Treatment of a Maxillectomy Patient with Limited Mouth Opening Using an Inflatable Obturator - A Case Report

Gunjan Gupta*, Anshul Mel and Varun Goyal
Post Graduate Institute of Dental Sciences, India

Abstract
Maxillary obturator prosthesis is the most frequent treatment option for management of partial or total maxillectomy. In cases of larger defects, a hollow bulb obturator is used. But what if there is a limited mouth opening is added to it? In such cases the use of an inflatable obturator is advised. This case report presents a method to fabricate the inflatable obturator.

Keywords: Maxillectomy; Inflatable obturator

Introduction

Tumors of the hard palate, maxillary sinus and sometimes the buccal mucosa or nasal cavity require surgery called a maxillectomy or maxillary resection. Violation of the hard palate creates an automatic defect that allows the oral cavity, maxillary sinus, nasal cavity, nasopharynx to become one confluent chamber. Lack of anatomic boundaries creates disabilities in speech and deglutition. Air, liquids, and food bolus escape from the oral cavity to exit the nares making adequate oral nutrition difficult if not impossible. Speech becomes unintelligible due the hypernasality. Prosthetic intervention with an obturator is necessary to restore the contours of the resected palate and to recreate the functional separation of the oral cavity and the sinus and nasal cavities. Lack of retention, stability, and support are the common problems encountered in patients undergoing rehabilitation with maxillary obturators. The size of the defect, number of remaining teeth, amount of remaining bony structures, and the ability of the patient to adapt to the prosthesis are few factors that affect the prognosis of the treatment [1]. But sometimes the patient undergoes radiation therapy due to which the mouth opening gets reduced. If the defect is large then it becomes very difficult for the patient to insert and remove the obturator. Therefore, for such patients an inflatable obturator can be used.

Case Report

A 58 year old male patient visited for the rehabilitation of a 6 months old maxillary defect after maxillectomy. Intraoral examination revealed a maxillectomy defect on the left side with the remaining dentition 11, 12 and 13 (Figure 1). The palatal defect showed complete healing with a band of scar tissue on the lateral margin. The patient had difficulty in mastication, speech, and nasal discharge and had only 1.5 cm of mouth opening. The prosthesis was thus planned as an inflatable obturator attached to a removable partial denture. The defect was packed with damp cotton and the maxillary arch impression was made with putty vinyl polysiloxane using a stock tray. Then a special tray was fabricated and border molding done (Figure 2). The wash impression was made with the light body vinyl polysiloxane material (Figure 3). The jaw relation was recorded and try in done. It was then processed using the heat cure acrylic resin. The inflatable obturator was then attached to the prosthesis. It comprised of a vent hole labially in

*Corresponding author: Gunjan Gupta, Post Graduate Institute of Dental Sciences, India, Tel: +91 1262 281 304; E-mail: aagunjangupta@gmail.com

Received December 21, 2016; Accepted January 23, 2017; Published January 28, 2017

Citation: Gupta G, Mel A, Goyal V (2017) Treatment of a Maxillectomy Patient with Limited Mouth Opening Using an Inflatable Obturator - A Case Report. J Clin Case Rep 7: 921. doi: 10.4172/2165-7920.1000921

Copyright: © 2017 Gupta G, et al. This is an open-access article distributed under the terms of the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original author and source are credited.
the region of 22 and a modified sphygmomanometer pump to which a nozzle was attached to inflated the obturator (Figure 4).

The patient was advised to first place the removable prosthesis in his mouth and then inflates the balloon through the vent hole using the sphygmomanometer pump (Figure 5). When he wants to remove the prosthesis, the balloon was deflated first using the sphygmomanometer pump (Figure 6) and then the prosthesis was removed from the mouth.

**Discussion**

Maxillary obturator prosthesis is the most frequent treatment option for management maxillectomy defects. Obturator designs for partial and total maxillectomy defects include open and closed hollow obturators [2-6] inflatable obturators [7] and two-piece hollow obturator prosthesis. Heavy weight of the obturators is often a dislocating factor. Hollowing the prosthesis to reduce its weight is the well-established fact [8,9]. But it becomes more problematic when there is an added limited mouth opening. So in such scenarios the inflatable obturator is the preferred and the suitable treatment option.

**Conclusion**

One of the primary objectives of an obturator is the recreation of the partition between the oral and nasal cavities. This improves deglutition and enhances speech intelligibility. Restoration of aesthetics is achieved by the replacement of the missing teeth. In addition to this if there is a condition of limited mouth opening then this inflatable obturator can be used for such patients.

**References**

1. Kumar JV, Kumar AS, Lylajam S (2013) Hollow partial denture with hollow bulb obturator, a novel technique for rehabilitation of post-maxillectomy defect. Health Sciences 2: JS006.
2. Nidiffer TJ, Shipman TH (1957) The hollow bulb obturator for acquired palatal openings. J Prosthet Dent 7: 126-34.
3. Mahdy AS (1969) Processings a hollow obturator. J Prosthet Dent 22: 682-686.
4. Palmer B, Coffey KW (1985) Fabrication of the hollow bulb obturator. J Prosthet Dent 53: 595-596.
5. Parel SM, LaFuente H (1978) Single-visit hollow obturators for edentulous patients. J Prosthet Dent 40: 426.
6. Chalian VA, Barnett MO (1972) A new technique for constructing a one-piece hollow obturator after partial maxillectomy. J Prosthet Dent 28: 448-453.
7. Payne AG, Welton WG (1965) An inflatable obturator for use following maxillectomy. J Prosthet Dent 92: 120-124.
8. Cheng AC, Somerville DA, Wee AG (2004) Altered prosthodontics treatment approach for bilateral complete maxillectomy: A clinical report. J Prosthet Dent 92: 120-124.
9. Patil PG, Patil SP (2014) A hollow definitive obturator fabrication technique for management of partial maxillectomy. J Adv Prosthodont 4: 248-253.