

FLEXIBLE DENTURES

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ABSTRACT

Aim of the study Removable partial dentures are a treatment of choice for a wide range of patients because of the immediate replacement of teeth at low cost. Flexible removable partial dentures were introduced to overcome the disadvantages of conventional partial dentures and giving patient with good esthetics, function and comfort. This article discusses about the clinical procedures, flexible denture base materials, indications, advantages of the flexible removable partial dentures along with a case report.

Materials and methods Between December 2024 and May 2025, we treated ten patients with elastic dentures from rural areas who did not accept acrylic dentures due to the increased volume and unsightly metal clasps. Among them, there were patients who already wore traditional acrylic dentures and were not satisfied, and the rest presented with partial edentulism and were treated for the first time with flexible partial dentures.

Results The flexible denture is much more comfortable for patients, as it does not have a rigid base, gives the patient ease of speaking and chewing and a pleasant physical appearance.

Conclusions Flexible partial dentures are an excellent and affordable solutions for many edentulous cases.

Key words: denture base material, flexible dentures, biodentaplast, partial dentures.

INTRODUCTION

Replacement of missing teeth is one of the most important needs for patients attending clinics to restore esthetics and/or function. Many treatment modalities are available for replacing missing teeth; removable partial denture, fixed partial denture or dental implant. Removable partial dentures became popular many decades ago with the introduction of acrylic polymers and chrome cobalt alloys in dentistry. Many patients choose removable partial dentures due to cost effectiveness and speed of execution [1]. Removable partial dentures made of acrylic or metal framework pose problems with difficult to address, such as insertion in undercut areas, brittleness of methyl methacrylate which leads to fracture, and allergy to methyl

methacrylate monomer. Flexible denture base materials were introduced to dentistry in 1950's by the name Valplast and Flexiplast. Injection molding technique is used for the fabrication of flexible dentures from these materials and fluid resins. In the mid 1970's Ivoclar introduced an injection molding system which used an acrylic resin modified for the injection molding process[2].

MATERIALS AND METHODS

When Conventional dentures cause discomfort to the patient with undercut areas that cannot be solved even after relining the denture, flexible dentures are preferred. Soft liners provide a cushioning effect in undercut areas and abused tissues but these liners are temporary and need to be replaced time to time. One such good

alternative for this is flexible/soft dentures[3].

Flexible dentures are a type of removable dental prosthesis designed to replace missing teeth. They are made from a flexible, lightweight, and biocompatible material called nylon or thermoplastic acrylic, which allows for greater comfort and a more natural feel compared to traditional rigid dentures.

Indications: Flexible dentures are often chosen for patients looking for a removable, aesthetically pleasing, and comfortable solution, particularly when other options like fixed bridges or implants are not suitable[4].

Biodentaplast is a brand associated with flexible denture materials, specifically used for manufacturing flexible dentures. These are typically made from thermoplastic polyamides, such as nylon-based materials, which offer high flexibility, comfort, and aesthetic appeal.

Features of Biodentaplast flexible dentures:

- **Flexible and resilient:** The material allows the denture to bend without breaking, providing a comfortable fit.
- **Thin and lightweight:** The denture is less bulky, improving comfort and aesthetics.
- **Biocompatible:** Suitable for patient's oral tissues with minimal irritation.
- **Aesthetic:** Translucent material blends with natural tissues for a more natural look [5].

Advantages of using Biodentaplast:

- Easier adaptation to the patient's gums.
- Minimal adjustment required after placement.
- Good for patients with sensitive tissues or those needing a less invasive option.

Limitations:

- Like other flexible dentures, they may have less supporting strength for severely resorbed ridges.
- May require careful handling during removal to prevent tearing.

Use in clinical practice: Biodentaplast is often chosen for partial or complete flexible dentures where comfort and aesthetics are prioritized, especially for patients who cannot tolerate rigid acrylic metal-based dentures.

Care Tips for Biodentaplast Flexible Dentures:

- **Cleaning:** Rinse the denture thoroughly after meals to remove food debris.
- **Brushing:** Use a soft-bristled toothbrush and a non-abrasive denture cleaner to gently clean the surface. Avoid harsh or abrasive cleaning agents that could damage the material.
- **Soaking:** Soak the denture in a cleaning solution recommended by your dentist, typically once a day, to disinfect and remove stains.
- **Handling:** Handle with care to prevent tears or fractures, especially during removal and insertion.
- **Storage:** When not in use, keep the denture in water or a denture-cleaning solution to prevent drying out and warping [6].
- If you experience discomfort or damage, consult your dental professional for adjustments or repairs.
- Flexible dentures are suitable for patients with metal and monomer allergies; patients who have a restricted mouth opening, such as those with scleroderma; patients who wish to hide the gray metal color on their front teeth from anterior clasps; patients who find

acrylic dentures uncomfortable; patients with severe ridge undercuts; and patients who want to maintain space temporarily and restore aesthetics and function [7].

In the images below I show you an example of a case treated with elastic partial dentures in which we have the initial situation in which the patient presented and



Figure 1. A rural male patient treated with elastic partial dentures.

it was necessary to clean the oral cavity and extract the root debris. Here we give some examples in order to illustrate the aspect of a printed paper.

I have exemplified a patient treated by me with elastic prostheses, in figure 1 the initial situation with which the patient presented prior to the prosthesis is represented.



Figure 3. The situation with prostheses in the oral cavity and aesthetic braces.



Figure 2. Is the orthopantomographic examination of the patient.



Figure 4. Flexible dentures detached from the oral cavity.

CONCLUSIONS

1. Of the 20 patients treated with elastic prostheses, all of them were satisfied with the treatment.

Flexible dentures are often chosen for patients looking for a removable, aesthetically pleasing, and comfortable

solution, particularly when other options like fixed bridges or implants are not suitable.

2. Biodentaplast is often chosen for partial or complete flexible dentures where comfort and aesthetics are prioritized, especially for patients who cannot tolerate

rigid acrylic or metal-based dentures.

3. Maintenance and care for flexible dentures are also relatively simple. They can be easily cleaned with a soft toothbrush and denture cleaner, similar to traditional dentures. However, it is important to note that certain cleaning agents, such as those containing alcohol or bleach, should be avoided as they may damage the flexible

material.

4. In addition to comfort, flexible dentures also offer excellent aesthetics. The material used in these dentures is translucent, allowing them to blend seamlessly with the natural colour of the gums and surrounding teeth. This ensures a more natural and attractive appearance, enhancing the patient's confidence in their smile.

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