Evaluation in accuracy to two impression techniques: in case of bone anchored bridge

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Abstrak

Purpose: The Purpose of this study was to investigate and compare the accuracy of two procedures: open tray with splinting technique and closed tray impression techniques, in inovative in vitro experiments. Materials and methods: One master cast was fabricated with 4 abutment replica implants with almost parallel position in anterior region of an edentulous mandibular plaster cast. The working cast was taken impressions with open tray splinting technique (group 1) and closed tray technique (group 2) using polyvinyl siloxane impression material. The Type III dental stone was poured into around the impressions. The accuracy of impression procedures were measured 24 hours later after pouring dental stode to each impression. Four sites were marked to measured on every platform of implant analogs. The analyzing stylus was positioned to each site and the heights, horizontal inclination and saggital inclination were measured using the Laser displacement transducer (LK G115; Keyence, Osaka, Japan). Measurements of these 16 points of four implants per a model was repeated 7 times under the same condition. The gap between the abutment and superstructure at one screw test was evaluated with a digital microscope system (VH-Z100 & VH-5000; Keyence, Osaka, Japan). The mean and standard deviation estimated from the samples of each subgroup were statistically analyzed by ANOVA test ($P<0.05$ as the level of significance). Results: The relative differences of implant heights, horizontal inclination and saggital inclination of each implant on closed tray technique was statistically significant different to master cast and open tray with splinting ($P<0.005$). Conclusion: The open tray technique was more accurate comparing to the closed tray technique. The gap between the abutment and superstructure in the open tray with splinting technique was smaller comparing to the closed tray technique.