COMMENTARY

Managing the Peri-implant Mucosa: A Clinically Reliable Method for Optimizing Soft Tissue Contours and Emergence Profile

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As practitioners, we cannot ignore the influence of soft tissue contours on the overall esthetic outcome of anterior dental implant restorations. Tooth loss results in soft tissue collapse and bone resorption with the end result being flat, non-anatomical contours.[1] Therefore, preservation of the existing soft and hard tissue contours should be the goal of esthetic patient management.[2] The final esthetic result is a combination of proper implant positioning, soft tissue biotype, appropriate bone levels on adjacent teeth, and developing an appropriate emergence profile of the soft tissue via the interim provisional restoration. Unlike techniques used for maintaining the bony architecture, which are exclusively surgical, maintaining the gingival architecture is governed principally by prosthetic concepts.[3] A properly contoured provisional prosthesis is the best approach for sculpting the peri-implant soft tissue or maintaining the existing soft tissue architecture whenever possible by means of immediate provisionalization. The challenge we as clinicians face is how to best transfer this developed soft tissue architecture to the cast, thereby duplicating the emergence profile of the provisional prosthesis into the final prosthesis.[4]

In this article,[5] Parpaiola and Sbricoli, et al confirm the importance of previously mentioned factors on the final esthetic success, and describe a predictable technique for transferring the newly developed soft tissue emergence profile to the master cast and subsequent definitive implant restoration. Several techniques have been described in the literature for capturing this soft tissue contour, but the two most commonly used are impression of the provisional restoration in situ [4,6] and indirectly replicating the subgingival contours of the provisional restoration via impression material and auto-polymerizing acrylic resin.[7,8] Some practitioners however, prefer to take standard impressions using round (non-anatomical) stock impression abutments for sake of ease, but typically do not replicate the three-dimensional shape of the natural cervical tooth contour. Additionally, tissue may collapse rather quickly when left unsupported resulting in inaccurate reproduction of the soft issues. Subsequently, practitioners may allow the laboratory technician to sculpt the working cast to mimic the proper gingival contours around the implant abutment/crown restoration. However, there are potential inherent problems with this technique. The technician does not know the soft tissue biotype present resulting in the possible risk of soft tissue recession if the definitive restoration is over-contoured on the facial surface causing excessive pressure. Additionally, if the soft tissue was not supported adequately during the impression phase, the definitive implant crown may have an improperly placed interproximal contact resulting in an open gingival embrasure or excessive pressure on the interproximal papillae. Thus, in cases where esthetics is of upmost importance or the soft tissue is "at risk" for possible collapse with standard implant fixture level impression techniques, capturing the soft tissue profile intra-orally or using a technique similar to that described in this article[5] should be used.

One point of concern not addressed by this author is the fact that tissue can collapse quite rapidly (when left unsupported) while the practitioner/assistant is in the lab fabricating the customized impression coping. To expedite the fabrication of this customized impression coping, the practitioner or clinical assistant can embed a laboratory analogue

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into laboratory plaster prior to the appointment. Additionally, if concerned about tissue collapse, an impression post can be inserted into the implant fixture and flowable composite resin syringed around the coping to fill the space to the crest of the tissue, and cured to maintain the soft tissue profile temporarily. Lastly, if the provisional restoration was fabricated indirectly and the resulting soft tissue contour does not require further modification, one can fabricate the customized impression coping on the provisional cast thereby saving costly chair time.

Parpaiola and Sbricoli, et al[5] did a nice job overall in describing this predictable approach to capturing the developed soft tissue profile into the final impression. Once poured, the master cast will accurately replicate the peri-implant soft tissues as found intra-orally, and allow for fabrication of the definitive restoration that will blend harmoniously within the surrounding soft tissue architecture.

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