

Guest Editorial**Fixed Prosthesis: Beneficial Influences on Periodontal Health**

The state of periodontal health is a vital consideration in planning for fixed and removable prostheses. Not only must the structural and functional integrity of the periodontium's components (the gingiva, periodontal ligament, and alveolar and supporting bone) be established prior to the construction of the prostheses, but the design and function of the prostheses must preserve tissue health.

Periodontal tissues can quickly reflect inadequacies in clasp and rest design and placement, selection of abutment teeth, occlusal relationships, extent of saddle coverage, placement of palatal and lingual bars, morphology and positioning of pontics, width and shape of embrasures, selection of abutments including their numbers and distribution, etc.

Without discussing the relative merits of fixed and removable prostheses, it may be stated that periodontal health is generally best maintained by fixed prostheses. There are a number of reasons for such a categorical statement. When fixed restorations are constructed, axial and proximal contours of the crowns can be more ideally established to significantly protect the gingival margins from the effects of food, bacterial plaque, and debris lodgment and irritation. Buccal, lingual, occlusal, and gingival embrasures can be created to afford maximum protection to the interdental tissues, providing tissue and dental contours, which may deflect material away from the interproximal zones. Access is also provided for self-administered periodontal hygiene procedures. Additionally, where they do not reach the height of the contact areas between contiguous teeth, interdental soft tissues tend to be keratinizing and convex in form, thus aiding in the maintenance of these areas. A fixed prosthesis, properly constructed, can also protect the soft and hard tissues of edentulous areas. Pontic contours facially, lingually, and interdentally (eg, the adequacy of gingival embrasures) tend to negate the direct insult of food and debris against the marginal tissues, allow for the free egress of these substances from the interdental and interpontic areas, and permit ease of physiotherapeutic maintenance, thus helping to prevent recurrent gingival (and periodontal) disease and localized soft tissue irritation and trauma.

The esthetic benefit of fixed restorations cannot be ignored, especially in those areas of the dentition that have suffered extreme attachment loss. Following periodontal therapy, the clinical crowns are often longer than desired and the display of large interproximal spaces is increased. Fixed restorations improve esthetics by optimizing crown morphology, topography, emergence profile, and interproximal relationships, while permitting the establishment of a maintainable environment. When minor irregularities in arch form are present, occasioned by malposed teeth, they may be corrected either solely by the fixed prosthesis or by the fixed restoration in association with orthodontic tooth movement. Where teeth have been moved, the fixed prosthesis (initially the provisional fixed prosthesis) serves as an excellent means of postorthodontic stabilization.

In periodontally affected dentitions, stabilization may be afforded to teeth that have reduced periodontal attachment. Such teeth, acting alone as abutments, may not serve adequately to support the prosthesis; however, when splinted to adjacent teeth, they not only may contribute valuable support but also may remain as useful and functional members of the dentition. In some cases of extensive maxillary reconstruction, the clinician also has the option of shortening the incisocervical/occlusocervical length of the teeth, thus establishing satisfactory crown-to-root ratios. In patients with severely compromised occlusion, more ideal and adequate occlusal relationships can be produced with a fixed prosthesis, eliminating such potentially deleterious factors as tooth extrusion and tipping, nonworking-side (balancing) interferences, prematurities in centric relationships, insufficient anterior incisive group function, etc. Improved dental function can be established by recreating optimal overbite-overjet relationships, angle of incisive guidance, and desirable contacts in lateral excursions. Prospectively, forces may be directed axially; the attachment apparatus can best withstand vertically applied stress. Nowhere is this more important than in the dentition where supporting structures were once subjected either to advanced marginal periodontitis with concurrent secondary occlusal traumatism, or to the pronounced attachment apparatus damage induced by adverse occlusal relationships. The negative occlusal sense—the lack of awareness of the teeth in relationship to their investing tissues, the temporomandibular articulation, and mandibular musculature—is more easily achieved with fixed prostheses.

In addition to the gingival/soft tissue protection and the esthetic and occlusal benefits, fixed restorative dentistry can, in many instances, reduce or eliminate the incidence of dental caries, especially of the cemental variety. Root hypersensitivity may be brought under control, adding greatly to the patient's comfort and ability to improve dietary selection.

Finally, dental implants have expanded the limits of fixed prostheses, both in the periodontally healthy, partially edentulous patient, serving as stable terminal and/or intermediate abutments and in the fully edentulous patient. In addition, the integration of osseointegrated implants into periodontal prosthesis therapy allows the clinician to face and control the biomechanical disadvantages of cantilevers, the severe mobility of compromised abutment teeth, the presence of long edentulous spans, the absence of posterior supporting dentition, etc, with new satisfactory alternatives. Implant therapy allows for a splinting effect of immobile fixtures attached to the natural dentition (with or without interlocks) and potentially extends the longevity of the remaining teeth.

After enumeration of many of the numerous benefits of fixed prostheses, it would appear that there is no longer a place for the removable partial denture in the armamentarium of the dentist. This is far from the truth; there are numerous indications not only for the placement of removable partial dentures, but also for their use in combination with fixed prostheses.

It is entirely within the capabilities of the practitioner to plan restorations that will not only maintain periodontal and dental health, but will satisfy the esthetic and functional requirements of the patient.

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