“Flexible dentures” – an alternate for rigid dentures?

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Abstract

Hard and soft tissue undercuts are frequently encountered in the fabrication of prosthesis in partially as well as completely edentulous arches. Though alteration of denture prosthesis, relining by flexible relining material will serve the purpose but the flexible denture base materials stands in superior position compared to other options. This article is an effort to review the various commercially available flexible denture base materials and highlights their indications and special instructions in wearing and maintenance of the same.

Key words: Flexible dentures, Undercuts, Acrylic clasps

Introduction

Unilateral or bilateral undercuts are frequently encountered and may complicate successful fabrication of denture prosthesis. Management of these situations conventionally includes alteration of the denture prosthesis bearing area, adaptation of the denture base, careful planning of the path of insertion and the use of resilient lining material.

An alternative denture prosthesis design in which optimal flange height and thickness can be achieved is by using flexible denture base material. It is nylon based thermoplastic material that does not sacrifice function and preserves
aesthetics. Soft dentures are an excellent alternative to traditional hard-fitted dentures. Traditionally relining dentures with a soft base increases comfort at the cost of chewing efficiency. To make up for the loss of chewing efficiency, denture wearers would use dentures adhesive which causes its own problems. A flexible material is now an option that does not trade off the ability to eat.

**FLEXIBLE DENTURES**

Soft dentures are generally only used when traditional dentures cause discomfort to the patient that cannot be solved through relining. Soft dentures are not the same as a soft reline for traditional dentures. Soft relines use a soft putty-like substance to separate gums from the hard acrylic in dentures. Flexible dentures use a special flexible resin that prevents them from chafing the gums, allows the wearer to chew properly. It also provides a soft base that prevents the gums from being rubbed raw. Some of the commercially available products are Valplast, Duraflex, Flexite, Proflex, Lucitone, Impak whereas valplast and lucitone are monomer free.

**Advantages**

Flexible dentures have got various advantages over the traditional rigid denture bases. Translucency of the material picks up underlying tissue tones, making it almost impossible to detect in the mouth. No clasping is visible on tooth surfaces (when used in manufacturing of clear clasps), improving aesthetics. The material is exceptionally strong and flexible. Free movement is allowed by the overall flexibility. Complete biocompatibility is achieved because the material is free of monomer and metal, these being the principle causes of allergic reactions in conventional denture materials. Clinicians are able to use areas of the ridge that would not be possible with conventional denture and partial techniques. Patient can wear appliances that would normally not be comfortable. Flexible dentures will not cause sore spots due to negative reaction to acrylic resins and will absorb small amounts of water to make the denture more soft tissue compatible. Flexible dentures may be used as an alternate treatment plan in rehabilitating the anomalies such as ectodermal dysplasia.

**Disadvantages**
Flexible dentures generally not used for long-term restorations and is intended only for provisional or temporary applications. Flexible dentures tend to absorb the water content and will discolor often. Metal frame partial dentures remain the "standard" for long-term restorations. When grinding this prosthesis, proper ventilation, masks, and vacuum systems should be used and the procedure is technique sensitive. Extreme caution is necessary when processing to avoid skin contact with the heated sleeve, cartridge, furnace, heating bay, hot cartridge, injection insert, piston head adapter, hot flasks, and heat lamps.

**Pro-flex**

Pro-flex is the flexible denture base material which can be used for Full & Partial Flexible Dentures. Pickett Dental Laboratory has been offering Pro-flex full and partial flexible dentures since 1998. Pro-flex is easy to work with the quality, aesthetics and most importantly, the final results.

Pro-flex denture material be indicated in some of the Anatomical considerations-enables the material to effectively engage tooth and tissue undercuts. Also, Pro-flex is hypoallergenic -recommended for patients with known acrylic or metal sensitivities. Aesthetically the material is semi translucent, allowing the prosthetic to better blend with the colour of the natural gum tissue. With Pro-flex flexible partials, there are no metal clasps. Pro-flex full and partial flexible dentures are easily adjusted by the dentist.

Maxillary Pro-flex flexible denture

This material is tough, durable and dense, manufactured with thousands of pounds of pressure and vacuformed to fit the model perfectly. The final layer is a flexible resin composite that is firm enough to hold teeth under all occlusal loads, but flexible enough to allow delivery of the dental appliance without adjusting any undercuts. Simply warm the denture with running water to bring it up to body temperature before inserting it. Pro-flex partial and full dentures can be repaired, and the full dentures can be relined here at the laboratory with Pro-flex Soft Line material. Pro-flex flexible dentures are set up with the same quality teeth used in acrylic dentures and cast partials.
**Valplast**

Valplast is a flexible denture base resin that is ideal for partial dentures and unilateral restorations. The resin is a biocompatible nylon thermoplastic with unique physical and aesthetic properties that provides unlimited design versatility and eliminates the concern about acrylic allergies. The Valplast Flexible Partial allows the restoration to adapt to the constant movement and flexibility in your mouth. The flexibility, combined with strength and light weight, provides total comfort and great looks! The preparation is relatively simple. The Valplast partial is virtually invisible because there are no metal clasps and the material itself blends with the tissue in your mouth. While the cost is often higher than a partial made with visible metal clasps. The Valplast flexible partial involves only non-invasive procedures.

**Maxillry esthetic valplast denture**

Valplast denture showing flexibility

In case of patients who has Acrylic Allergies, History of partial frame breakage, Alternative to implants or fixed products and Presence of tori valplast flexible dentures can be indicated

**Special instructions for valplast flexible denture wearer.**

Patients should Clean Valplast flexible dentures regularly. Patients should Soak Valplast dentures in water for 10-15 minutes a day, or overnight at least three times a week. Loose particles can be removed with the use of a sonic denture cleaner, or by placing the appliance under running water. Brushing a Valplast appliance is not recommended as this may remove the polish and roughen the surface over time.

**Sunflex**

Sunflex Partial Dentures are made from a strong biocompatible nylon thermoplastic, and
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are unbreakable, yet lightweight and translucent... which allows natural tissue to show through. The sunflex flexible denture base materials are virtually Invisible, Unbreakable, Metal-Free, Lightweight and incredibly Comfortable.

Maxillary sunflex partial denture

The sunflex flexible denture base materials are exclusively used in partially edentulous arches because of its versatile advantages. Some of the advantages includes are no need of metal clasps - only tissue-colored clasps that blend with natural teeth, these are more stain-resistant than other flexible acrylics, these dentures has the perfect degree of flexibility, these can be relined and repaired, these dentures will not warp or become brittle, these flexible dentures stands aesthetically superior removable partial with full functionality and comfort, these dentures are ideal for patients considering a removable partial and those who do not want metal clasps and these dentures are perfect for patients that are allergic to monomer.

Conclusion

The fabrication of the optimum restoration is depending on the clinicians skills in selection of the type of the restorations which is required for the patient. The fabrication of prosthesis for the partially edentulous arches encountered a special challenge where many interferences, various path of placement, tilted teeth and deranged occlusion will complicate the treatment plan. Flexible dentures will stand in a superior position in fulfilling the various patients demand for more retentive and aesthetic treatment needs. Flexible dentures were previously selected by few patients and the clinician but now a days it has become an elective treatment option.
References

