Soft Tissue Surgery for Implants

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KEYWORDS

- Subepithelial connective tissue graft • Epithelial connective tissue graft
- Gingival biotype • Pouch technique • VIP connective tissue graft
- Free subepithelial connective tissue graft
- Single-incision technique for harvest of subepithelial connective tissue graft
- Two-incision technique for harvest of subepithelial connective tissue graft

KEY POINTS

- Improving the quality of soft tissue around dental implants improves the final esthetic outcome.
- Soft tissue grafts play an integral role in increasing volume and morphology of attached gingiva.
- The pouch technique is ideal for augmentation of the soft tissue at the time of immediate implant placement.
- The VIP-CT graft is ideal augmentation of horizontal and vertical soft tissue augmentation.

INTRODUCTION

There are two common reasons for implant surgery: esthetics and function. In both cases, the treatment is aimed at re-establishing the missing soft and hard tissue architecture. Implant surgery success is no longer judged by the ability to osseointegrate, but rather by the ability of the clinicians involved in delivering care to predictably provide an acceptable esthetic result that is stable long-term under functional load.

It has long been established that appropriate quality and quantity of soft tissue provides the most optimal peri-implant environment. Attached tissue around dental implants increases soft tissue stability and decreases the incidence of peri-implant mucositis. Having an adequate band and thickness of soft tissue in the esthetic zone is often needed to provide the much-needed optimal esthetic outcome that allows the final restoration to seamlessly blend with the surrounding dentition.[1]

The authors have nothing to disclose.

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GINGIVAL BIOTYPE

Esthetic outcomes in implant dentistry strongly correlate with the patient's gingival biotype. The gingival perspective depends on gingival complex, tooth morphology, contact points, hard and soft tissue considerations, periodontal bioform, and biotype. Two distinct biotypes have been described by Olsson and Lindhe[2]: thin scalloped and thick flat. There are three key areas of variation between the two biotypes and these include differences in soft tissue, bone, and teeth morphology. Determination of biotypes in a specific individual is controversial and can be quite challenging, especially because parameters used for assessment are often subjective. Thus, use of objective criteria is recommended and combining direct measurement of soft tissue thickness and tooth morphology can aid in the determination and classification.

Thin Scalloped Gingival Biotype

The bony and soft tissue architecture tends to be highly scalloped, the soft tissue is thin, and this type of tissue reacts to insult with recession (Fig. 1). The underlying buccal plate tends to be thin with frequent fenestration and dehiscence type of defects. The bony architecture tends to undergo extensive remodeling after extraction of teeth including increased loss of height of the buccal plate and socket dimension compared with patients with a thicker buccal plate. The teeth tend to be more triangular in shape with narrow contact areas located in the incisal one-third and the crowns at the cervical area are either flat or have a subtle convexity with a flat emergence profile.[3]

Thick Flat Gingival Biotype

The bony and soft tissue architecture tends to be flat with short interdental papillae, supported further by a dense and thick band of attached tissue (Fig. 2). There is dense fibrotic tissue, and this kind of soft tissue reacts to insult with pocket formation rather than recession. The underlying bony architecture is thick and rarely has dehiscences or fenestrations. The thick plate tends to undergo lesser remodeling after surgical procedures. The teeth tend to be squarer in shape with long contact areas extending to the cervical one-third. The emergence profile tends to be pronounced.

There is general consensus that the addition of soft tissue graft to the surgical implant protocol in patients with thin scalloped biotype increases gingival thickness and improves esthetic outcomes, especially at the buccal gingival margin level. It is likely to even improve longer-term soft tissue stability.[4]

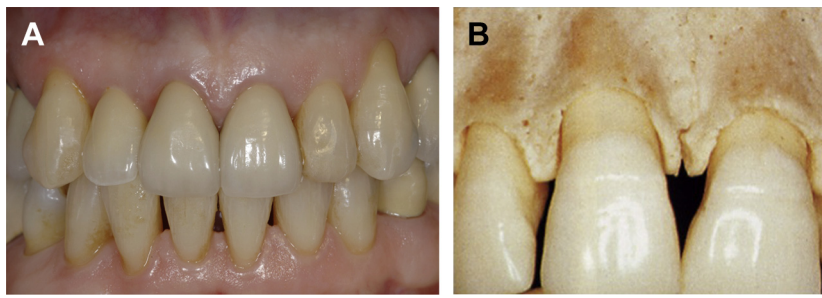

Fig. 1. (*A*) Thin scalloped gingival biotype with triangular-shaped teeth. (*B*) Thin biotype with thin buccal plate and fenestrations. Also note the scalloping of the bony architecture.