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RESEARCH ARTICLE

MANAGEMENT OF EXCESSIVE GINGIVAL DISPLAY BY ESTHETIC CROWN LENGTHENING PROCEDURE

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ABSTRACT

Harmony between the teeth, gums and the lips are required for creating a beautiful and pleasing smile profile. Discrepancies in any one of the factors results in excessive gingival display and short clinical crowns which are not esthetically acceptable, ultimately affects the confidence of the person. Gummy smile caused due to gum overgrowth over the teeth can be treated by esthetic crown lengthening procedures where excess gingiva is removed to expose the natural length of the teeth. This chapter reports about esthetic crown lengthening procedure in patient with excessive gingival display.

Key words:

Crown Lengthening,
Gingivectomy,
Biologic Width.

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INTRODUCTION

Excessive gingival display is a common problem among patients who are concerned about their esthetics. Many causative factors are present for the condition such as short upper lip, excess of maxilla, short clinical crowns or hyperactive upper lip that retracts too much during full smile (Narayanan *et al.*, 2015). Variety of treatment options are present for correcting this conditions which depends upon finding the basic cause. By modifying the contours of the gingiva one can correct the excess gingiva present but this procedures requires preserving the biological width of the gingiva (Smukler, 1997). Biologic width is defined as the physiologic dimension of the junctional epithelium and connective tissue attachment, according to the pioneering study conducted by Gargiulo *et al.* (1961). Encroachment of biological width can jeopardize periodontal tissues thus removal of crestal bone and osseous recontouring is required in cases of esthetic crown lengthening procedures where the biological width is minimal (Ingber *et al.*, 1977). This case report describes the management of excessive gingival exposure by surgical crown lengthening and osseous recontouring to apically reposition the dentogingival complex.

CASE REPORT

A 34 year old female patient came to department of periodontics, Saveetha dental college with a chief complaint of excess gingival display. On clinical examination it was assessed that she had maxillary excess with exostosis present in the maxilla which displayed white prominences in the upper anterior teeth region when the patient smiled (Figure1). On gingival examination the width of the attached gingiva was found to be 7 mm. No tooth mobility or periodontal problems detected. Upon bone sounding showed the distance between the gingival margin to the alveolar crest which was found to be >3mm. Although a combination of orthodontic treatment along with gingival recontouring was advised to her, she opted only for later. Therefore the crown lengthening procedure was planned in relation to 14, 13,12,11,21,22,23,24 along with osseous recontouring for reducing the exostosis. Initial measurements and markings are made on the gingiva at a distance of 2mm from the gingival margin (Figure2). An internal bevel incision in relation to 14, 13,12,11,21,22,23,24 and the excess gingival tissue was removed. A full thickness mucoperiosteal flap was raised (Figure3) and osseous recontouring done for the exostosis (Figure4). The flap was repositioned and sutured with 3-0 silk sutures (Figure5). Sutures were removed after a week and one month postoperative showed reduced gingival exposure with improved clinical crown height and smile (Figure6).

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Figures 1. Pre operative photograph showing excessive gingival display with exostosis



Figures 5. Immediate post operative view after suturing



Figures 2. Markings were made at a distance of 2mm from the gingival margin for gingivectomy



Figures 6. One Week Post Operative View



Figures 3. Full thickness mucoperiosteal flap was raised for osseous recontouring



Figures 7. Post Operative After 1 Year



Figures 4. Osseous recontouring in the upper anteriors



Figures 8. enhancement in patient smile with reduced gingival exposure

Follow up to 1 year showed sustained results in terms gingival contour and the patient was very much satisfied with the results obtained (Figure 7&8).

DISCUSSION

Esthetic crown lengthening procedure requires gingivectomy to reduce the excessive gingival display (Minsk, 2001). In addition bone contouring was also done in this chapter to reduce the exostosis. To have a harmonious and successful treatment a minimal biologic width of 3mm is required (Allen, 1988). Encroachment in biologic width can lead to gingivitis, discomfort, recession and pocket formation (Kois). The interproximal bone should also be carefully removed so that the anatomic structures are maintained properly which ensures coronal proliferation of interproximal tissues, thus it replaces the distance between the crest of the bone to the base of the contact area which is required to achieve esthetics (Tarnow *et al.*, 1992). Although combination of orthodontic treatment is required in such type of cases, removing excess gingiva are effective in patients seeking short duration and cost effective treatment procedures which camouflages the underlying skeletal defect.

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