



### F30 Violating the “Biologic Width” — Is It Worth It?

Gregory S. Golden, DDS\*, 8577 Haven Ave, Ste 105, Rancho Cucamonga, CA 91730

After attending this presentation, attendees will comprehend the importance of the natural biologic width of gingival attachment that exists in human dentition, and why it is necessary to determine its actual dimensions prior to crown lengthening procedures. Violation of the biologic width leads to post-operative gingival hyperplasia, bleeding, and severe pain.

This presentation will impact the forensic science community by educating odontologists engaged in civil dental malpractice case review and establishing the criteria for understanding the importance of maintaining the biological width, accurate documentation, and record keeping during their own general and prosthetic work, and assist in the civil litigation cases they may review in the course of forensic investigation of dental malpractice. A case presentation will photographically depict and verbally describe the events and procedures leading to a failed prosthetic reconstructive result, investigation of the post-operative consequences with a conclusion of gross negligence and perjury by the defendant, and resolution of the treatment performed by the defendant.

Traditional crown lengthening is a frequent procedure used to reduce excessive gingival display (gummy smile).<sup>1,2</sup> Treatment involves close coordination between the treating restorative dentist and the periodontist in order to protect the biologic width of the connective tissue attachment. This is pre-determined by sulcus depth probing wherein the biologic width is sounded and a periodontal flap is used to expose the root surfaces and alveolar bone.<sup>2,3</sup> Bone is then removed and the gingiva repositioned according to the appropriate width of the attachment.<sup>4,5</sup>

A 39-year-old female patient consulted a well-known and highly profiled cosmetic dentist from Orange County, California, for treatment of her gummy smile and repair of a discolored front tooth which had an unsightly fracture sustained as a teenager. The dentist then proceeded to complete 3mm gingival recontouring by laser surgery and preparation of 22 teeth in two hours and forty minutes, resulting in severe pain in several of the patient's teeth. Following a series of unsuccessful subsequent appointments, the patient and her husband determined that they should seek second opinions from several specialists in the area. It was concluded that not only were several teeth over-prepped, which required eight root canals to alleviate pain, all crowns needed to be removed and replaced after correct crown lengthening, along with correction of a malocclusion created by the original restorations.

The litigation by binding arbitration occurred over seven days, wherein experts from both plaintiff and defendant testified to their opinions. During testimony by the defendant, it was found that records were falsified and that pre-treatment and post-treatment photos and models had been purposely destroyed by the defendant.<sup>6</sup> Subsequent damages award, current and future economic loss, and court costs were given to the plaintiff in excess of \$700,000.

This case study is an example of what may occur after neglecting the importance of the biologic width in prosthetic and reconstructive cosmetic dentistry, and the need for maintaining accurate records.

#### References:

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4. Becker W, Ochsenbein C, Becker BE, Crown Lengthening; the Periodontal Restorative Connection. *J Comp Cont Ed* 239-40, 1998
5. Hempton TJ, Dominici JT, Contemporary Crown-Lengthening Therapy; a Review. *JADA* 141:647-655, 2010
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#### Civil Litigation, Dental Malpractice, Forensic Odontology