

Hollow Bulb Obturator for Hemimaxillectomy Patient: A Case Report

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ABSTRACT

Rehabilitation of hemimaxillectomy patients can be challenging. The most common prosthetic treatment problem with such patients is, getting adequate retention, stability and support. The size and location of the defect usually influences the amount of impairment and difficulty in prosthetic rehabilitation. Obturator prosthesis is commonly used as an effective means for rehabilitating hemimaxillectomy cases, which is often quite heavy due to the extension into the defect that is better relieved by making it hollow. This case report describes the fabrication of hollow bulb obturator.

Key Words: Hemimaxillectomy, Hollow Bulb Obturator

INTRODUCTION

Prosthetic rehabilitation after hemimaxillectomy becomes challenging due to diverse clinical and technical problems. The usual treatment sequence becomes placement of a surgical obturator during the surgery for 5–10 days that is followed by a removable interim obturator that is placed for the duration of the wound healing period and the definitive obturator that is placed for about 3–6 months post-surgery, when major changes in tissue conformation are no longer expected.¹ The construction of the interim obturator is a source of pain and discomfort, during a period which is already very stressful for the patient. The clinician must not only cope with the patient's difficulties, but in technical terms must deal with mobile, non-cicatrized, bleeding tissues, with mucous secretions, and with jaw and mouth movements restricted by pain and swelling.² Similarly the definitive palatal obturators the undesirable weight of the prosthesis becomes the challenge as it affects the retention, stability and support of this maxillofacial prosthesis.³ Different techniques of fabrication of various types of obturator have been proposed with the aim of simplifying this process; both for clinician and patient.^{4,5} Similarly various techniques of reducing the load of definitive obturator bulb have been proposed.⁶⁻¹⁰ As most of these techniques are complex, time-consuming and costly, this article explains a simple method of fabrication of a light weight hollow bulb obturator for an edentulous maxillectomy patient.

CASE REPORT

An 43 year old male patient was reported to department of prosthodontics and crown and bridge, PGIDS, Rohtak for the prosthetic rehabilitation of a right hemimaxillectomy that was done one year ago for removal of squamous cell carcinoma. The patient complained of difficulty in feeding, nasal regurgitation of fluids and nasal twang in his voice. On extraoral examination right malar region was found to be sunken with limited mouth opening. Intraoral clinical examination revealed healthy post-maxillectomy defect on the right side of hard and soft palate communicating superiorly to the nasopharynx with dentulous maxillary and mandibular ridges (Fig. 1). A light weight hollow bulb definitive obturator along with complete denture was planned for the rehabilitation of this patient.



Fig 1.

Primary impressions of the defect and edentulous ridges were made with irreversible hydrocolloid (Zelgan 2002 Dust free easy mixing, DENTSPLY India Pvt Ltd)(Fig.2) and special trays were fabricated using autopolymerized acrylic resin (Self cure acrylic Repair material, DENTSPLY India Pvt Ltd)(Fig 3).



Fig 2.



Fig 3.

Final impressions were made using light viscosity addition silicone impression material after recording the peripheral border seal putty addition silicone(Fig.4,5).

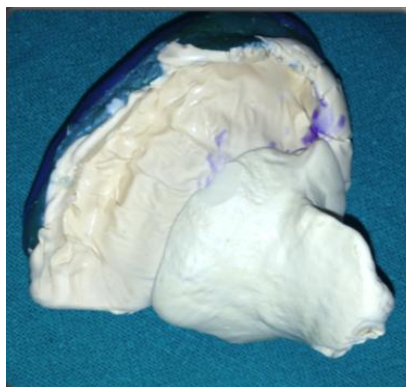


Fig 4.



Fig 5.

Impressions were poured and final casts of type IV dental stone (Kalstone, Kalabhai Karson Pvt. Ltd, Mumbai) were obtained and record bases as well as occlusal rims were made for the recording of maxillomandibular relationship. Teeth arrangement was done (Fig.6) and try in performed on patient, after approval of denture for esthetics and comfort from the patient, the waxed up denture along with obturator was processed for acrylicization (Fig 7).



Fig 6.A



Fig 6B.



Fig 7.

The maxillary denture was processed for a hollow bulb obturator. During packing of acrylic resin salt incorporate between two acrylic layer at the defect portion. After acrylization and finishing polishing salt was removed through holes which was made on palatal surface. After removal of salt these holes were closed with the self cure acrylic resin. The mandibular denture was processed conventionally using heat polymerizing acrylic resin. Final complete denture prosthesis along with definitive hollow bulb obturator (Fig.8) was inserted inside the patient's mouth to rehabilitate the edentulous post-maxillectomy patient to acceptable comfort function and esthetics (Fig. 9).



Fig 8



Fig 9.

DISCUSSION

Obturator is the treatment of choice for hemimaxillectomy and maxillectomy patients once the defect is the result of surgical removal of pathology or neoplasm. The functional demands of speech, mastication and deglutition require the obturator seal the defect to prevent loss of air and fluid through the nose. Furthermore, a bulb extension is required to improve the resonance of sounds to be heard with noticeable clarity. This extension, if made of solid acrylic, possesses undesirable weight to the prosthesis that hampers the retention, stability and support of it and results in patient's dissatisfaction.³ The challenge to the clinician increases more if the patient doesn't have any remaining natural teeth to hold the prosthesis in place. Hence various technical attempts have been performed by different clinicians across the world to make the bulb part of obturator to make lightweight. The technique described in this article gives a simple way of making lightweight hollow bulb obturator by incorporating of salts during packing of acrylic. The reduced weight helped in achieving better retention, stability and support of the obturator that was a part of maxillary complete denture. The patient after wearing the prosthesis had better comfort, function and appearance.

CONCLUSION

The fabrication of obturator prosthesis by salt incorporating salt between two layers of acrylic resin in defect portion during packing that makes inside the bulb a hollow space reduces the weight of obturator prosthesis significantly. This reduced weight of prosthesis gives the patient better comfort as the retention, stability and support of the prosthesis is improved.

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