COMMENTARY

REATTACHMENT OF ANTERIOR TEETH FRAGMENTS: A CONSERVATIVE APPROACH

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There have been scores of articles documenting tooth fragment reattachment since Starkey's groundbreaking article[1] in 1979. The value of this publication by Macedo and colleagues is that it brings this innovative treatment option to the attention of clinicians. Furthermore, peer-reviewed case reports serve to document the results of complementary techniques, collectively adding credence to treatment choices within the profession. I want to take this opportunity to elaborate on a number of supplementary issues with regard to anterior tooth fragment reattachment.

A number of publications (including this one) reveal the "conservative" approach to the reattachment of fractured incisors. Most clinicians would agree that the conservative slant is a stretch of the terminology in those instances where the fracture involves the biological width, as it does in case 1. The reattachment procedure itself can be clinically complex; the complexity revealed in figures 8 and 10 supports this contention. The conservative designation is, however, justified in that no further damage is inflicted on the tooth remnant, and as such remains an important treatment modality that every dentist should offer his or her patients. Orthodontic extrusion, when biological width involvement necessitates surgical intervention, is an adjunctive treatment option (previously documented[2]) that should be part of the options presented to patients.

The clinical outcome of restorations utilizing tooth fragments, in terms of retention, is still primarily dependent on durable enamel bonding. Aside from the usual adhesive variables affecting the bond (etching time and other idiosyncratic procedural variances), the reattachment process is essentially a butt-jointed weld; as such, the closer the adaptation, the stronger the "weld." The authors have demonstrated a useful adaptation technique using a stent. Readers are urged to revisit a recent publication in the *Journal of Esthetic and Restorative Dentistry*[3] detailing the use of silicone index in a complex reattachment procedure.

Clinicians would be advised to refrain from using self-etching dentin bonding systems until such time that the resultant enamel bond is as predictable in the long term as the earlier-generation three-bottle systems. It is pertinent to note that none of the in vivo tooth fragment reattachment studies have utilized self-etching dentin bonding systems. Previous in vitro studies have shown insufficient fragment retention when self-etching products are used.[4] Long-term studies using self-etching systems should be carried out to investigate fragment retention prior to clinicians resorting to adhesive simplification in this treatment modality.

It has been clinically well established that the more complete the fragment recovery, the more predictable the esthetics in the long term. Patients should be advised that reattachment is the most appropriate immediate treatment option and that further treatment options will no doubt be implemented as the restoration ages. The Andreasen group has suggested that porcelain laminate veneers may be used to supplement fragment bonding, thereby enhancing dental esthetics and function.[5] In fact, porcelain veneers restored the fracture strength to that of intact incisors.

Readers are reminded that discoloration of the fragment at the time of reattachment is not a contraindication to reattachment. The reattachment of the crown fragment should be done even if the crown fragment is discolored, as Toshihiro and Rintaro have shown excellent esthetic rebound in color 1 year post-treatment following intraoral rehydration.[6]

Lastly, little has been written about the psychological benefit of reattachment, particularly for parents devastated by the catastrophic loss of a child's smile; it has been my clinical experience that parents are comforted by the knowledge that

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the tooth fragment has been utilized in the restoration. Dentists should make every effort to educate the community to retrieve tooth fragments and bring them to their restorative appointment.

Reattachment of anterior teeth fragments using meticulous bonding techniques is a predictable restorative treatment option that offers the advantages of immediate esthetics and conservation of the remaining tooth structure.

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