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Finding the Right Aligner Brand for Your Practice

One orthodontist compares Ormco's Spark Clear Aligners to the leading aligner brand to find the right aligner brand for his practice

BY BILL DISCHINGER, DMD

Clear aligners have been in orthodontics for a very long time. While I was in my residency and during my first year in private practice, I remember John Sheridan, DDS, MSD, presenting his Essix aligners. The reactions from my colleagues at the time were varied. I heard many orthodontists comment, "This will never fly. You can't move teeth and correctly finish cases with a piece of plastic. This is going to ruin the specialty." But I also heard positive comments: "This is going to completely revolutionize the profession." It went on and on depending on your viewpoint.

Fast forward 20 years and you'd be hard pressed to find someone who doesn't agree that clear aligners are here to stay. To say clear aligners have changed the specialty of orthodontics would be an understatement. If you look at the history of orthodontics, a few moments (or inventions if you will) stand out: twin brackets, pre-adjusted brackets, super elastic NiTi wires, self-ligating brackets, to name just a few. I would make an argument that clear aligners may trump all of those by the time it is all said and done. And some would still argue, not for the better of the profession.

I, however, tend to view the world and my profession through a glass half full. Clear aligners have opened the door for millions of patients who never would have sought orthodontic treatment if braces were their only option. Clear aligners have allowed us to grow our practices and expand our patient demographic, despite what some of the purveyors of "doom and gloom" would have us believe. In our practice, we have fully embraced clear aligners, while at the same time, growing the number of patients we treat with braces.

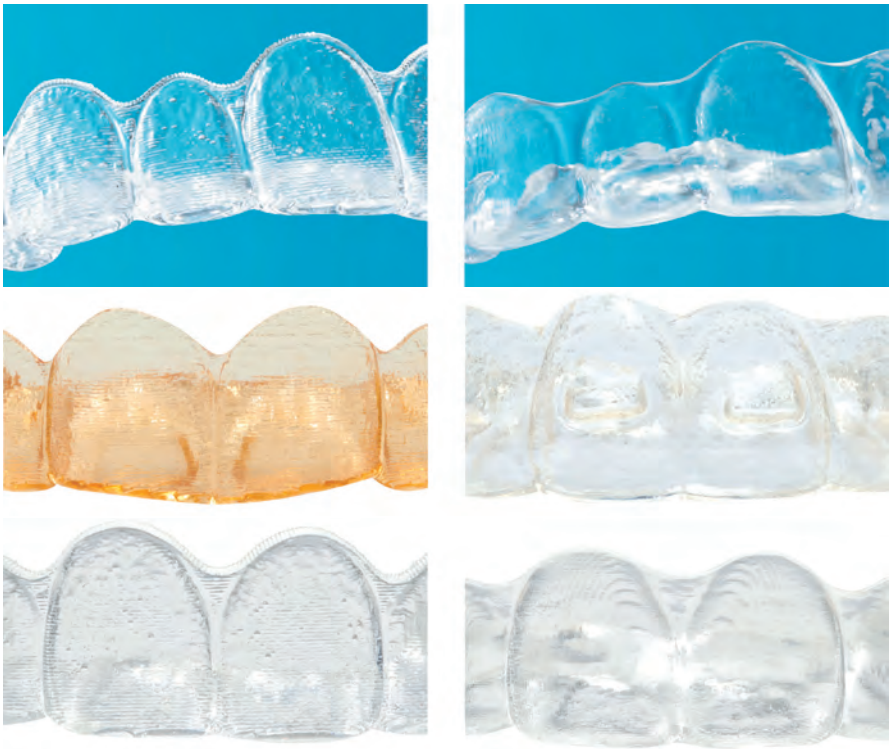

Figure 1: Leading aligner (left) vs the TruGEN material (right) used to manufacture Spark Clear Aligners. Comparisons of clarity (top); staining—coffee, 3 days (middle); and comfort (bottom).

If you've attended any of the last few AAO meetings, you probably noticed in the exhibit hall that every company you know (and some you've never heard of before) now offer a clear aligner system. As a firm believer that competition leads to improvement, I hope (and I have seen this already) that with more companies in the game clear aligners continue to get better.

With this in mind, I have made it a point to try out different aligner systems, one of them being Spark Clear Aligners from Ormco Corp, which are being used by doctors worldwide to treat a wide variety of patient malocclusions including Class II correction, patients with semi erupted teeth, and extraction cases. To provide full disclosure, I was asked by Ormco to do a clinical trial as I am one of their key experts. Initially, I planned to submit a few cases, see how they progressed, and then make a decision on which company I wanted to continue working with in the future. That plan changed rather quickly once my team and I got our hands on the product.

BILL DISCHINGER, DMD, received his dental degree from Oregon Health & Science University School of Dentistry and his certificate in orthodontics from Tufts University. In private practice in Lake Oswego, Ore, he also serves as adjunct professor in orthodontics at the University of The Pacific. As an Ormco key expert, Dischinger was invited to trial the Spark Clear Aligner system in 2018 and is lecturing on his experience with Spark worldwide. Having employed the Damon system for 21 years, he is also a Damon system certified educator, and lectures around the world on a variety of subjects.

Figure 2: A 55-year-old female—Class I, moderate anterior overbite with constricted arches.

Figure 3: At 11 weeks and 22 aligners, arch development and overbite correction proceeding.

Figure 4: Treatment completed at 26 weeks with 39 aligners total.

It simply surpassed our expectations.

In this article, I will discuss the major benefits and advantages of the Spark Clear Aligner system that our team has seen, share the experience of my Spark patients, and present a couple of completed cases.

The System

My first experience with Spark was during my training session on the software, and from the very start, it was evident it was a winner for me. The advanced Approver 3D software enables orthodontists to visualize, plan, and achieve their ideal finishes with greater flexibility and control. It's designed to provide a high level of design into patient treatment and display the virtual end-result, including root movement, taking much of the guesswork out of treatment planning. With regard to the submission process, I found it to be very fast and easy—in fact, it took me less than half the time to upload a case than previous submissions with software from other companies I've used.

An added bonus was that the advanced Approver software worked on my Mac. As a long-time Mac user, I've never been able to make my own adjustments to cases, causing delays and miscommunication when using other software. Being able to make my own adjustments sped up the process of approving my cases and ensured I got exactly what I was looking for.

Figure 5: A 36-year-old female patient—Class I with mild anterior open bite; flared incisors with a slight anterior edge to edge occlusion.

Figure 6: At 8 weeks, a nice initial correction of the anterior open bite and uprighting of flared incisors.

Figure 7: Treatment completed at 31 weeks with active Spark Aligner wear for 21 weeks, which resulted in a closed open bite.

Spark Approver software is designed to put the orthodontist in better control by providing higher flexibility: multiple case setups allow a doctor to compare treatment options; library roots help simulate patient anatomy; and customizable attachments and cutouts on lingual, labial, and occlusal sides of the teeth allow for additional tooth movement and more.

At the aligner delivery appointment for my first Spark patient, as my chairside assistant was placing the attachments using the provided template, I was (of course) very interested and peeked over her shoulder. She pulled off the template, checked to make sure all the attachments were in place, and then asked me to check for flash with my high-speed handpiece. As I sat down and prepared to remove the flash as I always do, I realized there was no flash to clean up.

I have now come to realize that 'no flash clean-up' is a consistent experience with Spark Aligners. The amount of flash we have to remove has reduced to virtually none and has been a huge time saver for my clear aligner delivery appointments. The attachment template is phenomenal and I consistently hear the same feedback when speaking to other orthodontic practices using Spark. Within our first few cases, my team told me they hoped we do all our clear aligner cases with Spark.

Ormco did extensive testing on the TruGEN material prior to releasing it. They found that TruGEN's clarity and stain resistance were superior to the leading competitor. In addition, the studies conducted by

the Spark team of PhD material engineers showed TruGEN had a 12.5% higher force retention than the leading competitor's material. One of the goals the Ormco team had with its TruGEN material was to ensure a more comfortable treatment experience for patients by delivering polished, scalloped edges on the aligners on every Spark case. Although the Spark Aligners certainly felt and looked better on the surface, I still wanted to understand my patients' reactions.

Most patients that start clear aligner treatment have never had something like this in their mouths before. Knowing this, we decided to take five patients currently in aligners from the leading aligner brand and change their aligners over to Spark when it was time for their refinement.

I will never forget the first delivery we made to one of these patients. As she was seating the upper aligner, she suddenly said, "OMG, this is like night and day on the comfort to my tongue."

After delivering the aligners to the other four patients, we consistently heard the same positive reaction to the comfort of Spark from all of them. One patient noted, "My tongue does not get cut like it used to on my other aligners (the previous aligner brand), the soreness is better when I switch out my aligners. They feel thinner, more flexible and just lighter." Looking closely at the aligners, I have noticed there is no "lip" on the edge as I typically see with the leading aligner brand. I think that must be the difference they are feeling.

The Cases

Case 1 and 2 started and finished with Spark Aligners—no other aligners were used in these two cases.

Case 1

A 55-year-old female patient wanted to develop her arch width for a broader smile (Figure 2). In addition, we needed to correct her overbite and align some crowded teeth. One of the features I have enjoyed with the Spark treatment designs is the arch form they apply. Being a Damon user for my passive self-ligation cases, I prefer a broad, upright, arch form and the Spark team is adept at setting up my cases with the Damon arch form.

In this case, I really wanted to achieve the upright canine and premolar positions to achieve a full arch form. I used lingual bite ramps on the upper 2-2 to help open the bite and achieve the overbite correction.

As you can see, we achieved excellent arch development and overbite correction with our initial set of 22 Spark Aligners over 11 weeks (Figure 3). The patient was using high frequency vibration with the Propel VPro5 and changed her aligners twice per week.

We did a refinement of eight active aligners—the final three being virtual c chain aligners. Upon completion of this, we had some very minor incisor rotations to finish up, and with a third round of nine aligners, the case was completed.

The patient had a total of 39 aligners with a total treatment time of 26 weeks (6 weeks during our turnaround times from refinement scan to delivery of aligners). She actively wore aligners full time for 20 weeks and nighttime for 6 weeks.

The patient had a total of seven appointments in our office. We had her initial consultation appointment at which time we took her intraoral scan and photos. We delivered her aligners, then had her back for a short aligner check appointment at 6 weeks and her refinement scan at 11 weeks. At 14 weeks we delivered her refinement aligners and saw her back 4 weeks later for one last scan with a delivery at 21 weeks. At 25 weeks we scanned for bonded retainers to be fabricated in our lab and placed them along with final records at 26 weeks.

The result met our goals: We broadened the patient's arch form, placing the canines and premolars in a much more upright position. We also alleviated the overbite and resolved the crowding (Figure 4).

Case 2

Our second patient, a 36-year-old female, is the type of case that, with other aligner brands, provided me with challenges (Figure 5). Vertical extrusion movements of incisors, particularly lateral incisors, have always been problematic in my hands; and for this patient, that was the main treatment. She had undergone orthodontics as a child and as an adult had subsequent relapse. She never had a maxillary lingual bonded retainer for retention—which is key to long-term retention of the correction.

Her initial series of Spark Aligners consisted of 16 active aligners. We used horizontal gingivally beveled attachments on both the buccal and lingual of the maxillary lateral incisors. Additionally, we used horizontal beveled attachments on the mandibular incisors to aid in the extrusive movements. The patient also used high frequency vibration with the Propel VPro5, changing her aligners two times each week.

As you can see in the photos after just 8 weeks, the changes with Spark Aligners were remarkable (Figure 6). I was thrilled with the vertical movements we achieved so quickly, something I have always struggled with in the past with other clear aligner systems.

We performed three refinements to finish the case. The first consisted of seven active Spark aligners, the second again with seven active aligners, and finished with eight active aligners. The patient again used high frequency vibration, changing the Spark Aligners twice per week.

The patient had a total of 38 aligners and total treatment time of 31 weeks (9 weeks during our turnaround times from refinement scan to delivery of aligners). She actively wore aligners full time for 21 weeks and nighttime for 10 weeks.

In total, the patient had seven appointments in our office. We had her initial consultation appointment at which time we took her iTero scan and photos. We delivered her aligners and then had her back for a short aligner appointment at 4 weeks and her refinement scan at 8 weeks. At 11 weeks we delivered her refinement aligners and saw her back 4 weeks later for another scan with a delivery at 18 weeks. At 22 weeks we scanned one last time for some minor finalization of space closure. We delivered new aligners at 26 weeks, followed by a final scan for bonded retainers at 30 weeks. Bonded retainers were fabricated in our lab and placed along with final records at 31 weeks. The result achieved our goals: We closed her open bite and achieved a beautiful smile arc (Figure 7).

Conclusion

Today's patients are looking for beautiful results, but they want to achieve these with minimal esthetic impact during their treatment and with shorter treatment times than what traditional orthodontics has offered in the past. For years, we have had esthetic treatments available to us, but in our office, the Spark Aligner system has given us a clearer alternative for our esthetic treatments. In addition, the movements have been achieved predictably and with fewer aligners than we have seen with other aligner systems. Incorporating high frequency vibration with Propel's VPro5, we now have a great combination of tools to deliver a beautiful, esthetic, and fast treatment. OP