Case Report

Beyond traditional dentures: Innovative solutions for comfort and aesthetics

Anuradha B[1*], Vinothini V[2]

[1]Senior Consultant, General Dentistry and Endodontics, Kauvery Hospital, Radial Road, Chennai,Tamil Nadu

[2]Resident, General Dentistry, Kauvery Hospital, Radial Road, Chennai,Tamil Nadu

*Correspondence

Abstract

Background: Management of missing teeth with removable prosthesis can be challenging when patients experience discomfort with conventional acrylic dentures. A 33-year-old female presented with discomfort due to the bulkiness of her maxillary acrylic removable partial denture. Considering the anatomical limitations and her reluctance toward surgical implant procedures, a flexible removable partial denture fabricated from Valplast was selected. The final prosthesis offered enhanced comfort, improved aesthetics, and satisfactory function, highlighting the clinical benefits of flexible dentures in appropriately selected cases.

Key words: Removable partial dentures (RPDs); Valplast; OPG (Orthopantamogram)

Citation: Anuradha B, Vinothini V. Beyond traditional dentures: Innovative solutions for comfort and aesthetics. Kauverian Med J. 2025;2(12).1315

Academic Editor: Dr. Venkita S. Suresh

ISSN: 2584-1572 (Online)

1. Introduction

Removable partial dentures (RPDs) are commonly used for replacing missing teeth and provide reliable functional solutions, particularly in patients who are medically compromised or unwilling to undergo expensive surgical procedures. Conventional acrylic and cast-metal RPDs have been widely used, but they are often associated with drawbacks such as excessive bulk, visible clasps, and allergic reactions. To overcome these limitations, flexible thermoplastic materials such as Valplast have gained popularity due to their superior aesthetics, comfort, and biocompatibility. This case report illustrates the successful use of a flexible removable partial denture in a young female patient dissatisfied with her conventional acrylic prosthesis.

1.1 Case Presentation

A 33-year-old female presented with complaints of discomfort and aesthetic concerns related to her conventional acrylic removable partial denture, which replaced teeth 24, 25, 26, and 27 in the upper arch. The patient reported that the denture felt bulky due to

extensive palatal coverage and was unaesthetic because of visible metal clasps. Upon clinical examination, the patient was found to be a suitable candidate for implant supported prosthesis. However, OPG (Orthopantamogram) revealed close proximity of the maxillary sinus to the posterior region and the patient was not willing for extensive surgical interventions such as sinus lift augmentation or zygomatic implants. Based on her preferences, a flexible removable partial denture with minimal palatal coverage was planned.

1.2. Treatment procedure

Primary upper and lower arch impressions were taken using putty. Jaw relation was recorded, and vertical dimension of occlusion was established. Shade and shape of artificial teeth were selected. A trial denture was fabricated and evaluated intraorally for aesthetics, retention, and phonetics. After minor adjustments, the final flexible partial denture was processed and delivered. The patient was provided with instructions regarding insertion, removal, hygiene, and maintenance.

2. Outcome

The patient reported significant improvement in comfort compared to her previous denture. The reduced palatal coverage eliminated bulkiness, and the absence of visible metal clasps greatly improved aesthetics. Function and phonetics were also satisfactory, and the patient quickly adapted to the new prosthesis.

3. Discussion

Flexible partial dentures, typically made from thermoplastic resins like nylon, offer several advantages over traditional acrylic RPDs.

Aesthetics: The translucent base material mimics natural gingival tissue, enhancing the denture's appearance.

Comfort: The thin, lightweight, and flexible design adapts closely to oral contours, ensuring better comfort.

Durability: Flexible dentures have a higher resistance to fracture than traditional acrylic dentures, making them more reliable.

Biocompatibility: They are free from metal and monomer content, making them suitable for patients with allergies or sensitivities.

4. Conclusion

Flexible partial dentures offer a highly effective treatment option for patients who are unwilling or unable to undergo implant procedures or those who experience discomfort with conventional RPDs. They are especially advantageous in patients with systemic comorbidities such as uncontrolled diabetes mellitus, cardiovascular disease, bleeding disorders, or other conditions where invasive surgical interventions are contraindicated. This case demonstrated the successful use of a flexible denture to achieve optimal aesthetics, comfort, and function, underscoring the value of flexible dentures in modern prosthodontic care.