

Gingival augmentation for osseointegrated implant prostheses

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As experience with the prosthodontic aspects of osseointegration grows, it is apparent that not every patient can adapt to the prosthesis design. The hygiene-efficient elevated design can create speech problems in the maxillae from redirection of air and compromise of lip support in the mandible. Although most patients overcome initial problems with control of chewed food material, some will require prosthetic modifications to manage food impaction.

Inherent in the design of the implant-supported prosthesis is an access space apical to the cervical region of the displayed dentition (Fig. 1). The lip support normally afforded by a conventional denture flange is absent and can be cosmetically significant in profile, particularly in the mandibular arch. A false gingival veneer can be created to reestablish lip contour while allowing adequate access for hygiene.

METHOD

The implant abutments are blocked out lingually with a soft beading wax (Fig. 2). An elastic material (Impregum, Premier Dental Co., Norristown, Pa.) is injected into the labial sulcus around the implants and prosthesis (Fig. 3), and is border-molded while setting. The set material, when removed from the mouth, will have enough firmness and elastic memory to be poured without further backing (Fig. 4).

An autopolymerizing acrylic resin veneer is created in the master cast with resin incorporated in all cast undercuts (Fig. 5). The artificial stone cast is removed from the resin segmentally or by shell blasting, and the

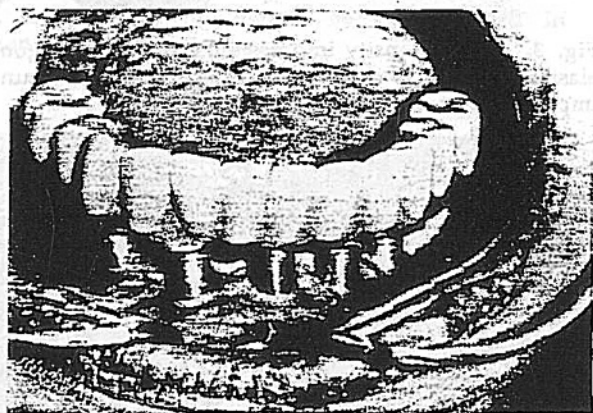


Fig. 1. Implant access region below prosthetic dentition allows for ease of hygiene procedures. This region can also provide a space for lower lip collapse in certain individuals.

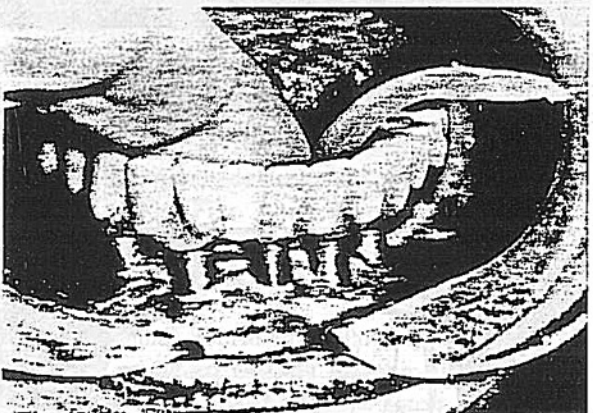


Fig. 2. Implant abutments are blocked out lingually with a soft beading wax.

abutment regions are relieved so that no metal undercuts are engaged and tissue contact is passive. The distal extensions of resin around the canine and premolar denture teeth are left intact so that the veneer will snap into place engaging these undercuts only (Fig. 6).

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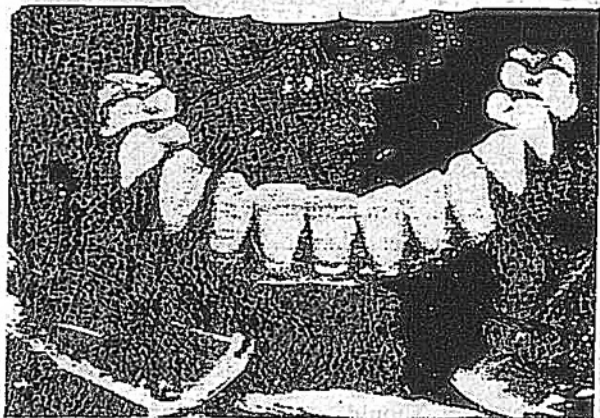


Fig. 13. Overdenture for patient in Fig. 12 with permanent soft reline supported by six osseointegrated fixtures. Overdenture was necessary to assure patient satisfaction with implant service.

tongue impingement or the uneven palatal surfaces created. Overdenture therapy may be advisable if this problem becomes intractable.

Food entrapment

For patients unable to cope with food impaction, a similar veneering procedure can be attempted. Most

patients, however, will require overdenture therapy to deal adequately with dead spaces of the subframework (Figs. 12 and 13). Patient expectations should be evaluated and modified during the interview phase of therapy so that potential problems with food control are understood initially.

SUMMARY

A method of solving some problems inherent with osseointegrated implant prosthesis has been presented. A removable flange can reestablish lip support or block escape of unwanted air while allowing the access necessary for competent hygiene procedures. Overdentures may be indicated to provide the prosthetic gingival surface necessary for adequate food control or speech.

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Elimination of mandibular labial undercut with autogenous bone graft from a maxillary tuberosity

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Edentulous patients who have significant mandibular labial undercuts may present problems in constructing dentures that will provide adequate function and comfort. Undercuts of edentulous alveolar ridges can be treated by (1) surgical reduction of the overhanging alveolar crest of bone or (2) filling the undercut region with a bone graft, cartilage, or some biologically acceptable foreign material.

Starshak and Sanders¹ state that with a broad alveolar

process, the patient can afford to sacrifice a little overhanging buccal bone. Even if the posterior alveolar is narrow, the support offered by the oblique line will compensate for the narrow ridge. Anteriorly, the problem is more complex because if the anterior residual alveolar ridge is reduced it must bear more of the masticatory load and eventually will undergo additional resorption. Removing anterior undercuts without attempting to eliminate them with bone can cause future problems for the patient, such as accelerated resorption of the mandibular alveolar ridge, difficulty in mastication and speaking due to a limited denture base, and the necessity for further reconstruction of the denture. The blockout of undercuts will result in a decreased

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