

3MSM Health Care Academy

The Evolution of a Hybrid Technique with the 3MTM IncognitoTM and 3MTM ClarityTM Advanced Appliances



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Dr. Samuel Wise received his DDS degree from The Ohio State University College of Dentistry in 2004 and his MS in Orthodontics from the University of Detroit Mercy in 2009. He served as a General Dentist in the U.S. Air Force at Nellis AFB in Las Vegas, Nevada, and Dover AFB in Dover, Delaware. He has been in private practice in North Canton, Ohio, since 2010. Dr. Wise is a Diplomate of the American Board of Orthodontics and a member of the AAO as well as Ohio and local Dental Societies.

I was asked recently to share our practice's experience using the combination technique of 3MTM IncognitoTM Lingual Braces on the upper arch and 3MTM ClarityTM Advanced Ceramic Braces on the lower. In order to share my thoughts on this "hybrid" treatment modality, it's probably best to start with how our practice got here.

Coming out of residency in 2009, the economy was in the middle of the great recession and most practices were trying to rebound from the downturn of 2008. I was practicing as an associate in a large group practice outside of Detroit that had made heavy investments in technology. These investments paid dividends as they took market share from their competitors to stay even in an economy where many practices saw significant decreases in patient starts and revenue. When I had the opportunity to join a practice closer to home in 2010, I jumped on the chance and carried these lessons to the Buckeye State.

Once settled in Ohio, my partner and I looked for ways to differentiate ourselves from our competition. We determined that one of our practice's core values is *Innovation*, so we decided to add treatment options that honored and embraced technology. We started with SureSmile[®] which made us more efficient but something was missing. Like our dental colleagues, we had more and more adult patients coming into the practice demanding greater esthetic options. Patients that demanded aligners who we felt were not good candidates (due to case difficulty) would come in for new patient consultations and leave without scheduling when they didn't fit our aligner profile.

So, in 2011 we took our first Incognito course to find a treatment option for those patients that we felt were not good aligner candidates. We looked to Incognito as an option to take patient compliance out of the picture and allow us to treat difficult cases more predictably. In addition, lingual braces offered the only truly hidden option satisfying the appetite of the adult patient that places a high priority on esthetics.

We treated our first 10-15 cases with full upper and lower Incognito braces at the same cost as our labial cases. We wanted to get as much experience as quickly as possible, so offering these hidden braces at equal cost to our labial cases allowed us to do so in short time. We dove in head-first, tackling extraction and borderline surgical cases right out of the gate. Our assistants at the time were highly experienced in labial orthodontics but completely inexperienced in lingual. They welcomed the challenge of learning something new and cool (lingual orthodontics is neat) and would actually negotiate who would get to work with the lingual patients when they came in for appointments.

Treating patients with lingual braces and technology created a buzz, and doctors began referring to our office to provide their patients with a higher level of care and some doctors specifically referred ONLY their adult patients who they knew demanded premium esthetics. Patients began coming to our office from all over the state of Ohio, many driving to Canton from areas as far as two-plus hours away.

As time went on, we treated more and more patients with full upper and lower Incognito. We treated the first 50 cases or so this way. Full lingual bonding appointments take longer than labial bonding in some cases, could be tough to work on the lower brackets due to the tongue, short inter-bracket distances make wire engagement more difficult, plaque and tartar on the lower brackets may be a major issue for some patients, and the patient can sometimes have a difficult time with speech and adapting to their braces when they have full upper and lower lingual appliances.

To solve these issues, starting in about 2016 we moved away from full upper and lower Incognito and began encouraging these aesthetically-driven patients to consider upper Incognito and lower ceramic braces. Clarity Advanced brackets had improved dramatically from previous versions and many of these patients will accept lower labial ceramic brackets since they don't show or show minimally in their smile. This combination offers now the best of both worlds, superior esthetics and reduced issues compared to treating the lower arch with lingual appliances.



Figure 1A: Upper arch with 3M™ Incognito™ Appliance System.

Using this treatment option, we have been able to keep our treatment cost down due to reduced lab fees (single arch versus dual arch). This encourages more patients to accept Incognito as a treatment option. The greater interbracket distance in the lower arch makes archwire engagement easier and we also experienced fewer bond failures due to easier isolation when bonding. The friendlier work environment of the upper arch, allows newer orthodontic assistants to become proficient treating lingual braces sooner. As well, patients are generally happier with the combination due to less tongue irritation and easier speech adaptation due to having a place for the tongue to rest without being interfered with by custom brackets.



Figure 2A-D: Case 1 progression.



Figure 3A: Case 1 final.

Case Setup	
Midlines:	Align midlines
Class Relation (Canine Right):	Finalize Class I
Class Relation (Canine Left):	Finalize Class I
Class Relation (Molar Right):	Finalize Class I
Class Relation (Molar Left):	Finalize Class I
Interproximal Reduction:	As needed
Arch Form:	3M™ OrthoForm™ III
Lower Intermolar Width:	Expand as needed to fit OrthoForm III
Lower Inter canine Width:	Expand as needed to fit OrthoForm III
Close All Spaces:	Close all spaces
Leveling of Upper Anteriors:	Level the central incisal edges (the gingival margins will be off) and leave the laterals .3 mm shorter.
Overbite:	Ideal (1.0 mm - 3.0 mm)
Anterior Crown Torque:	UR1 needs proclined. Set upper incisors to ideal as needed.

Table 1: Case setup.

Our general treatment protocol has evolved over the past couple of years, but we have found that it is best for patient comfort to bond the lower arch first. At that lower arch bonding appointment, we scan the arches for fabrication of the upper Incognito appliances. When setting up the case in 3M™ Unitek™ Treatment Management Portal (TMP), we ask that the upper lingual braces be setup to match the lower labial archform that we will be using (for us 3M™ OrthoForm™ II or III) so that the arches will coordinate during treatment.

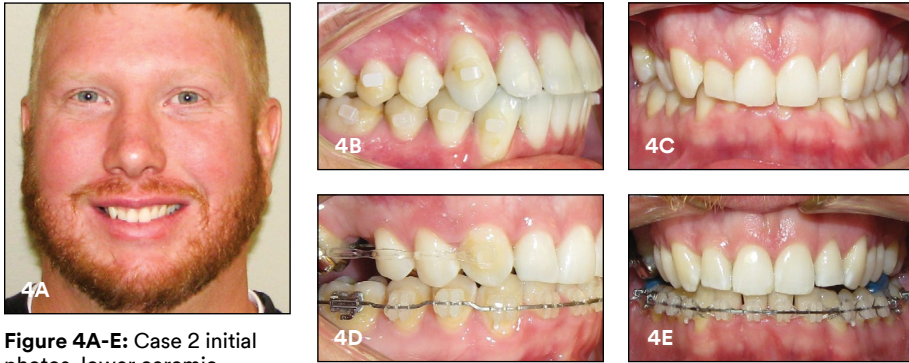


Figure 4A-E: Case 2 initial photos, lower ceramic brackets applied.

We bond the upper arch 6-8 weeks later at which time the patient is fairly adapted and comfortable with their lower appliances and ready and excited to get their lingual braces started.

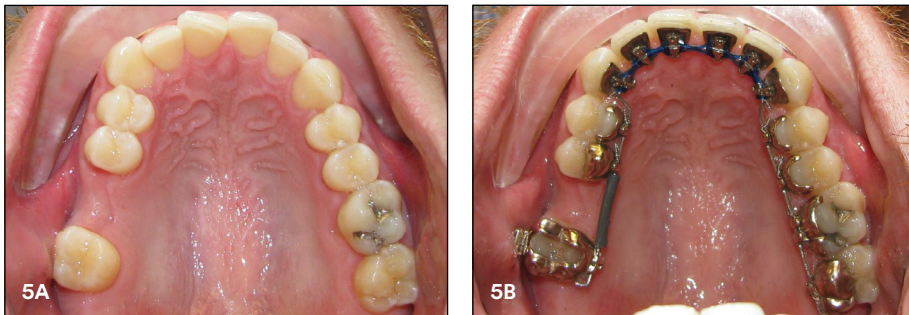


Figure 5A-B: Case 2 initial upper, upper bonded 6-8 weeks after lower.

Once the brackets are bonded and secure, we schedule these patients every 8-10 weeks for 30-minute adjustments. On one appointment we change the lower archwire and at the alternate appointment change the upper archwire. On the appointment when the opposite arch is not due for a wire change, we check for full wire engagement and retie the archwires as needed. Labial buttons needed for elastics that once had to be added to both arches, now only need to be added to the upper arch since the lower arch has hooks included with the ceramic brackets.



Figure 6A-D: Case 2 progression.

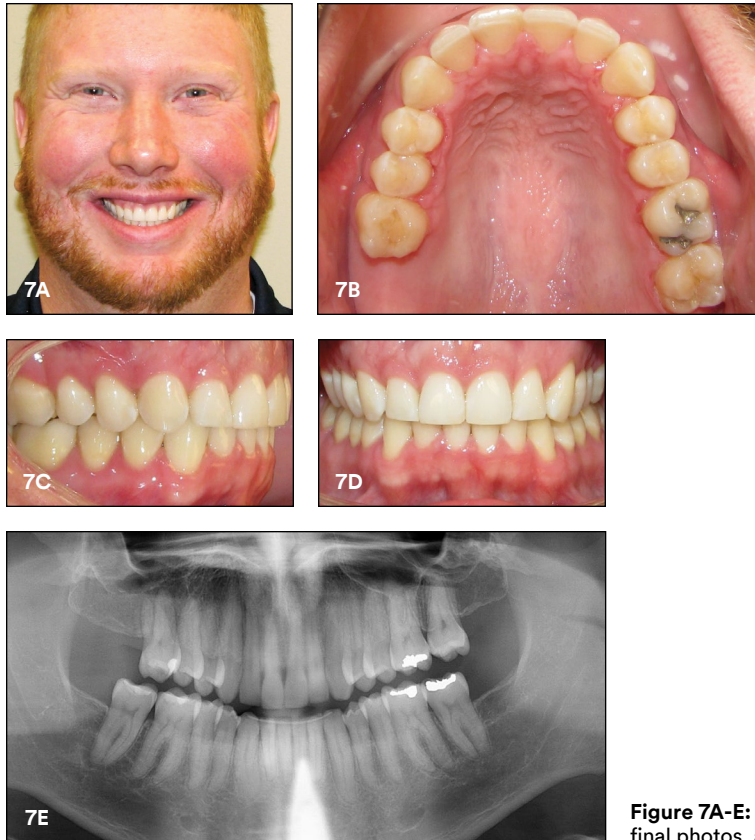


Figure 7A-E: Case 2
final photos, and X-ray.

In the past couple of years, we have treated another 40-50 patients or so using this technique and it continues to gain favor with another handful of patients electing this treatment option this summer. We do still offer full upper and lower Incognito treatment as an option but at a premium cost due to the longer and more difficult appointments and encourage patients to consider the combination technique for all of the reasons mentioned. Our office continues to challenge itself; we will try anything once as they say, with our first hybrid surgical patient having started his braces this summer, who by the way drives from the west side of Cleveland after finding our office online!

Case photos provided by Dr. Samuel Wise.