

7. Summary

A follow-up long term prognosis of an implant retained superstructure depends heavily in an exact and precise fitting. In order to achieve this precise fitting the impression must „register“ the exact position of the implants in the oral cavity.

This procedure seems to be the critical factor for the fitting precision of the implantsupported superstructure.

The objective of this study was measuring the influence of different parameters to transfer precision of implant positions using the Ankylos[®]-system. Three groups were built by variance of impression material, transfer copings and splinting techniques.

The results of the reached transfer precision should be divided by one part based on a reference plane of the whole cast (absolute comparision) and one part based on an implant-referred comparision (relative).

Impression materials based on polyether (Impregum[®] Penta and Impregum[®] Penta soft) showed very precise results. Lower levels of precision has been reached with the impression material Aquasil Monophase[™] based on medium consistency A-Silicone. There were no statistically significant differences between these groups, equal for an absolute or relative reference plane.

There were different results for the groups with an absolute and relative reference plane if the various transfer copings were used.

A significant more nonprecise result has been obtained if Ankylos[®]-Balance transfer copings were used and the related reference plane was built by the whole cast. Three other transfer copings produced transfer precision of a same level.

In case of relative reference no significant differences between the groups using various transfer copings have been obtained. All groups showed homogen precise results in exception of the Ankylos[®]-Standard abutment. The Ankylos[®]-Standard group did produce a wide spread of measured values.

Summary

The techniques by splinting Ankylos® transfer copings with the autopolymerizing acrylat Pattern Resin LS in an one-time or a two-time procedure showed no higher transfer precision as if the reference plane of the whole cast was choosen. One-time splinting technique lead to less precise transfer precision in comparision to renunciation of splinting materials as if using a relative reference (statistically significant). Additionally sectioning and resplinting (two-time technique) produced higher precise impressions, but the value of precision of nonsplinted transfer copings has not been reached .

A perfect transfer of the implant positions from their intraoral situation to a master cast seems to be impossible with today´s materials an methods.