



NEUTRAL ZONE TECHNIQUE IN MANAGEMENT OF RESORBED RIDGES- A CASE REPORT.

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ABSTRACT- Prosthetic Rehabilitation of completely edentulous severely resorbed ridges is very challenging. Severely resorbed lower ridge poses a problem in stability of the mandibular dentures. The concept of Neutral Zone significantly helps to overcome the challenge. The Neutral Zone is the area where the outward forces from the tongue are neutralized by the forces of the lips and the cheeks acting inwards during functional movements. Dental Implants is a treatment option to improve the retention and stability of the unstable denture but due to economical feasibility is less frequently used. This article describes management of severely resorbed ridge with the technique of Neutral zone incorporation in the dentures

KEYWORDS- neutral zone, resorbed ridges, neuromuscular coordination

INTRODUCTION

Resorption of the Residual Ridge is a continuous process in the completely edentulous patients. Increased resorption will lead to a decrease in the Denture bearing area ultimately affecting the stability of the dentures. Poor Denture foundation is commonly encountered in clinical practise. Dentures fabricated in harmony with Neutral zone helps to overcome this problem.¹

Neutral zone is the potential space between the cheeks and lips on one side and the tongue on the other. It is that area or position where the forces between the lips, cheek and tongue are equal.”²

Fish stated that from the three surfaces i.e Occlusal surface, Intaglio surface and polished surface, the polished surface is bounded by teeth and tongue on either side. Hence the fabrication of denture in this harmony will fetch us with stable dentures.³⁻⁶

Teeth arrangement in the Neutral zone helps to place the teeth without interfering with normal muscle activity and the complete dentures are imparted with normal oral and perioral activity serving to retain the dentures without any displacement.⁷⁻⁹ For favourable prognosis of the denture, selected impression technique should be based on current status of the basal tissues. In this article incorporation of Neutral zone helps to achieve successful results of complete denture.

CASE REPORT

A 62 year old male reported with a complaint of inability to chew food. The patient was known case of Diabetes and was on medication. He also gave history of extraction of teeth 7 years before and an old denture which he stopped wearing because of looseness of lower denture. Intraoral examination revealed completely edentulous severely resorbed maxillary and mandibular ridges(Fig.1). Removable and fixed treatment options were explained to the patient from which he agreed for removable complete dentures as per his financial constraints.

Impression compound was used to make primary impression of maxillary and mandibular arch(Fig.2). The impression was poured with Dental Plaster and special tray was made over it. Border moulding and final impression was made with low fusing impression compound and Zinc Oxide Eugenol paste respectively(Fig.3). The impression was then poured with Dental stone. Record bases with rakes (orthodontic wire was bent) was made to stabilize the admixed material over it. The record bases were then placed intraorally and tentative jaw relation was recorded. Neutral zone was recorded by various functional movements like swallowing, smiling, laughing, action of drinking water, wetting the lips, pouting, and phonetics checked. The recorded neutral zone was then refined with help of soft liners over the admixed compound(Fig.4). Plaster Index was prepared around the recorded Neutral zone of maxillary and mandibular arch(Fig.5). Admixed compound was then removed and replaced by melted wax from which the Occlusal rim was prepared in the recorded neutral zone. Jaw relation was taken(Fig.6) and teeth were arranged over it⁹ Fig.7). Fabrication of Dentures was done in the conventional manner. Denture insertion was done and checked for any overextension. (Fig.8)



Fig. 1a,b-Edentulous Maxillary And Mandibular



Fig. 2 a,b -Primary Impression Of Maxillary And Mandibular Made With Impression Compound



Fig.3- Border Molding And Final Impression Of Maxillary Andmandibular



Fig.4- Recorded Neutral Zone With Soft Liner



Fig. 5-Indexing Of The Recorded Neutral Zone Of Maxillary And Mandibular Arch



Fig. 6- Recorded Jaw Relation



Fig. 7-Wax Trial of Denture



Fig. 8-Fabricated Dentures

CONCLUSION

Neutral Zone is one of the technique used in severely atrophied mandibular ridges providing stability to the dentures. It is an alternative to implant supported prosthesis which is most often economically not feasible to the patients. Recording Neutral Zone is non invasive and

simple, should be recorded in every resorbed mandibular ridge to enhance the quality of the treatment.

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