Case report:

Lingualized occlusion -A better way for enhancing function & esthetic

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Abstract:

Occlusion has a considerable influence on the outcome of every Prosthodontic treatment as occlusal prematurity have destructive and destabilizing influences on dentures. Unless denture bases are adequately and evenly stabilized, it is virtually impossible to properly equilibrate the occlusion. Inorder to overcome this problem the relative simplicity involved in development, lingualized occlusal scheme has gained favor among practitioners. lingualized occlusion is a valuable concept because it blends many of the ideal of the anatomy and mechanichal school of thought, it retain many advantages of anatomic and non anatomic occlusion. so this article representing the application of lingualized occlusion scheme in severely resorbed ridge.

Introduction:

The lingualized concept utilizes anatomic teeth for the maxillary denture and modified nonanatomic or semianatomic teeth for the mandibular denture. Lingualized occlusion should not be confused with placement of the mandibular teeth lingual to the ridge crest. The basic concepts of lingualized occlusion were first suggested by Payne. Poundz discussed a similar occlusal concept and used the term "lingualized occlusion."[1] Lingualized occlusion represents an established method for the development of functional and esthetic complete denture articulation.[2] During the past 25 years, lingualized occlusion has gained popularity for complete denture applications.[3-6] Gysi was first to report the biomechanical advantages of lingualized tooth forms.[7] The lingualized occlusion concept is a variation of the bilaterally balanced occlusion concept. The premolars and molars are arranged so that only the lingual cusps of the upper posterior teeth make contact with the central fossae of the lower posterior teeth.[8]

Lingualized occlusion (LO) was judged to be of aesthetics, easy to arrange, and of greater stability and retention during masticatory function than other occlusal designs.[9] so this article describe the fabrication of complete denture using lingualized occlusion scheme for enhancing greater stability and masticatory efficiency in severely resorbed ridge.

Case report:

A 63 year old female patient reported to the department of prosthodontics with chief complain of missing teeth in upper and lower arch with resorbed ridges. Patient was advised lingualized occlusion scheme for fabrication of complete denture as it enhance stability and masticatory efficiency.

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Procedure:

On intraoral examination it was found that patient has highly resorbed both upper and lower arch.(fig 1)

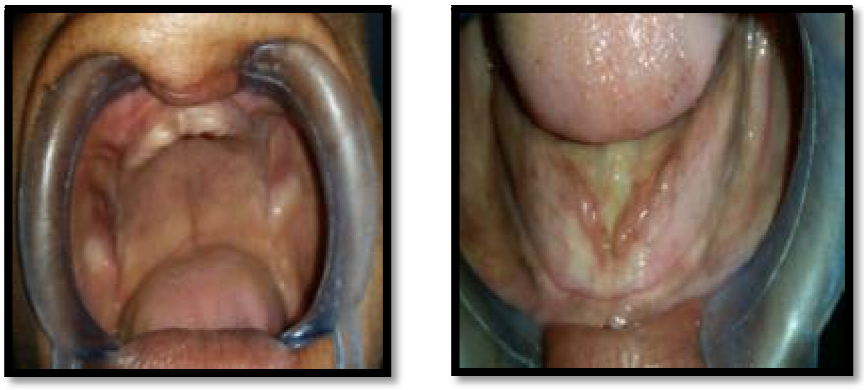
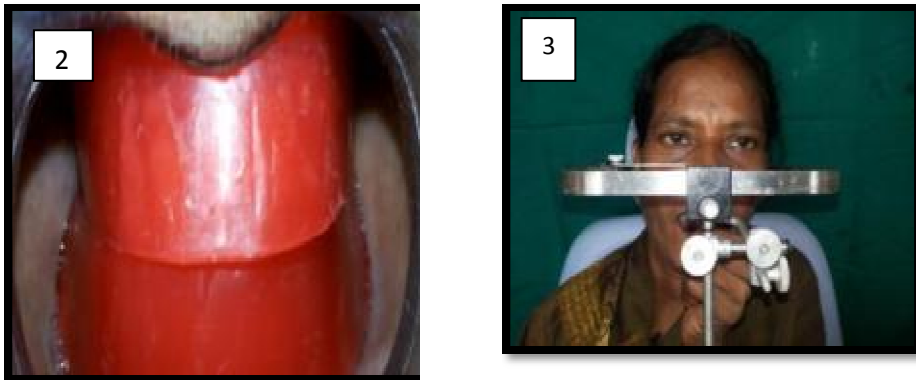


Figure1:Resorbed Maxillary and Mandibular arch



1) The primary impression made with impression compound with non perforated edentulous stock tray.

2) Cast was poured with plaster of paris, custom tray was fabricated and bourder moulding was performed with low fusing type I impression compound (green stick).

3) The final wash impression was made with low viscosity zinc oxide eugenol paste.

4) Master cast was poured with dental stone, denture bas was made and wax occlusal rim was made on it.

5) Jaw relation was carried out conventionally to record vertical and centric relation.(fig2).

6) Face bow transfer was done and master cast was mounted on semi adjustable (hanau) articulator.(fig3)

7) Teeth arrangement done in such a way so that lingual cusp of all upper posterior teeth touch the central fossa of lower posterior teeth and bucally there is no contact .(fig 5) & (fig 6)

8) Wax try in was done.(fig4)

9) Denture was proceed in normal manner. finishing and polishing was done.(fig5)

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Figure 4:Try in was done

Figure 5: Denture insertion done

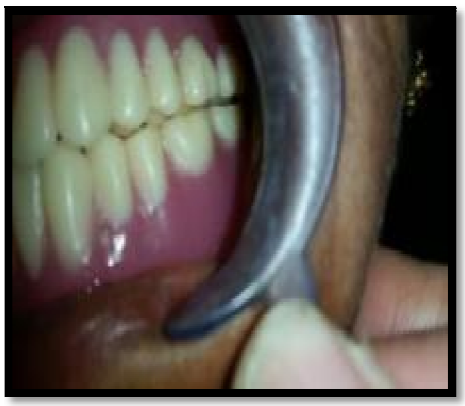

Figure 5: Right side occlusion

Figure 6: Left side occlusion

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Discussion:

1) The ideal artificial tooth arrangement that maximizes denture stability, comfort, esthetics, and function has occupied the dental literature for many years. Of all occlusal schemes that have been presented to the Prosthodontist in cases of severe ridge resorption of edentulous patients, that of lingualized occlusion has emerged as one of the more popular.[10]

Pre-treatment

Post treatment

2) The lingualized occlusion concept is an example of a bilaterally balanced occlusion concept. The premolars and molars are arranged and modified so that only the lingual cusps of the upper posterior teeth make contact with the central fossae of the lower posterior
teeth.[11]

3) On the basis of a normal class I jaw relationship, this means that with a conventional anatomical occlusion concept, during lateral movement both the buccal and lingual cusps of the upper and lower denture
come into contact on the working (active) side, which means a large number of contacts during eccentric jaw movements. In comparison with this conventional anatomical concept, the number of occlusal contacts is reduced considerably with the lingualized occlusion concept, it's only in centric relation that the lingual cusps of the posterior teeth in the upper denture make contact in the central fossae of the lower posteriors and buccal cusps are not in contact.[12]

4) **Indications of lingualized occlusion**

- Sever ridge resorption.
- Class II jaw relationship and displaceable supporting tissue.
- Patient with complete denture oppose removable partial denture.
- Patient with parafunctional habit.

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5) **Advantages of lingualized occlusion**

The advantages of the lingualized occlusion concept are as follows: the advantages of both the anatomical teeth (i.e. aesthetic and chewing capacity) and the non-anatomical teeth (i.e. less horizontal forces) are maintained, particularly in patients with severe alveolar bone resorption. Vertical forces are directed more centrally on the mandibular alveolar ridge, which gives more
stability to the lower denture.[13]

Conclusion:

Lingualized articulation has been advocated by many practitioners over the past 60 years. It can be achieved using a variety of tooth molds arranged in a number of ways that seem to provide the least complicated approach to occlusal rehabilitation and to satisfy the needs of the edentulous patient. Clinical experience has supported its use during functional and nonfunctional activities.

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