## COMMENTARY

# Biotype Change for the Esthetic Rehabilitation of the Smile[1]

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The terms "thick biotype" and "thin biotype" that are used in the literature[2] and in the lecture room have become, through repetition, somewhat inflexible terms. They are used didactically and clinically starting with the initial patient examination and right through the diagnosis and final restoration. Although not as etched in stone as terms like "mesial" and "distal," we currently see certain treatments not being considered once a case is "labeled" thick or thin. The authors of this article are to be complimented for a thorough highly self-critiqued case report[1] revealing that a thick periodontium can be modified by a "subtractive" surgical procedure, just as a thin periodontium can be modified by an "additive" soft and/or hard tissue augmentation.

It should be pointed out that in reality the term "biotype" is (and has been) a term used inappropriately but is unfortunately commonly accepted "dental terminology." When referring to thick or thin periodontium, "phenotype" is the appropriate term to use. Phenotype is the physical appearance of an organism as distinguished from its genetic makeup. The phenotype of an organism depends on which genes are dominant and the interaction between genes and the environment. Biotype is a group of organisms having the same genotype. Breeds of animals are obvious biotypes (such as man).

Although the "Clinical Significance"[1] as written by the authors clearly describes this paper, we must recognize the overwhelming importance of their comments made regarding the issue of the interdisciplinary team or lack of it in this case prior to the authors seeing the patient. They correctly present both in the "Case Report" and "Discussion" sections, the failure of interdisciplinary planning prior to the initiation of orthodontic therapy. Although not implicating orthodontists as there is no indication of who did the initial "orthodontic treatment," it is clear given the state of the art in dentistry today that a case like this should not begin without consultation with both the periodontist and restorative dentist. The case will not be labeled in this commentary as below the standard of care, as the patient being 54 years of age could certainly have received this care 30 to 40 years ago. We have recognized for many years through the comments of Ralph O'Connor,[3] his team, and many others[4] across the globe that a failure to properly plan is clearly not acceptable today and quite frankly can be harmful to patients.

In this particular case, should the patient have allowed the authors to have performed "limited orthodontic treatment," she would have facilitated a much more conservative treatment regimen with likely better longevity. The presented patient is a 54-year-old nonsmoking female who can expect 30–40 more years of life, assuming she has relatively good health. Should she have allowed minimal orthodontics with some intrusion and other minor treatment, possibly facilitated with temporary anchorage devices (TADs) to speed treatment, she would today have much more conservative restorations in enamel-bonded porcelain veneers. Instead, she has received restorations prepared on root surfaces that were cemented and not enamel-bonded. Although (we) periodontists have been well schooled by our restorative colleagues to not "wade too deeply" into commenting about the restoration of teeth, we do know that restorations on roots are never preferred over restorations in enamel as nothing good happens structurally, pulpally, or periodontally in those cases. It is well documented that cemented veneers, as in this case, do not possess resistance to

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marginal caries or retention as compared with restorations bonded in enamel.[5] In this case with altered occlusal relationships from canine substitution, flexure of the restored teeth and loss of a restoration may also be a greater risk.

This paper also discusses the importance of the biological width associated with surgical crown lengthening. Although the authors do recognize the work of Garguilo and colleagues[6] and they state that they left "at least 3 mm from the gingival margin" to the crest of bone, we must realize that the management of biological width from one patient to another may differ greatly. The work of Vacek and colleagues[7] clearly indicates a great range in the biological width, and surgeons must determine this accurately before surgery is commenced and not use an "average" dimension.

Great care must also be taken regarding when to commence restorative care after crown lengthening, especially when it is done on root surfaces. Although 12 weeks was acceptable in this patient and likely in others, it may take many more months before restorative therapy should be commenced.[8] The patient may need to wait and be in provisional for some time until a healthy probe depth of at least 1 mm has formed.

In conclusion, although phenotype (biotype) modification is a clinical reality, clinicians must recognize the complexities that may be involved. The authors acknowledged this when they stated in their conclusion: "A comprehensive and interdisciplinary approach is often necessary to achieve optimal results." This "approach" is not "often necessary" but is always required by dentists for every case. As doctors, the responsibility is also upon our shoulders to not only proceed in such a manner but to completely inform the patient of risks both in the present and in the future regarding their choices. Clinicians must build value in a patient's mind before patients simply "reject" care. We have that obligation, but fortunately, we still have the right to refuse to treat if we believe it is not in the patient's best interests or we would not have it done to ourselves.

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