

Prosthodontic Rehabilitation of Decimated Dentition Using Pankey-Mann and Schyuler's Concept of Occlusion

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ABSTRACT

Background: Full mouth rehabilitation continues to impose challenge in restorative dentistry. It requires efficient diagnosis and elaborates treatment planning to develop ordered occlusal contacts and harmonious articulation in order to optimize stomato-gnathic function, health and esthetics which then translates to patient's comfort and satisfaction. Several techniques of full mouth rehabilitations are proposed in dental literature but each one has ultimate goal of achieving harmonized dentition and its supportive structures. This paper describes the full mouth rehabilitation of a 64-year-old female with unaesthetic appearance of dentition and other dental problems such as unfavorable restorations using Pankey Mann and Schyuler's philosophy of occlusal rehabilitation.

Keywords: Full mouth rehabilitation, Pankey-Mann-Schyuler philosophy, PMS technique, Occlusal rehabilitation.

INTRODUCTION

Full mouth rehabilitation requires efficient diagnosis and elaborate treatment planning to develop ordered occlusal contacts and harmonious articulation in order to optimize stomatognathic function, health and esthetics which then translates to patient's comfort and satisfaction. Thorough knowledge of the various concepts of articulation is therefore integral to address the patient's problem related to restoration of multiple teeth that are either decimated, collapsed or missing.¹ Several techniques of full mouth rehabilitations are proposed in dental literature but a clinician should ascribe to one after a comprehensive diagnosis of the patient's clinical condition and prospective

consideration of his/her oral health, function, comfort and esthetic requirements.¹

Indications for full mouth rehabilitation: Collapsed occlusion due to loss of teeth, Loss of vertical dimension, Repeated fracture of restorations, Para functional habits, Lack of inter-occlusal space, Trauma to occlusion, TMJ disorders, Developmental anomalies in dentition, Mal-occlusion (class-II malocclusion, class III malocclusion)^{2,3}. Contra-indications for full mouth rehabilitation such as There are many malfunctioning mouths that do not need extensive dentistry and have no joint symptoms. These cases are best left alone. One or two "good" teeth may have to be operated on in order to satisfactorily

Received: Nov. 23, 2018; Accepted: Jan. 27, 2019

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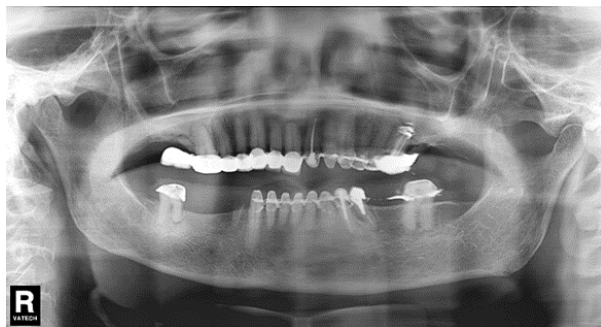


Fig 1: Pre operative OPG.



Fig 2: Occlusal plane analysis.



Fig 3: Recording of functionally generated path using light cure acrylic resin.



Fig 4: Canine guided occlusion.

accomplish our objective. In short, no pathology -no treatment.⁴

PHILOSOPHY OF OCCLUSAL REHABILITATION

One of the most practical philosophies for occlusal rehabilitation is the rationale or treatment that was



Fig 5: Post operative patient's profile.

originally organized into a workable concept by Dr. L.D. Pankey. The philosophy has had as its goal in the fulfilment of the following principles of occlusion as advocated by Schuyler:

1. A static coordinated occlusal contact of the maximum number of teeth when the mandible is in centric relation.
2. An anterior guidance that is in harmony with function in lateral eccentric position on the working side.
3. Disclusion by the anterior guidance of all posterior teeth in protrusion.
4. Disclusion of all nonworking inclines in lateral excursions
5. Group function of the working side inclines in lateral excursions.

Proper sequence advocated by PANKEY-MANN and SCHYULER philosophy:

Part1: Examination, diagnosis, treatment planning and prognosis.

Part-2: Harmonization of the anterior guidance for best possible esthetics, function and comfort.

Part-3: Selection of an acceptable occlusal plane and restoration of the lower posterior occlusion in harmony with the anterior guidance in a manner that will not interfere with condylar guidance.

Part-4: **Functionally generated path technique:** Restoration of the upper posterior occlusion in

harmony with the anterior guidance and condylar guidance

CASE REPORT

A 64-year-old female with unesthetic appearance and ceramic). Patient was unsatisfied from her previous dental treatment where she was given temporary bridge after removal of fixed restoration. An orthopantomogram was taken (Fig:1). Patient had fixed prosthesis in the first quadrant and remaining had temporization done with respect to remaining second, third and fourth. Root stumps were present in respect to 44. Patient had partial edentulous ridge due to missing 45, 46 and 36. On intraoral examination metal surfaces could be appreciated due to chipping off. Temporary restoration was luted with GIC. Fixed dental prosthesis was removed from both maxillary and mandibular arches. Diagnostic impression was made and face bow transfer was done using centric record

Cast was mounted. Anterior diagnostic wax up was done by raising the vertical dimension up to 6mm because of lack of clearance in posterior teeth during mounting (in order to obtain 4mm clearance). Then, stage 1 temporization was tried in patient but there was midline shift and also anterior guidance was steep. Again anterior mock-up was done using average values of articulator and second stage temporization was done and anterior esthetics, phonetics and function was verified. Using anterior temporization protrusive record was made. Programming of articulator was done using protrusive record. Once the articulator was programmed posterior Occlusal plane was established using Broadrick occlusal plane analyser (Fig:2). Once the Occlusal plane was established posterior mock-up was done and putty index was made and posterior temporization was done. Stage two temporization was confirmed and patient was recalled after 3 weeks. Final impression was made using light bodied and heavy bodied polyvinyl siloxane material. Facebow transfer was done and transfer on to the articulator and mounting was done. Porcelain fused metal crowns were fabricated for anterior and lower posterior segment. Firstly metal try in was done of anterior segment and final prosthesis was luted using GIC. Once anterior segment was confirmed lower posterior metal try in

was done and final crowns were luted using GIC. Upper posterior were fabricated using Functional generated pathway. Using metal crowns FGP was done. For FGP, light cure acrylic resin was used. Metal crowns were seated upper posterior teeth and light cure acrylic resin was added and patient was guided to close the mandible in centric relation followed by protrusive. Right lateral and left lateral and again in centric relation and curing was done using light cure acrylic resin (Fig:3). Individual mounting was done and porcelain was added. Final crowns were cemented. Occlusion obtained was canine guided occlusion (Fig:4). One year postoperatively patient was satisfied with esthetics and function (fig:5).

DISCUSSION

The FGP technique is highly versatile and has been employed with equal efficacy in fabrication of crown, bridge, complex full mouth reconstructions, complete, and RPDs as well as dental implant restorations. It is recognized that the Pankey-Mann philosophy of occlusal rehabilitation was originally a combination of the Monson spherical theory and the Meyer functionally generated path technique, where they attempted to gain bilateral balance in eccentric movements.^{4,5,6} The Pankey-Mann-Schuyler philosophy retains the FGP technique, except that the balancing side contacts are eliminated due to their traumatogenic effect on the masticatory system. If the FGP technique is properly accomplished, only minor intraoral occlusal adjustments are necessary.⁷ Besides, the availability of the sophisticated fully adjustable articulators, the FGP still remains a technique that is simple, reliable, and unsurpassed in accuracy.^{8,9} As outlined by Brecker,¹⁰ *"The human jaw, with all its limitations, with all its interferences, and with all its problems created by habit, makes the best articulator. Consideration should be given to the patient's individual pattern of chewing."* Functionally generated path technique utilizes the patient's masticatory system to develop occlusion and has the advantages of being simple, accurate, and reliable.

CONFLICT OF INTEREST

No potential academic conflict of interest relevant to the above article was reported.

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