

Effect of Interimplant Distance and Retention on Implant Overdenture Satisfaction

Objective: Assessment of the influence of inter-implant distance and the magnitude of crestal detour on patient satisfaction and quality of life of two implant-retained mandibular overdenture wearers.

Method: Edentulous patients who had been rehabilitated with two implant-supported mandibular overdentures with single attachments and maxillary complete dentures at a university clinic were included in this study. The overdenture attachments were either ball or locator attachments. All the patients completed the Turkish version of OHIP-14 and the VAS satisfaction questionnaire. Instant retention forces of the overdentures were measured using a custom made dynamic testing machine. The inter-implant distances were measured using a wire along the crest and horizontally with a ruler in the casts obtained from the impressions made from the patients. The magnitude of crestal detour of all patients was found by subtracting these two values from each other.

Result: No statistically significant association was detected between instant retention forces and VAS scores ($p>0.05$), but higher retention forces presented statistically significant better quality of life scores in the social disability and handicap domains of OHIP-14. ($p<0.05$). Although no statistically significant association was identified between the inter-implant distance measurements and VAS scores ($p>0.05$), higher inter-implant distance values showed significantly lower social disability and handicap domain scores of OHIP-14 both in the linear and horizontal measurements. Additionally, higher crestal detour values showed significantly higher general comfort, chewing, ease of hygiene maintenance, esthetics and pain VAS scores ($p<0.05$) and significantly lower physical pain domain scores of OHIP-14 ($p<0.05$).

Conclusion: Within the limitations of this clinical study it may be presumed that greater inter-implant distances provide better quality of life and the rise of the magnitude of crestal detour provides better patient satisfaction of the two implant-retained mandibular overdenture wearers. Although higher instant retention values provide better quality of life, it does not affect patient satisfaction.

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