709-13.
3. Goiato MC, Dos Santos DM, Magri FM, Rahal V, Andreotti AM, Moreno A, Filho AJ. Rehabilitation of maxillary cleft with hybrid obturator prosthesis. *J Craniofac Surg.* 2013 Sep; 24(5):e517-21.
4. Rogers WA, Salinas TJ, Novoselsky A. Maxillary definitive obturators: rationale of design. *J Dent Technol.* 1996 Nov; 13(9):19-26.
5. Lethaus B, Lie N, de Beer F, Kessler P, de Baat C, Verdonck HW. Surgical and prosthetic reconsiderations in patients with maxillectomy. *J Oral Rehabil.* 2010 Feb; 37(2):138-42.
6. Haraguchi M, Mukohyama H, Taniguchi H. A simple method of fabricating an interim obturator prosthesis by duplicating the existing teeth and palatal form. *J Prosthet Dent.* 2006 Jun; 95(6):469-72.
7. Rieger JM, Wolfaardt JF, Jha N, Seikaly H. Maxillary obturators: the relationship between patient satisfaction and speech outcome. *Head Neck.* 2003 Nov; 25(11):895-903.
8. Vojvodic D, Kranjcic J, Kharade PP, Sharma S. A two-step (altered cast) impression technique in the prosthetic rehabilitation of a patient after a maxillectomy: A clinical report. *J Prosthet Dent.* 2013 Sep; 110(3):228-31.
9. Kharade PP, Sharma S. Simple method for fabricating a cast partial framework obturator for lifelike appearance: a case report. *Gen Dent.* 2013 Sep-Oct; 61(6):42-5.
10. Karunagaran S, Markose SC, Paprocki GJ. Management of the maxillary cancer patient--what the general dentist should know. *J Tenn Dent Assoc.* 2013 Spring-Summer; 93(1):40-4; quiz 45-6.
11. Keyf F. Obturator prostheses for hemimaxillectomy patients. *J Oral Rehabil.* 2001 Sep; 28(9):821-9.
12. Raja HZ, Saleem MN. Gaining retention, support and stability of a maxillary obturator. *J Coll Physicians Surg Pak.* 2011 May; 21(5):311-4.

FIGURES:



Figure 1: The defect was examined and cleaned of the debris.



Figure 2: Definitive impression using putty and light body.



Figure 3: Cast metal frame was fabricated and tried in the patient.



Figure 4: Bite rims were fabricated and bite was registered as in conventional method.



Figure 5, 6, 7: Definitive prosthesis insertion was done and checked for occlusion.



Figure 8: Satisfactory aesthetics and function was achieved.