Issue 2

April, 2004

The Examiner

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Multidisciplinary Treatment of The Anterior Dentition

The Dental Makeover

The new trends of self-improvement have reached immeasurable levels in our culture. Weight loss programs are abundant and more people are jumping on the bandwagon of the image enhancement frenzy fueled by many television shows that focus on the immediate gratification of plastic surgery and esthetic dentistry. However, large segments of the population are still unaware of the impact that esthetic dentistry can have on their looks and lives. The dental professional is often guilty of not communicating and educating the patients of his ability to transform their smiles with minimal invasive procedures. Smile evaluation questionnaires should become part of the initial patient interview alongside with the medical health history forms. The questionnaire can probe the level of the patient's concern with his smile in a non-intrusive fashion and will open the door to further discussions regarding image improvement.

***Gingival Considerations in Smile Reconstruction*:**

The gingiva is an integral part of the smile element that is often neglected in the rush to restore the anterior dentition. In addition to evaluating the lip line, teeth color, shape and position, the following elements related to the dental-gingival complex have to be assessed:

1. The color, thickness and contour of the gingiva.
2. The amount of gingiva visible at smile and repose.
3. The length of the papillae.
4. Crowns width to length ratios.
5. The position of the free gingival margin.
6. The position of the alveolar crest.

The Gummy Smile:

A smile can be described as ''gummy'' if excessive gingival tissues are visible at smile and repose. The gummy smile can be of a dental-gingival nature, dental-alveolar origin, or a combination of the above.

A gummy smile of the dental-gingival nature may be one of two types:

1. *A gummy smile due to Altered Passive Eruption*: In this situation, the gingival tissues and the underlying alveolar bone fail to recede past the CEJ. The width to height ratio of the clinical crown is less than *0.75*. Esthetic crown lengthening can correct this gummy smile with or without the need for additional esthetic dentistry. The earliest intervention can be at 12 years old for females and 14 years old for males. The passive eruption is complete at those ages and no additional tooth structure is going to become exposed without surgical treatment.
2. *A gummy smile due to dental abrasion*: The anterior teeth may become short due to excessive wear giving the appearance of a gummy

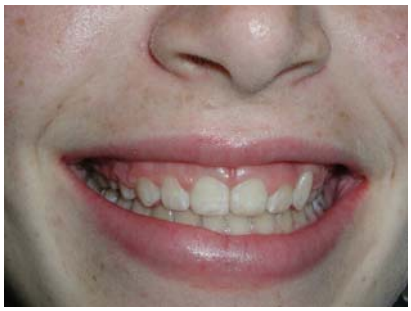

Figure A-1: Preoperative view . 18 year old female. Orthodontic treatment completed by Dr. Chris Jernigan.

Figure A-2: The gingiva is sutured immediately after the surgery.

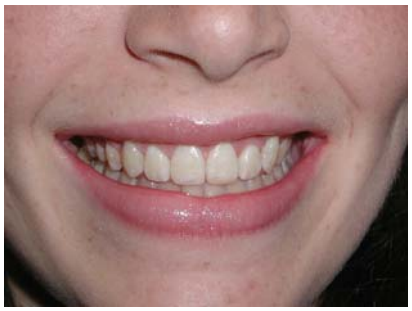

Figure A-3: Final smile picture after 8 weeks of healing.

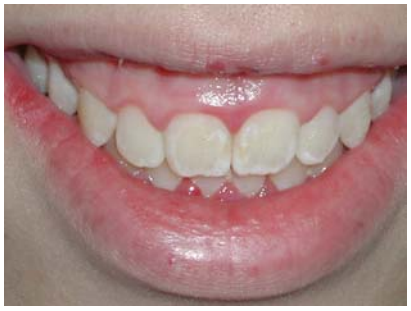

Figure B-1: Preoperative view. 17 year old male. Orthodontic treatment completed by Dr. Chris Jernigan.

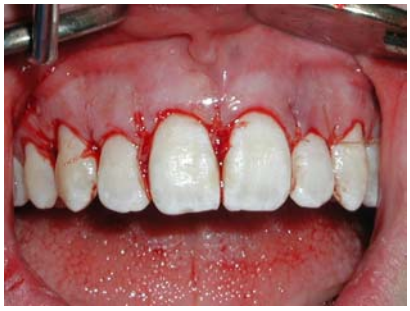

Figure B-2: The gingiva is sutured immediately after the surgery.

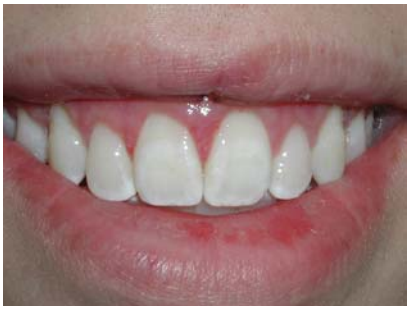

Figure B-3: Final smile picture after 6 weeks of healing.

"A gummy smile is often a source of psychological trauma for the adolescent patient"

smile. Esthetic crown lengthening can correct the width to height ratio. The roots can become exposed after the surgery and esthetic dentistry, such as veneers and crowns are often necessary.

A gummy smile of a dental-alveolar origin can only be corrected with orthognathic surgery and orthodontic treatment. Cosmetic crown lengthening can enhance the final results.

Case Study 1:

An 18 year old female presented to my office for the assessment of short teeth and a gummy smile prior to the completion of her orthodontic treatment (*Figures A1-A3*). The examination revealed the alveolar bone crest is at or coronal to the CEJ. The width to height ratio of her anterior crowns is less than 0.7. The diagnosis of a gummy smile due to altered passive eruption was made. Cosmetic crown lengthening on the facial of teeth # 4-13 was completed immediately after the removal of the orthodontic appliances. By removing osseous structure, the bone crest was positioned 3 mm apical to the CEJ in order to reestablish the biologic width at the appropriate level.

Case Study 2:

This 17 year old male presented to my office for the evaluation of a gummy smile. His orthodontic treatment was completed recently (*Figures B1-B3*). The initial examination revealed short clinical crowns on the maxillary anterior teeth, inappropriate height to width ratio, and square clinical crowns. Further evaluation indicated that the alveolar crest is coronal to the CEJ. The diagnosis of altered passive eruption was given. Crown lengthening on the facial aspect of teeth # 5-12 was completed.

Case Study 3:

This 17 year old female presented to my office for the evaluation of short clinical crowns (*Figures C1-C9*). Her orthodontic treatment was completed a few months earlier. The initial evaluation revealed short clinical crowns with inappropriate width to height ratios. Discolored enamel was also noted in addition to a pegged lateral. The diagnosis of altered passive eruption was made. The treatment plan included a cosmetic crown lengthening on the facial of teeth # 4– 13 in addition to porcelain veneers on teeth # 6-11. After exposing the alveolar bone, the initial diagnosis was con-

Figure C-1: Preoperative picture. 17 year old female.

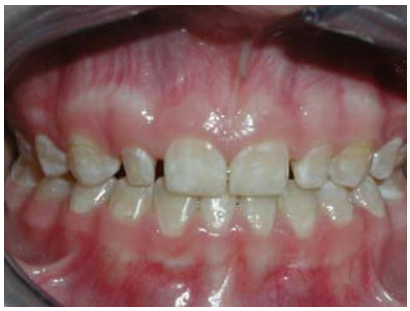

Figure C-2: Preoperative picture of smile.

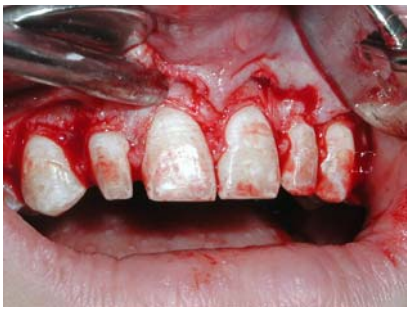

Figure C-3: After flap reflection. Note the bone level at the CEJ.

Figure C-4: Bone removal exposed 3 mm of roots surfaces.

Figure C-5: The flap was sutured after the completion of the procedure.

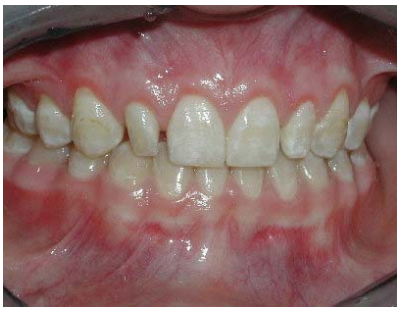

Figure C-6: Picture after eight weeks of healing.

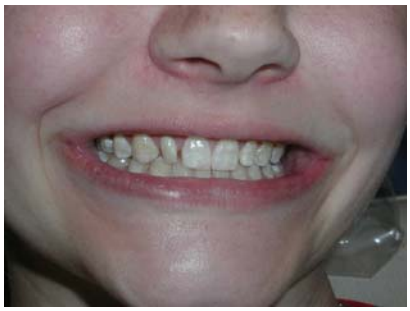

Figure C-7: Smile picture after eight weeks of healing.

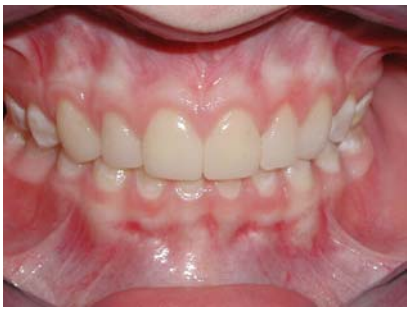

Figure C-8: Picture after completion of veneers by Dr. Glenn Reese.

Figure C-9: Final smile picture after completion of esthetic dentistry.

firmed by noting the alveolar bone crest at the CEJ (*Figure C-3*). The bone crest was repositioned 3 mm apical to the CEJ to allow the reestablishment of the biologic width at the appropriate position. Eight weeks of healing were allowed prior to placement of the veneers.

Discussion:

A gummy smile can go unnoticed by the patient and the parent. However, in most situations, the patient is aware of the unaesthetic appearance but has no clue to what the solution can be. The dental professional can educate the patient on the abilities of esthetic dentistry and cosmetic periodontal surgery for improving the unaesthetic appearance and correcting the problem. In the majority of cases, an underlying osseous discrepancy underlies the gingival problem, making *gingivectomy* alone inadequate. Without addressing the osseous substructure, the gingival tissues will rebound within a short period of time leading to frustration and disappointment for the patient.
The waiting period between the completion of the periodontal surgery and restorative treatment varies according to the literature from six weeks to six months. I advocate a waiting period of 8-12 weeks after the completion of the surgery depending on the thickness and the nature of the gingival tissues.

"Performing gingivectomy without addressing the osseous structure is the reason for rebound of the gingival tissues in most cases"

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PICTURES FROM THE ARESTIN PRESENTATION

On October 9, 2003, I hosted a dinner seminar entitled: Periodontal Disease, a Continuum of Care. The course was held at Featherstone's Restaurant at Bridgemill. The evening was an excellent opportunity to catch up on the latest in periodontal disease and treatment. Over forty dentists and hygienists attended and had a great time.

Dr. Edwin Swords and Dr. John Kirby

Dr. Diab, Dr. Tyler Baird, and Dr. Stuart Loos

Dr. Dennis Radcliff and Dr. Lee Amason

Dr. Narissa Goode and Dr. John Peluso

Sandy (Dr. Amason) and Marla (Dr. Stockwell)

Dr. Tyler Baird and Dr. Nelson Woo