Maxillary bonded retention

Dr. Richard Paulson's article in the Fall edition (Paulson RC. A functional rationale for routine maxillary bonded retention. Angle Orthod 1992;62(3):223-226.) describes a bonded technique to help obtain anterior guidance for a functionally optimum occlusion in orthodontic case finishing procedures. Obviously, Dr. Paulson has been greatly influenced by Peter Dawson's work. He quotes Dawson: "...failure to properly establish the correct anterior guidance is a major cause of post-treatment instability." He also uses Reitan's animal experimental work on elastic fiber reorganization of rotated teeth to justify keeping bonded retainers for four years.

Dr. Paulson does not state in his article the duration of his vacuum-formed maxillary plastic removable retainers. It should be note that Dawson's tenets on orthodontic stability are not supported by any long-term postretention studies in peer review orthodontic journals.

Furthermore, Reitan's animal studies of elastic fiber reorganization and stability implying a cut-off retention period of four years runs counter to Riedel, Little, et al.'s work at the University of Washington. Their excellently designed, clinical, 10-year post-retention study of over 600 well-treated cases with 2 to 3 years of retention showed 66% relapse.

In regard to other tenets of Dawson's, such as "position of equilibrium," Donald Enlow in equivalent terminology stated "the treatment aim of orthodontics is facial balance or homeostasis," but, he added, "unfortunately we don't know how to measure it." (Enlow DH. Morphologic factors involved in the biology of relapse. J Charles H Tweed Foundation 1980;8:16-23.) In my paper, "The evolution and clinical management of long-term retention procedures", a long-term retention procedure was proposed as an alternative or option for maintaining stability. This was supported by a series of documented cases 10 to over 30 years posttreatment with a majority still wearing retainers. Sheridan succinctly concurred (Sheridan JJ. The three keys of retention. J Clin Orthod 1991;25:717-718.)

Finally, continued work such as that by Dr. Paulson, Dr. Dawson, and Williamson (referred to by Dr. Paulson) is necessary and important — but must be tested over the long-term. At the present state of the art, for most of our patients, I must agree with Parker who said it all in the title of his paper: "Retention, Retainers may be Forever".

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Author's response

I enjoyed reading Dr. Kaplan's letter and agree with many of his statements.

In defense of Peter Dawson's observations on posttreatment instability, it is true that he is not primarily working with treated orthodontic patients. His theories are based on having treated thousands of adult patients with temporomandibular dysfunction and associated symptoms. I would welcome long-term studies testing Dr. Dawson's occlusal theories on orthodontic patients and our specialty would benefit from well-designed studies incorporating his parameters of occlusal excellence in our finishing procedures. My clinical observations continue to strengthen as an endorsement of his theories.

Regarding long-term retention, I would like to expand on the recommendations that I routinely emphasize to my patients.

(1) I now recommend a minumum of 4 to 5 years with bonded retention. If the patient maintains the gingival tissue in the area of bonded retainers, and is accepting of the limited responsibility of maintaining them, I recommend continuing the bonded retention indefinitely.

(2) If the patient or his or her dentist requests removal of bonded retainers, I emphasize that we have no way of predicting if the treatment result will be stable. We therefore treat every patient as if his or her occlusion may be unstable and should be monitored for an indefinite duration.

(3) The vacuum-formed "Pro-Form" retainers are precise enough that I advise continual monitoring by the patient. I tell them they will be able to feel changes sooner than we can see them. My recommendation is to gradually reduce the nights per week that the retainers are worn. The optimum result would be to wear an upper or lower Pro-Form retainer once a week, with no discernable feeling of tightness or pressure. I recommend wearing only one retainer for an evening, rather than add the thickness of two retainers in the inter-occlusal space. If the retainers begin to feel tight, wear them more frequently. If no tightness or pressure develops, limit the retainer wear to one night per week.

I trust this recommendation on long-term monitoring, by the patient, of his or her own occlusal stability will answer the question Dr. Kaplan raises about the duration of using vacuum-formed retainers.

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