

بررسی میزان gap و overhang در ناحیه finish line کوپینگ‌های تهیه شده با سه روش ریختگی با دو نوع آلیاژ در ایمپلنت‌های ITI

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 **دندانپزشک

Title: Discrepancy measurements of copings prepared by three casting methods and two different alloys, on ITI implants.

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Background and Aim: An important criterion for success assessment of implant-supported prostheses is marginal fit. Vertical and horizontal discrepancy can result in loosening of the prosthetic screw, crestal bone resorption, peri-implantitis and loss of osseointegration. Despite careful attention to waxing, investing, and casting, marginal discrepancies are inevitable. The aim of this study was to evaluate the marginal gap and overhang in three casting methods with two different alloys in ITI implants.

Materials and Methods: In this experimental in vitro study 48 analog abutments were randomly divided into six groups as follows: 1) burn out cap + BegoStar, 2) impression cap + BegoStar, 3) conventional wax up + BegoStar, 4) burn out cap + Verabond2, 5) impression cap + Verabond2, 6) conventional wax up + Verabond2. Waxing was done in 0.7 mm thickness verified by a digital gauge and a putty index was made for all groups. Reamer was used for correction of the finish line after casting in all groups. Castings were seated on analog abutments and embedded in acrylic resin. Specimens were sectioned by isomet instrument and polished and cleaned by ultrasonic cleaner for 10 min. The marginal gap and overextended margins of castings were examined under a Scanning Electron Microscope (SEM) (X200). The mean gap and margin overextension were calculated for each group. Data were analyzed by multivariate analysis and Bonferroni post-hoc test with $p < 0.05$ as the level of significance.

Results: No significant difference in gap size was observed among the three casting methods with two alloys ($P=0.056$). The marginal gap was not different in the studied casting methods ($P=0.092$). Gold alloy crowns showed lower marginal gaps compared to base metal alloy crowns ($P < 0.001$). No significant difference in overhang size was observed among casting methods with two alloys ($P=0.093$). Base metal alloy crowns showed less overhang compared to gold alloy crowns ($P < 0.001$). There was a significant correlation between overhang and use of impression cap in base metal alloys ($P < 0.001$).

Conclusion: Based on the results of this study, vertical discrepancy of frameworks made with gold alloy were less than those made with base metal alloy. Base metal alloy demonstrated less overhang. Conventional wax up or using burn out caps produced less horizontal discrepancy.

Key Words: Dental implant; Impression cap; Burn out cap; Marginal gap; Overhang; Finish line; Overextended margin; Marginal fit; Dental alloy; Marginal discrepancy

چکیده

زمینه و هدف: یکی از فاکتورهای مهم در موفقیت ایمپلنت‌های دندانی تطابق لبه‌ای casting و اباتمنت در ایمپلنت‌های سمان شونده می‌باشد. overhang و gap در مارجین ایمپلنت می‌تواند سبب لقی، تحلیل استخوان کرسنال، peri-implantitis و از دست رفتن استواینتگریشن شود. علیرغم دقت در مراحل واکس

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