No Attached Keratinized Gingivama?

A Clinical Solution for the Clinician

INTRODUCTION

Implant dentistry is becoming an important method of restoring missing teeth with function and aesthetics. Our patients are requesting and even demanding this type of therapy. Our modern materials and methods have made implant dentistry predictable with long-term positive prognoses. The surgical placement of dental implants involves a comprehensive understanding of both the surgical and prosthetic applications. However, today’s implant dentistry is prosthetically- and patient-driven, so there needs to be a clear visualization of the completed restorative case prior to any surgical intervention.

Anatomic considerations need to be understood, including the position of the nerves, sinuses, and undercuts (Figures 1 and 2). The thickness and angulation of bone must be studied, and the integrity of the buccal and palatal or lingual plates clearly understood. Smile design and emergence profile has developed into an art unto itself.

Determining the position of the mucogingival junction prior to dental implant placement is critical to an ideal final result. If there is not a minimum of 3.0 mm of attached gingiva, a flapless technique that has become popular for implant placement should be replaced by the more conventional flap procedure.

This clinical case report will illustrate the use of a flap procedure in the placement of dental implants, with the subsequent creation of attached gingiva where there was only mucosal tissue.

Keys to Success

Prior to surgical placement of any dental implant, limitations need to be recognized. Implant design and technology, such as digital radiography, has allowed visualization of the underlying anatomy more effectively. However, soft-tissue considerations cannot be forgotten. Periodontal deficiencies, such as a lack of keratinized or attached gingiva, need to be determined and appropriately treated. This may result in the requirement for flap procedures prior to implant placement and creation of attached gingiva.

Success with dental implants is based on the need to achieve primary stabilization and conventional flap procedures are necessary. Regardless of the techniques used (flap or flapless), local infiltration of the surgical site is followed by creation of the osteotomy sites for placement of dental implants. A pilot drill, usually 2.0 mm or so, is used to create the proper angles and determines final depth. Digital radiographs are used to determine ideal mesial-distal angulation and vertical positioning. Following the pilot drill, wider diameter drills create the final bone opening to accept the properly predetermined implant size. Longer, wider implants provide more sur-

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Periodontal Considerations

Periodontal considerations really need to be understood. Circumstances arise when following tooth loss, the mucogingival junction is right at the crest of the edentulous ridge (Figure 3). This results in a lack of attached gingiva in the place where it is probably most needed. Periodontal procedures should be considered prior to implant placement. Stable gingiva margins are essential to the health of dental implants. The attached gingival tissue provides protection to external injury and is a critical component to proper tissue healing around dental implants. Without this keratinized tissue, food impaction and tissue shrinkage may occur which may affect long term bone stability and aesthetics.7 Attached gingiva is important when the patient’s plaque control is compromised, as plaque may invaginate to the implant surface. When situa-

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tions arise where the mucosal tissue is near or at the crest of an edentulous ridge, which is common following tooth loss, apically repositioned flaps following dental implant surgical placement may create a zone of attached gingiva. A healthy zone of keratinized mucosa around dental implants facilitates restorative procedures and increases the patient’s ability to control plaque and makes professional maintenance routine.

If not careful, keratinized tissue can also be lost during the initial surgical phase of implant placement due to the crestal incision made for flap preparation and also later as the result of second phase uncovering of the buried dental implant. The lack of keratinized tissue may result in the eventual lack of circumferential seal by the dense connective tissue collar created by the healing abutments during implant healing. This may result in a problematic environment for bacteria penetration and can compromise the long-term health and stability of the dental implants.

**Importance of Keratinized Attached Gingiva**

Reconstruction of keratinized mucosa in implant sites is an important facet of today’s dental implant surgical procedures. The establishment of healthy pink tissue around implants results in more predictable maintenance and improved aesthetics.

Keratinized attached gingiva protects the tissue around teeth and implants from trauma. The tight contact of the keratinized attached gingiva which is from the gingival margin to the nonkeratinized free gingival margin.
The quality of life of many of our patients can be dramatically improved through well-done implant dentistry. ◆

References

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Dental implants provide the opportunity to fill edentulous spaces without damaging or compromising adjacent tooth structure. Not preparing healthy tooth structure is a huge advantage to the predictable treatment using dental implants. Implant retained crowns, when designed correctly, provide the patient stability and outstanding function. Tooth by tooth replacement and emergence profile allow simple cleaning with floss, which is much simpler and effective than hygiene around and under fixed bridges.

Replacement of missing teeth with dental implants is predictable and has become commonplace. Patients present to our practices with information gathered from many sources, including other medical specialists and even the Internet. They have often educated themselves on the benefits of implant dentistry. However, some cases present themselves that may be more difficult for the practicing dentists than others. Bone contour, tooth position, vital anatomy, and the lack of attached gingival, all need to be carefully evaluated to ensure a high quality functional and aesthetic final result. Dental implants can be a predictable way to improve the patient’s smile and function. Over time there may be a significant cost savings since they are safe and highly successful in most candidates.