COMPARATIVE EVALUATION OF DIMENSIONAL ACCURACY OF RESULTANT CASTS MADE BY PUTTY RELINE AND TWO STEP INJECTION ADDITION SILICONE IMPRESSION TECHNIQUE TO THAT OF A PUTTY RELINE AND TWO STEP INJECTION CONDENSATION SILICONE IMPRESSION TECHNIQUE- AN IN VITRO STUDY

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ABSTRACT

Background & Objectives: Transfer of an accurate replication of the patient's hard and soft tissue to the dental laboratory is important. An accurate impression will result in precise fitting cast restoration. This is one factor that determines the restoration's longevity. Some studies have indicated that dimensional accuracy is influenced more by technique employed rather than material itself. Several techniques have been suggested to improve the accuracy of impressions.

The aim of this study was to compare and evaluate the dimensional accuracy of casts made using addition silicone and condensation silicone impression materials, employing putty reline technique and two step injection technique

Methods: A stainless steel model containing two tapered abutment crowns with cross grooves on occlusal and proximal surface for reference measurement was fabricated on a lathe.

30 impressions of addition silicone impression material and condensation silicone impression material each were made, of which 15 were putty reline technique and 15 were of 2 step injection technique.

A Travelling microscope was used to assess intraabutment and interabutment dimensions on stone cast poured from the impression from stainless steel model. For each of the dimension on the stainless steel model, 15 measurements were made

Results: When interabutment dimensions within the addition silicone and condensation silicone were analyzed ($p=\mathbf{0.0371}$, $p<0.05$) significant difference was noted.

Significant difference in the interabutment dimension of the addition putty reline technique of the three subgroups according to pour were noted. Since the F value was significant, to know the significant difference within the groups, pair wise comparison analysis was done by Newman-Keuls multiple post hoc procedure

Interpretation & Conclusion: The addition reaction impression material yielded more accurate casts using both the putty reline and 2 step injection technique than those of condensation impression material. The 2 step injection technique was found to be more accurate than the putty reline technique.

Key words: Addition Silicone, Condensation Silicone, Putty reline, 2 step injection