



Full Mouth Rehabilitation: A Combination Treatment

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Introduction

The loss of natural teeth results in aesthetic and functional deficits, reduction in the quality of life and self image perception¹. The reconstruction of partially edentulous patients may present numerous challenges to the clinician. In many partially edentulous situations, the combination of implants and fixed restorations may be difficult to implement².

Surgical concerns include medical contraindications, anatomical factors, such as mandibular nerve or maxillary sinus pneumatization, or costs involved with implant treatment, whereas prosthodontic concerns include the correction of aesthetics, phonetics and occlusal vertical dimension³.

Class III malocclusions specifically present with complex dentoalveolar problems, including anterior end-to-end or anterior and/or posterior cross-bite, resulting from maxillary retrognathism and mandibular prognathism³. These problems may predispose patients to dental caries, periodontal disease, and edentulism, as well as adverse psychosocial effects³.

Case Report

The case report describes a 47 year old male patient who underwent full mouth-rehabilitation after presenting with class III malocclusion with erosion of anterior teeth, several missing posterior teeth and numerous remaining teeth that were heavily restored. His chief complaint was, "I can't eat properly and spit on my guests while speaking. I would like to replace my hopeless teeth, have a nice smile and eat properly". Medical history revealed that he smoked 10 cigarettes per day and suffered from chronic sinusitis, confirmed by CBCT. He was subsequently optimised by an ENT, convinced to stop smoking and an improvement in oral hygiene status was accomplished prior to treatment.



Fig. 1 Lateral cephalogram indicating skeletal and dental class III malocclusion with horizontal growth pattern of mandible



Fig. 2 & 3 Pre-treatment anterior view showing severe anterior attrition, right posterior crossbite, loss of posterior support and loss of OVD

The treatment plan was discussed and consent was obtained from the patient. The surgical phase of treatment was initiated by extraction of teeth 15, 14, 24, 26, 34, 35, 44, 45 and 46.

A waiting period of 3 months was allowed before bone augmentation was performed. Due to sinus pneumatization and insufficient bone stock, bilateral sinus lifts were performed in the maxilla. Bilateral ramus cortical bone grafts were harvested using the Surgibone® Piezo-electric hand piece. Sandwich techniques were implemented in all 4 quadrants using rigid cortical screws with a mixture of autograft and Bio-Oss (Geistlich®), and the placement of Bio-Gide membranes (Geistlich®).

A further waiting period of 9 months was allowed prior to the placement of endosseous implants in the augmented sites. 12d Co-Axis® (Southern Implants®) externally hexed tapered implants were used in the 14 and 24 areas and standard externally hexed tapered implants (Southern Implants®) were placed in mandible and posterior maxilla. Three months was allowed prior to loading.

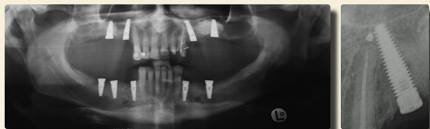


Fig. 4 Orthopantomogram showing final position of endosseous implant

Fig. 5 Co-Axis® Southern Implant

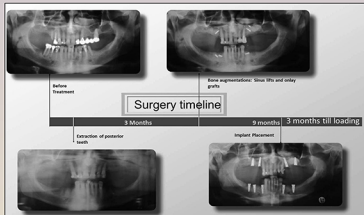


Fig. 6 Surgery timeline showing pre- and post-treatment radiographs

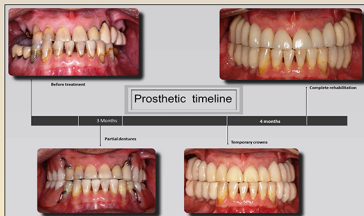


Fig. 7 Prosthetic timeline showing pre- and post-treatment clinical photos restoring both function and esthetics

Discussion

A comprehensive multidisciplinary approach to treatment planning is required to achieve a successful outcome. Communication involving prosthodontists, periodontists, oral hygienists, dental technicians and maxillo-facial and oral surgeons is often necessary to ensure accurate diagnoses and appropriate treatment planning. The placement of implant-supported fixed prostheses provides a long-term solution as an alternative to removable prosthetic appliances.

Conclusion

The ever increasing demand for an acceptable aesthetic outcome in combination with a functional dentition poses many challenges to the clinician, but by understanding the patient's needs, his anatomical limitations and the available treatment modalities, the anatomical, biomechanical, aesthetic and psychosocial aspects were successfully achieved.



Ethics: Prosthodontic consent was obtained.

References

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3. Bencharit S, Misiek D, Simon L, Malone-Trahey A. Mouth Rehabilitation With Dental Implants for a Patient With Skeletal Class III Malocclusion: A Case Report. *Journal Oral Implant* 2012; 38.1: 63-70.