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Case report

An alternative approach to fabricating a meatus obturator prosthesis

Suat Yaluğ and Hüseyin Yazicioğlu

Department of Prosthodontics, Faculty of Dentistry, Gazi University, Ankara, Turkey

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Abstract: We describe the fabrication of a meatus obturator prosthesis made with visible light-cured (VLC) resin. The fabrication technique is relatively easy and saves time by eliminating some laboratory procedures for both the patient and the practitioner. The meatus obturator results in a more stable maxillary prosthesis and permits acceptable speech for patients using it. (J. Oral Sci. 45, 43-45, 2003)

Keywords: soft palate defects; soft palate obturators; visible light-cured resin; meatus obturators.

Introduction

Abnormalities of the soft palate can occur in different ways, and the resulting defects can be grouped into three categories: congenital, acquired, or developmental. Congenital cleft palate results from interruption of the embryologic development of the hard or soft palate. Surgical resection of neoplastic disease can alter the continuity of the soft palate, resulting in an acquired defect. Diminished capacity of the soft palate to respond to functional demands may be developmental or the result of muscular or neurologic disease. A pharyngeal obturator prosthesis can be used to achieve a number of objectives in many patients with congenital and acquired soft palate defects. Most pharyngeal obturators are used to separate the nasopharynx from the oropharynx during speech and deglutition (1).

Correspondence to Dr. Suat Yaluğ, Department of Prosthodontics, Faculty of Dentistry, Gazi University, 82 Sokak, Emek 06510, Ankara, Turkey
Tel: 0090-312-2126-220
Fax: 0090-312-2239-226
E-mail: syalug@gazi.edu.tr

A meatus obturator should be considered when the posterior extension of a fixed obturator prosthesis is likely to result in prosthesis displacement. A meatus obturator establishes closure of nasal structures at a level posterior and superior to the posterior terminus of the hard palate. The obturator extends superiorly and slightly posteriorly from the hard palate border and separates the oral from the nasal cavity at this level (2).

The meatus obturator provides separation of the nasal cavity from the nasopharynx at the posterior choanae. Since the vertical extension is closer to the palatal portion of the prosthesis, less torque is placed on the palatal portion, thus decreasing the tendency to dislodge. This prosthesis is most applicable to a fully edentulous patient who has undergone total resection of the soft palate (1,3,4).

VLC denture base materials were introduced in 1984 with the advent of the Triad system and materials. VLC is used in many clinical applications for maxillofacial prosthetics such as radiation stents, soft palate obturator prostheses, surgical obturator prostheses, hollow obturator prostheses, interim obturator prostheses, palatal augmentation prostheses and feeding and mouth-stick prostheses (5-7).

Subject

The patient described was a 35-year-old woman with congenital absence of the soft palate. No surgical operation had been performed previously to repair this defect (Fig. 1). The patient had been using conventional complete prostheses and had difficulties during phonation and deglutition.

Methods and Results

1. A conventional complete denture was constructed initially (Fig. 2).

2. The prosthesis was adjusted, and after roughening its posterior palatal region, VLC regular pink fibered sheet

Fig. 1 Occlusal view of the defect.

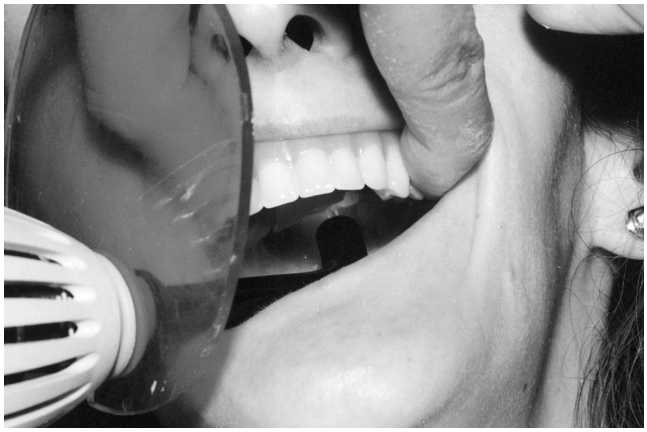

Fig. 3 Application of the visible-light source in the patient's mouth.

Fig. 2 Definitive maxillary and mandibular prostheses.

Fig. 4 External application of the visible-light source.

denture base resin (Dentsply International Inc., York, PA, USA) was attached to the palatal terminus of the maxillary prosthesis.

3. After seating the prosthesis in the mouth, a hand-held visible-light source (CU-80 Visible curing light, Jovident International B.V., Netherlands) was positioned, and the light was applied for 2 min to obtain an initial set (Fig. 3).

4. The maxillary prosthesis was removed from the mouth and the light was applied repeatedly and directly to the prosthesis for 2 min using a hand-held visible-light source (Fig. 4). Then the defect was closed using small increments of VLC denture resin core in the mouth.

5. The maxillary prosthesis was removed from the mouth and the light was applied directly to the prosthesis for an additional 8 min to complete polymerization of the resin using a Triad custom-curing unit (Dentsply International Inc., York, PA, USA).

6. After roughening the inner surface of the bulb, an impression of this region was made using tissue conditioner (Visco-gel, Dentsply DeTrey GmbH, Konstanz, Germany) (Fig. 5).

7. After packing and processing with heat-cured acrylic resin (Vertex RS, Dentimex, Netherlands), the fabrication of the prosthesis was completed.

8. Finally, two small holes were drilled through the obturator in the bulb region of the prosthesis to restore nasal breathing (Fig. 6).

Discussion

Meatus obturators are used for patients with extensive defects of the soft palate who exhibit a very active gag reflex. Indeed, they may be the obturator of choice for edentulous patients when retention is a problem (2).

The meatal extension is not as lengthy as the more conventional obturators, and the obturator may be quite thin in its anterior-posterior dimension. Thus less weight is added to a maxillary complete denture. Also, the downward displacement force from the obturator extension is closer to the supporting tissues of the parent prosthesis (2).

With this technique, the VLC system is easier to use and saves more time by eliminating laboratory procedures in

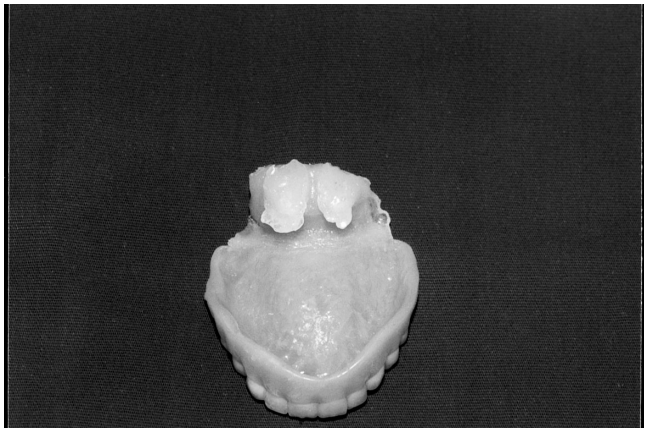

Fig. 5 Making the impression with tissue conditioner.

Fig. 6 Finished prosthesis.

comparison with a wire loop for fabrication of a meatus obturator prosthesis. This procedure is simple for both the practitioner and the patient, compared with the difficulty involved in adjusting the wire loop.

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