Hollow Maxillary Denture: An Approach for Light Weight Denture

Khushboo Mishra¹, Divya Hegde², Sajan Shetty³, Vijayalakshmi CR⁴, Sanjana Shah⁵, Cora Abigail Coutinho⁶

1,5,6-PG Student, Department of Prosthodontics, Bangalore Institute Of Dental Sciences And Hospital, 2-Professor and Head of the Department, Department of Prosthodontics, Bangalore Institute Of Dental Sciences And Hospital, 3,4-Senior Lecturer, Department of Prosthodontics, Bangalore Institute Of Dental Sciences And Hospital.

ABSTRACT

Severely resorbed maxillary and mandibular edentulous arches provide decreased support, retention, and stability, which are the objectives of impression making. Extreme resorption of edentulous maxilla may cause difficulty during the fabrication of a maxillary complete denture. After which the weight of the complete denture only compromises them further. The consequent weight of the processed denture only compromises them further. This article elaborates on an alternative approach for hollowing a maxillary complete denture. The use of candies in the form of jelly to provide the cavity which creates a hollow space and the result of which leads to a light weight maxillary denture. This hollowing ensures the even thickness of both denture base resins for structural integrity and reduces the heaviness of the denture.

KEYWORDS: Complete denture, hollow maxillary denture, resorption

INTRODUCTION

Rehabilitation of severely atrophic edentulous ridges poses a clinical challenge, as there is a decreased denture bearing area.¹,² There are conventional methods that help in denture making for these resorbed ridges or when the interarch space is more, but as a result, this leads to the heavy denture.⁶⁷ However, studies have shown that even without the addition of extra weight to the denture, denture stability can be obtained.⁸⁹ Given the extensive volume of the denture base material in prostheses provided to patients with severe residual ridge resorption or when the interarch space is increased, by making the denture base hollow, reduction in prosthesis weight may be achieved. The following case-report describes the simple technique where a hollow complete maxillary denture was provided for a patient with increased interarch space between the maxillary and mandibular ridge.

CASE REPORT

A 65 year-old male patient reported with a presenting complaint of missing upper and lower teeth. The patient gave a history of missing teeth for the past 3 years. Intraoral examination revealed an increased interarch space between the maxillary and mandibular arch, and ridges were fine, although no severe resorption was seen (Figure 1).

The patient was advised for implant-retained prosthesis, but the patient was reluctant for any surgical intervention. As the interarch space was more and to avoid the bulk of prosthesis, so as an alternative, the patient was treated with a prosthesis incorporating hollow complete upper denture and convention complete lower denture.

The following steps were followed for the fabrication of hollow complete dentures.

Technique:
1. The maxillary denture was fabricated up to the trial denture stage in a conventional manner. (Figure 2)
2. Process the trial dentures in the standard manner until the wax elimination stage.
3. After wax elimination, apply separating media all over the area except on the teeth.
4. Now, in the original dewaxed cope, measure the distance from the ridge-lap area of the tooth to the sulcus depth margin. From the total distance, 2 mm thickness of the denture base and 2 mm distance from the ridge lap of the tooth is subtracted considering the strength of the denture. The value obtained determines the area for the spacer. (Figure 3 and 4)

Figure 1: Increased interarch space

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5. Now put the first layer of heat polymerized material and then put two layers of jellies and see the space remaining. After that, place the second layer of heat polymerized acrylic over the jellies and see the fitting. If it is not closing, repeat the procedure by removing excess of acrylic. (Figure 5)

6. Do the trial closure. Care should be taken not to perforate it.

7. Reseat the original flask and verify the complete closure of the flask. Mix, pack, and polymerize the acrylic resin in the usual manner. Recover the processed denture.

8. Make two-hole and retrieve the jellies by using the orthodontic wires. Close the opening using auto-polymerizing acrylic resin. Finishing and polishing of the dentures are done in the usual manner. (Figure 6)

9. Verify that the cavity is sealed. This can be verified by immersing the denture in water. If no bubbles are seen, an adequate seal is confirmed. (Figure 7)

10. The dentures were inserted in the patient’s mouth and were reviewed after 24 hours. (Figure 8)
DISCUSSION

The high volume of acrylic can lead to the heavy weight of denture, which can compromise the stability and retention of the denture. Hollow maxillary complete denture eventually reduces the weight of the conventional prosthesis, which in turn prevents transmission of the unwanted and detrimental forces, which would otherwise be transmitted from a conventional heavy prosthesis to the underlying tissue and bone. Thus, it helps to preserve underlying tissue and bone and maintains the integrity of the mucosa. Here the method described has advantages over the previously described techniques as jellies can be retrieved easily with a splash of hot water as well as with stainless steel wire. This technique is simple, and it gives the required hollowing space uniformly. Adding on advantages, this method is very cost-effective as well.

CONCLUSION

A simplified technique for fabricating a hollow complete maxillary denture is described with the objective of emphasizing the need to reduce the bulk of the denture and to maintain the integrity of mucosa and to preserve the remaining alveolar bone.

REFERENCES


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