

Periodontics and Prosthodontics Relationship - A Review¹Dr. Shubhangi Sharma, MDS Periodontology & Oral Implantology, Jammu & Kashmir, UT²Dr. Sunny Sharma, MDS Prosthodontics and Crown & Bridge**Corresponding Author:** Dr. Shubhangi Sharma, MDS Periodontology & Oral Implantology, Jammu & Kashmir, UT**Citation of this Article:** Dr. Shubhangi Sharma, Dr. Sunny Sharma, “Periodontics and Prosthodontics Relationship - A Review”, IJDSIR- June - 2022, Vol. – 5, Issue - 3, P. No. 126 - 129.**Copyright:** © 2022, Dr. Shubhangi Sharma, et al. This is an open access journal and article distributed under the terms of the creative commons attribution non-commercial License. Which allows others to remix, tweak, and build upon the work non-commercially, as long as appropriate credit is given and the new creations are licensed under the identical terms.**Type of Publication:** Review Article**Conflicts of Interest:** Nil**Abstract**

The article was aimed at addressing the relationship between prosthodontics and Periodontics. A sound Periodontium provides a firm foundation for an esthetic and functional prosthesis. Conversely, when restorations are designed to be self- cleansing and promote gingival health, the tissues present a harmonious esthetic blend at the restorative –gingival interface. This review paper aims at exploring the potential of an interdisciplinary approach to achieve this end. Within modern dentistry, periodontics and prosthodontics share an intimate and inseparable relationship in multiple aspects, including treatment plan, procedures execution, outcome achievement and maintenance.

Keywords: Biological width, periodontal health, retraction cord, proximal relationship, prosthodontics**Introduction**

A beautiful smile can be crafted only against a backdrop of healthy gingiva. A sound Periodontium provides a firm foundation for an esthetic and functional prosthesis. The practice of restorative dentistry has a reciprocal relationship with the maintenance of periodontal health.

Poor restorative treatment may have adverse effects on the Periodontium by increasing accumulation of plaque while untreated periodontal disease will compromise the success of restorative dentistry¹. When restorations are designed to be self-cleansing and promote gingival health, the tissues present a harmonious esthetic blend at the restorative gingival interface.

Discussion

This review attempted to address the key relationship between periodontics and prosthodontics. For prosthodontics, periodontal health plays an important role on the longevity of restorations. On the other hand, defective prostheses may contribute to progression of periodontal diseases.

Prior treatment plan, tooth prognosis should be addressed both on individual tooth and all overall dentition. Several periodontal prognostication systems have been introduced based on either periodontal stability or certain parameters²⁻⁴, such as furcation involvement, tooth mobility, the severity of bony destruction, etc.

The impacts of periodontal health on prosthetic therapy

Active periodontal diseases and contributing factors should be eliminated or controlled prior to prosthodontic constructions. Function and lifespan of prosthesis will be compromised if periodontal disease remains uncontrolled after delivery. In addition, periodontal inflammation results in soft tissue changes in terms of texture, color, size and gingival consistency. It then leads to impaired esthetic outcomes by deteriorating the harmony between periodontium and prosthesis. In addition to inflammation control, Periodontist could offer a hand for soft and hard tissue management to prepare sites for successful prosthetic treatments. For that patient who had history of periodontitis, regular supportive periodontal therapy is even more beneficial to prevent further disease progression. Previous studies showed that sites with treatment but without maintenance had 2 times higher tooth loss than sites with regular maintenance after periodontal treatment^{5,6}. In other words, regular compliance of periodontal maintenance is key to prevent the recurrence of periodontal diseases and to maintain the integrity of treatment outcomes.⁷

The impact of prosthetic factors on periodontal health

Defective restorations contribute to disease progression by increasing accumulation of dental plaque and retention of food debris. Invasion of **biologic width** may also result in periodontal inflammation.

Restorative clinicians must understand the role of **biologic width** in preserving healthy gingival tissues and controlling the gingival form around restorations^{8,9}. A clinician is presented with three options for margin placement; supra-gingival, equigingival, and subgingival margins.

With the advent of more translucent restorative materials, adhesive dentistry, and resin cements, the ability to place supragingival margins in esthetic areas is now a reality. The use of equigingival margins traditionally was not desirable because they were thought to retain more plaque than supragingival or subgingival margins and therefore result in greater marginal gingivitis.

When determining where to place restorative margins relative to periodontal attachment, it is recommended that patient's existing sulcular depth be used as guideline in assessing the biologic width requirement for that patient.¹⁰ If the sulcus probes 1.5mm or less, the restoration margin should be placed 0.5mm below the gingival tissue crest. If the sulcus probes more than 1.5mm, margin should be placed half the depth of the sulcus below the tissue crest. If sulcus greater than 2mm is found, gingivectomy can be performed to lengthen the root. If patient experiences tissue discomfort when the tissue margin levels are being assessed with periodontal probe, it is good indication that margin extend into the attachment and that a biologic width violation has occurred. Biologic width violations can be corrected either by surgically removing the bone away from proximity to the restoration margin i.e, crown lengthening procedure or by orthodontically extruding the tooth and thus moving the margin away from the bone.^{11,12}

Use of retraction cord and effect on periodontium

There is direct relationship between the time that retraction cord is in the sulcus and the potential for adverse gingival responses such as recession. It has been suggested that total cord retraction time should not exceed 15 -20 minutes. A single – cord technique is the least traumatic option than two cord technique, and is normally applied when sulcus is shallow, and the margin

is placed only minimally in the crevice in areas of root proximity.^{13,14} Management of the gingival tissue is essential for obtaining acceptable impression especially for subgingivally located restorations.¹⁵

Ruel and co-workers reported that gingival displacement methods may cause 0.1-0.2mm gingival recession and the destruction of junctional epithelium that took 8 days to heal.¹⁶ Chemical agents as well as mechanical force of retraction cords could trigger the temporary gingival recession and gingival inflammation.¹⁷ Hence, the proper manipulation of different gingival retraction techniques such as materials and time control are the key factors to avoid permanent tissue damage while impression taking process is made.

Proximal relationship

Contact types between prostheses may also play a role on periodontal health. The relationship between open contacts and periodontal destruction has been a controversial issue since last century. To verify the impacts of open contacts on periodontium, Jenberg and colleagues conducted a cross sectional study enrolling a 104 patients with unilateral open contacts. In addition to greater prevalence of food impaction, the sites with open contacts presented greater pocket depth and clinical attachment loss although there was no significant difference for gingival index, bleeding and calculus index between contact types.¹⁸

Moreover, another cross-sectional study reported an increase of bone loss(2.4)% in patients with initiate periodontitis.¹⁹ In spite of an indirect relationship between open contact and periodontal inflammation, it could be speculated from these studies that food impaction contributes to increasing pocket depth and clinical attachment level. Thus, clinician should avoid to place open contacts between fixed prostheses.

Conclusion

Frequent and efficient communications are essential between Periodontist and prosthodontists through the entire treatment procedures, including plan, treatment procedures and maintenance, since both specialty share a common goal; to create a pleasing esthetic with a harmonious stomatognathic system. Close attention paid to both soft and hard tissues around teeth and implants before, during, and after restorative produces a successful outcome. It also gives the patient the benefit of comprehensive treatment with precise and lasting restorations.

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