

EDITORIAL

In search of predictable treatment outcomes

Maintaining the treatment sequence outlined in the dentist's treatment plan ensures that all treatment objectives are met in an orderly manner. Along the way, the dentist utilizes a variety of treatment methods to ensure patient comfort and interim stabilization of the restored areas. In fixed prosthodontics the role of provisional restorations cannot be overemphasized, yet their limitations are not fully understood by many clinicians.

Routinely fabricated of carbon plastic materials of some sort (such as polymethylmethacrylate and bis-acryl), provisional restorations help to maintain comfort and stability of the restored abutments. Vital teeth are protected and the treating dentist is able to evaluate the occlusal design and stability before the definitive restorations are delivered. Provisional restorations have been described as the blueprints for definitive restorations. However, since they are not fabricated of the same material as the definitive restoration and, in certain situations, differ in design, the interim treatment may not provide a clear view of the treatment outcome.

A simple example is a 3-unit fixed partial denture replacing a posterior tooth. Even the best-fitting provisional is fabricated of a plastic material that has the ability to flex—unlike the definitive prosthesis with a rigid framework (metal or ceramic). This ability to flex, especially in areas of high occlusal load, such as posterior teeth, will cause a rapid marginal seal breakdown and cement washout. Many clinicians have had good results leaving well-fitting single provisional restorations cemented with provisional cement for a slightly prolonged period of time, but are surprised to find leakage, and in some cases even carious lesions, developing under a provisional fixed partial denture left for the same period of time. Is this predictive of the patient's susceptibility to caries development and failure of the definitive restoration? No, it is the difference in the material properties that resulted in such outcome. Since plastic is flexible, posterior provisional fixed partial dentures will start leaking relatively quickly. This, however, is not indicative of the performance of the definitive prosthesis, which will be fabricated of a rigid material.

Another good example involves complex restorative treatment, especially in patients with excessive wear due to parafunctional activity who require full-

mouth rehabilitation. In many of these patients the definitive treatment will include multiple single full-coverage restorations. However, the provisional restorations are usually designed differently than the definitive restorations in such situations. It would be time consuming and ineffective to fabricate 28 single provisional restorations; it is acceptable to fabricate the provisional restorations as a 1-piece splinted prosthesis for the 6 anterior abutments, and/or 1-piece posterior splinted prosthesis for each posterior quadrant. Splinting a large number of abutments prepared in slightly different angles guarantees increased retention of the provisional restorations, so they are not easily dislodged even with continuous parafunctional forces. The flexible nature of the provisional material may result in wear but usually not a fracture of the provisional restorations. In extensive rehabilitations, the provisionals may be adjusted between appointments, so monitoring excessive and rapid wear of the provisional may be challenging.

Many clinicians feel frustrated when a patient who seemed to be comfortable and stable in provisional restorations returns with fractured and/or dislodged definitive restorations. Understanding the difference in the design and material properties between the provisional and definitive restoration delineates the limitation of using the provisional as the sole predictor of treatment outcome. Careful evaluation of the preoperative situation, the number of missing teeth and fractured restorations, among other factors, is necessary.

Well-designed provisional restorations will maintain patient comfort and stability during the treatment phase and will serve as a guideline for the design of the definitive restoration from a functional and esthetic standpoint. However, using the stability of the provisional restoration (or lack thereof) as the sole predictor of the outcome of the definitive restoration is a major leap of faith.



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