

THE OPTIMIZATION OF INTERMAXILLARY RELATIONS AT THE MAXIMUM INTERCUSPATION WITH THE HELP OF THE GERBER SET NO. 105

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Abstract: The consequences of those intermaxillary relations generating functional changes must be treated in accordance with the rest position and the maximal intercuspation relation. Based on data collected from a total of 127 patients, the results of our study indicate that the intra-oral graphic recordings of intermaxillary relation offer a better accuracy and precision of the measurements. Moreover, the use of intra-oral graphic recording methods for centric relation registration along with the teeth mounting following the principles of bilateral balanced occlusion (using articulators) proved to be essential steps in achieving correct and functional dentures. In most of our cases, where the measurements were made by the means of set Gerber teeth fitting errors were found. Therefore, these were corrected by occlusal equilibration inside articulator or by teeth replacement.

Cuvinte cheie: ocluzie, relații intermaxilare, contact dentar, echilibrare ocluzală

Rezumat: Consecințele relațiilor intermaxilare generatoare de modificări funcționale, trebuie apreciate în funcție de poziția de repaus și relația de intercuspitate maximă. Pornind de la date colectate de la un total de 127 de pacienți, rezultatele studiului de față indică faptul că sistemele grafice de înregistrare intraorală a relației intermaxilare oferă o mai mare acuratețe și precizie a determinărilor. Mai mult, utilizarea sistemelor grafice intraorale pentru înregistrarea R.C. precum și montarea dinților pe baza principiilor ocluziei bilaterale balansate (utilizând articulatorul) reprezintă etape esențiale în realizarea unor proteze totale corecte și funcționale. În majoritatea cazurilor în care determinările au fost efectuate cu setul Gerber, s-au descoperit erori de montare a dinților. Acestea au putut fi corectate prin echilibrare ocluzală în articulator sau prin remontarea anumitor dinți.

INTRODUCTION

The paradigm underpinning this study is the principles of functional occlusion by the total prosthetics and mandibular-cranial fundamental relations. “C.R. is independent of dental contact and is determined by the jaw manipulation through a purely rotational movement about the transverse axis”.(1)

A detailed theoretical analysis of the occlusal principles and the mandibular-cranial relationship is not the main subject of this paper, but we mention these concepts that underlie the case studies discussed.

Occlusal concepts in balancing total prosthesis include the concept of bilaterally balanced occlusion, the concept of lingualized occlusion, the concept of linear occlusion and the concept of neurocentric occlusion.

Regarding the false intermaxillary relationship in our study we aim to detect false causes of intermaxillary relations and its impact on the dental apparatus, and identify an effective and ergonomic method of remedy.

The optimization of the intermaxillary relations involves analyzing and optimizing the artificial arches and the analysis and correction of the occlusal relationship at the closing movement of the articulator during the propulsive and lateral movement. During the optimization of prosthetics special attention should be given also to the vertically over - or undersized prosthesis.

OBJECTIVE

The overall objective of this study is to capture the state of occlusal balance among the people with total edentulous through Gerber’s method no.105.

The operational objective of the study is to highlight the advantages of using the Gerber Set Nr. 105 as a safe and comfortable method for both the physician and the patient for analysis and correction of the intermaxillary relations at total edentulous.

METHODS

Sample: the data was collected from a total of 127 patients of both sexes, mostly senior/elderly patients. 87 of these have full-arch prosthetics and most of the required an optimization of the intermaxillary relations.

The collection and selection method of the examined patients, included in addition to a clinical examination a research-type, semi-structured questionnaire with open and closed questions requesting socio-demographic data and both subjective (details about efficiency: of mastication, of swallowing, of phonation, of respiration, about the patients satisfaction regarding the above mentioned functions, and about the maintenance degree of oral hygiene) and objective (examination of the mounting of the teeth using the required principles, and the examination of the occlusal relations) information.

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CLINICAL ASPECTS

Figure no. 1. Instruments for the use of the Gerber Set No. 105



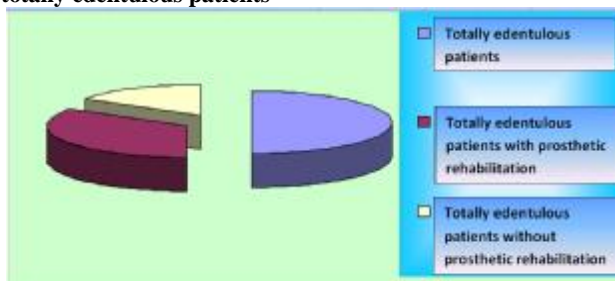
Figure no. 2. Registration plates



RESULTS

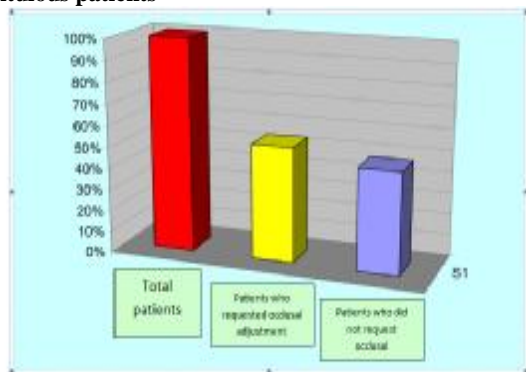
From 127 investigated patients, 87 patients (69%) have prosthetic rehabilitation, and 40 patients (31%) do not have prosthetic rehabilitation, which shows an interest in functionality and the appearance of the buccal cavity.

Figure no. 3. The frequency of prosthetic rehabilitation at totally edentulous patients



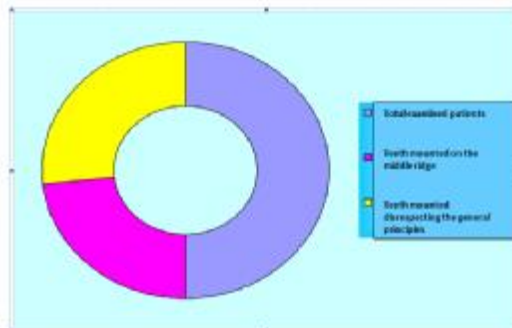
We can notice a high percentage of patients who require, for various reasons, occlusal adjustment.

Figure no. 4. The need of occlusal adjustments by the totally edentulous patients



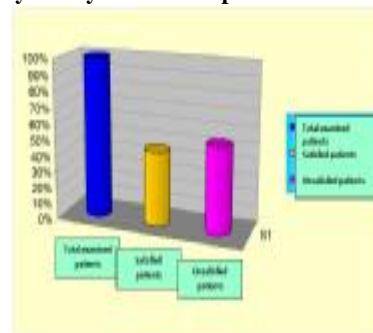
We noticed that an important reason leading to prosthetic dysfunction in time is that prosthetic teeth were mounted in contravention with the general principles.

Figure no. 5. Objective intraoral analysis of totally edentulous patients



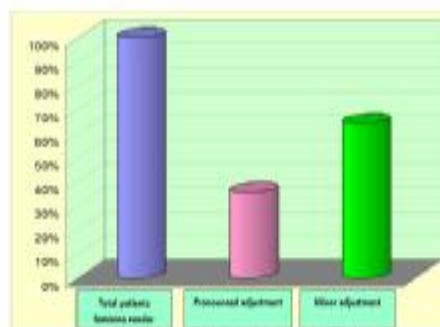
The most common unsatisfactory reason for patients with prosthesis is an overall masticatory inefficiency.

Figure no. 6. Subjective evaluation of the masticatory efficiency by totally edentulous patients



Assessment of the need and subsequently the prosthetic rehabilitation, taking into account the level of masticatory, phonation and physiognomic function obtained.

Figure no. 7. The need of occlusal adjustment after the optimization of the prosthesis with the Gerber set



These goals were met in a significantly higher percentage of the patients with full prosthesis whose intermaxillary optimization was performed using the Gerber Set.

CONCLUSIONS

Following the clinical-statistical study performed, we can summarize the following conclusions:

Our study addressed a group of 127 patients of both sexes, of which 69% respectively 78% had prosthetic rehabilitation, which suggests addressability of the dental office and thus interest in oral functionality and appearance.

From the examined patients with full prosthesis, we found that 54.02% of them required occlusal adjustment.

We encountered modifications in intermaxillary relations and thus prosthesis requiring optimization, more frequently by patients wearing full prosthesis over a long period of time.

The consequences of intermaxillary relations that generate functional changes, must be judged according to the rest position and the maximum intercuspation relations.

Graphic recording systems of intraoral intermaxillary relationship provide a greater accuracy and precision of measurements.

By respecting the tripod principle of balance and avoiding dento-dental contacts the stability and masticatory efficiency of the optimized prosthesis improved considerably, which led to a higher degree of satisfaction at patients wearing prosthetic parts.

In most cases where the Gerber Set was used to make measurements, we found fitting errors of the teeth. This could be corrected by occlusal equilibration in the articulator or replacing some teeth.

The use of graphics and mounting models in the articulator during all of the clinical and technical stages of total edentulous prosthetic avoids a large number of errors and leads to a functional prosthesis from the start up.

If the case of new prosthesis where the measurement of the intermaxillary relations was made only with occlusal templates is indicated reassessment with the help of the Gerber Set and the immediate equilibration in the articulator to increase the patients comfort in the early stages of the prosthesis process.

The use of intraoral graphical systems for recording RC and mounting teeth using the principles of bilaterally balanced occlusion (using articulators) are essential steps in achieving accurate and functional dentures.

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