Scholars Journal of Medical Case Reports
OPEN ACCESS
Abbreviated Key Title: Sch J Med Case Rep
ISSN 2347-9507 (Print) | ISSN 2347-6559 (Online)
Journal homepage: https://saspublishers.com/journal/sjmcr/home

Full Mouth Rehabilitation- A Multidisciplinary Approach: A Case Report

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| **Received:** 22.03.2019 | **Accepted:** 01.04.2019 | **Published:** 30.04.2019
DOI: 10.36347/sjmcr.2019.v07i04.002

Abstract **Case Report**

Full mouth rehabilitation demands careful clinical and radiographic investigation and treatment planning. It becomes more challenging with the partial edentulism where bilateral segment is found missing. At the same time the severe worn and decay of anterior teeth facilitates the loss of anterior guidance and condylar guidance. And the loss of posterior teeth results in the loss of vertical dimension with collapsed bite and loss of normal occlusal plane. This results in the loss of esthetics, phonetics and function as well. This case report describes 55-year-old female, who had the loss of anterior guidance and condylar guidance due to severely worn out and decayed anterior tooth , along with the reduction of the vertical dimension with collapsed bite. Restoration of the severely worn out and decayed maxillary anterior tooth was done by multidisciplinary approach followed by restoring back the lost vertical dimension with cast partial denture prosthetic rehabilitation. This case reports that a satisfactory clinical result was achieved by restoring the vertical dimension with an improvement in esthetics and function.

Keywords: Full mouth rehabilitation, Tooth wear, Vertical dimension of occlusion, Anterior guidannce, Condylar guidance, Cast partial denture.

INTRODUCTION

Face is the most exposed part of the body, and the mouth being a prominent feature, teeth are getting a greater share of attention. In the past 25 years, the focus in dentistry has gradually changed from routine dental treatment to various special restorative materials and techniques like CAD/ CAM etc. However in an economic country porcelain fused to metal restorations and removable partial dentures for long span partially edentulous situations still remains the desirable option. The goal of dentistry is to increase the life span of functioning dentition, just as the goal of medicine is to increase the life of functioning individual. The formerly independent disciplines of prosthodontics, periodontics, restorative dentistry, orthodontics and maxillofacial surgery must join together to satisfy the patients desire to look better. The purpose is not to sacrifice function but to use it as a foundation of esthetics. Full mouth rehabilitation cases are of the most difficult cases to manage in dental practice. This is because such cases involves not only replacement of the lost tooth structure, restoring chipped or worn out teeth, but also restoring the lost vertical dimension besides This case report describes the oral rehabilitation done for a patient by using interdisciplinary approach with endodontics, periodontics and prosthodontics imparting both the esthetics and function.

In modern dental practice many published paper suggested the application of implants in partially edentulous patients, serving as abutments for single crowns or fixed prostheses [1, 2]. Moreover, there is a paucity of studies concerning the combination of tooth supported fixed partial denture with extracoronal semi-precision attachment and removable cast partial dentures.

CASE REPORT

A female patient, Anitha C. shetty, 42 years old reported to the department of prosthodontics, A. B. Shetty memorial institute of dental sciences, Mangalore, Karnataka with the chief complain of decayed, discoloured and broken upper front teeth since 6 months. Also complained of missing upper back teeth and almost all lower teeth except for few, since 2 years. On complete examination, including both the clinical and radiographic, revealed grossly carious maxillary anterior teeth with pulpal involvement, bilaterally missing maxillary posterior teeth and partially

edentulous mandibular dental arch with respect to 32,33,34,35,36,37,42,44,45,46 and 47.

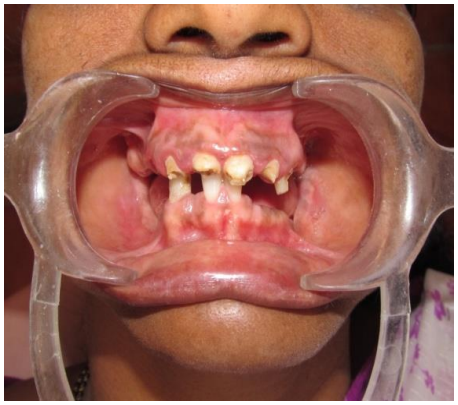


Fig-1: Extraoral view (pre-operative)

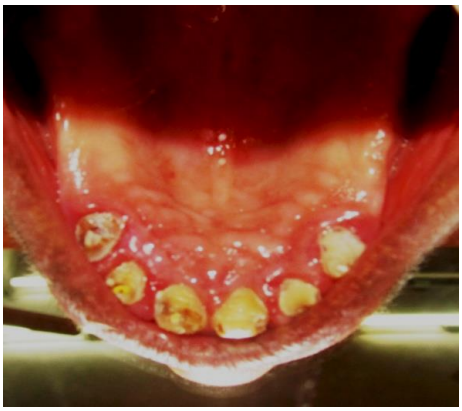


Fig-2: Intraoral view (pre-operative)

Diagnostic impression of both the arches was made and the casts were poured which were mounted with face-bow transfer. Periapical radiograph showed grossly carious teeth and periapical lesion with respect to 23. Panoramic radiograph revealed missing teeth with respect to 14, 15, 16, 17, 24, 25, 26, 27, 32, 33, 34, 35, 36, 37, 42, 44, 45, 46 and 47.

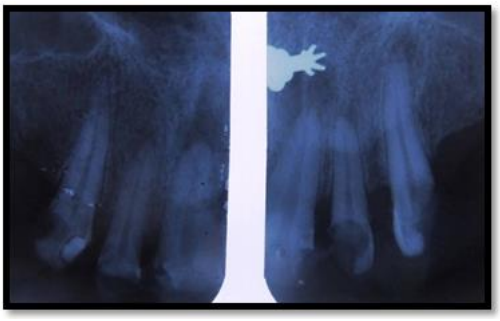


Fig-3: IOPA (Pre-operative)

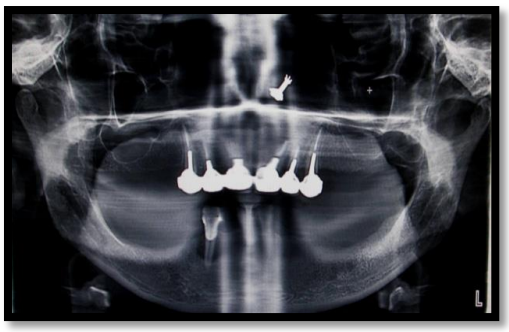


Fig-4: OPG (Post- operative)

Clinical procedure

As the patient was not interested in extraction of the remaining ailing teeth, I planned for a multidisciplinary approach involving the endodontic, periodontics and prosthodontic procedures. Due to the pulpal involvement of teeth with respect to 11, 12, 13, 21, 22 and 23, they underwent root canal treatment followed by customized post and core treatment.

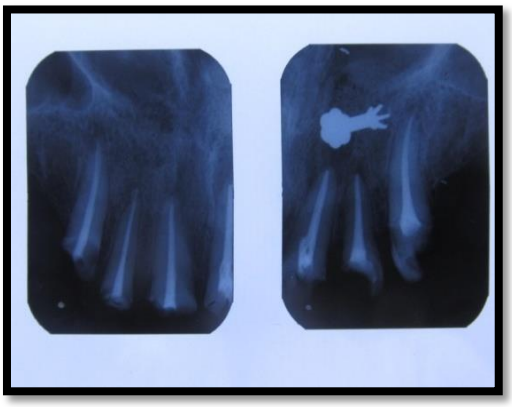


Fig-5: IOPA (After RCT)

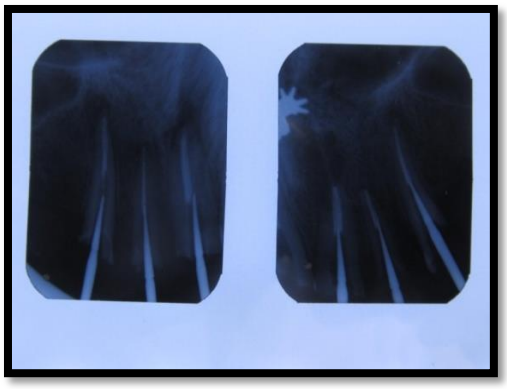


Fig-6: Creation of Post space

Fig-7: Customised metal post (After metal casting)

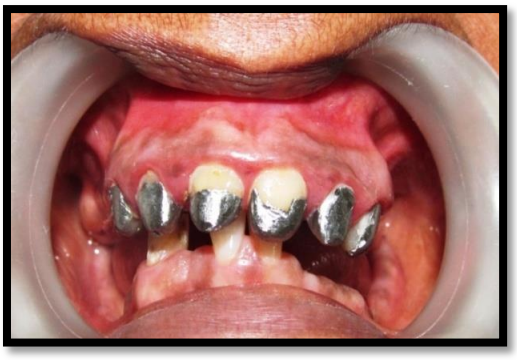


Fig-8: Cementation of customised metal post

As crown length of maxillary anteriors were small, the biologic width of each tooth was calculated and crown lengthening procedure was carried out followed by Coe-pak application.

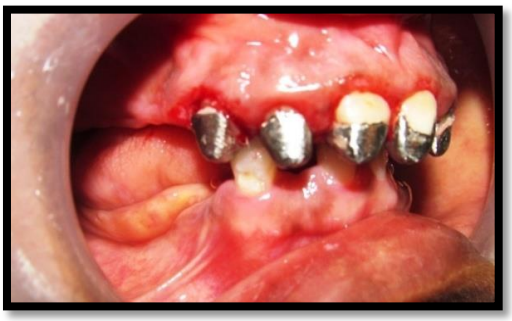


Fig-9: Gingivectomy (for crown lengethining)

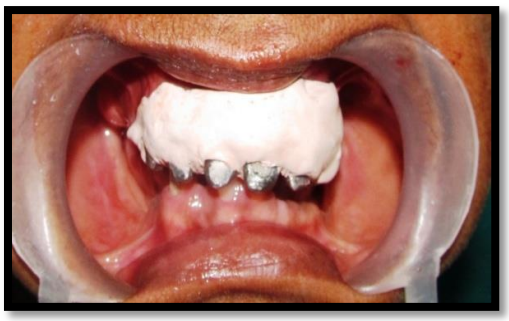


Fig-10: ZoE pack placed after gingivectomy

After a healing period of 20 days, patient was recalled and tooth preparation was done for coping, followed by making impression of the prepared tooth and pouring of the cast.

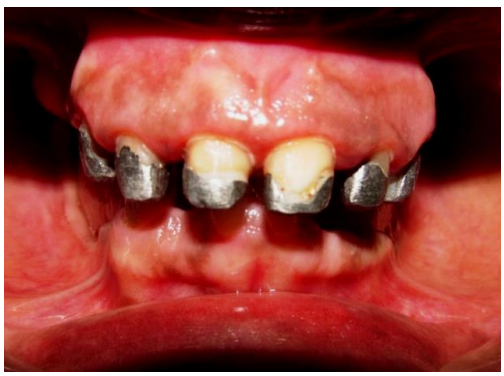


Fig-11: Crown lengthened (After complete healing)

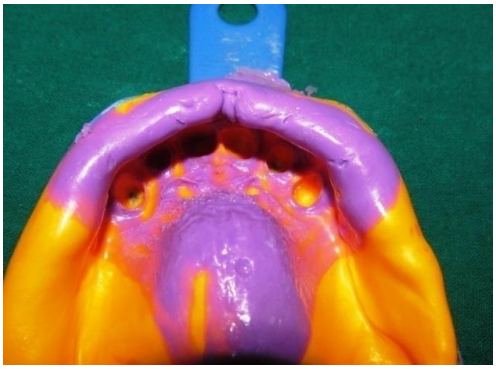


Fig-12: Secondary impression for PFM crown fabrication

Wax pattern for coping was prepared on the prepared dies, milling was done on the palatal aspect and extracoronal attachment on the distal aspect of canine on either side and finally casted and metal copings were milled as well. Followed by metal try in and ceramic build up.

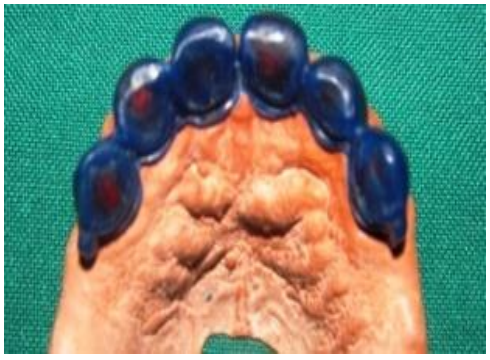


Fig-13: Wax up (for casting)

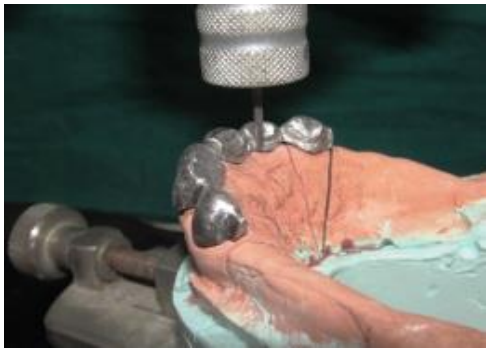


Fig-14: Metal milling

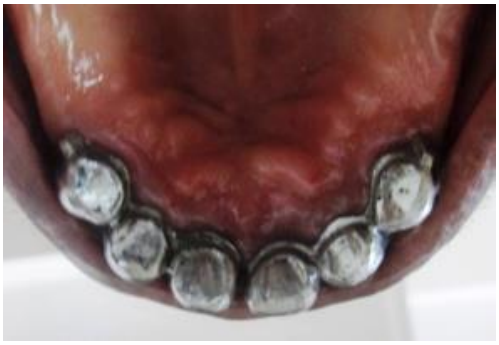


Fig-15: Metak Try- In

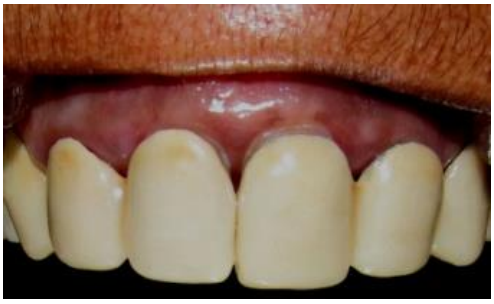
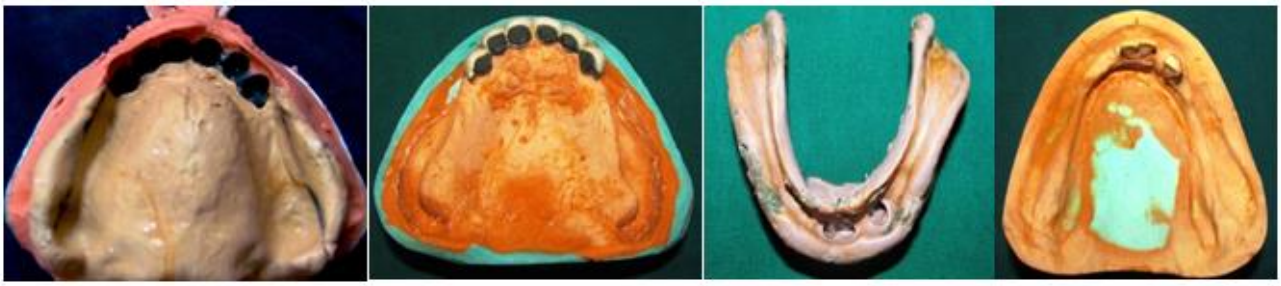


Fig-16: PFM crown trial

Followed by secondary and pick-up impression of the maxillary partially edentulous dental arch which was finally poured. Secondary impression of mandibular partially edentulous dental arch was made, beading and boxing was done and finally secondary cast was poured.



Figs-17: Pick up impression of maxillary and Mandibular secondary impression

After duplication and pouring of the refractory cast, the cast partial denture framework was designed and casted with Wirobond c, having a combination of metal and acrylic as maxillary major connector design, with I bar on canine on either side. It also had two premolar shaped projections on either side so as to have ceramic build done on to it. Mandibular: lingual plate as major connector, meshwork as minor connector, Y- bar on 31 and 42.

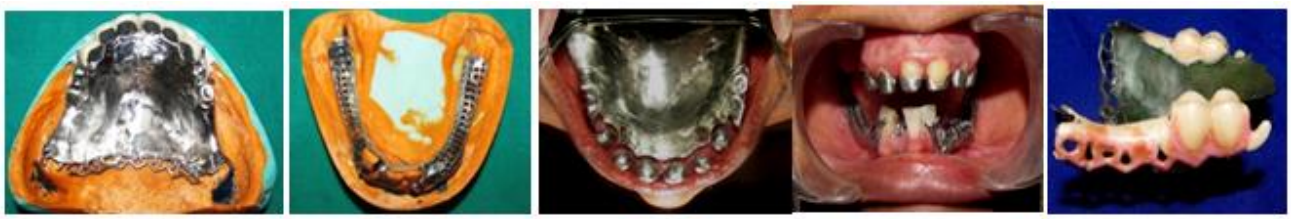


Fig-18: Cast partial denture metal framework, try in was done

As the patient had gummy smile, and extent of smile were up to second premolar, so ceramic build up was done in the metal cast framework itself, on the premolar shaped coping so as to have the shade mach with the anterior fixed prosthesis. Occlusal rim was made on to the framework and jaw relation was recorded followed by facebow transfer and mounting on to the semi-adjustable articulator. Teeth setting and try in was done. Finally processing of the cast partial denture was done.

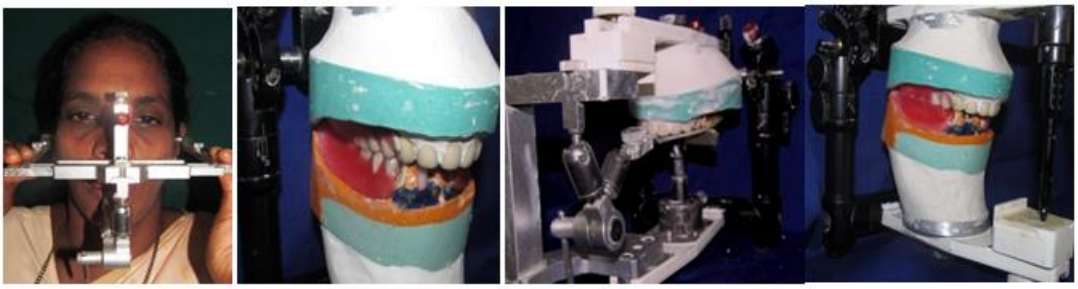


Fig-19: Face bow transfer

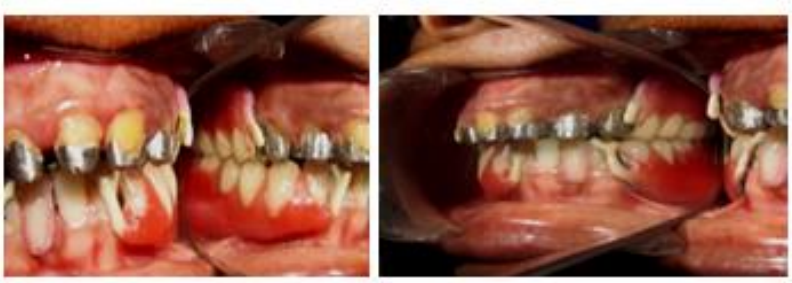


Fig-20: Cast partial denture Try-In

After finishing and polishing of the cast partial denture, insertion was done along with the permanent cementation of anterior single PFM crowns and interferences were removed in centric and eccentric occlusion.

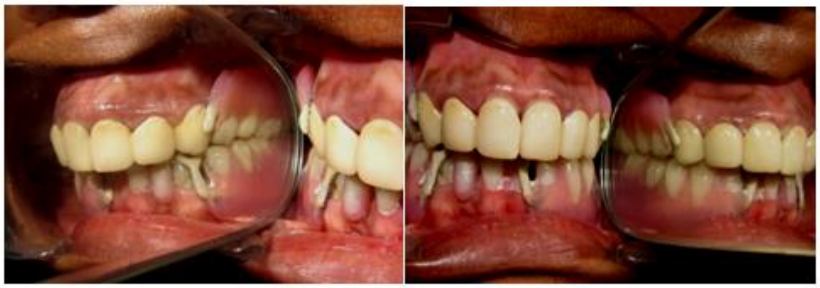


Fig-21: Post cementation of Maxillary anterior PFM rowns and Cast partial debture insertion

Fig-22: Pre-Operative and Post-Operative Views showing occlusion and Aesthetics

DISCUSSION

The restoration of esthetics and function in patients can be accomplished by an accurate diagnosis and appropriate treatment planning involving multidisciplinary approach.

The primary goal of treatment should be to tackle each problem along with a comprehensive plan, which would take care of any future treatment needs. Psychological demands of these patients should also be handled with a lot of sensitivity.

In the present case, the patient requested a treatment plan without the extraction of existing anterior grossly decayed tooth. Hence, it was decided that the rehabilitation would involve predominantly endodontic for root canal treatment, periodontal for crown lengthening and prosthodontics for prosthetic rehabilitation as various treatment approaches.

CONCLUSION

Full mouth rehabilitation is a radical procedure and should be carried out in accordance with the dentist's choice of treatment planning which is based on his knowledge of various philosophies followed and his clinical skills. A comprehensive study and practical approach must be directed towards reconstruction, restoration and maintenance of the health of the entire oral mechanism.

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