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# THE EDITOR'S CORNER

## Time Is of the Essence

The cardinal rule of case presentations is to allow enough time so that you can strongly encourage questions from patients and their parents. Failure to do so is simply courting disaster later on, and any time spent resolving issues in the case presentation is more than regained during the course of a full treatment. Of course, you can never predict just what questions will be asked; over the years, I've fielded some doozies, including, "Will braces help me get pregnant?" and, from a burly male engineer, "Can braces make me look more like Julia Roberts?" Still, you can almost always count on three questions to surface: "Will this hurt?" "How much will this cost?" and, "How long will I be in braces?" I've already dedicated an Editor's Corner (December 2004) to Question No. 1. The biennial JCO Orthodontic Practice Study addresses Question No. 2. The third question, which really means, "Is there anything you can do to make the treatment go faster?" has been the subject of numerous orthodontic research projects over the last century and a half. It seems now, however, that significant progress is right around the corner.

Most investigations into the possibilities of shortening treatment time have centered around various aspects of physics and engineering. Considerable effort has been expended on the reduction of friction, with some modest results. The concept is not new: Begg espoused minimizing the wire-bracket interface more than a half-century ago. Reducing the coefficient of sliding friction requires either alternative wire materials (nickel titanium vs. titanium molybdenum vs. chrome cobalt vs. stainless steel), alternative slot materials (stainless steel vs. ceramic vs. steel-lined ceramic vs. polycarbonate), different types of appliances (such as the currently popular self-ligating brackets), or new ligation techniques. Other physics-based techniques have focused on force application—the continuous forces of nickel titanium springs vs. the intermittent forces with rapid degradation applied by elastic power chain vs. the relatively continuous forces of loop mechanics.

A number of surgical approaches have also been tried. Block osteotomies were first proposed many years ago. In these, individual teeth or segments of teeth are loosened surgically by one of several methods, such as buccal corticotomies or transeptal corticotomies, and fixed orthodontic forces are then applied. More recently, a surgical degloving procedure has been introduced, in which the gingival attachments around all the teeth to be moved are essentially severed, with gingival flaps being reflected and then replaced. Orthodontic forces can be applied shortly after the periodontal procedure. Although some of these surgical approaches have demonstrated spectacular reductions in orthodontic treatment times, they have never really caught on. It is not hard to see why. Leaving aside the patient's anticipation of pain (actually, the people I have talked to about these procedures insist that they are not all that painful), the cost of surgery can be prohibitive, especially when added to the normal cost of orthodontics.

Several research groups have explored pharmacological approaches to reducing treatment time. Most of these have focused on mediators of inflammation, such as prostaglandins, prostaglandin synthetase, or cyclooxygenase inhibitors. Some have shown moderate success, akin to that of the friction studies. The appeal of the pharmacological methods is obvious: Who, given a choice between having surgery and either taking a pill or getting a shot, would not opt for the latter, assuming equal or near-equal efficacy?

A new drug treatment is currently being investigated by a team headed by Dr. Timothy Wheeler at the University of Florida. Relaxin, a naturally occurring human hormone, is being used "to biochemically augment tooth movement and retention", according to a news release pub-

lished on News-Medical.net.\* To further quote this release, "Relaxin is best known as the hormone that helps women's pelvic ligaments stretch in preparation for giving birth. It does this by softening collagen and elastin in the tissues, loosening strong, cord-like fibers until they have the consistency of limp spaghetti noodles." Preliminary animal studies conducted on behalf of BAS Medical,\*\* the drug's manufacturer, have been promising. Drs. Dennis R. Stewart, Paul Sherick, Susan Kramer, and Peter Breining have found reason to believe that relaxin hormone therapy may not only reduce treatment time, but even eliminate the need for retainers.\*\*\* According to Wheeler, "Right now, retention is the biggest problem we have in orthodontics. I want to get completely away from retainers, which for most patients right now are a lifetime commitment."

If the research by the teams at BAS and the University of Florida pans out, it will revolutionize orthodontics as we know it. Imagine a full-arch, four-bicuspid extraction case being treated in, say, 10 months, followed by "retention" in the form of a hormone shot. When you consider that the tooth movement in Wheeler's study is being done with Invisalign, you have an entirely new approach to treating malocclusions.

Just when it seems as if nothing really new will ever come along again in our specialty, the landscape changes completely. I am willing to bet that the one constant will be the three eternal questions: "Will it hurt?" "How much will this cost?" "How long will it take?" It's the answers that keep changing.

RGK

\*<http://www.news-medical.net/?id=11509>.

\*\*BAS Medical, Inc., 1660 S. Amphlett Boulevard, Suite 200, San Mateo, CA 94402.

\*\*\*<http://www.annalsnyas.org/cgi/content/abstract/1041/1/379>.