



ORTHODONTIC RETAINER MODIFIED AS PROVISIONAL RESTORATION

Dr. Shivani Sanjay Ambatkar	BDS, Post Graduate Student
Dr. Kristal G. Holt	BDS, Post Graduate Student, VYWS Dental College And Hospital Amravati
Dr. Ratnadip A. Lohakpure	BDS, MDS, Reader And Professor, VYWS Dental College And Hospital Amravati.
Dr. Amol A. Verulkar	BDS, MDS, PhD, Head Of Department, Professor VYWS Dental College And Hospital Amravati
Dr. Shweta A. Kolhe	BDS, MDS, PhD Scholar, Reader And Professor VYWS Dental College And Hospital Amravati

ABSTRACT

Tribal people constitute 8.3% of nation's total population, which is over 84 million according to 2001 census. Due to many factors these people face many problems including illiteracy, isolation and inadequate health facilities. By reviewing the literature it was observed that these people are characterised by dental caries as well as unmet treatment needs. Accessibility to healthcare and socioeconomic status could be the reason for these unmet needs. This study describes a means of replacing a missing tooth immediately until the patient can place a permanent prosthesis. Vacuum formed retainers are extensively used in Orthodontics after fixed Orthodontic treatment. Patients with a history of traumatic tooth loss and the desire to improve esthetics often undergo multidisciplinary treatment. Loss of teeth especially in the anterior region is an unesthetic condition which can also alter pronunciation making the patient uncomfortable in social situations. Replacement of missing teeth immediately is not always possible due to local, systemic and economical factors. Variety of options for provisional replacement of teeth are available which may require tooth preparation of adjacent teeth. One method to replace the missing tooth without any need of preparation is by using the Vacuum formed retainer. This article describes a patient rehabilitated with the help of Vacuum formed retainer after fixed orthodontic treatment before placement of implant.

KEYWORDS : Vacuum formed retainer, traumatic tooth loss, provisional restoration, esthetics, multidisciplinary treatment.

INTRODUCTION

Dental trauma refers to any injury or damage to the teeth or nearby tissues resulting from physical impact or force.¹ Traumatic dental injuries pose a significant socio-psychological impact on the affected individual affecting their quality of life, with potential economic implication. The patient may develop a sense of loss similar to losing a body part after the loss of teeth.²

Such Patients with a history of traumatic tooth loss and a desire to improve their esthetics often undergo interdisciplinary treatment. A Vacuum formed retainer also known as Essix retainer or Clear retainer is a removable retainer introduced by Dr. John Sheridan in 1993³. Concerns were raised about the original design, which only extended from canine to canine, as it was associated with a slight increase in open bite (2.3%). To address this, it has been recommended to extend the retainer to cover all occlusal surfaces.⁴ It has been extensively used in Orthodontics as a retainer after fixed orthodontic treatment. This retainer can be modified as a provisional prosthesis for rehabilitation in cases with missing teeth until a more final prosthesis can be placed.

Steps For Fabrication

1. Diagnostic impressions material of maxillary and mandibular arches made of alginate impression were recorded.

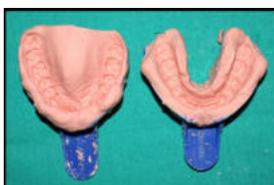


Figure 1

2. Working models were obtained with type III dental stone
3. An acrylic tooth similar to the size and shade of the adjacent central incisor was selected.

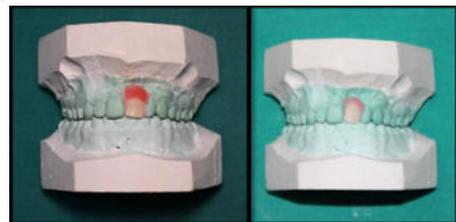


Figure 2

4. The tooth was appropriately trimmed and contoured to fit the archform.
5. The working model was trimmed appropriately and separating media was placed.
6. The acrylic tooth was placed on the working model with self cure acrylic resin and allowed to set.
7. This temporary prosthesis underwent finishing and polishing and was tried in intraorally.
8. Three grooves were created on the lingual aspect of the prosthesis in medio-distal direction to improve retention.



Figure 3

9. This assembly was placed in the Ministar for fabrication of thermoformed retainer. A copyplast sheet of 1mm thickness was used to fabricate the modified prosthesis.

The retainer and acrylic was appropriately trimmed to eliminate sharp edges and polished with an abrasive before delivery. The patient was also given post-insertion instructions regarding wearing time and cleaning the appliance.



Figure 4

Pre Treatment And Post Treatment Photographs



Figure 5

DISCUSSION

This article describes a quick and easy procedure to provide esthetic rehabilitation to patients. Little to extensive tooth preparation is required to restore a missing tooth in order for it to receive the prosthesis. Some systemic or local factors may not allow immediate replacement of the missing tooth after completion of orthodontic treatment. Many treatment alternatives both fixed and removable are available for replacing the missing teeth among which the patient agreed to placement of implant following completion of orthodontic treatment. Chopra et al⁶ used tooth coloured acrylic resin loaded directly into the retainer to replace mandibular 1st molar. Shetty et al⁷ used flowable composite to create a pontic incorporated in the aligner. All these techniques are able to rehabilitate the missing teeth but the alveolar bone lost cannot be replaced. The tissue coloured portion of the retainer was able to mask the defect, making it look more esthetically pleasing.

Advantages

- Immediate improvement in esthetics
- No need of tooth preparation
- In pediatric or adolescent patients unable to get implants
- Can be used to rehabilitate multiple missing teeth
- Easy to fabricate
- Oral hygiene can be easily maintained
- Preservation of space till final prosthesis can be placed
- Loss of alveolar bone is covered by acrylic

Limitations

- Can not be used for longer period of time

CONCLUSION

Retainers are used post orthodontic treatment and can be

modified to include missing teeth by the method mentioned in this article. This modified prosthesis is easy to remove for hygiene purposes, readily available, cost-effective, comfortable to wear, preserves the integrity of abutment teeth, and can be adjusted to minimize contact with soft tissue. This modified retainer is greatly accepted in cases where immediate replacement of the missing teeth is not possible.

Patient Consent- Obtained

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