Alternatives to Traditional Complete Dentures

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KEYWORDS

• Flangeless • Denture • Palateless • Removable prosthesis • Modified denture
• Edentulous • Ridge preservation

KEY POINTS

- The flangeless and palateless denture has been a controversial treatment modality because of the uncertainties surrounding its effectiveness on retention.
- Retention, border molding, diagnosis, and treatment planning are important in this treatment.
- The scrupulous detail and meticulous attention to protocol throughout the course of treatment with the flangeless denture cannot be overemphasized.
- Although alternatives to traditional complete dentures are not routinely used to make complete dentures, they have been successfully used for the treatment of edentulous patients.
- Alternatives to traditional complete dentures provide valuable prosthodontic treatment that should be considered in treating select edentulous patients.

INTRODUCTION

Alternative designs in traditional complete denture therapy have been controversial because of the uncertainties surrounding the effectiveness of retention of the prosthesis. The importance of retention for a maxillary complete denture has been well recognized in the literature. As early as the mid-twentieth century, crucial aspects of retention including atmospheric pressure, intimate tissue contact, and peripheral seal were identified.

Hardy and Kapur[1] and others[2–6] reported on the posterior palatal seal and its advantages related to placement and location. More recent publications[7–9] have discussed specifics of the palatal seal such as clinical determination, location, adaptation, anatomic structures, and the value of border molding to create a retentive seal. Border molding in the fabrication of complete dentures has been described by several investigators,[10–12] but the question remains as to how much a limited flange or a denture flange that is not border molded in the anterior vestibule truly affects the seal.

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The purpose of this article is to help answer this question through a literature update on specific alternative prostheses,[13–15] and to show how these alternatives are effectively used to treat edentulous patients (**Boxes 1** and **2**).

MODIFIED PALATELESS AND FLANGELESS REMOVABLE PROSTHESIS

After World War II, the evolution of autopolymerizing resins allowed the repair and modification of complete dentures and removable partial dentures without cumbersome processing techniques. Depending on the number and position of remaining teeth, a removable prosthesis can be made palateless. Removable partial dentures (RPDs) have been used for many years with flangeless tooth replacements.[16–19]

A key indication for a modified extension of prosthesis is when a labial flange is not needed because there is sufficient bone and lip support. In these instances, adding a buccal flange can distort the facial support and muscles of facial expression, limit function, and compromise aesthetics.

RPDs are designed with metal bases and reinforced acrylic pontics, tube teeth, and/or braided posts that typically do not incorporate a denture base flange; the denture teeth are set directly against the residual alveolar ridge or are placed directly on the metal base. In essence, there is no flange because the physiologic function and residual ridge does not require any additional support.

In these scenarios, the length of artificial teeth depends on the amount of existing interocclusal space. The width of artificial teeth varies from the perspective of facial/lip support.

Box 1
Chronologic importance of maxillary complete denture retention

1950s

Stamoulis: atmospheric pressure, intimate tissue contact, peripheral seal

Hardy: Posterior palatal seal; advantages, placement, location

1960s

Laney, Gonzalez: palatal relief and posterior palatal seal

1970s

Silverman: dimensions and displacement of posterior palatal seal

1980s

Ettinger: posterior palatal seal, a review

Calomeni: posterior palatal seal, location and preparation

1990s

Sykora: adaptation and shape

2000s

Kim: relining and dimensional accuracy

Rashedi: current concepts for determination

2010s

Perry: anatomy and physiology