

Hard-tissue laser systems: Is the future now?

By David L. Hoexter, DMD, FACD, FICD
Editor in Chief

A greater number of dentists may soon be ready to start using hard-tissue lasers in the preparation of teeth and reshaping of bone. The technology promises to be more precise, lead to more esthetic results and, hopefully, be more economical as well.

Restoring the natural dentition has been one of the cornerstones of dentistry. Historically, GV Black was the first to use hand chisels to shape his design preparation for restorations. A foot-pedaled drill with special burrs followed. Belt-driven handpieces with drilling apparatus came next, along with a high-pitched whirring sound. Although the belt helped the practical achievement, the irritating and annoying sound hurt the dentist's ear and escalated patient fear and anxiety.

The high-speed handpiece helped

ease strain on the practitioner's hand and seemed to make things better for patients, but the whirring sound simply evoked a variation in the fear. Lasers have made remarkable strides to eliminate the annoying sounds, but initially the technology was limited primarily to soft-tissue work. Different power sources are utilized for different fields.

Today, hard-tissue lasers are becoming more accessible and practical. Recently, in an exhibitor booth at a major dental meeting, I was amazed by a laser system used for hard-tissue procedures. Early on, hard-tissue lasers used in dentistry would typically cause bone or dentin to become dried or desiccated and then crumble. Pulpal reactions were also reported. Use could result in patient discomfort and pain. Many practitioners avoided the technology.

Also with the early generations of the technology, some questionable claims were made about some hard-tissue achievements. I tried some of those ear-



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lier products and found the ones I used to be expensive and ineffective. Their pounding, pulsating, loud noises — along with streams of water — seemed to achieve little if anything for the patient. Application seemed limited to Class V restorations.

The disappointment of some these early products dulled many practitioners' hope and expectations for the use of lasers with hard-tissue procedures. But things are far different now!

Testing in the exhibit hall

One example I recently learned about is Light Instruments' LiteTouch Er:YAG laser system, which was launched in the U.S. last year by AMD Lasers. It is a water-cooled laser that enables clinicians to shape osseous structure as well as the tooth as desired, without causing pathology, while achieving desired goals.

Once the practitioner acquires the ability to use the tip's apex rather than the side of the filament, as many are accustomed to do with a burr, the artistic abilities of the practitioner promise to soar with this technology's possibilities.

I immediately see the possibilities with a restorative preparation. With this laser, the micro-groove caused by the burr on the cavo surface of the tooth will no longer be there. Then, perhaps, the micro-seepage of such a groove's margins will no longer be present. This means the restorations shouldn't leak or wear out at the restoration's "margins-less" seepage, resulting in longer-lasting restorations and improved service for our patients.

The advantages of using a laser on hard tissue are enormous. To begin with, the laser is silent. The annoying and fear-provoking sounds of many high-speed, air-driven handpieces and the whirring, chilling noise of many belt-driven handpieces disappear.

Using a hard-tissue laser, the resulting margins of a tooth preparation in restorative dentistry are sharp and might prevent micro-leakage. The resulting longer-lasting restorations further justify the technology as economical and practical.

I encourage you to try one at a dental meeting where physical booths are present, and let me know if you agree that the future is now.

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the need for additional visits when submitting a claim. Giving us a little wiggle room for oral-health assessment humanizes the health care provider. It adds value to our diagnostic abilities. It allows us to emphasize the mouth/body connection to the patient. If we've assessed that the patient presents with at least 30 percent of his or her gingivae exhibiting moderate to severe inflammation, the code can then be correctly used.

When The New York Times reporter called me to do research on Esther's life, the initial questions were about Esther's classic dental-hygiene textbook. The 12 editions in multiple languages are impressive enough on their own. So I tried to steer the reporter away from the text, hoping the tribute might focus more on the wonderful, energetic woman Esther was. When Esther was 89, she was out on a Chicago dance floor at a Hu Friedy party at 10 p.m. The rest of us, decades younger, were yawning into our decaf.

I can see why someone who isn't a hygienist would wonder why people would stand in line for two hours for an auto-

graph from a professor. This is what made Esther so special and unique. She really was our True North.

Esther was our link to another era. A living, breathing connection to the beginning of our profession. The rest of us can only pray that, in time, the shadows of our own professional reputations stand bigger than ourselves.

I've been collecting lithographs for 30 years. Stumbling upon Sorel's "The Last Flossing" around the same time that Esther passed away led me to believe that divine providence had met divine providence. Considering Sorel's nontheism, I'm not so sure he would agree. But then, he's not a hygienist.

More online

For more information on the updated dental hygiene code, visit DiGangi's website, www.DentalCodeology.com.

Find "The Purple Guide: Developing Your Clinical Hygiene Career" on Gutkowski's site, www.rdhpurpleguide.com.

At press time, a signed print of Sorel's "The Last Flossing" could be seen for sale at www.chrisbeetles.com/gallery/cartoon/last-flossing.html.