



CASE REPORT

Lingualized Occlusion – A Hope for Prosthodontist: Case Report

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Abstract

As we all know that the success of complete denture restoration depends on the occlusion given in the specific patient, as occlusion plays a major role in retention, stability, support of the denture. Occlusion is a very fine and complex topic to be taken into consideration while fabricating a complete denture. Occlusion has a considerable influence on the outcome of every Prosthodontic treatment modality. There are various occlusal schemes in the literature for complete denture fabrication, but none of the one accepted universally. In patients with resorbed ridges, special care is to be taken for fabrication of complete denture occlusion, as there is less retention, stability and support. In order to overcome these problems lingualized occlusal scheme has gained favor. So the success of a stable denture depends more on the occlusal scheme given on the denture.

Keywords: Occlusion, Lingualized, Resorbed Ridge

1 | INTRODUCTION:

Occlusion is defined as static relationship between the incisive and the masticatory surfaces of the maxillary and mandibular teeth or analogues of teeth (GPT-9). There are various concepts, philosophies and techniques have been documented for complete denture occlusal scheme. There are different school of thought on occlusal schemes in complete denture for e.g. bilateral balanced occlusion, monoplane occlusion, and lingualized occlusion. (1) Lingualized occlusion represents an established method for the development of functional and esthetic complete denture articulation. During the past 25 years, lingualized occlusion has gained popularity for complete denture applications. (2–5) The premolars and molars are arranged in such a

fashion that only palatal cusp of maxillary premolars and molars contact the central fossa of the lower posterior teeth. (6) Gysi was the first to report the advantages of lingualized tooth form. (7) So the Concept of lingualized occlusion was introduced by Alfred Gysi in 1927. In 1941, Payne introduced a more clear form of lingualized occlusion. Payne

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credited former with development of this technique, and provided a brief description of the required laboratory procedures. Pound: Finally introduced the term 'lingualized occlusion'. (8, 9)

primary concern for patient only mastication was the primary concern. The treatment planned for the patient was the maxillary and mandibular complete denture with occlusal philosophy of lingualized occlusion.



FIGURE 1: Edentulous Maxillary Ridge

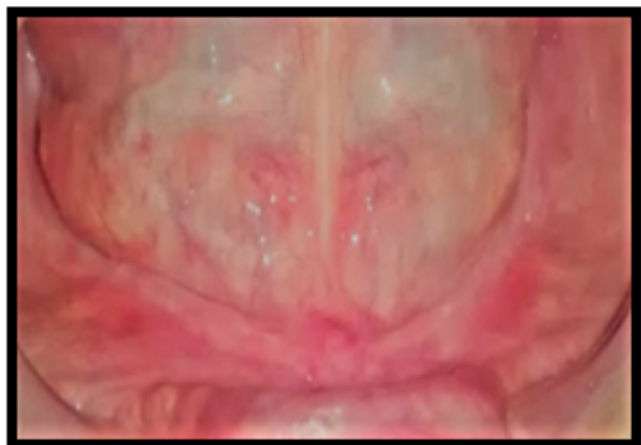


FIGURE 2: Edentulous Resorbed Mandibular Ridge

2 | CASE REPORT:

A 66 years old male patient reported to department of prosthodontics with chief complaint of inability to eat food, due to missing teeth in upper and lower jaw since 2 years and wanted the replacement of the same. On intraoral examination, the maxillary and mandibular ridges are completely edentulous with well rounded maxillary ridge Figure 1 and resorbed mandibular ridge Figure 2. Esthetic was not the



FIGURE 3: Face bow transfer



FIGURE 4: Face bow Transfer done

3 | PROCEDURE:

Primary impression of maxillary and mandibular arch were made using non perforated stock metal edentulous trays with impression compound casts

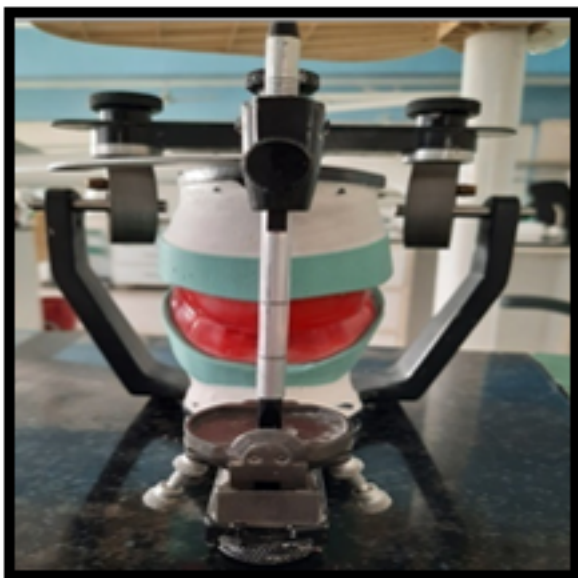


FIGURE 5: Mounting at Centric Relation done



FIGURE 6: Teeth Arrangement Showing Left Side Lingualized Occlusion

were poured with dental plaster. For the secondary impression special tray were fabricated using self cure acrylic resin using a single spacer for maxillary and mandibular arch and border moulding was performed using type I green stick impression compound and the final wash impression was made with zinc oxide eugenol impression material. Secondary impressions were poured and the master cast were retrieved. Denture base with occlusal rims was fabricated and jaw relation was done using conventional method. A hanau face bow transfer was done Figures 3 and 4 and the casts were mounted in



FIGURE 7: Teeth Arrangement Showing Right Side Lingualized Occlusion



FIGURE 8: Try in Showing Right Side Lingualized Occlusion at Centric Relation

centric relation on semi adjustable Hanau articulator Figure 5. Teeth selection according to the patients skin tone and facial shape was carefully done. Teeth arrangement was done Figures 6 and 7 in such a way that palatal cusp of all upper posterior teeth contact the central fossa of lower posterior teeth and on the same time there is no contact on the buccal side. Set up trial arrangement was done and centric relation as well as lingualized occlusal scheme was verified intra orally during try in procedure Figures 8 and 9. Denture was finished, polished and delivered to the patient Figures 10, 11, 12 and 13. Post denture delivery instructions were given and recall visit was



FIGURE 9: Try in Showing Left Side Lingualized Occlusion at Centric Relation



FIGURE 11: Denture Deleivered Showing Right Side Lingualized Occlusion at Centric Relation



FIGURE 10: Frontal View Showing Denture Deleivered and Occlusion At Centric Relation



FIGURE 12: Denture Deleivered Showing left Side Lingualized Occlusion at Centric Relation

planned post 24 hours, 1week and 6 months after delivery.

4 | DISCUSSION:

Arranging teeth in lingualized occlusion is an attempt to maintain the esthetics and food penetration advantages of anatomic form. This form utilizes semi anatomic teeth for maxillary denture while non anatomic teeth for mandibular denture with slight modification of the mandibular posterior teeth accompanied by selective grinding of the central fossa of the mandibular teeth, lowering

marginal ridges. Arranging teeth in lingualized occlusion should not be confused with placing mandibular teeth lingually to the crest ridge. In normal class I jaw relationship, with a conventional denture made with anatomical occlusion concept, the denture during lateral excursions; both the buccal and lingual cusps of the upper and lower denture on the working side come in contact, that indicates a large number of articulating contacts during eccentric jaw movements seen on the denture. In comparison with the lingualized occlusion concept, the number of occlusal contacts is highly reduced, it's only in centric relation



FIGURE 13: Frontal Smiling Profile

that the palatal cusps of the posterior teeth in the upper denture make contact in the central fossa of the lower posteriors and buccal cusps are not in contact. It can be advantageous to slightly rotate the maxillary posteriors teeth buccally to achieve slight clearance of buccal cusps and reduce the need for extensive grinding. Various advantages of choosing lingualized occlusion is use of both anatomic and non-anatomic teeth forms, good penetration of food bolus possible, bilateral mechanical balanced occlusion obtained around centric relation, vertical forces are centralized on the mandibular arch. Lingualized occlusion is indicated in patients with high demand esthetics but a semi- anatomic occlusal scheme is suggested because of severe ridge resorption, in class II jaw relationship or highly unstable or displaceable supporting tissues, used when complete denture opposes a removable partial denture or in patients with para-functional habits. (10, 11)

5 | CONCLUSION:

The cuspal relationship as seen with the lingualized occlusion is achieved with variety of moulds and anatomy of teeth that seem to provide the minimal

occlusal adjustments and greater benefits to the patients. This occlusal scheme provides greater support to the denture base area as the forces are well directed to the centre of the ridge.

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