

CLINICAL CROWN LENGTHENING

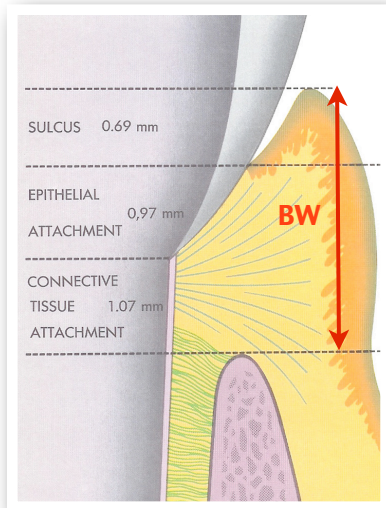
Clinical crown lengthening is the removal of bone and soft tissue from around a tooth in order to expose more of the tooth. This can be done for two primary reasons: aesthetics, or prosthetics. Although these two types of surgery have been categorized separately, the two often overlap, as you will see in the cases presented below.

Aesthetically lengthening teeth does not always require the fabrication of any sort of restoration post crown lengthening surgery.

Prosthetic, or functional, crown lengthening surgery is performed with the understanding that a new restoration, usually a full coverage crown, will be used to restore the function of the tooth or teeth in question.

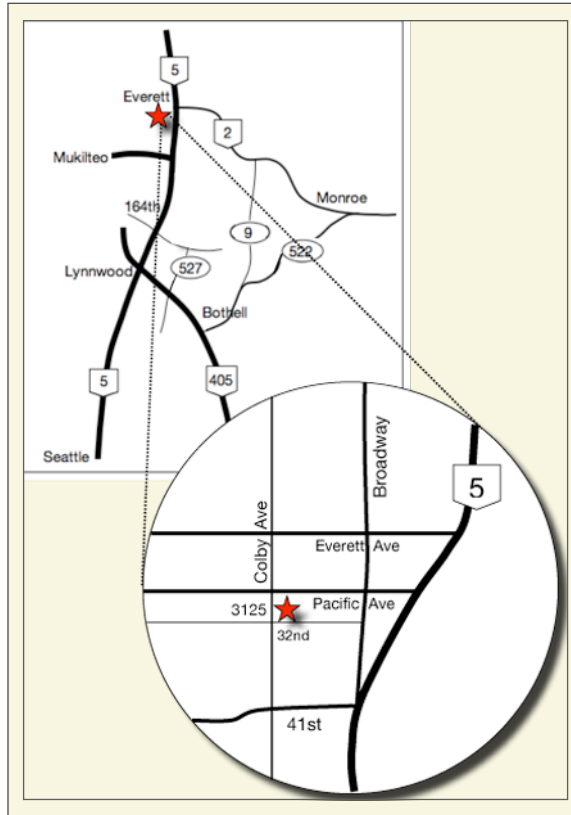
This issue of ProbeTips will explore these two types of surgery and hopefully guide the clinician in referring patients when necessary.

Of fundamental importance is understanding biologic width. Biologic width (BW) is the genetically predetermined distance that the gingiva maintains over the bone, from free gingival margin to osseous crest. Although this dimension varies per patient, it is generally 3mm in thickness, as illustrated in the diagram.



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PROBE TIPS

A QUARTERLY PERIODONTAL
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Clinical Crown Lengthening

GENERAL CONSIDERATIONS

There are several factors which limit the use of clinical crown lengthening surgery in the face of more stable and predictable restorations like a fixed partial denture, or dental implants.

1. Crown : Root ratio
2. Root shape and surface area
3. Root trunk length to furcation entrances (lingual/palatal entrances are more apical)
4. Pristine healthy adjacent teeth
5. Aesthetic compromise

If any of the above parameters are impinged upon (i.e. the new crown length will be greater than the root length, the root is small or conical in shape, the entrances to furcations are very near the osseous crest, or support will be lost from adjacent healthy teeth which may also pose an aesthetic compromise), then it is appropriate to consider other restorative options listed above.

AESTHETIC CROWN LENGTHENING

Problem: Gummy Smile

General Causes: Passive eruption of the teeth, Super-eruption of the teeth, Short clinical crowns or tooth wear, Excessive maxillary dimension of facial bone vertically, Short upper lip, Hypermobile upper lip.

Treatment: Eruption of the teeth or short clinical crowns can be corrected with crown lengthening as depicted in the case that follows. For the other causes of a 'gummy smile', either orthognathic surgery or plastic surgery are required to alter the proportions of the tissues.

Case No. 1: In this case, passive eruption has kept the bone levels coincident with the CEJ, instead of an average 3mm apical to the CEJ. Once the

bone levels are corrected, the newly sculpted gingival tissues will maintain their genetically predetermined distance from the bone, usually approximately 3mm (i.e. Biologic Width). No restorations are required.

Case No 1.

Before



After



PROSTHETIC CROWN LENGTHENING

Problem: Subgingival Restorative Margin/Lack of Ferrule

General Causes: Caries or Crown Fracture, Super-eruption of the teeth, Short clinical crowns or tooth wear

Treatment: Subgingival restorative margins can be corrected with crown lengthening as depicted in the case that follows.

Case No. 2: Teeth which are super-erupted (or similarly teeth which just have short clinical crowns or significant tooth wear), will require restorations to cover the newly exposed root surfaces and provide an aesthetic outcome. Tooth #11 has a long root and will tolerate surgery well in preparation for fabrication of a survey crown under the planned removable partial denture.

Case No 2.



Before

After



REFERENCES

- Clinical Periodontology and Implant Dentistry.* Lindhe et al. 4th Ed. 2003.
Gargiulo, et al. Oral Surg Oral Med Oral Path. 1961.