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

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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 hypernasility. 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





Figure 2: Border molding.



Figure 3: Wash impression.

inflatable obturator attached to a removable partial denture. The defect was packed with damp cotton and the maxillary arch impression was made with putty vinylpolysiloxane 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

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Figure 4: Removable partial denture with inflated obturator and sphygmomanometer unit.



Figure 5: Prosthesis in patient's mouth.



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.8 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.

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