An alternative impression technique for implant-retained overdentures

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High survival rates related to the use of mandibular implants in the edentulous jaws have been well documented in the literature.[1-3] Overdentures supported by 2 implants are highly successful in the edentulous mandible.[4] Both primary stress-bearing areas and implants provide support for the overdenture.[5] Therefore, it is essential to provide good adaptation of the denture base and peripheral seal at the borders for adequate tissue support. The overdenture impression should record the supporting soft-tissue areas simultaneously with accurate positioning of implant components.[6]

There are several definitive impression techniques to make impressions of edentulous arches. These techniques may be categorized as functional, mucostatic, or selective-pressure.[7-9] The frequently used techniques for implant-retained overdentures are the closed and open tray impression techniques.[10,11] Polyether or vinyl polysiloxane impression materials are generally used for these 2 techniques.[12,13]

The difference in mucosal resilience compared to the resilience of teeth has been considered an important factor for impressions made for complete and removable partial dentures. For implant-retained overdentures, it has been stated that the resilience difference between the mucosa and implant must be considered during selection of the attachment system.[14] Thus, the difference in resilience should be also considered for the impressions of implant-retained overdentures. The combined use of zinc oxide eugenol (ZOE) impression material in combination with elastomeric impression materials for implant-retained overdenture impressions may allow for recording the alveolar mucosa in a functional state and the implant components accurately. This article describes an alternative impression technique for implant-retained overdentures.

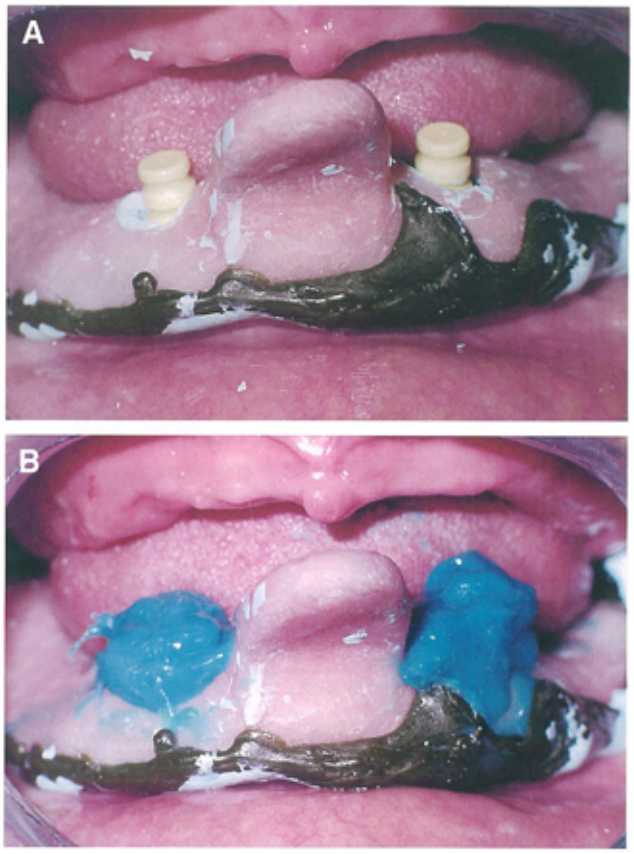

Fig. 1. A, Impression of edentulous areas with ZOE paste. **B,** Silicone impression material added through openings adjacent to implants.

PROCEDURE

1. Replace healing caps (Zimmer Dental Inc, San Diego, Calif) with ball abuments (Zimmer Dental). Make preliminary impressions of both arches with irreversible hydrocolloid (CA 37; Cavex Holland BV, Haarlem, Netherlands). Prepare the acrylic resin custom trays (Paladur; Heraeus Kulzer GmbH, Hanau, Germany) with 2 openings around the implants.
2. After bordermolding (Impression compound; Kerr Italia SpA, Salerno, Italy), make the impression of edentulous regions of the mandible with ZOE impression paste (Cavex Outline; Cavex Holland BV) using finger pressure (Fig. 1, *A*). Remove the mandibular tray from the mouth and clean excess impression paste from around implants. Place tray in the mouth again and ensure proper seating. Make the impression of implants by injecting low-viscosity vinyl polysiloxane impression material (Speedex; Coltene/Whaledent Inc, Cuyahoga Falls, Ohio) on and around the ball abutment transfers through the openings (Figs. 1, *B*, and 2).

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Fig. 2. Definitive impression with implants analogs in place.

3. Pour the cast with Type IV stone (Begostone; Bego, Bremen, Germany).

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