Guest Editorial *Microgap or Macrogap: Significance of the Marginal Discrepancy Between Implant Crown and Abutment*

There has been an abundance of discussion about the "microgap" in implant dentistry, both in the literature and at scientific meetings. It appears to be accepted that the microgap between the top of the implant and the abutment is a space for bacteria to colonize and create an irritant that results in bone loss at the coronal aspect of implants. This bone loss has been referred to as "dive back" and appears to be acceptable to the first thread of the dental implant.

As a prosthodontist in private practice, my observations regarding bone dive back do *not* support the microgap theory. Bone loss to the first thread of implants restored in my practice over an 11-year period has for the most part been avoided, and success rates have been higher than those reported in the literature.

If all restored implants have an "unavoidable" microgap, why do the majority of implants in my practice show no signs of dive back? The answer may lie in the location of the "macrogap," the marginal discrepancy of the crown to the finish line of the abutment. Its location relative to the bone is what I believe to be the true bone irritant. I try to keep this macrogap as far coronal as possible. The average microgap of most implant systems is about 5 μm, compared to an average of 50 μm for the macrogap created by a crown margin. This tenfold greater gap has the potential to harbor more bacteria and illicit a more significant inflammatory response.

Unfortunately, when restoring implants, it has become common prosthodontic practice to ignore the rules followed when determining finish line (crown margin) location. Impinging on the biologic width (ie, gingival attachment) of a natural tooth creates a predictable inflammatory response that is well-understood by most restorative clinicians. For some reason, these principles have been forgotten with implant prosthodontics. Many implant manufacturers produce prefabricated abutments with finish lines coincident with the top of the implant. Laboratory technicians also determine finish line location on custom abutments. This often creates crown margins that are more than 3 mm subgingival.

Consistently following established prosthodontic principles for tooth preparation and finish line location should limit how subgingival a crown margin is. Keeping the macrogap away from the level of bone can only have a positive effect on bone levels and ultimately improve long-term implant success.

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