

Case Report

Essix Appliance: An Innovation Modification for use as Temporary Bridge- A Case Report

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ABSTRACT:

Clear retainers are being widely used in the field of prosthodontics and orthodontics. Various studies have been conducted upon its use as a retainer. Vacuum formed retainer can be used as a temporary bridge for replacement of missing teeth following either extraction or implant placement with tooth coloured acrylic resin. It is an excellent alternative to tissue borne provisional restoration. This article will emphasize on method of fabrication, advantages and disadvantages of Essix appliance.

Key words: Vacuum formed retainer, Temporary bridge, Tooth coloured acrylic.

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INTRODUCTION

A vacuum formed retainer is a removable retainer introduced by Dr. John Sheridan in 1993.^{1,2} It is also known as Essix retainer, Thermoplastic retainer and Clear retainer. Thermoplastic vacuum formed retainer has been very useful in Prosthodontics including its use as matrix in fabrication of provisional restoration of implants⁴, surgical guides. It can also used to fabricate a temporary bridge to replace missing anterior teeth.

CASE REPORT

A 14 years old boy, reported to the Department of Prosthodontics, Dasmesh Institute of Dental Research & Science, Punjab with a chief complaint of missing first molar in lower right quadrant (**Figure-1**). On examination of the maxillary arch all the teeth were intact. In the mandibular arch, there was missing right first molar (85). Patient got the extraction done one month back.

Various treatment options were considered such as conventional fixed partial denture, resin bonded fixed partial denture, removable partial denture, cast partial

denture, Essix appliance. Implant and conventional fixed partial denture were not ruled out as age of the patient was below 18 years. Fixed partial denture are contraindicated below 18 years due to large pulp horns.⁵ Implants are contraindicated due to chance of implant getting submerged as growth of the jaw take place.³ After discussing various treatment options and their pros and cons, it was decided to rehabilitate the missing tooth with Essix appliance.



Figure-1 (Pre-operative view)

Fabrication Technique

1. Diagnostic impressions were made, using irreversible hydrocolloid impression material (Dentsply, India). **(Figure-2)**



Figure 2: (Primary impression maxillary and mandible)

2. The impressions were washed and poured with type III dental stone (Dentsply, India). **(Figure-3)**



Figure 3: (Diagnostic cast)

3. Cast are retrieved and teeth arrangement of first molar was done on the cast, verify the occlusal plane with maxillary teeth. **(Figure-4)**



Figure 4: (Teeth arrangement of 1st molar)

4. Place a sheet of thermoplastic material i.e. polypropylene (1.0mm thick) in the frame of the vacuum forming machine (Easy-Vac) and heat it.

5. Once the polypropylene sheet was heated, turn off the heater and turn on the vacuum. Simultaneously lower the heated sheet over the cast.
6. Allow it to cool completely under vacuum for maximum adaptation of the material to the tooth portion.
7. A small hole on the lingual surface of the retainer where tooth need to be replaced was cut to improve the retention.
8. First molar was removed and tooth coloured acrylic resin (DPI, Mumbai, India) was mixed and loaded in the retainer.
9. Place the retainer on the cast and allow it to set. **(Figure-5)**



Figure-5 (Acrylic loaded in retainer and allow it to set)

10. Smooth the tissue surface of the set acrylic so as to have no tissue contact. **(Figure-6)**



Figure-6 (After setting of acrylic)

11. Finishing and polishing was done in conventional manner. The tissue surface was made convex for easy cleaning.
12. Post insertion instruction were given to the patient regarding not to wear it during eating and patient was advised regarding regular cleaning of appliances. **(Figure-7)**



Figure-7 (Post-operative view)

DISCUSSION

Many techniques are there to rehabilitate missing tooth, which are divided into two categories i.e. Fixed and Removable. Fixed includes Implants, conventional fixed partial dentures and if required for short span then resin bonded fixed partial dentures. Removable includes conventional removable partial dentures and cast partial dentures. Each and every method has its own advantages and disadvantages.

Implant and conventional fixed partial denture were not considered as in these treatments, age factor plays an important role. Below 18 years, both are contraindicated. Moreover, economic factor i.e. high cost of implant is also to be considered. Resin bonded fixed partial denture such as Maryland Bridge require bonding to the lingual surface of abutment teeth. In this case molar 47 was not fully erupted to provide sufficient enamel to retain the prosthesis, so this option was also ruled out.

In Removable, Cast partial denture was not considered as it requires tooth preparation on abutment teeth and abutment molar was not fully erupted. However, patient was not willing for that. Conventional Removable partial denture could be given to the patient but he had a prior notion that it may impinge him and cause discomfort. So, this method was also not considered.

In these cases, where none of the above treatments can be used, Essix appliance proves to be an innovation. Essix appliance does not require tooth preparation of abutment molar whereas most of the

above mentioned technique required. Hence, it preserves tooth structure. It can be used to accommodate the short span edentulous space.

ADVANTAGES

- Inexpensive¹
- Easy to fabricate⁶
- Does not interfere with healing
- Immediate replacement of extracted teeth
- Does not involve any preparation on abutment teeth
- Easy to maintain oral hygiene.
- Easy to wear in daily routine.

DISADVANTAGES

- Not recommended for long period of time due to its wear property
- Demands good compliance.⁷
- Poor colour stability for long term.²

SUMMARY

This article describes a simple method for rehabilitating a short edentulous span. Essix appliance is useful as a provisional restoration after implant placement or extraction. It is very comfortable, inexpensive and demands less skill. It also provides protection of soft tissue during healing phase and is easy to fabricate. Essix appliance, however is not recommended for long use due to rapid wear.

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