A study on occlusal perception in dentate individuals and complete denture wearers

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Abstract

Abstract: Objective of this study was to compare the perception of occlusal contacts in dentate individuals and complete denture wearers with the use of shim stock sheets.

Methodology: Twenty dentate and denture wearers were randomly selected and were checked for perception of occlusal contacts using shim stock sheets having thickness of varying thickness and mean values was calculated.

Result: showed that perception of disocclusion in dentate individuals and denture wearers varied. There was no effect of hot or cold beverages on the point of perception.

Keywords: occlusal contact, shim stock sheets

Introduction

Occlusal contacts and disocclusion are perceived very accurately by dentate individuals because of the specialized proprioceptive mechanism present in the periodontal ligament. In complete denture wearers also, the perception of occlusion and disocclusion is present but the accuracy may be limited when compared to that present in the natural teeth. The lowest disocclusion perceived both with natural dentition and dentures was not documented in the literature. A comparison in this regard will be clinically significant and hence the present study was designed.

Objective

To compare the perception of occlusal contacts and disocclusion in dentate individuals and in complete denture wearers.

Methodology

20 dentulous individuals with full complement of teeth and 20 complete denture wearers were selected randomly. Individuals were evaluated for the perception of occlusal contacts using shim stock sheets having thickness of 25µ, 40µ, 60µ, 100µ and 200µ (fig.1, fig.2, fig.3, fig.4). After blindfolding the individuals with black cloth, the shim stock sheets were placed one at a time between the maxillary and mandibular posterior teeth on one side (fig.5). The individuals were asked to occlude and tell whether they perceived any gap on the contra lateral side. The experiment was repeated with sheets having different thickness. When the individuals perceived a lack of contact on the contra lateral side, it was recorded. The experiment was repeated by changing the sides and after taking hot and cold beverages. Shim stock sheets were used randomly to prevent bias.
Result

Out of 20 dentate individuals, only 2 were able to perceive the occlusal discrepancies when 25\(\mu\) thickness shimstock sheet was placed i.e 90% of dentate individuals were not able to perceive the gap of 25\(\mu\). 80% dentate individuals were not able to perceive disocclusion on contra lateral side when 40\(\mu\) shimstock sheet was placed. With 60\(\mu\) shimstock sheet 80% of dentate individuals could perceive the disocclusion. Upto 40\(\mu\) denture wearers could not perceive the disocclusion. When 60\(\mu\) sheet was placed than 80% denture wearers perceived the disocclusion. When 100\(\mu\) shimstock sheet was used both denture wearers and dentate individuals showed similar results i.e 16 out of 20 individuals perceived disocclusion. At 200\(\mu\), all the dentate individuals and the denture wearers could perceive the disocclusion (table.1). Intake of cold or hot beverage did not affect the perception in dentulous individuals (table.2 and 3), but in denture wearers, disocclusion was perceived only at 60\(\mu\) and 50% of individuals perceived the disocclusion when 100\(\mu\) sheet was used after the intake of hot beverages.

Discussion:

Perception of occlusion and disocclusion are clinically significant when restorations are given in dentate individuals. The high points on the restorations and the disocclusion on the contralateral sides are perceived at 25\(\mu\) by a few individuals but complete denture wearers could identify the discrepancy after 60\(\mu\). Clinician has to exercise sheets in ensuring these contact markings, rather than verifying exclusively on patients response. Denture wearers cannot perceive the disocclusion below 60\(\mu\) and hence both working side and balancing side contacts are to be adjusted by careful assessment using the marking system. Observation of patient cannot be relied totally in determining occlusal discrepancies.

Conclusion:

Denture wearers have limited occlusal contacts perception to that in dentate individuals. Patient’s perception and operator's observation may not match in the assessment of occlusal contacts. Thus, these sheets if used in descending order of their thickness in clinical practice can prove to be an essential tool for reducing occlusal discrepancies in dentate as well as in complete denture wearers.