

Effect of Periodontitis and Scaling and Root Planing on Risk of Pharyngeal Cancer: A Nested Case—Control Study

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I. Object:

This study investigated the association between periodontitis and the risk of pharyngeal cancer in Taiwan.

II. Materials & Methods:

For this population-based nested case-control study using the Longitudinal Health Insurance Database derived from Taiwan's National Health Insurance Research Database, we identified patients (n = 1292) who were newly diagnosed with pharyngeal cancer between 2005 and 2013 and exactly paired them with propensity score matched control subjects (n = 2584). Periodontitis and scaling and root planing (SRP) were identified before the index date. Pharyngeal cancer was subdivided into 3 subgroups on the basis of anatomic location: nasopharyngeal cancer, oropharyngeal cancer, and hypopharyngeal cancer. A multiple conditional logistic regression model was applied to analyze the adjusted odds ratio (aOR).

III. Results:

Periodontitis was associated with an increased risk of pharyngeal cancer (aOR, 1.57; 95% confidence interval (CI), 1.17 to 2.10), especially oropharyngeal cancer (aOR, 2.22; 95% CI, 1.07 to 4.60). We found a decreased risk of pharyngeal cancer in patients who had undergone SRP (aOR, 0.77; 95% CI, 0.61 to 0.96).

IV. Conclusion:

In conclusion, this study showed that periodontitis was associated with an increased risk of pharyngeal cancer and SRP exerted a protective effect against pharyngeal cancer. Our results suggest that treating periodontitis and performing SRP, which are modifiable factors in oral health, in clinical practice may provide an opportunity to decrease the disease burden of pharyngeal cancer in Taiwan.

Adhesion and chemical analysis of zirconia-resin interfaces bonded by tribochemical silica coating and universal adhesives

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I. Objective:

The trend of prosthodontic rehabilitation already moves to the monolithic zirconia restorations. However, the chemical inertness of zirconia also indicates the difficulty to bond with resin cements. 10-methacryloyloxydecyl dihydrogen phosphate (10-MDP) is the most effective chemical agent to improve the bonding of zirconia, while 10-MDP based universal adhesives may incorporate silane. In another way, tribochemical silica coating (TSC) is also recommended to enhance the affinity between zirconia and silane. The purpose of this study was to evaluate the effectiveness of universal adhesives, and the ability of adjunct TSC in enhancing resin- zirconia bonding.

II. Materials & Methods:

Zirconia disks were treated with the Rocatec soft (3M EPSE) TSC treatment for 10 s. Subsequently, three experimental primers (5% MDP, 5% silane, and the mixed MDP+ silane) were applied on zirconia. The treated surfaces were evaluated by a time-of-flight secondary ion mass spectrometer (ToF-SIMS). Resin composite cylinders were bonded to the treated zirconia. The bonded assemblies were subjected to the SBS tests after either storage for 24 h or 5000 thermocycles.

III. Results:

In the ToF-SIMS analysis, the MDP groups showed less infiltration of phosphorus-related ions (PO_3^-/ PO_2^-) into zirconia. Contrarily, the mixed MDP and silane group show deep infiltration of phosphorus-related ions. The TSC+silane group showed the formation of silanol group. In both 24-hour and post-thermocycles SBS tests, TSC combining with the mixed primers presented the highest SBS values, followed by the TSC+silane group. The MDP primer presented the lowest SBS values.

IV. Conclusion:

In using TSC treatment, 10-MDP does not bond onto zirconia due to the barrier of silica coating. The combination of MDP and silane showed the superior chemical bonding which was stable after thermocycling. The presence of silane may facilitate the adsorption of MDP.

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Seven-year follow-up of a cast-metal resin-bonded bridge on mandibular incisors with low bone levels (case report)

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I. Introduction:

The cast-metal resin-bonded bridge is a conservative approach to replace the missing tooth. It can provide an additional option in cases of anatomical limitations like tilting, replacement of missing anterior teeth in children and adolescents, short span, sound teeth or with minimal restorations, or periodontal splinting.

II. Case:

A 53-year-old male patient complained about hypermobility of the mandibular left central incisor. The mandibular left central incisor was extracted due to the severe bony defect. In addition, the mesial bone levels of the mandibular left lateral incisor and the mandibular right central incisor were low. He hoped to have the prosthesis for esthetics, but he did not want to accept the removal partial denture or the implant. After 6-month follow-up, mesial bone levels of the mandibular left lateral incisor and the mandibular right central incisor were better than those before. He chose to receive a cast-metal resin-bonded bridge after discussion. The margin was prepared with a definite knife-edge or a light chamfer owing to limited enamel thickness of lower incisors. A combination of more than 180-degree opposing groove placement at line angles and cingulum rests were prepared to achieve the greatest stability. Finally, he was satisfied with the resin-bonded bridge. After seven years, the effect is still good.

III. Discussion:

The advantages of cast-metal resin-bonded bridges are minimal removal of tooth structure, minimal potential for pulpal trauma, supragingival preparation, easy impression making, and reduced patient expense. The disadvantages of cast-metal resin-bonded bridges are reduced restoration longevity and compromised esthetics on posterior teeth. Cooperative patients are very important. In this case, the bone support of abutments is not good for the traditional bridge. Besides, the patient didn't want to accept the implant or a removal partial denture. A cast-metal resin-bonded bridge on mandibular incisors provided a conservative preparation and periodontal splinting. The enamel thickness near CEJ on lingual or mesial surface of the mandibular incisor is usually less than 0.5 mm. Therefore, the margin was prepared with a definite knife-edge or a light chamfer. The combination of more than 180-degree opposing groove placement at line angles and cingulum rests resulted in the greatest stability.

IV. Conclusion:

A cast-metal resin-bonded bridge is an additional treatment option in proper clinical conditions and carefully selected patients.