QUESTION 2

How do I select an attachment for use in a removable partial denture or overdenture?

Background

Typical considerations when selecting an attachment for a removable partial denture or overdenture include the amount of interocclusal space available, the size and periodontal status of the abutment and the stress-breaking ability of the attachment. Other factors, such as retention, ease of use and anticipated lifespan of the attachment, should also be considered, and these factors are the focus of the discussion in this article. The 2 most commonly used dental attachments in our group prosthodontic practice are the Bredent and Locator attachments.

Attachment with a Removable Partial Denture

Bredent (Senden, Germany) manufactures a variety of styles of attachments suitable for use in many applications. One of the main benefits of the Bredent line of attachments is their reliability of retention and their ease of use. The retentive mechanism for these attachments is based on plastic female components (friction matrixes) that sit in metal housings in the removable denture. These friction matrixes are colour-coded: green for reduced-friction retention, yellow for regularfriction retention and red for high-friction retention. These plastic retentive components can easily be removed and replaced at chairside by the dental practitioner. A handful of the matrixes can be stocked at little cost and replaced as needed. The selection of a particular friction matrix depends on the design of the prosthesis, the number of abutments available and the patient's manual dexterity.

Case 1

The patient in case 1 wanted better retention and a more esthetic removable partial denture, and the Bredent Vario-Kugel-Snap Sagitall (VKS-SG) ball-and-socket stud-type attachment was selected. **Figure 1** illustrates the use of 4 "mini" Bredent VKS-SG attachments. **Figures 2** and **3** illustrate the removable partial denture in place. Because of the number of abutments and the patient's demonstrated ability to insert and remove the partial denture easily, the yellow (regular-friction) matrix was used.

Attachment with an Overdenture

The Locator attachment (manufactured by Zest Anchors, Inc., Escondido, Calif.) is a commonly used attachment in our group prosthodontic practice. It consists of a metal female component that is fixed intraorally and a nylon male component anchored in a metal housing in the denture base. It can be used either for tooth or implant applications. Like the Bredent attachments, the nylon male retention elements of the Locator system are colour-coded according to degree of retention (blue = 1.5 lb/3.3kg, pink = 3 lb/6.6 kg, clear = 5 lb/11 kg). A green retention element is used for abutments of varying degrees of angulation (10° to 20° angle). Furthermore, the Locator has a self-aligning design, whereby the male portion snaps into the female portion. Patients with this attachment find it very easy to insert and remove their dentures.

Finally, the Locator has a very low profile, so is an ideal choice if interarch space is limited. Like



Figure 1: Palatal view of the 4 mini Bredent Vario-Kugel-Snap attachments. Figure 2: Palata partial denture r

Figure 2: Palatal view of the removable partial denture retained with Bredent Vario-Kugel-Snap attachments.

Figure 3: Frontal view of the removable partial denture.

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Figure 4: The Locator core tool.



Figure 5: The Locator attachment in the tooth 23 root.



Figure 6: The blue (1.5-lb) male retentive element in the removable partial denture.

the friction matrixes in the Bredent attachment, the male retentive elements of the Locator attachment can be replaced easily, with minimal time and effort, with the Locator core tool (Fig. 4). The core tool in fact incorporates 3 tools in a single mechanism. The curved section of the tool, for removal of the male portion of the attachment, has a hook to catch and pull the nylon male liner out of the permanent metal housing. The middle section is the male seating tool, used to seat a replacement male portion into the metal housing. The third part of the tool is the abutment driver, for use in an implant application. Because of its retentive capacity, ease of use, ease of maintenance and ease of replacement of components, the Locator has been our attachment of choice in patients with overdentures.

Case 2

For case 2, the Locator attachment was used in a natural-tooth overdenture application. Tooth 23 was treated endodontically and prepared to accommodate the Locator attachment, which was cemented with C&B Metabond adhesive resin cement (Parkell, Inc., Edgewood, N.Y.) (Fig. 5). The male nylon component was then anchored in a metal housing in the denture base (Fig. 6). In this situation, the blue (1.5-lb) male retentive element was used.

Conclusion

Because of their retentive capacity, ease of use, versatility and lifespan, the Bredent line of attachments and the Locator attachment are the attachments of choice in our group prosthodontic practice.

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