

Aesthetic Outcome of Anterior Crown Lengthening: A Case Report

Abstract

Aesthetic crown lengthening or gingival contouring is a procedure done to correct excessive gingival display or 'gummy smile'. In periodontology, it is done by perioplastic procedures. Simple excision or gingivectomy can be performed to correct short clinical crowns without violating the biological width. The present case report describes a case of aesthetic crown lengthening using electrosurgery unit (Unicorn Denmart®).

Key words: Aesthetic crown lengthening, gingival contouring, biologic width, electrosurgery.

Dr Radhika Malhotra

P. G. Student
Department of Periodontology
Subharti Dental College and Hospital
Meerut-250005, Uttar Pradesh.

Dr Anamika Sharma

Professor & HOD
Department of Periodontology
Subharti Dental College and Hospital
Meerut-250005, Uttar Pradesh.

Address for Correspondence

Dr. Radhika Malhotra
Department of Periodontology
Subharti Dental College and Hospital
Meerut-250005, Uttar Pradesh.
radsnineteen@gmail.com

Introduction

Aesthetics play a vital role in the management of dental defects and malformations. A compromise in the aesthetics is no longer acceptable owing to the increasing patient awareness.¹ The anterior teeth pose a psychological impact on the patient due to their position in the mouth.²

One of the commonly encountered aesthetic concerns is the excessive gingival display or the 'gummy smile'. It may be treated by orthodontic, orthognathic or perioplastic procedures. However, when the anatomic crown is not fully exposed, then simply removing the gingiva via precisely planned incisions yields satisfactory results.³ Excision of gingiva or gingivectomy is usually done by scalpel, electrosurgery or laser. Over the years, electrosurgery has been used routinely in fields of medicine and dentistry. It is the intentional passage of high-frequency waveforms or currents, through the body tissues to achieve a controllable surgical effect.⁴ Electrosurgery minimizes bleeding and is associated with less post-operative discomfort.

The present case report describes aesthetic crown lengthening done by electrosurgery, which is a simple, cost effective procedure and gives good results, along with patient satisfaction.

Case Report

An eighteen year female reported to the Department of Periodontology, Subharti Dental College and Hospital, with a chief complaint of 'short teeth'. A detailed medical and dental history was obtained from the patient. Intraoral examination revealed approximately 2-3 mm of excessive gingival tissue was on the maxillary anterior teeth in relation to the cemento-enamel junction (CEJ). In addition, the anterior teeth presented with an unsatisfactory gingival contour and crown size discrepancies. Maxillary and mandibular impressions were taken and diagnostic casts were obtained along with pre-operative intraoral photographs.

Treatment plan: The treatment plan included esthetic crown lengthening by

electrosurgery (Unicorn Denmart®) to reduce the amount of gingival display, raise the height of the anterior teeth, and correct gingival symmetry.

Before planning for the surgery, complete plaque and calculus removal was done.

Surgical procedure: After giving local anesthesia (2% lidocaine with 1:100,000 epinephrine), the distance of the gingival margin from the crest of the alveolar bone and the CEJ were measured on the labial aspect of the anterior teeth. The excess gingival tissue was marked to facilitate excision and gingival contouring done by electrosurgical unit. The length of the lateral incisor was planned to be 1 mm shorter than the central incisors at the gingival margin. In addition, the canine height was modified to achieve the same gingival margin as the central incisors. With the help of wire electrode, scalloping incisions were given and subsequently, gingivectomy was completed. Routine post-operative instructions were given. The medications prescribed were, amoxicillin 500 mg tid for 5 days and paracetamol tid for 3 days. Patient was recalled after 1 week and no post-op complications were seen. Further, patient was recalled after 1 month and 3 months for re-evaluation. Gingival margins were stable and healing was uneventful.

Discussion

With the changing scenario and increasing popularity of cosmetic dental treatments, there has been an increase in perio-esthetic procedures in comparison with periodontal anti-infective therapies. The crown lengthening procedures are directed towards providing biological width for the healthy restoration of teeth as well as for forming esthetic gingival contours.

Biological width is the sum of the junctional epithelium and supracrestal connective tissue attachment and was found to be 2.04 mm. Violation of biological width leads to gingival inflammation, discomfort, gingival recession, alveolar bone loss and pocket formation.⁵ Tomar et al⁶ demonstrated a perio-esthetic-restorative crown lengthening procedure for improving the aesthetics of a patient. They performed an

undisplaced flap with osseous recontouring for obtaining the biological width and subsequently placed the crown for restoration of teeth.

Electrosurgery has certain limitations such as the initial cost of the equipment, it cannot be used in poorly shielded cardiac pace makers, unpleasant odor and heat generation. However, when electrosurgery is applied according to principles, predictable results and good wound healing can be achieved.⁷ Gandhi et al⁸ obtained favourable results by using electrosurgery for the conservative crown lengthening of a fractured tooth.

Conclusion

Aesthetic crown lengthening should be considered as a treatment option for irregular gingival contours. However, a careful diagnosis as well as a thorough understanding of the anatomical structures involved, and the biologic width concept is mandatory for the stability of the anticipated gingival margins following the treatment.

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Legends

Figure 1 pre-operative picture.

Figure 2: Intraoperative photograph

using electrosurgical loop

Figure 3: 1 month post-operative

Figure 4: 3 months post-operative



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Managing Editor

Media House, Zaidi Colony, Idgah Road
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Bijnor-246701 (U.P.) India

P.: +91-1342-261444, C.: +91-9027637477

info@healtalkht.com

editor@healtalkht.com

www.healtalkht.com

