

TECHNOLOGY IN FOCUS

A NEW TREATMENT OPTION

WHAT CAN A LASER BRING TO YOUR PRACTICE?

Dental lasers offer tangible benefits for both dentists and patients. Rachel Kendrick hears about the advantages in practice of one such device

Many patients are still fearful of visiting their dentist. The prospect of drills, needles and numb lips - however likely or unlikely - can be a real barrier to patient attendance. And lasers can really help here.

In common use in the USA for a long time now, dentists have discovered that lasers can help you to attract new patients and increase treatment acceptance of day-to-day restorative cases.



The Waterlase MD, from Biolase

By reducing the need for anaesthetic, treatments that once required multiple appointments can now be completed in a single visit. And the Waterlase MD Turbo laser allows you to handle a wider variety of procedures too.

This laser works really well in a periodontal setting, which is where I discovered it. Dr Rana Al-Falaki is, so far, the only UK specialist in periodontics using the Waterlase MD in practice.

Dr Al-Falaki told me, 'When periodontal specialists carry out root surface instrumentation or debridement, we are working semi-blind - we can't physically see 7mm down a pocket. The main aim of the laser for me is as an extra non-surgical tool which helps you to do more than you would have been able to do before, without resorting to surgery. It allows you to go deeper than you could have before, up to 14mm, and because there's no bleeding, you can also see more clearly.'

HOW IT WORKS

The Waterlase MD removes all remaining granulation tissue and calculus, once you've used your traditional method. With the laser, it's actually the water that does the cutting, removing calculus at the same time, and when used in non-surgical treatment, the water penetrates into the root surfaces, removing bacteria and the smear layer. It removes the granulation tissue and is also used to disturb the epithelium on the outside to help prevent down growth of the epithelium in the healing process, thereby helping to promote new

attachment, rather than a long junctional epithelium.

It ends up creating a favourable calculus and bacteria-free environment for new attachment, which is the gold standard in periodontal therapy. And there is now research coming through from the US, which shows that the attachment following the use of this laser remains more stable long-term than with traditional methods using ultrasonics and hand instrumentation. This YSGG (yttrium scandium gallium garnet) laser is also effective in desensitisation of dentine, leaving the teeth less sensitive after periodontal treatment, but can also be used to treat sensitive teeth due to fractures and other causes of dentine exposure.¹

Dr Al-Falaki added: 'I'm finding that furcation areas are closing up with potential for bony infill, with no need to flap or carry out surgery. Basically, it's giving teeth that once you couldn't have hoped to save an extra chance.'

'There's no need to use a drill to cut bone, as the laser can cut both gum and bone. Patients have reported far less pain and swelling following surgical treatment than with traditional methods and it's much quicker too, as the laser quickly removes all the granulation tissue without us needing to extensively scrape it all away.'

When non-surgical treatment isn't working, but the patient really doesn't want surgery, the laser gives you an extra tool that may give a good result without needing to resort to cutting.



A close up of the Turbo HP handpiece



Lasers allow the dentist to work in deeper periodontal pockets, up to 14mm

PROCEDURES WHICH BENEFIT

Fraenectomies can be carried out within 10 minutes, and with no need for sutures, as

radiographically.'

Desensitisation of teeth is possible using this laser, although of course the main cause

there is no bleeding and we leave it all to heal by secondary intention. Nor does the fraenum grow back, which can happen when removed with a scalpel. There is very little pain afterwards, most people complain of a bit of soreness, but no need for painkillers. These benefits make the possibility of carrying the procedure out on children much easier and less traumatic.

Crown lengthening is atraumatic, again with much less pain and swelling afterwards. We can 'draw on' the new desired gumline, so patients can see how long their new teeth will be, and bone removal can be carried out without needing to raise a flap in many cases, so there is no need for suturing and a more predictable settled gingival margin.

Biopsies can be carried out without having much pain afterwards, and there is no scarring following removal of tissue with the laser.

Dr Al-Falaki added, 'Regeneration is a possibility in theory, because of the environment we set up following treatment. I'm still waiting to see these results though, which can take a good year to see

needs to be tackled at the same time, this might mean dietary advice, for example. The desensitisation is permanent.

REFERENCES

1. Yilmaz HG, Cengiz E, Kurtulmus-Yilmaz S, Leblebicioglu B. Effectiveness of Er,Cr:YSGG laser on dentine hypersensitivity: a controlled clinical trial. *J Clin Periodontol* 2011(38)341-346

WATERLASE MD: KEY FEATURES

Healing time is dramatically reduced (five days down to the equivalent of one and a half) because the clotting stage is completely avoided

Far less inflammation and pain

Analgesic effect – blocking of C-fibres to the brain (which tell it that pain is present)

Reattachment – as soon as you put the laser into the pocket, it removes all the germs and then roughens the very smooth surface, which encourages reattachment of tissues, resulting in reduced mobility and increased retention of teeth

Radial firing perio tips – these are new and produce a ball of energy. The energy comes from the side of the tip, rather than the top, with amazing effects

Agitated water causes a hydrophobic shock wave

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