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Dr. Dhrumil Manek
Department of Prosthodontics
Crown and Bridge,
Salem, Tamil Nādu, India

Rediscovering removable prosthesis designing: An ingenious approach

Dr. Dhrumil Manek

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Abstract

It's important to preserve the natural tooth structure and also to preserve supporting tooth structures as well as those areas where prostheses are placed. This case report carries an ingenious approach for a removable prosthesis for a 56-year-old male patient based on his willingness to maintain natural teeth and not to opt for extraction and thus selection of abutment teeth was done accordingly.

Keywords: Removable prosthesis, ingenious approach, alveolar bone loss

Introduction

The importance of teeth in maintaining the alveolar ridge's position has been long recognised in the field of dentistry. Thus, the primary goal of modern dentistry is to preserve teeth and periodontium. Several studies have found that removing all-natural teeth and wearing complete dentures for an extended period results in alveolar bone loss [1].

Extraction of the entire dentition followed by full denture replacement causes psychological trauma, decreased stability and retention, compromised masticatory function, and a loss of aesthetic appearance [2].

In a study done by VA Crum and Rooney demonstrated that when some teeth are present, there is significantly less alveolar bone resorption than in edentulous patients. Another advantage of preserving natural teeth is that it preserves the periodontium's proprioceptive ability and provides psychological benefit to the patient [1].

Over dentures, immediate dentures, and transitional dentures are treatment options for such arches with few remaining teeth. Transitional dentures are an excellent treatment option for patients who do not want to undergo extraction or endodontic procedures [2-6].

Removable partial denture with acrylic teeth veneering is one such innovative method that can be used in dental practice which can turn out to be a simple and cost-effective treatment option.

Case Report

A 56-year-old male patient presented to the department of prosthodontics at Vinayaka Missions Shankarachariyar dental college, Salem with the primary complaint of multiple missing teeth in the maxilla and a completely missing set of dentition in the mandible. The remaining natural dentition in the maxillary arch (14, 15, 16, 24, 25, 27) had a poor long-term prognosis for use as an abutment for the removable partial denture.

The presence of a retained left maxillary central incisor was recognized as significantly impacting the aesthetic outcome of the maxillary removable partial denture (Fig 1: Pre-operative intraoral photograph). The aesthetic and prognostic outcomes of the treatment plan were clearly explained to the patient; however, the patient was unwilling to have that left maxillary central incisor extracted and requested that the most favourable aesthetic outcome be achieved with the given clinical situation. No relevant medical history was associated with the patient.

To this end, a removable partial denture with acrylic teeth veneering was planned for the case. A preliminary impression was made using an irreversible hydrocolloid.

Corresponding Author:
Dr. Dhrumil Manek
Department of Prosthodontics
Crown and Bridge,
Salem, Tamil Nādu, India

(Zhermack Tropicalgin Alginate Impression Material), followed by a secondary impression using the selective pressure technique. Tentative jaw relation was done, and casts were mounted on a mean value articulator. The artificial acrylic teeth were trimmed according to the available mesiodistal and labiolingual space to accommodate the retained left maxillary central incisor and a trial of the waxed-up maxillary removable partial denture and the mandibular conventional complete denture was done clinically.



Fig 1: Pre-operative intraoral photograph

The maxillary removable partial denture without the veneered acrylic teeth was cured with the heat cure acrylic resin (DPI, India) by compression moulding technique. After trimming, finishing, and polishing the removable partial denture, the veneered acrylic tooth on the left maxillary central incisor was stabilized with a 21-gauge Stainless steel orthodontic wire (Samit Stainless Steel Wire) extending from the palatal surface of the right maxillary central to the palatal surface of the left maxillary lateral incisor artificial acrylic teeth. On the palatal surface of artificial acrylic teeth, both ends of the orthodontic wire were luted with self-adhesive resin cement. Once the acrylic artificial tooth was luted the prosthesis was inserted and tried in the patient's mouth such that the prosthesis can be easily removed and worn by the patient. Following this, the patient was also given post-insertion instructions and taught to remove and wear the prosthesis. The patient was asked to report after 7 days to follow up on the provided prosthesis. The patient was also convinced and satisfied with the aesthetics of both maxillary and mandibular prostheses.



Fig 2: Maxillary removable prosthesis showing the veneering done on the left maxillary central incisor



Fig 3: Post-Operative

Clinical Significance

It is always appreciable to maintain natural dentition and the same approach has been followed in this case as the patient was willing to keep the natural tooth, accordingly skilful work was carried out in the selection of abutment tooth with all justification of consequences given to the patient, and based on clinician experience such prosthesis has the maximum probability to last longer if oral hygiene is managed by patient and also if the patient doesn't have any systemic diseases, thus outcome was fair to post 1 year after placement of a prosthesis.

Discussion

As illustrated in the given case report many such patients are not willing to extract the teeth and demand an acceptable prosthesis, can be treated with this novel approach which aims at the preservation of the remaining tooth and its associated structures along with providing the best aesthetics in each clinical scenario. Achieving a single path of insertion along with multiple such veneered acrylic teeth might turn out to be a bit tricky whereas 1-2 teeth that are well orienteered with their position in the ridge can be considered as an ideal candidate for the fabrication of removable partial dentures with acrylic teeth veneering.

Patients having very few remaining teeth can be treated by fabrication of over dentures or immediate dentures or transitional dentures. Over dentures may not always be a favourable option for all such cases due to contraindications, the need for endodontic procedures, the requirement for more patient visits and financial reasons. Many patients delay getting all their teeth extracted as it has a detrimental effect on their psychology. Thus, Cu-sil dentures or removable partial dentures with acrylic teeth veneering serve as an amicable treatment option for such patients.

These dentures are aimed at preserving the remaining natural teeth and have a positive effect on the retention and stability of dentures. It gives the patient psychological satisfaction of retaining the natural teeth. No special impression techniques or materials are required. Future add-ons and relines are possible. These dentures can also serve as conventional full dentures if the patient later loses all the natural teeth.

These dentures are contraindicated for patients with numerous, evenly distributed natural teeth across the dental arch, this will result in a weak appliance. They should be avoided in patients with bruxism, severe undercut areas and patients with high smile lines. The gingiva of the remaining teeth is covered totally, which may lead to plaque accumulation, which can be avoided by regular check-ups and proper hygiene maintenance.

Further clinical cases and long-term follow-ups should be done to understand the limitation of such dentures.

Conclusion

Partial Dentures with acrylic teeth veneering are not yet commonly prescribed to patients. This case report shows that such dentures can serve as an acceptable option and a viable treatment alternative in a few situations. It is an excellent option for patients who want to replace their missing teeth while retaining their very few remaining teeth

Conflict of Interest

Not available

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Not available

References

1. Blatterfein L, Payne George Zarb HA, Crum RJ, Rooney GE. Removable Prosthodontics Sectkin Editors Alveolar bone loss in over dentures: A S-Year Study.
2. Zarb GA. Prosthodontic treatment for edentulous patients complete dentures and implant-supported Prosthesis.
3. Rangarajan V. Textbook of prosthodontics Second Edition.
4. Stewarts Clinical Removable Partial Prosthodontics.
5. Heartwell CM, Rahn AO. Syllabus of complete dentures.
6. Winkler S, Chairman A. Essentials of complete denture prosthodontics second edition.

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