

ROOFLESS DENTURE-A NOVEL APPROACH FOR THE MANAGEMENT OF GAG REFLEX

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Abstract

Gag reflex can be a major issue with the edentulous patient who needs replacement of teeth with complete denture. This condition can further be complicated if the patient suffers from any respiratory problem along with gag reflex, thereby preventing them from wearing the complete denture. Also, conditions like high palate and presence of palatal tori pose a significant challenge to the clinician in fabricating a satisfactory prosthesis for the patient that can be brought to regular use by the patient. This case report discusses and highlights how roofless denture can be used to overcome gagging and improvise denture wearing for a known potential gagger. Thus, by fabricating a horse shoe shape palateless denture, one can successfully treat such patients to their utmost satisfaction.

Key words: Gag reflex, High palate, Palatal tori, Roofless denture, Horse shoe palateless denture.

INTRODUCTION

Gagging is a normal, protective defense mechanism which prevents foreign bodies from entering the trachea, pharynx or larynx.¹ A few patients in this category cannot tolerate conventional maxillary dentures that have maximum palatal coverage and extension of all borders.²

Gagging has been generally classified as either psychogenic or somatogenic. Psychogenic gagging is induced by anxiety, fear and apprehension.³ It may be a manifestation of underlying psychologic problem. Behavioral management therapy or psychotherapy can be considered strongly in the management of the psychogenic gagging patient. Somatogenic gagging can result from insufficient retention, incorrect occlusal vertical dimension, malocclusion, lack of tongue space, thick posterior borders and inadequate posterior palatal seal. The latter can be avoided through correct palatal coverage in order to maintain firm contact with the soft palate during function and phonation.

Gagging severity index⁴: Dickinson and Fiske proposed the Gagging Severity Index (GSI), that classified the gag reflex into five grades primarily based on the degree of difficulty presented in dental procedures such as impression taking and fillings. However, the GSI is based on the results of dental procedures and is not appropriate for assessing the condition prior to treatment.

1. **Grade I:** Very mild; occasional and controlled by the patient
2. **Grade II:** Mild; control by the patient with reassurance from the dental team
3. **Grade III:** Moderate; consistent and limits treatment options
4. **Grade IV:** Severe and treatment is impossible
5. **Grade V:** Very severe; affecting patient behavior, making treatment impossible.

Various methods such as using a throat spray to numb the back of the mouth, brushing the area of the tongue that triggers the gag reflex helps to desensitize from choking have been advocated for the management of gag patients with complete denture. Although not a routine prosthodontic solution, the "roofless or palateless" denture can be used effectively in the management of patients with extreme gagging problems.

OTHER INDICATIONS:

- Deep palatal vault
- Presence of palatal tori.

CONTRA INDICATIONS:

- Shallow palate
- Atrophic maxillary ridge
- Excessively thick and ropy saliva

This article describes a clinical report on the management of the patient with gag reflex using a 'roofless or palateless' maxillary complete denture.

CASE REPORT

A 55 year old female patient reported to the Department of Prosthodontics and Crown & Bridge, Desh Bhagat Dental College and Hospital, Mandi Gobindgarh with the chief complaint of missing teeth and wanted an artificial set of teeth. A review of the patient's medical history did not reveal any significant details.

TECHNIQUE:

All the clinical and laboratory steps from diagnostic impression till try in are followed in conventional manner (Figure1). Although the patient had gagging problem, it was still managed during the procedure of impression making by using methods such as controlled breathing and relaxation, distraction and systemic desensitization. This was followed by the preparation of master cast that involves beading of the cast by placing 0.5-1mm deep bead with a No. 4 round bur and refining with a spoon excavator on the median slope of palate, covering the rugae area as well. This will aid in the retention of denture. Anteriorly, the beaded border should cross the mid-

palatal suture line at right angles and be placed in the rugae valleys when possible. Posteriorly, the bead line extends to and blends with the pterygomaxillary (hamular) notches bilaterally (Figure2). The bead so made helps aid in the retention of the denture by slightly compressing the tissue underneath it, compensating the polymerization shrinkage for intimate contact with the intaglio surface.

At the wax up step, the maxillary temporary denture base was trimmed in a horse shoe shape such that it extends 1mm beyond the bead on the master cast (Figure3). Denture processing steps such as flasking, dewaxing and acrylisation using heat cure acrylic resin were carried out similar to conventional complete denture fabrication.

On the day of insertion, the roofless denture was inserted in to the patient's mouth and post insertion instructions given to the patient (Figure4,5). Post insertion follow up was carried out at the prescribed interval of time. The patient was satisfied with the prosthesis as this helped to overcome her problem of severe gagging to full coverage complete denture.



Fig. No 1: Try in stage following the conventional manner



FigNo2: Beading of the Master cast

Fig. No 3: Horse shoe shape wax up of maxillary denture



Fig. No 4: Final prosthesis insertion



Fig. No5: Roofless denture for maxillary arch

DISCUSSION:

Most patients accept the custom tray and border molding procedures readily but some patients whose gagging is of a psychologic nature overcome their problem before denture procedures are completed and are comfortable with a well-constructed prosthesis. However, a modified custom tray that does not completely cover the palate can be constructed if necessary and used as the impression tray. Stability for a palateless maxillary denture is enhanced by a well-balanced noninterfering occlusion and a well-shaped maxillary arch that will minimize the horizontal movement. Extensive ridge resorption, a shallow palatal vault or lack of vestibular depth tend to compromise stability. Although palateless denture prove to be of significant use for gag patients, but in any case increased palatal coverage would provide larger area over which the occlusal forces could be distributed.

On the other end, palateless denture is significantly indicated in patients with deep palatal vault and patients with the palatal tori showing reluctance towards the surgical removal. The prime concern for the fabrication of this horseshoe shape denture is to facilitate function and comfort to the patient without compromising the retention and stability of the prosthesis. Also, while fabricating the prosthesis the clinician must be aware of the importance of beading the master cast that would ultimately determine the outcome and prognosis of the treatment.

CONCLUSION:

Palateless dentures are recommended as one of the possible solution for gagging patients with a history of unsuccessful denture wearing and for patients with a large inoperable maxillary torus. The limitations of the technique must be fully realized by both the clinician and the patient prior to treatment. The palateless denture technique is of definite benefit for gagging patients who have previously been considered as treatment failures but one thing should be kept into consideration that not every patient is a patient for roofless denture.

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