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RESEARCH ARTICLE

A SYSTEMATIC APPROACH FOR FULL MOUTH REHABILITATION OF A PATIENT WITH LOST VERTICAL DIMENSION -A CASE REPORT

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ABSTRACT

Restoration of mutilated dentition is always a challenging task. Each case is unique by itself and involves meticulous planning of an appropriate occlusal scheme to reconstruct the debilitated dentition. There are many philosophies indicated for an occlusal rehabilitation. Pankey Mann Schuyler philosophy is a simple, organized technique in managing full mouth rehabilitation cases. This article describes modified Pankey Mann Schuyler philosophy by customising the anterior the guide table in accordance to the provisional restoration in a cardiac patient.

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INTRODUCTION

The restoration of normal healthy function of masticatory apparatus is the ultimate aim of full mouth rehabilitation. Full-mouth rehabilitation seeks to convert all unfavourable forces on the teeth which inevitably induce pathological conditions in to favourable forces that permit normal function and therefore induce healthy conditions (Irving Goldman, 1952). The objective of full mouth rehabilitation is not only the reconstruction and restoration of the worn-out dentition, but also, maintenance of the health of the entire stomatognathic system. Full mouth rehabilitation should re-establish a state of functional as well as biological efficiency where teeth and their periodontal structures, the muscles of mastication, and the temporomandibular joint (TMJ) mechanisms all function together in synchronous harmony (Kazis, 1960). Proper evaluation followed by definitive diagnosis is mandatory as the aetiology of severe occlusal tooth wear is multifactorial and variable. Careful assessment of the patient's diet, eating habits and/or gastric disorders, along with the present state of occlusion is essential for appropriate treatment planning (Lerner, 2008).

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Emphasis must be placed on the evaluation of occlusal prematurity preventing condylar seating into the centric relation position (Dawson, 2006). Behavioural factors that may contribute to parafunctional habits and/or nocturnal bruxism are also important to understand and manage in order to successfully restore and maintain a healthier dentition (Neff, 1995). This case report describes 75-year-old male, who had loss of anterior guidance, due to severe wear of dentition, and the reduction of the vertical dimension and also had decreased in chewing efficiency. Occlusal overlay splint was used after the decision of increasing vertical dimension by anatomical landmark, facial and physiologic measurement. Once the compatibility of the new vertical dimension had been confirmed, interim fixed restoration and the permanent reconstruction was initiated. This case report describes improvement in aesthetics and function and also general health of the patient.

CASE REPORT

A 75-year-old male patient reported to the Department of Prosthodontics with a chief complaint of severe sensitivity to hot and cold food and difficulty in chewing. Patient gave a medical history of coronary artery disease, stent placement and diabetes which was under control.

On examination there was a discrepancy between the centric occlusion (CO) and maximal inter cuspal position (MIP) (Fig.1). In order to properly diagnose the case, a comprehensive examination was conducted, inclusive of a full-mouth radiographic series, dental caries detection, and periodontal probing. There were no abnormalities on extraoral examination. No facial asymmetry or tenderness of muscles of mastication. Mandibular range of motion was within the limits. Oral pantograph of the patient was checked (Fig 2). Intra oral examination revealed few grossly decayed teeth and root stumps and remaining teeth were severely attrited. Root stumps in relation to15, 45&46 were extracted and root canal treatment were carried out for 23,24,25,44,47&48,under antibiotic coverage. Impression of the maxillary and mandibular arches were made with irreversible hydrocolloid material and diagnostic casts were obtained. Patients freeway space and closest speaking space was observed and bite rise of 3 mm was planned. Face bow transfer of maxillary cast was done (Fig 3) and mounted on a semi adjustable articulator (Hanau wide view) and mandibular cast was mounted with Lucia jig in the anterior region and interocclusal record in the posterior region. Porcelain fused to metal crowns were selected as restoration of choice for all the teeth.

Once the treatment plan was accepted diagnostic wax up was carried out at the increased vertical height. Posterior occlusal plane was established with Broadrick's occlusal plane analyser (Fig 4). Occlusal overlay splint with increment of 1mm each week was given to patient to adjust to increased vertical dimension. Patient was asked to wear the splint continuously except while eating for about 6 weeks before definitive restoration is planned. Firstly, all the anterior teeth were prepared. Impressions of the prepared teeth were made with irreversible hydrocolloid in stock trays. The maxillary occlusal splint was modified by removing the anterior section and posterior portion was used as a centric relation record. Then impression compound jig was made using posterior portion in place and jig was used to get new centric record using bite registration material. Maxillary and Mandibular casts were mounted on Hanau articulator. Provisional anterior restorations were prepared with visible light-polymerized temporary material (3M ESPE Protemp 4).

Anterior determinant of vertical dimension was checked with anterior provisional in oral cavity. Speaking line, smile line and lower lip line was assessed for optimum visibility of upper and lower anterior. Then posterior teeth were prepared and provisional restorations were cemented(Fig5). Lower posterior teeth were restored in harmony with anterior guidance followed by the restoration of the upper posterior teeth. Provisional restorations were adjusted to establish maximum intercuspation in centric relation along with canine guidance and no inference in protrusive and lateral excursion. The patient was followed up for another six weeks to further assess adaptation to the proposed vertical dimension before the permanent restorations. Once the provisional restorations were equilibrated and the aesthetics and phonetics were deemed satisfactory, an occlusal bite record was taken with provisional restorations. The maxillary posterior sections were removed and, with the anterior section still in place, posterior bite records were taken. The anterior section was then removed and, with the posterior bite records in place, an anterior bite record was taken. Upper and lower impression were made with provisionals.

Fig.1 Preoperative view of a patient

Fig. 2 Preoperative oral pantograph

Fig. 3. Facebow transfer

Fig.4 Broadrick's occlusal analysis

Face bow recording was taken of the maxillary povisionals. Maxillary and mandibular casts are mounted using occlusal bite record (Fig 6).

Custom incisal guide table is fabricated as given by Dawson to establish anterior guidance in the final restoration (Fig 7). The protrusive path and lateral excursions were recorded in pattern resin on a flat guide table by movement of the articulator pin in the unset resin.

Fig. 5 Temporaries cemented

Fig. 6 Casts with temporaries mounted on articulator

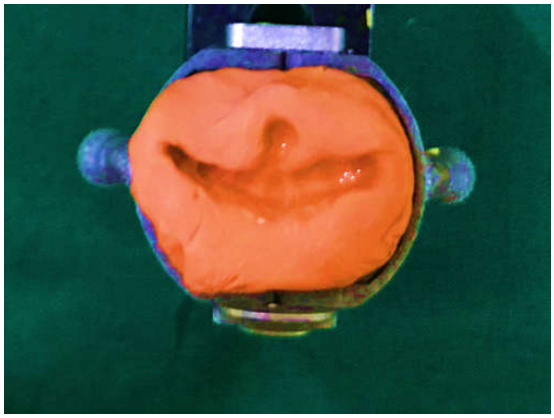

Fig.7. Customised anterior guide table

Fig. 8 metal copings try in

Fig. 9 final restoration

Once the incisal guide table was fabricated, cross mounting began. The maxillary preparation model was mounted against the mandibular provisional restorations and the mandibular preparation model was next mounted against the maxillary preparation model with the help of bite records. The wax pattern was fabricated and were cast and metal copings were tried in patient's mouth (Fig 8). The customized incisal table helped in fabrication of final porcelain fused to metal prosthesis in accordance with patients adapted vertical height and minimum interference in lateral and protrusive excursion.

Fig.10 Disocclusion in protrusive and lateral

The final restoration is cemented using GIC type1luting cement (Fig 9) (Fig10). Flexible removable partial denture is planned in relation to 14,15,16,17,46,47. Patient was recalled after 6 moths and 1 year for check up showed healthy oral cavity which is must for a cardiac patient.

DISCUSSION

Full mouth rehabilitation is programmed treatment plan which involves entire stomatognathic system. This requires proper diagnosis of the existing condition, knowledge about the various philosophies of occlusion and its implementation according to patient's needs. In this case report a reorganised approach is planned where, new occlusal scheme is established around a suitable condylar position which is the centric relation position to optimize patient's occlusion. In PMS technique, the incisal guidance was the developed intraorally with acrylic resin to satisfy aesthetic and functional requirements. Optimal occlusal plane is selected as dictated by the curve of Monson and mandibular posterior teeth are restored in harmony with the anterior guidance such that they will not interfere with the condylar guidance. Maxillary posterior occlusal surfaces are developed after the completion of mandibular restorations by the functionally generated path technique (FGP) (Meyer, 1938). The PMS occlusal scheme, unlike the gnathological concept, encouraged multiple occlusal contacts during lateral movements (group function or wide centre) and during protrusive movements (long centric, an essential feature of this technique) and absence of nonworking side contacts (Mann, 1960; Pankey, 1960). In this, both maxillary cuspids had to be in good functional contact in centric and eccentric positions before beginning the reconstruction of the posterior teeth. If not, it must be obtained by reconstruction of the cuspids even if there is no caries. As FGP technique utilizes wax to obtain the record there is great potential for errors.[10]In this case report posterior occlusal plane is established and temporaries were given at established occlusal plane. Patient's protrusive and lateral excursive movements with no interface is observed for 6weeks. The acrylic index is then prepared by mounting the maxillary and mandibular casts with temporaries. Cross mounting of casts was done with prepared teeth. The acrylic index was used to prepare the final restoration with required occlusal scheme and greater patients' adaptability.

Conclusion

Full mouth rehabilitation is a complex procedure. It involves meticulous treatment plan knowledge of the clinician to select and plan the occlusal scheme for that particular patient as each case is unique. It improves the overall health and well-being of the patient.

REFERENCES

Dawson PE. 2006. Functional Occlusion: From TMJ to Smile Design. St. Louis, MO: Mosby; 432-433.

Irving Goldman. 1952. The goal of full mouth rehabilitation. *J pros Dent.,* 2:246-251.

Kazis H, Kazis AJ. 1960. Complete mouth rehabilitation through fixed partial denture prosthodontics. J Prosthet Dent 10:296–303

Kwong SM, Tay FR, Yip HK, et al. An ultrastructural study of the application of dentine adhesive to acid-conditioned sclerotic dentine. J Dent 2000;28(7):515-528.

Lerner J. 2008. A systematic approach to full mouth reconstruction of the severely worn dentition. Pract Proced Aesthet Dent 20:81–87.

Mann AW, Pankey LD. 1960. Oral rehabilitation: part I. Use of the P-M instrument in treatment planning and in restoring lower posterior teeth. *J Prosthet Dent.,* 10:135–150.

Meyer FS. 1938. Can the plain line articulator meet all the demands of balanced and functional occlusion in all restorative works? *J Colo Dent Assoc.,* 17:6–16.

Neff P. 1995. Trauma from occlusion. Restorative concerns. *Dent Clin North Am.,* 39(2):335-354.

Pankey LD., Mann AW. 1960. Oral rehabilitation: part II.Reconstruction of the upper teeth using a functionally generated path technique. *J Prosthet Dent.,* 10:151–162

Tay FR, Pashley DH. 2004. Resin bonding to cervical sclerotic dentin: A review. *J Dent.,* 32(3):173-196.

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