A New Technique for the Fabrication of Interim Obturator

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INTRODUCTION

An obturator is a device that is used to close any unnatural opening intraorally. This is usually a defect in the maxilla such as cleft palate or resected maxilla. There are numerous ways of fabricating the open and closed hollow obturator. All these techniques intend to provide a light weight prosthesis that is readily accepted by the patient. The obturator provides the advantage of easy cleans ability, but accumulation of moisture necessitates frequent cleaning.¹ Removable lids or the covering of the obturator prosthesis usually reduces this disadvantage. Various methods available for fabrication of hollow bulb obturator either as one piece or by processing in two halves and sealing using autopolymerising resin.² One-piece hollow bulb obturator can be fabricated by filling the hollow portion using materials such as sugar,³ salt, polyurethane foam, sponge⁴ and gas injection using argon gas.⁵ Non detachable screw cap can also be used to cover the opening made to pour out the sugar or salt.

A case report of a bilateral maxilla defect in a patient with Paget disease is discussed in this article. Oral recovery after hemi maxillectomy poses numerous technical and clinical challenges. The normal treatment sequence includes the installation during the operation of a surgical obturator; then this obturator is removed 5 - 10 days later, and an interim removable obturator is installed and placed for the remainder of the wound healing period. Finally, when major improvements in tissue configuration are no longer required, the definitive obturator is built and positioned about 3 - 6 months after surgery. While necessary,² the construction of the interim obturator is a trigger of pain and distress during a period that is, of course, already very exhausting for the patient.³⁻⁵ The clinician also faces problems with mobile, bleeding and non-scarred tissues, mucinous secretions in the oronasal areas. Different types of obturators and fabrication methods have been proposed for both clinicians and patients to address this concern.⁶⁻⁹

The most commonly seen intraoral defect is the one affecting the maxilla, through an opening into the nasopharynx. These defects can either be congenital or acquired. These are usually large openings in the palate and the surrounding anatomic structures. Obturators are used to seal these defects to restore proper mastication, speech, deglutition, and aesthetics. This article presents case reports describing a new technique for the fabrication of interim obturator.

The aim of this article is to explain a new method of obturation in which two distinct soft liners are created by an interim obturator, for a 58-year-old male patient who has endured bilateral partial maxillary resection, maintaining a band of mucosa in the soft palate. We have described the construction of an obturator of this sort (Figure 1). 2 weeks after the surgery, in the dental chair and on a single appointment, the interim obturator was built as follows.

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Impression was made following tray less technique using putty into, making the impression in 3 sections and joining the 3 parts with cyanoacrylate. Light body is used as wash impression to record fine details (Figure 2). Master cast is poured with die stone and all the undercuts are blocked with lab putty (Figure 3). An acrylic plate is made on the cast (Figure 4). 75 % of putty was scraped on the cast, relining material was used in which adhesive was applied on the acrylic plate, the material was mixed, loaded on the plate and pressed it on the cast (Figure 5). GC Soft liner (Figure 6) was used for other 25 % in which it was loaded on the 1st liner then this is placed in the patients mouth for relining and blocking the openings (Figure 7, 8, 9). Excess was removed and insertion was done.

Figure 1.
Maxillary Arch

Figure 4.
Acrylic Plate

Figure 5.
Ruby Soft-Liner

Figure 2.
Maxillary Impression

Figure 6.
GC Soft Liner

Figure 3.
Undercut Block on the Cast

Figure 7.
Interim Obturator

Figure 8.
Obturator
Insertion

Figure 9.
Final Interim
Obturator

DISCUSSION

This form of interim obturator favours rapid speech recovery and comfortable swallowing patterns with its less disruptive design to the patient than many alternative procedures. Customary adjustment and modification is required over the 3 - 6 months subsequent to surgery in view of the continuously altering tissue conformation. We reviewed the patient every 7 - 10 days in the present case. There are a range of benefits to the procedure viz. no impressions need to be collected, weight is low since the bulb is hollow and the bulb is filled with a soft reline non damaging to the tissues and encourages good sealing and retention.¹⁰

The following are major drawbacks to this technique. First, insufficient seal between the bulb and the base of the denture can permit fluid movement into the hollow chamber, where they putrefy and generate appalling odour. Hence, additional concentration must be exercised to ensure proper sealing. Secondly, for longer time periods, soft reliners do not retain optimum properties, but this is unlikely to be a major setback in the current context, as frequent modifications and adjustments of the obturator is required in any case.¹¹

Thirdly, the soft reliners binds to the resin very poorly; however, using our system, this issue is less important than if the bulb were made completely of reline material, as in this case, the ratio of weight of reline material to adhesion surface would be much higher.^{12,13} The method mentioned here allows for the construction of short single visit interim obturator in the dental chair, without the need for additional impression making or accessory laboratory services. Soft reline bulb covering implies that it stretches into the defect undercuts when positioned, thereby improving retention and soft

reliners are less detrimental to soft tissue healing than hard reliners.

CONCLUSIONS

The patient was rehabilitated with the interim obturator and was observed for a period of 2 years. The patient expressed satisfaction with the prosthesis and no complications were reported. Obturators are very viable treatment options in rehabilitating patients who underwent surgical maxillary resection.

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