



Mini Review

Soft Tissue Rehabilitation for Implants in Esthetic Zone

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ABSTRACT

A healthy and stable implant/soft tissue interface may be achieved by implementing a suitable width of keratinized tissue, which is crucial for the implant's long-term effectiveness. The amount of connected gingival tissue is increased, and clinical attachment loss is avoided, by using several grafts and procedures to broaden the keratinized tissue around dental implants. This plays a significant role in maxillary anterior alveolar defects which are undergoing implant rehabilitation. Various treatment options have been established to accommodate a possible augmentation pre or post implant placement for the longevity of the implant.

Keywords: Anterior esthetics, Peri implant health, Soft tissue augmentation

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Introduction:

Healthy soft tissue around the implant is essential for a good cosmetic finish of the implant or repair. Animal studies have firmly shown the existence of a soft tissue seal or cuff around dental implants and abutments as well as its function in the body's defence against infection. It's crucial to develop a sufficient soft tissue seal around dental implants and restorations in order to maintain stable peri-implant health over the long term. The ultimate gingival margin is frequently determined by the consistent size of the soft tissue's biological breadth. It follows that the final location of the gingival edge is determined by the position and stability of the alveolar bone ridge surrounding dental implants. This is an important aspect for the physician to recognise and consider while doing dental implant restorations in the aesthetic zone.

According to the information that is now available, peri-implant soft tissue health may be preserved with proper oral hygiene regardless of the presence of a keratinized gingival tissue zone around the implant or restoration. In actuality, without the protection of a strip of keratinized gingival tissue, maintaining excellent oral hygiene around dental restorations is quite challenging. The significant association between dental plaque and peri-implant inflammation was further established by studies on peri-implantitis and peri-implant mucositis. It is essential that a stringent regimen of plaque management and monitoring be included in the long-term maintenance of dental implants and implant supported dental restorations.^[1]

Discussion

A clinical decision-tree for solving the cosmetic difficulty with anterior maxillary implants as follows. Based on the preoperative assessment of alveolar bone width and the available bone width following implant placement at the anterior maxillary edentulous site, the treatment plan may vary. If the buccal bone width is greater than 2 mm post implant placement an additional Subepithelial connective tissue graft is placed during the first surgery for a clinical scenario with significant soft tissue augmentation,^[2] whereas roll flap technique or envelope flap technique is followed during second surgery if the need for soft tissue contouring is less than 1 mm. ^[3]If the alveolar bone width is inadequate with available buccal bone width less than 2mm post implant placement, ridge augmentation is suggested simultaneously using guided bone regeneration or block graft placement prior to implant surgical placement for an enhanced outcome towards horizontal augmentation. ^[4]

Based on the clinical situation, various methods might be employed to increase the quantity of soft tissue either before or after implant placement. Techniques or grafts like acellular dermal matrix combined with an envelope flap or pouch (tunnel method),^[5] connective tissue graft (CTG) or acellular dermal matrix with a coronally advanced flap (CAF), free gingival graft can be used.

Pediculated connective tissue graft (PCTG):Connective tissue grafts have been utilized to enhance the contours of the alveolar ridge and to cover the roots of several neighboring gingival recessions associated with gains in the CAL and in the width of the keratinize tissue. These surgical treatments, when recommended and carried out correctly, can result in stable and considerable increases in soft tissue volume and shape, which can help with the effective management of implant sites' aesthetics.^[6]

Connective tissue graft acellular dermal matrix in combination with an envelope flap or pouch: By doing away with the requirement for vertical releasing incisions, this approach maximizes vascularity. Additionally, this treatment is a great way to preserve the papilla's positional height when nearby recession flaws are present and connected by an aesthetic papilla. Subepithelial or acellular collagen matrix type of grafts can be placed in the most ideal and vascular sub-gingival environment thanks to this flap design and partial-thickness dissection.^[7]

Free gingival graft: Autogenous: FGG is frequently used in mucogingival operations to enhance the quantity of keratinized tissue around implants and is regarded as a dependable and effective method for supplementing peri-implant soft tissue deficiencies.^[8]

Treatment planning for soft tissue rehabilitation: To appropriately construct an implant case that will produce an attractive outcome, a full 3-dimensional preoperative examination of the edentulous location is essential. The volumes of the soft tissue and bone should be considered as diagnostic factors before surgery.^[9,10] An implant has to be encircled by between 1.8 and 2.0 mm of important bone for long-term durability of aesthetics. Hard tissue grafting is necessary due to insufficient bone. Sites should be assessed for their soft tissue characteristics as well. With augmentation, a difference in soft tissue shapes with neighboring teeth can be corrected.

Conclusion

Dental implants have long been recognised as a reliable therapeutic option with excellent clinical success rates. The formation and preservation of peri-implant soft tissue as well as aesthetic factors for implant restorations have attracted increasing attention throughout time. To get a good, aesthetically pleasing result, implant dentistry practitioners need to achieve more than simply implant osseointegration. Clinicians may fulfil patients' rising aesthetic needs by being aware of the diversity of procedures that are available and using good planning. The requirement for soft tissue augmentation treatments surrounding dental implants in the anterior aesthetic zone, however, continues to be debatable and lacks literature support. For a more accurate evaluation of these surgical treatments, long-term clinical studies are required.

Authors' contribution

Harini Sri K: Manuscript editing, Literature search, data collection

Harshini Nivetha E: Data Analysis, manuscript drafting

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Conflict of interest

The authors have nothing to disclose or any conflicts of interest.

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