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Evaluation of residual cement at implant abutment junction and in gingival mask with precementation and dental floss technique: an in-vitro study

Running title: Cementation techniques on residual cement at implant abutment junction

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Abstract

Statement of problem: Complete removal of residual cement at the implant abutment interface and on subgingival margins after cementation of implant supported prostheses has been shown to be unpredictable. Residual cement at implant abutment interface is associated with peri-implantitis.

Purpose: To evaluate the amount of residual cement at the implant abutment interface and on laboratory gingival mask using two different cementation techniques.

Material and methods: Assembly of implant analog with regular platform and unprepared implant abutment with 1mm collar height were embedded in autopolymerizing acrylic resin block at the level of abutment implant analogue interface. Nickel chromium crowns were fabricated with access vent. The laboratory gingival mask was injected around the implant abutment interface to simulate peri-implant soft tissue of 1 mm thickness. The specimens were divided randomly into 2 groups, with each group receiving a different cementation technique i.e 15 samples were cemented using dental floss, 15 samples were cemented using modified cementation technique while cementing crown seated under constant load (80 N) for 10 minutes.

The amount of residual cement was measured under stereomicroscope. Results were compared with t test.

Results: There was statistically significant difference seen for the values of residual cement between the groups of cementation using floss techniques and modified cementation techniques ($p < 0.05$) with higher values of residual cement for cementation using floss technique on all aspects.

Conclusion: Within the limitation of this in vitro study least amount of residual cement was present in modified cementation techniques compared to cementation using floss technique.

Clinical Significance: The residual cement if left over after cementation may lead to peri-implantitis

Key words: residual cement, periimplantitis, cementation, precementation technique

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