

Effect of cement remnants at crown-abutment margin on peri-implant soft tissue, randomized clinical trial

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Abstract

Objective: This study compared the effect of changing abutment design and cementation technique on peri implant soft tissue.

Materials and methods: 28 titanium endosseous threaded implants were placed in 28 patients in the premolar maxillary region. 14 crowns were cemented over the abutments with the cement applied to all axial walls, 7 of these crowns were cemented on closed abutments while the other 7 crowns were cemented on vented abutments.

Treatment protocol included three stages; surgical stage where the implants were placed, followed by the prosthetic stage which included placement of abutments of different designs, CAD/CAM provisional crowns were fabricated and cemented. In follow-up stage; periodontal assessments and soft tissue esthetic assessments were done at the time of provisional restoration placement (base line), then at 3 months and 6 months intervals.

Results: Analysis of the results revealed that the effect of the abutment design (vented and closed) and cementation technique (cervical only and all axial walls) on the peri-implant tissues was statistically significant difference between groups

Conclusion: vented abutments with cement applied on the cervical 1/3 only showed the best esthetic results. This better esthetic behavior seems to be strongly correlated to the less excessive cement extruded in this group.

Clinical significance: Prosthodontics should use vented abutments rather than closed ones and applying the cement on the cervical one third of the crown to decrease the amount of extruded cement.

Key words: vented abutment, closed abutment, cementation technique, peri implant soft tissue, PES.

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