

Soft tissue blueprint for precise aesthetic smile: Case report

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Abstract

Background: The periodontal soft tissues are an important determinant of pink and white esthetics. Management of the soft tissues that frame each tooth is crucial to aesthetic smile design. The use of blueprint can aid in determining the pre-treatment profile for teeth and create the optimum smile for the patients.

Case: A 27-year-old female has smile esthetic problem due to square-ish maxilla front teeth, and showing too much gum. Patient is aesthetic demanding and requesting for correction.

Case management: Soft tissue blueprint followed by wax-up and individual surgical template was made before the surgery to preview the proposal of future smile. Aesthetic crown lengthening was performed using gingivectomy technique by diode laser. Oral hygiene instruction is given during healing time.

Conclusion: High- aesthetic demand on having a perfect smile can be achieved by developing an aesthetic proposal and subsequent blueprint. The use of surgical template can aid in precise and optimum result.

Keywords: Soft tissue blueprint; Gummy smile; Aesthetic crown lengthening; Dentistry; Health outcome

1. Introduction

Dentistry continues to evolve with new techniques and materials, however, the success of treatment is based mainly on diagnosis and treatment planning [1]. For gummy smile patient, the periodontal soft tissues are an important determinant of pink and white esthetics. Management of the soft tissues that frame each tooth is crucial to aesthetic smile design [2] High-aesthetic demands require difficult clinical decisions regarding the final esthetic outcome in which the operator must visualize the final position of margin gingiva. These critical decisions must be made before treatment is rendered. Communicating these decisions to the patient is crucial prior to achieving clinical success. Blueprint is the conduit for providing excellent communication. The use of blueprint can aid in determining the pre-treatment profile for teeth and create the optimum smile for the patients [1].

2. Case

A 27-year-old female with gummy smile was referred to Department of Periodontology, Universitas Airlangga for evaluation of unsatisfactory smile. Examination revealed "square-ish" teeth and high lip line, which indicated that crown lengthening and possible lip reposition procedure were required for creating optimum smile. Cemento-Enamel Junction measurement was taken during consultation session, and given a conclusion that osseous reduction was not needed. Patient has high- aesthetic demand, therefore the use of blueprint can aid surgery procedure for precise result.

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2.1. Treatment Plan

- Phase I (dental health education, scaling and root planing)
- Phase II (crown lengthening 13 - 23)
- Phase IV (maintenance).

2.2. Management

Initially, an impression of the maxilla was taken on first appointment after thorough and complete evaluation to realize the diagnostic wax up. Then, a surgical template was confectioned. Prior to surgery, the surgical guide was placed in the patient's mouth to confirm proper seating and to check whether the proposed level of the gingival margin met the aesthetic demands of both the clinician and the patient. On the day of the surgery, the guide was inserted in the mouth and the new gingival margin was registered using diode laser (Biolase – EPIC) under local anesthesia. Gingivectomy technique was performed precisely using the outline of surgical guide. Oral hygiene instruction was given after the procedure. Healing evaluation has been done on day 1, day 7, and day 14.



Figure 1 Blueprint Development - Wax Up



Figure 2 Personalized Surgical Template





3. Discussion

In recent years, aesthetic demands in dentistry have increased greatly because of the enhanced awareness of beauty. Clinicians have increasingly focused on the management and reconstruction of pink aesthetics [3]. Complex aesthetic cases require difficult clinical decisions regarding the final esthetic outcome in which the operator must visualize the position of the margin gingiva and the teeth [1]. These critical decisions need to be made before treatment is rendered. Communicating these decisions to the patient are crucial prior to achieving clinical success. The key to meeting the increasing demands of aesthetic patients is communication among all involved parties: patient, clinician, and technician.

To achieve a harmonious and natural blending of the teeth with the surrounding tissues, multiple biologic, functional, and biomechanical aspects must be addressed pre-operatively so that any potential problems can be identified [4].

The esthetic template is the conduit for providing excellent communication. The selection of the appropriate esthetic template is based on four sequential decisions such as dentofacial analysis, blueprint development, matrix management, and template application. When utilizing an esthetic template, the clinician must know where the margin of the gums should be placed based on a dentofacial analysis. The dentofacial analysis must then be communicated to the laboratory, and then a blueprint is developed from the diagnostic casts. Aesthetic blueprint is a sketch of patient's final smile. A matrix is then fabricated from the blueprint. The esthetic template is a valuable communicator that can be utilized in office. Clearly, the effective use of esthetic templates demonstrates a reversible way to visualize difficult esthetic decisions before any irreversible procedures are completed [5].

4. Conclusion

High-aesthetic demand on having a perfect smile can be achieved by developing an aesthetic proposal and subsequent blueprint. The use of surgical template can aid in precise and optimum result.

Compliance with ethical standards

Acknowledgments

The study has no acknowledgement.

Disclosure of conflict of interest

There is no conflict of interest to declare.

Statement of ethical approval

The present research work does not contain any studies performed on animals/humans subjects by any of the authors.

Statement of informed consent

Informed consent was obtained from all individual participants included in the study.

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