

## Case Report

# RESTORING ANTERIOR ESTHETICS IN A COMBINED EFFORT

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## ABSTRACT

Aesthetic considerations have influenced the management of dental practice in varying degrees for many years. As anterior teeth form the pillar of a person's personality, replacing missing anterior teeth places a huge responsibility on the shoulders of a dentist. Today, patient awareness and expectations have increased recently to the point, that, less than optimal aesthetics are no longer an acceptable outcome. Since an ideal esthetic appearance calls for a healthy and inflammation-free periodontal tissues, it involves perio-restorative relationship to be symbiotic as a whole. This is a clinical case presentation of one such interdisciplinary approach taken towards rehabilitation involving the role of Endodontist-Periodontist- Prosthodontist in achieving the goal of harmony of form and function.

**Keywords:** Anterior Esthetics, Interdisciplinary Approach, Crownlengthening, Guided Bone Regeneration

## INTRODUCTION

The replacement of form, function, and esthetics is the primary goal of restorative dentistry. Equally important is doing no harm when restorations are placed. Improper management of the periodontal tissues during restorative procedures is a common, but often overlooked, cause of failure. When a restoration is placed, the preservation of an intact, healthy periodontium is necessary to maintain the tooth or teeth being restored.

Predictable long-term restorative success requires a combination of restorative principles with the correct management of the periodontal tissues (Levine *et al.*, 1999). The perio-restorative relationship is one of the most important symbiotic relationships that exist in healthcare as a whole. The two rely heavily on one another and allow the dental practitioner to achieve the highest degree of excellence in quality, comprehensive care. Here we present one such case which required a interdisciplinary approach involving a periodontal & prosthetic approach to achieve an esthetic & functional rehabilitation of a patient.

## CASES

A 30 year old male patient reported to JSS dental college and hospital Mysore with a chief complaint of fractured fixed partial denture and desired a replacement for the same. Patient gave no relevant medical history. On examination, 11,21 (bilateral central incisors) were found to be missing (h/o trauma 6 years), 12,22 (lateral incisors, bilaterally) were RCT treated 6 yrs. back which were fractured post & core abutments (figure 1). Since there was insufficient coronal tooth structure, it was referred from Department of Prosthodontics for crown lengthening.

### Clinical Procedure

Following Phase -1 therapy which comprised of scaling & rootplaning, tissue health assessment was monitored at periodic recall visits. The patient was then sent for routine blood investigations, after which, the patient was prepared for the surgical phase for crown lengthening.

Surgical procedure: Local anesthesia (2% lignocaine 1:80,000) was administered. Transgingival probing was then carried out to determine the biologic width; following which it was decided that internal bevel gingivectomy along with osseous reduction would be needed to avoid the violation of biologic width. A full thickness flap was raised with the help of crevicular and vertical releasing incisions adjacent to lateral incisors. Osteotomy was performed on bilateral laterals using a round bur mounted on micro motor hand piece under constant irrigation, so as to maintain a 3mm sound tooth structure coronal to alveolar crest in order to maintain the biologic width. On flap reflection, it was seen that there was a Sieberts Class 1 hard

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**Figure 1: PRE OP**



**Figure 2: Deficient alveolar ridge**



**Figure 3: Guided bone regeneration**



**Figure 4: Radiograph 3 months**



**Figure 5: Radiograph 9 months**



**Figure 6: Final prosthesis**



**Figure 7: Final Prosthesis**

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tissue ridge deficiency (figure 2).

Hence in joint consultation with the Department of Prosthodontics, it was decided to carry out ridge augmentation with the help of bioactive glass and a resorbable collagen barrier membrane (figure 3). The flap was then approximated with interrupted sutures and a periodontal dressing was given. Post op instructions were given to the patient along with a prescription of antibiotics and analgesics. The patient was asked to report back after 10 days for suture removal and check -up. On the post op visit, the patient presented with uneventful healing and good oral hygiene maintenance, the patient was then referred to the Department of Prosthodontics for final restoration (figures 6, 7). Nine months post op radiograph showed excellent amount of bone fill in the area of ridge (figures 4, 5):

## DISCUSSION

Initiation of therapy starts with an understanding of the patient's desires. In most cases, the patient's primary demand is an esthetic tooth replacement offering a nice smile. For the dental clinician, the reestablishment of esthetics and function requires knowledge of all treatment modalities (Buser *et al.*, 2005). The relationship between periodontal health and the restoration of teeth is intimate and inseparable. Maintenance of gingival health constitutes one of the keys for tooth and dental restoration longevity (Philippe *et al.*, 2003). An adequate understanding of relationship between periodontal tissues and restorative dentistry is paramount to ensure adequate form, function and esthetics, and comfort of the dentition (Kuller *et al.*, 2009) and this is where the importance of biologic width comes into play.

Biologic width can be defined as, the dimension of the soft tissue, which is attached to the portion of the tooth coronal to the crest of the alveolar bone. Based on the work of Gargiulo *et al.*, ( ) the biologic width is commonly stated to be 2.04 mm (Gargiulo *et al.*, 1961), it is of prime importance that the biologic width be respected while placing sub gingival restorations in order to avoid the consequences of violation which include inflammation, attachment loss & bone loss. Hence, as a rule, it was recommended that the restorative margin should be a minimum of 3 mm coronal to the alveolar ridge (Ingber *et al.*, 1977). However in some instances, surgical entry throws up an unexpected challenge which calls for a modification in proposed treatment plan. The same happened in this case wherein the hard tissue ridge deficiency was detected on reflection of the flap.

As it is very clear that in the anterior maxilla, good esthetic demands not only a well-fitting prosthesis but also sufficient hard and soft tissues, to achieve a natural looking result. However after extraction, the alveolar ridge attains a flat smooth contour. These smooth contours, pose problems for the restorative dentist. Various prosthetic and surgical options for improving esthetics in the patient with ridge deformities, like, long pontic design or gingival (pink) ceramic in the cervical region are available (Shah *et al.*, 2011). However, surgical procedures using soft & hard tissue grafts along with guided tissue regeneration –GOLD STANDARD in treating cases with ridge deficiencies. Previous literature supports the use of resorbable collagen barrier membrane along with bone graft. Controlled clinical studies have been presented describing the successful use of bioactive glass along with collagen membranes for guided bone regeneration (Zitzman *et al.*, 2001). In the present case we used a Bioactive Glass along with resorbable collagen membrane to bring about guided bone regeneration and ridge augmentation.

## Conclusion

Today, patient awareness and expectations have increased recently to the point, that, less than optimal aesthetics are no longer an acceptable outcome. Hence a combined effort in restoring proper form, function & esthetics can go a long way into bringing back patients lost smile and confidence. "Beauty lies in the eyes of the beholder; let's take it upon us, to mold what the eyes behold".

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