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THE EDITOR'S CORNER

How Predictable Is Stability?

In last month's issue of JCO, Dr. Robert Little presented some fascinating conclusions on orthodontic stability and relapse from the exhaustive University of Washington post-retention studies. He illustrated the rather sobering fact that the majority of orthodontic corrections, most notably those involving lower incisor crowding or dental rotations, are highly unstable over a period of 10-20 years. In other words, at least some relapse occurs in most orthodontic cases. The logical corollary to this conclusion is that the only way to achieve lifetime stability following orthodontic treatment is to employ lifetime retention methods.

This month, Dr. Peter Sinclair interviews Dr. Little, who takes a closer look at how the research sample that led to these conclusions was developed and suggests clinical steps to maximize the quality of case outcomes while minimizing relapse.

One of the main themes that emerges from these two articles is that orthodontic stability is, at best, unpredictable. While certain factors seem to point toward a better prognosis—maintenance of the leeway space in favorable mixed-dentition cases and preservation of the original mandibular archform, for instance—no pretreatment factors are strong predictors of long-term stability. On the other hand, some factors prove to be fairly accurate in predicting long-term *instability*. Take, for example, crowded cases treated without extractions through the expedient of "arch development". The best evidence to date, consisting of numerous studies, several systematic reviews, and at least one meta-analysis, still indicates that Charlie Tweed was right more than 50 years ago: Don't expand the lower canines or the lower archform if you want the best chance at long-term stability. Expansion of a crowded lower arch in almost every case is doomed to relapse. I've often wondered how many times this axiom has to be demonstrated before it is finally considered "proven".

The current nonextraction-arch-development fad relies heavily on the use of lifetime retention to maintain expanded lower arches. Dr. Little suggests that bonding

every lower anterior tooth to a fixed lower retainer is the only way to assure long-term stability in cases of lower anterior crowding, including extraction cases. Vertical stability can be enhanced in deep-bite cases by building flat-plane biteplates into wraparound removable upper retainers. I have noted personally that adding posterior bite blocks to removable upper retainers can be quite helpful in retaining corrected anterior open-bite cases.

Dr. Little also answers a question that has concerned me for some time: In a case where arch development has resulted in expansion of the lower archform, what is the long-term periodontal prognosis? He notes that several instances of gingival dehiscence or recession were seen after expansion in the Washington research sample. I am unaware of any really well-done long-term studies of gingival health secondary to arch-development treatment. Further in-depth research in this area is clearly needed.

Another of Dr. Little's major themes seems almost instinctive to many orthodontists: Finish to the highest possible standards—as if every case were an ABO case—then maintain those excellent finishes for as long as possible. Who could argue with that?

RGK