



# Lasering your way to Successful Dental Treatment

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**W**ould you rather take pictures with a 35-mm camera or a digital camera? Would you rather have a pager or a cell phone? How about film x-rays or digital radiography? I love the ever-changing technology of today's world, and I am constantly trying to stay up-to-date with the latest trends of cell phones, laptops, and iPods. So, imagine my elation when I discovered a resourceful dental tool that had the potential to help me practice dentistry more efficiently. As I conducted more research, I became increasingly excited. I had stumbled on a dental tool that allowed me to perform hard- and soft-tissue procedures at the touch of a button with only 1 machine. Not only could I use a single dental tool for

hard- and soft-tissue procedures, but I also had the ability to do so without having to administer an anesthetic! Thus, I began my quest on how to become proficient with this cutting-edge dental tool.

The Waterlase MD (Biolase; Irvine, CA) is an innovative hard- and soft-tissue dental laser that uses laser energy and water to perform dental procedures. The Waterlase MD is a nonthreatening dental tool to the patient. At first glance, one can see how it encompasses the latest technology. The laser unit is on 4 wheels, which makes it very easy to maneuver from room to room. The laser has a touch screen that makes it very easy to change settings with the simple push of a button. The power of the laser is strongly secured within a hard-case component, making this instrument very durable. The greatest feature of this tool is being able to change from a hard-tissue mode to a soft-tissue mode with the touch of a button. On the touch screen, I have the ability to control the power of the laser, the amount of water and air, and the hertz of the laser. The machine is also able to save 16 presets on its hard drive, so I can literally push 1 button and begin a procedure. The laser handpiece is similar to the size and shape of a compact traditional drill. There are also many tips to choose from for a personalized treatment approach.

On a daily basis, I perform many hard- and soft-tissue procedures. In dental school, I learned the basic foundations of dentistry: pick up a drill and cut hard tissue, pick up a scalpel and cut soft tissue. My instructor always advised me to

never forget to numb the patient first. This technique became routine to me. Many times, before performing these procedures, I was stopped by the patient with a phrase such as, “I hate going to the dentist” or “I hate shots.” So with steady hands and a quivering self esteem, I began to treat the patient. After graduating from dental school, I began to familiarize myself with the Waterlase MD, a new cutting-edge technology that could break my routine. In dental school, I had some exposure to the laser, but with the busyness of finishing my requirements, it left little time for me to explore other areas of dentistry. Now without any obstacles after graduation, I began to educate myself on the Waterlase MD.

There is a learning curve to the laser. To get to the stage where I felt complete confidence using my laser took approximately 3 months.

I did start off a little bit slow, because I was so accustomed to the concept of the drill. However, after a few procedures, I was able to adjust my technique. The tip of the laser is about 1 mm from the tooth structure that you want to remove. The water from the handpiece removes enamel, dentin, bone, and decay in a very conservative approach. The concept is a slow and steady technique that removes the targeted area. I can confidently treat my patients knowing that I am providing them with treatment that causes less trauma to the tooth and gum tissue. My patients heal much faster and with less postoperative discomfort.

With the new opportunity that the Waterlase MD afforded me, I began to perform procedures that I would never have performed without the laser. I found myself removing large tori, doing same-day bony



**Figure 1**—Before frenectomy.



**Figure 2**—Immediately after frenectomy.



**Figure 3**—Before gingivectomy.



**Figure 4**—Immediately after gingivectomy.

crown lengthening, troughing for crown preparations, performing frenectomies and gingivectomies without anesthesia, doing sulcular debridement for deep pockets, doing fibroma removal, curing aphthous ulcers, and desensitizing cervical abfraction/abrasion lesions. In the past, when I used a scalpel to cut the gingival I felt very barbaric with my technique. Now, with the laser, I can perform the procedure with a better touch and a higher quality result. The laser coagulates the soft tissue so the patient has little to no bleeding and a faster healing time with minimal to no pain. The frenectomy in Figures 1 and 2 was performed without any anesthetic and did not bleed. Many times I perform these soft-tissue procedures without any anesthetic so the patient is even more comfortable. The full-mouth gingivectomy in Figures 3 and 4 was also treated without anesthetic and did not have any heme.

Gone are the days of the high-pitched drill sound. With the initial introduction of the Waterlase MD, one hears a popping sound, similar to the sound of popcorn popping. The Waterlase MD does not heat or vibrate the tooth the way a traditional drill does. Therefore, patients are less sensitive and can often receive basic

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dental treatments without anesthesia or any injections, which is the greatest bonus to the Waterlase MD, and patients leave without having a numb lip or tongue. Gone are the days of waiting for the patient to become numb and comfortable. My patients now hop in the chair and I am able to start immediately. A few minutes later, they leave the chair without a numb lip and can eat and drink at any time. With the Waterlase MD, I can treat multiple quadrants in 1 visit, see more patients with less chair time (for a class II filling from start to finish takes about 15 minutes), patients' fear and anxiety is now minimal to none, and their number of visits is decreased.

When I perform my class II procedures, I can remove decay with the laser, bevel my margins if neces-

sary, and etch and desensitize the tooth all with the laser. The laser also sterilizes the tooth, so when I place a composite filling I am confident of the possibility of less recurrent decay. With the etching advantage, I trust that the composite restoration I place will have much better retention than with the drill. Also, the laser does not leave a smear layer the way the drill does, so my working area is clean for the composite.

Another advantage is, when I am preparing a class V procedure, if the decay encroaches underneath the gingival, I can use the same laser to remove soft tissue. This allows for a better composite restoration finish. The benefits of using the same tool for hard- and soft-tissue removal are endless. The laser removes the soft tissue from between 0.1 watts to 2.0 watts of power. To remove hard tissue, I simply increase the power to remove enamel or dentin, maxing out at 8.0 watts. I vary my power depending on each individual patient. The laser does cater to each individual so I can provide each patient with optimal comfort. I still use my low-speed and high-speed drill to polish restorations. The laser is not a replacement for the drill, but rather an adjunct that provides my patients with a better dental experience and less-invasive dental treatment.

Aphthous ulcer lesions can also be cured with the Waterlase MD. Before, the patient had to wait out the course of the lesion; now, using the laser on the sore can help to heal and eliminate it within 3 days. Patients that had deep pockets with generalized periodontal disease can now be cured with the laser. It has the ability to debride and sterilize the deep pockets, and, within 3 months, reattachment of the gum tissue can be achieved and abscesses eliminated.

My patients are very pleased with my use of the laser and all of the benefits of its treatment. They love the idea of getting pain-free, minimally invasive dental treatments. All of these factors can become a part of any dentists' regime by attending a few courses that are offered throughout the year by Biolase in various regions. Of course, like anything, the more laser procedures one performs, the more of an expert one becomes. The Waterlase MD truly has been an exciting part of the evolution of dentistry. With all of the innovative products available to the dental society, we want to utilize those that give us an edge and make us better clinicians. Let us, as dentists, shed some "laser" light on our profession. ■