ABSTRACT

Purpose of the study: The present invitro study was conducted to compare and evaluate the positional accuracy of implants with two different splinting materials with two different elastomeric impression materials.

Materials and methods: An acrylic reference model was obtained from edentulous wax model. Four impression copings were screwed onto the implant replicas of the reference model at a torque of 15Ncm using a manual torque wrench. 20 custom trays, for open tray impression were fabricated using cold cure polymerising acrylic resin. Pattern resin and BisGMA Splinting material and VPS monophase and VPES heavy body and light body impression materials were used. The pattern resin was made before 24 hours from custom made mould, splinted at the time of impression. All 20 casts of Group A and Group B were evaluated using a Coordinate measuring machine. The measurements were made in all the three axes namely x, y and z. The mean values of all the measurements for each group were obtained and they were statistically analysed using one way ANOVA and Post hoc tests.

Results: On comparison, of all the test groups the mean inter implant distance and implant angulations in all axes, Group II (A) shows nearest value to the reference model, when compared to all the test groups.

Conclusion: The study concluded that splinting with pattern resin was fabricated before 24 hours and splinted at the time of impression and VPES impression material casts exhibited minimum distortion value in inter implant distances and angulations.

KEY WORDS: Implants/Replicas, Impression copings, Impression material, Splinting material and Co-ordinate measuring machine.