A cut above: using lasers

Dr Ian Clift explains why Biolase is the way forward when it comes to performing laser surgery in your practice

As a dental implantologist and orthodontist who strives to be at the forefront of advances in the dental profession, I have long been interested in the use of lasers in dentistry. But until recently, their application has been somewhat limited.

Rapid advances in their development is likely to see them becoming an integral, everyday tool in dental surgeries, as laser technology enters a whole new era. Lasers reduce the need to use high-speed drills on the surface of teeth and can remove enamel, dentine and decay as well as cutting soft tissue around the tooth in the time it currently takes for an anaesthetic to numb the site.

Despite their many advantages, dentists are still unable to replace drills with lasers in their practices, because they can’t as yet cut surfaces such as metal and porcelain. That said, research is moving on a pace and it will not be long before their range of applications has advanced to an extent where they can be utilised to undertake these procedures both efficiently and cost-effectively.

The laser revolution

Originally developed by Theodore H Maiman using a theory devised by Einstein, lasers were reportedly first used in oral surgery in 1977, but the dental laser revolution did not get underway until the mid 1980s. The arrival of the D-Lase 500 – a laser system invented by Terry Meyers and his brother William – led to the establishment of American Dental Laser, which became part of laser company Biolase six years ago.

The laser system, which involves laser energy, water and air being combined to remove enamel and dentin, was cleared for use on adults and children in 1988, allowing Biolase to sell and market its product globally.

The benefits to dentists and patients are myriad, given the ease with which decayed matter can be removed and teeth and soft-tissue cut. The analgesic advantages are also welcome, as lasers save time in waiting for the local anaesthetic to take effect and, from the patient’s perspective, sometimes negate the need for injections – a procedure which many dislike and fear.

To find out exactly what lasers are now capable of and how their introduction could benefit my own practice, I attended a two-day intensive course at dentist Mark Cronshaw’s practice in East Cowes on the Isle of Wight. Mark runs a holistic dental practice and has been using Biolase for the past 10 years, amassing a wealth of experience. The course featured an excellent presentation, practical demonstrations and slide shows.

Because there were only three of us in attendance, we received personal tuition and saw for ourselves how efficient the laser was. The laser light was focused on a fine beam of water and the water molecules expanded 500 times to create mini explosions creating a cavity.

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focused on a fine beam of water and the water molecules expanded 500 times to create mini explosion creating a cavity. This felt totally different from using a drill, and wearing loops was essential. However, within a few hours we had all mastered the technique.

**Hands-on practice**

Our practical assignment involved cutting teeth and soft tissue on a pig’s head. We also learned how to service the equipment, which is essential if you are to maintain your laser in good condition. Additionally, we each received a folder containing well-presented, user-friendly material about Biolase to take away with us.

There is no doubt that Biolase offers many advantages including cutting soft tissue, cleaning and sterilising canals during endodontics and periodontal procedures. The new revolutionary turbo head cuts teeth very efficiently, leaving a neat cavity.

Implementing laser technology represents a major investment for surgeries and the full Biolase package costs approximately £50,000. However, a less expensive version for use in soft tissue cutting and whitening teeth is available for £8,000.

The Biolase course proved worthwhile and I would highly recommend it to other practitioners who are keen to learn more about the laser.

**About the author**

Dr Ian Clift graduated from the University of Sheffield in 1982, and has been principal dentist at Dentique dental practice in Leicester for more than 20 years. Ian has a special interest in implantology, has several years’ experience in the field and has completed his Postgraduate Diploma in Implantology from the Royal College of Surgeons.