Great results in treating periodontitis using the SiroLaser Blue

By Dr Michael Krech, Germany

Periodontitis, an inflammatory disease affecting the tissues supporting the teeth, is triggered by bacterial biofilms on root surfaces and/or mineralized deposits in gingival pockets. Treatment focuses primarily on removing periopathogenic bacteria, generally mechanically by cleaning the teeth and gingival pockets.

Dr. Michael Krech, a dentist from Marburg, presents a case history to describe how the additional use of a laser can prove advantageous when pocket depths are greater.

In most cases, periodontitis becomes a chronic disease that damages the tissues supporting the teeth. The inflammatory reactions by the immune system are triggered by bacteria. Depending on the kind of periodontitis, various species of bacteria can be found in the inflamed areas. In chronic periodontitis, for example, Aggregatibacter actinomycetemcomitans, Porphyromonas gingivalis, and Prevotella intermedia can be found. In acute periodontitis, Fusobacterium nucleatum and Capnocytophaga also present Porphyromonas bacteria in particular are responsible for severe damage. They prevent certain defense cells (neutrophil granulocytes) from functioning. Aggregatibacter species that can penetrate the soft tissue are also significant.

Case History

The treatment of a patient with periodontitis is described below, where the SiroLaser Blue (Dentsply Sirona, Marburg) was also used in addition to standard therapy. The periodontal diagnosis showed generalized horizontal bone loss with a bleeding index of more than half the measured gingival pockets (52%). However, there was no indication of aggressive periodontitis.

The patient's medical history was unremarkable; he was a non-smoker, and reported an occasional metallic taste in his mouth. The X-ray showed plaques in the approximal areas (API 45%) and periodontal anomalies in the upper jaw. The periodontal diagnosis showed generalized horizontal bone loss with a bleeding index of more than half the measured gingival pockets (52%). However, there was no indication of aggressive periodontitis.

Discussion

Successful treatment of periodontitis can be ensured only with the patient's cooperation. With suitable treatment in the dental practice and good compliance on the part of the patient, periodontitis can be virtually healed.

Experience from my practice has shown that instrumental treatment can be effectively supported with laser therapy. In this case, it was important to wait after instrumentation before use of the 445 nm laser due to the bleeding seen following subgingival instrumentation.

I am currently involved in a study under the supervision of Prof. Dr. Andreas Braun (University of Marburg) to examine the effect of the SiroLaser Blue on periodontitis treatment, the results of which will be published. Of the five patients examined and treated in my practice thus far, three have reported a rapid improvement of symptoms in the quadrants treated with laser. The laser may also have a positive effect on wound healing. The laser contributes significantly to reducing bacteria. Bacteria tests at different times suggest that the laser makes an important contribution to reducing the amount of periopathogenic bacteria.

A recall interval of 3 months was agreed (supportive periodontal therapy). Good oral hygiene practices were evident at the first appointment – the API was 16% and the BOP 15%. The periodontal status indicated considerable pocket depths. The patient reported that the metallic taste was gone.

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