

## Palatal Obturator with Salivary Reservoir- A Case Report

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### Abstract

*In palatal defect cases, one of the major problems reported is dry mouth. Xerostomia is the subjective sensation of oral dryness. Xerostomic patients also include a high caries rate, repeated failure of dental restorations. This article outlines the prosthodontics management of a Palatal defect case with a Palatal bulb Obturator with inbuilt Salivary Reservoir.*

**Keywords:** Reservoir denture, Xerostomia, Rehabilitation

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### Introduction

One of the most commonly occurring malignancies in India is Oral Cancer.<sup>1</sup> It is highly radiosensitive and patients who receive RT of oral cavity experience some oral complications like Xerostomia.<sup>2</sup> According to Glossary of Prosthodontic terms, xerostomia is defined as the dryness of the mouth from lack of normal secretions.<sup>3</sup> It is a symptom, not a diagnosis or disease. It leads to taste alteration, difficulty in speech & swallowing. Hence it has a significant negative impact on the quality of patient's life. To deal with this problem, patients are often advised frequent water intake and various citrus fruits in diet for salivary stimulation. In severe situations, salivary substitutes may be prescribed. They contain carboxymethyl cellulose, flavoring agents & electrolytes.<sup>4</sup> In edentulous patients, these salivary substitutes are given by incorporating a salivary reservoir in the prosthesis itself to maintain a continuous flow of intraoral wetting. A saliva reservoir is defined as a chamber incorporated into a removable prosthesis to provide a continuous flow of salivary substitute for certain time duration. These reservoirs provide a continuous flow of artificial saliva for 02 to 05 hours only then are to be re-filled.<sup>5</sup> This case report presents a case of a xerostomic patient who was successfully treated with a new form of reservoir in maxillary Obturator where other treatment modalities had failed. This modified technique resulted in denture that provided good lubrication of the oral tissue, was easily cleansed

by the wearer and was fabricated from routine denture material also.

### Case Report

A 64 years old partially edentulous male patient was referred to the Dept. of Prosthodontics, career Post Graduate Institute of Dental Sciences, Lucknow with a complaint of dryness of mouth and severe discomfort while speaking, eating. Intraoral examination revealed maxillectomy involving some part of hard and soft palate and mandibular dentate arch, dry tongue, and minimal frothy saliva in the floor of the mouth. Patient's mouth was noted to be very dry with cracks at the corner of the mouth. (See Fig. 1).

The patient was given multivitamin supplements.<sup>6</sup> He had been advised to use salivary substitute (methyl cellulose) regularly and frequently drink water to overcome the dryness and discomfort. At this stage, fabricating Maxillary obturator with inbuilt Salivary Reservoir was planned.



**Fig. 1: Maxillectomy involving hard & soft palate**



**Fig. 2: Diagnostic Impression of the defect with irreversible hydrocolloid**

### Procedure

Primary impressions were made in Irreversible Hydrocolloid<sup>7</sup> while definitive impression was made in light body poly vinyl siloxane (Addition silicone) impression material (Aquasil, Alstaten, Switzerland) since zinc oxide eugenol paste may cause burning sensation to the patient. (See Fig. 2, 3).

After try- in, the reservoir was constructed. Two sheets of 1.5mm thick modelling wax was laid over the defect area and a wax bead was carved. This wax bead will act as an external finish line. The intaglio surface was flaked and acrylized with heat cured acrylic resin. (See Fig. 4, 5).

After deflasking and polishing procedures were completed, wax was poured into the reservoir space within the acrylized bead. This area was duplicated in Dental plaster. After the separating medium was applied, another layer of wax was added and a lid was made in heat cured acrylic resin. Two needle sized holes were made to act as vent holes for salivary substitute. (See Fig. 6).

Now this lid was attached to the obturator with the help of autopolymerising acrylic resin. Between lid and the obturator, a foam sheet was sandwiched to hold artificial saliva for a longer time. The completed assembly was smoothed and given a final polish, so as to facilitate communication between reservoir and the oral cavity.



**Fig. 3: Special tray fabricated**



**Fig. 4: Palatal hollow bulb obturator with salivary reservoir- Occlusal view**



**Fig. 5: Palatal hollow bulb obturator with salivary reservoir- Posterior view**



**Fig. 6: Bulb area waxed for Lid fabrication**

#### Composition of artificial saliva<sup>8</sup>

- Potassium chloride 0.62 g/l
- Sodium carboxymethyl cellulose 10.0 g/l
- Sodium chloride 0.87 g/l
- Magnesium chloride 0.06 g/l
- Calcium chloride 0.17 g/l
- Sorbitol 29.95 g/l
- Methyl p-hydroxybenzoate 1.00 g/l
- Spirit of lemon 5 ml g/l

The patient was instructed about the filling of the reservoir and the due care. Post insertion check up was done after a day and regular recall visits were scheduled. The patient was satisfied with the prosthesis.

#### Discussion

Placement of reservoir in the maxillary obturator is not been documented well in the literature. This case report can offer clinicians an alternative method of treating patients suffering from xerostomia.

#### Advantages of this technique

- Additionally, it also enables the patient to clearly visualize the levels of saliva substitute within the chamber.
- The ready access to the reservoirs, both by the patient and by the dentist.
- It allows easy cleaning and adjustment of the reservoirs as needed.
- The only drawback of the technique is the additional laboratory steps but it can be of great utility in cases of xerostomia.

#### Conclusion

This paper reports a novel technique for the construction of a maxillary obturator incorporating salivary reservoir. Xerostomic patients wearing prosthesis can benefit immensely from it. The use of clear acrylic for the base section permits the clinician to determine the best size and position for placement of the reservoirs. It also enables the patient to clearly visualize the levels of saliva substitute within the chamber. This method utilizes routine materials during construction.

**Conflict of Interest:** Nil

**Source of Support:** None

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