Lingual you will love

Capturing the incremental patient with invisible orthodontics

Author: Ronald Roncone, DDS, MS

Lingual orthodontics is not new in the world of orthodontics. Crude attempts at lingual orthodontics were tried many years ago. The first true lingual began almost simultaneously about 1980 with Dr. Kurz of California and Dr. Fujita of Japan.

Patients around the world were hungry for an appliance that would give them straight teeth but could not be seen. Because of the potential commercial windfall, various companies entered the marketplace.

In the United States, many orthodontists immediately jumped into this new area only to realize that working with braces on the inside of teeth was not nearly as easy as it was when they were attached to the outside surfaces of teeth.

Due to the steep learning curve, the general acceptance of braces by U.S. citizens and the improvement in clear braces, lingual orthodontics disappeared, with a few notable exceptions. Meanwhile, those orthodontists outside of the U.S. worked on mastering lingual and making slow and steady improvements to the various techniques.

Some common statements arose from the initial experience with lingual orthodontics.

- Patients do not speak well with lingual braces.
- Tongue irritations are a constant problem for lingual patients.
- Patient visits take substantially longer with lingual braces.
- The time required to master lingual treatment is not worth the effort.
- It is too difficult to tie-in archwires.

Each of these statements has some element of truth in them, yet all can be refuted. This article will attempt to address all of these statements. However, even if they could not be totally refuted, one overriding factor remains: Patients want “invisible” orthodontics!

For many years, the most-used bracket in lingual orthodontics was the Kurz bracket (Ormco). It was a solid, well-conceived bracket that went through seven generations. The bracket basically remains the same as it was nearly 20 years ago. Other lingual brackets have been developed over the years, but most of the improvements have come in the area of precision placement of the brackets. Clinicians such as Takemoto, Scuzzo, Fillion, Wiechmann and others have made significant contributions in this area.

Several years ago, the biggest leap in development was the size of brackets conceived by Drs. Takemoto and Scuzzo. The bracket was very small and targeted the anterior teeth commonly referred to as the “social six.” Interest is again building for use of the lingual
bracket as part of an orthodontist’s offerings to his or her patients due to the high demand for an invisible solution.

Yet, with all the improvements, lingual orthodontics remained difficult. For the patient, speech problems could be overcome, but it was not a quick or easy adjustment. Patients also took a long time getting used to the tongue irritations. Gingival hyperplasia was also a common problem.

Even when the orthodontist mastered the “mechanics” of lingual, it was still difficult to ligate the wire to the brackets. Wire tying stainless-steel ligatures to each bracket or using special ties, such as the “double over” tie, were very time consuming and difficult. With these thoughts in mind, the next stage of lingual treatment necessarily led to lingual self-ligation.

Several years ago, in conjunction with GAC, we began the development of the In-Ovation “L.” It is currently in use in many areas of the world. The bracket is small: 1.5 mm in thickness and 2.2 mm in width. The clip is very easily opened and closed, which eliminates the difficult and time-consuming task of wire tying or placing elastomeric modules.

The same basic philosophy of light wire treatment that is part of the In-Ovation “R” and “C” protocol can be used on the lingual. With all of these advancements in technology, the highest degree of quality still requires indirect procedures for full lingual. Many excellent methods of indirect are currently available.

As an offshoot of this self-ligating bracket (SLB), it is very easy to treat simple cases requiring no basic changes in occlusion with the MTM® No•Trace (MTM = minor tooth movement) System. Mild to moderate crowding of the anterior teeth can be easily treated in a matter of weeks. All of the cases that our office has treated have been completed within the six-week to 4.5-month period. Most of these are under 10 weeks.

MTM No•Trace utilizes a reduced base size and is designed to address these simple cosmetic cases.
Fig. 6_MTM No•Trace series from closed to open.

reduced base allows the clinician to place the bracket near the incisal/occlusal edges of teeth, thereby eliminating any gingival irritation problems. It allows clinicians to correct minor misalignments with minimal office and chair time, incorporating only a simple round-wire treatment.

Almost every day, a patient’s parent expresses his or her desire to have straight teeth, but expresses that he or she does not want to show braces and doesn’t want it to take very long. Some of these patients had braces years ago, did not continue to wear retainers and subsequently developed crowding of the anterior teeth. Most of these people have good to excellent posterior occlusions.

Others never had braces but have continued to get crowding of teeth over the years. In the past, I would
attempt to correct these problems with retainers. The problem was that most people did not wear these retainers enough to obtain the results desired. Their treatment would continue on for many months. This was frustrating both for the patient and me. The treatment also became a financial disadvantage.

While clear aligners have become popular, this was not the answer for me because of the excessive amount of time it takes at the computer planning for relatively simple treatment.

In addition, the expense of the aligners was also a concern that ultimately led me to look for a better solution.

In my opinion, the use of MTM No•Trace System has many advantages over retainers and aligners:

- Truly invisible.
- Very tiny (1.5 mm thick), which virtually eliminates tongue irritation.
- Minimal speech problems.
- They are not dependent on patient cooperation (other than proper brushing).
- Because they are placed near the incisal/occlusal edges of teeth, there is little gingival problem.
- They can be placed directly, therefore no laboratory fees are involved. For those who routinely do their own indirect bonding, you can continue the process if you so desire.
- Chair time is minimal at each appointment. There are no “re-ties.” The light round wire continues to align teeth if left alone.
- 80 percent of patients require only one wire.
- The clips open and close easily with the tool provided or with an explorer (my choice).
- Depending on the country, province or state laws, placement and removal of archwires is easily a task that can be delegated to auxiliaries.

Certainly not all those who desire MTM No•Trace treatment are good candidates. Case selection is important. MTM No•Trace is meant as a cosmetic alternative only. Those patients whose correction requires root torque or uprighting are not good candidates. However, those who desire alignment only, who might obtain “better” treatment if full-bonded appliances were placed, may still choose a compromise result if their current malocclusion is not worsened.

These patients must understand the unstable nature of the result and agree to lifetime retention. In addition, these patients should be fully informed of the limitations of such treatment and sign a potential risk and liability disclosure form.

About the author

After receiving his undergraduate degree from Marquette University, Ronald Roncone, DDS, MS, pursued graduate study in physiology and neuroanatomy at the Marquette School of Medicine while simultaneously earning his dental degree from the same university. His CV includes postdoctoral certificates from the Harvard School of Dental Medicine and the Forsyth Dental Center.

Roncone’s practice in San Diego, Calif., specializes in adult treatment (esthetics, surgical and TMD) as well as early treatment for children. He is a respected and frequent lecturer, having taught more than 500 seminars around the globe. His impressive list of technical innovations include long (eight to 12 weeks) intervals between patient appointments, which he introduced in 1989 through the use of titanium wires and the development of a unique prescription for bands and brackets.

He is widely known in the orthodontic community as the “Guru of Marketing.” Please visit him online at www.ronconeorthodontics.com or e-mail info@ronconeorthodontics.com.