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Case Report

The Perio-Restorative Approach for Anterior Rehabilitation: Reporting of Two Cases

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ABSTRACT

To restore the teeth with sound periodontium biologic width is of utmost importance. In case of biologic width violation gingiva presents with severe inflammation which if not controlled can progress to destruction of supporting structures. These two case reports highlight the importance of biologic width. In first case crown lengthening is performed by two different modalities to respect the same whereas, second case depicts the consequence of violation in post-prosthetic phase which was later rectified by periodontal intervention. In both the case fixed partial dentures were planned for the patient. After successful periodontal intervention restorative margins could be safely placed without disturbing biologic width. Prosthesis was fabricated and anterior region was successfully rehabilitated. Follow up depicts stable periodontium with restoration of aesthetics and function.

Key words: Biologic width, Crown lengthening, Modified widman flap

INTRODUCTION

To restore anterior region successfully a clinician not only has to restore the function but also the aesthetics for the patient who desires for a perfect looking smile. [1]

Encroachment of the biologic width becomes of particular concern when considering the restoration. Not only aesthetics, but also the health of periodontium is imperative while placing the restorative margins.

The present case report describes the successful rehabilitation of the anterior region without violating biologic width. In the first case periodontal intervention is done by performing clinical crown lengthening to maintain the same, whereas in second its violation was rectified.

CASE REPORT 1

A 33 year old patient complaining of missing teeth reported to the college. Patient was planned for fixed partial denture (6-unit bridge). On examination it was found that patient had congenitally missing lateral incisors and canines with rotated 1st premolars. Patient was systemically health with sound periodontium. (Fig 1)

Intra-oral assessment of biologic width and keratinized tissue width was done .It was determined that in central incisor region the keratinized width is adequate with sufficient sulcus depth while in pre-molar region it was inadequate. Hence it can be deduced that for the safe placement of margins, crown exposure was required.

Oral prophylaxis was performed and crown lengthening was planned for 1st premolars. To avoid biologic width violation and considering inadequate width

of keratinized gingival, clinical crown exposure was achieved by apically repositioning the dentogingival unit i.e. apical repositioned flap. The flap was raised in the 14 region with vertical incisions on mesial and distal side. (Fig 2) with osseous re-contouring .Flap margins were re-positioned apically and secured with sutures. (Fig 3) Similar procedure was repeated on the 24 region. COE pack was placed and post –op instructions were given to the patient.

Fig1:Intra-oral picture

Fig 2: Flap reflection in 24 region

Fig 3: Flap sutured exposing 2 mm of crown

As keratinized tissue was adequate, external bevel gingivectomy with scalpel was carried out to expose maxillary central incisors. (Fig 4) Suture was removed on 7th post-op day. The region showed satisfactory healing with adequate crown exposure for all 4 teeth. Prosthesis was installed after 3 months and healthy periodontium was observed. (Fig 5)

Fig 4: External bevel gingivectomy performed in maxillary central incisors

Fig 5: Follow up after 3 months shows healthy periodontium

CASE REPORT 2

A 41-year old male patient reported to the department of Periodontics, with the chief complaint bleeding gums in lower front teeth since 2 weeks.

Patient underwent root canal treatment in lower front teeth 2 months back and later fixed prosthesis was placed. The patient was systematically healthy, with no history of traumatizing habits.

Intraoral examination revealed inflammatory gingival enlargement in lower anteriors with pseudo-pockets in the range of 6-8 mm with inadequate attached gingiva. (Fig 6)

Based on the above mentioned finding, violation of the biological width was the probable reason which resulted in

this clinical presentation. Removal of prosthesis was done followed by phase I therapy including scaling and root planning and use of chlorhexidine 0.2% mouthwash twice daily.

After 2 weeks of follow up, inflammation reduced with fibrotic enlargement. Modified widman flap was raised. Internal bevel incision till the base of the pocket was given in the same region to eliminate pocket as well as the enlarged gingival tissue under local anaesthesia (2% lignocaine). Vertical releasing incisions were given at distal line angles of 33 and 43. Alveolar bone ostectomy was carried out and the flap was apically displaced to re-establish the biological width. (Fig 7)

Suture removal was done after 10 days and healing was uneventful. After 1, week provisional prosthesis was cemented. After 2 months of follow up the gingiva appeared healthy with no sign of bleeding on probing. (Fig 8)

Fig 6: Inflamed gingival in relation to mandibular anterior region

Fig 7: Sutures placed after modified widman flap

Fig 8: Stable periodontium after prosthesis placement- 2 months follow up

DISCUSSION

Periodontal health is of paramount importance for all teeth, both sound and restored. [2] In the present case anterior region was rehabilitated by maintaining the adequate biological width.

Biological width is the sum of the junctional epithelium and supracrestal connective tissue attachment. The average space occupied by was found to be 2.04 mm. [3] It acts as a barrier preventing penetration of microorganisms into the periodontium. Violation of the same leads to gingival inflammation, recession, alveolar bone loss and pocket. [4] To have a harmonious and successful long-term restoration, a 3 mm of sound supracrestal tooth structure between bone and prosthetic margins, is advocated as it allows for the reformation of the biological width. [5]

In the first case, two different modalities of crown lengthening were adopted keeping in mind the amount of attached gingiva and biologic width .It is a surgical procedure that establishes an accurate bone width along with harmonious relation with periodontium. It provides a tooth crown dimension adequate for a stable dentogingival complex and for the placement of a restorative margin, so one can achieve the best marginal seal and an aesthetically pleasing final restoration. [6]

Firstly, apically repositioned flap with osseous re-contouring in pre-molar region was performed. This lead, not only to the clinical crown exposure but also the maintenance of adequate width of

keratinized tissue without violation of biologic width.

Then, external bevel gingivectomy in central incisors was performed which lead to the sufficient amount of clinical crown exposure with safe placement of restorative margins. After achieving sufficient crown exposure prosthesis was installed in the anterior region after 5 months.

In the second case report, a modified widman flap was performed with the objective of excising the pocket lining and crown exposure was achieved with maintenance of sound biologic width for the placement of restorative margins.

Several studies suggest that the biologic width re-establishes itself after crown lengthening procedures in 6 months. [7] For this reason, in the present case report the installation of definitive prosthesis was carried out after the healing period of the gingiva, in order to obtain the aesthetic position of the prosthetic margin.

Once satisfactory healing was achieved, it was convenient to demarcate the final margins of the prosthesis following which prosthesis was fabricated. Follow up for both cases show sound periodontal health with no signs of inflammation.

An esthetically pleasing appearance and a healthy periodontium are achieved as periodontist recontours and relocates the gingival margin and the alveolar crest causing minimal encroachment on sub-gingival tissues. [8]

Thus a collaborative approach between a restorative dentist and periodontist resulted in a successful rehabilitation, restoring both aesthetics and function.

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