

# TwinLight™ Periodontal Treatment

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## SUMMARY

### INTRODUCTION

For many intraoral soft-tissue surgical procedures the laser has become a dependable and desirable alternative to traditional scalpel surgery, however, the use of dental lasers in periodontal therapy is still considered controversial [1].

New research has suggested that non-surgical periodontal treatments with an Er:YAG laser may be one promising alternative for reducing and controlling the proliferation of microorganisms in persistent periodontitis [2]. The Er:YAG laser ablates periodontopathic bacteria with thermal vaporization, and its bactericidal effect on the diseased root surfaces appears to be superior to that of the ultrasonic scaler [3].

### AIM

The aim of this study was to compare the combined TwinLight™ laser therapy (Er:YAG + Nd:YAG) with conventional modified Widman flap surgery in patients with advanced periodontitis.

### MATERIALS AND METHODS

Fifteen patients with advanced periodontitis who needed corrective surgical treatment were included in the study. Smokers, patients on antibiotic treatment in the previous 3 months and patients with systemic diseases were excluded from the study. According to split mouth design, half of the patient's single-rooted teeth were randomly assigned to a modified Widman flap group (MWF) and the other half to a laser group (L). The MWF group was treated with conventional flap surgery while the laser group was treated non-surgically using neodymium (Nd:YAG) and erbium (Er:YAG) lasers. Laser treatment was performed in three steps including decontamination of the periodontal pocket (Nd:YAG; 3-4 W), removal of the pocket epithelium and the content of the periodontal pocket, scaling of the root surfaces (Er:YAG; 50 mJ/p) and stabilization of the blood clot inside the periodontal pocket (Nd:YAG; 4 W).

Clinical parameters of probing depth, recession, clinical attachment level and bleeding on probing were recorded at baseline and 3 months after treatment.

## RESULTS

The mean probing pocket depths at baseline were 3.87 mm ± 1.51 mm in the MWF group and 3.56 mm ± 1.63 mm in the laser group. These values decreased to 2.58 mm ± 1.10 mm ( $p < 0.05$ ) in the MWF group and to 2.63 mm ± 1.15 mm ( $p < 0.05$ ) in the laser group. Recession increased from 1.62 mm ± 0.77 mm to 2.25 mm ± 1.03 mm ( $p < 0.05$ ) in the MWF group and from 0.90 mm ± 1.11 mm to 1.28 mm ± 1.29 mm ( $p < 0.05$ ) in the laser group. Clinical attachment levels decreased from 5.50 mm ± 1.91 mm to 4.83 mm ± 1.52 ( $p < 0.05$ ) in the MWF group and from 4.46 mm ± 1.98 mm) to 3.91 mm ± 1.68 mm ( $p < 0.05$ ) in the laser group 3 months after treatment. The bleeding-on-probing score dropped from 16.67% to 8.33% in the MWF group and from 23.81% to 5.95% in the laser group.

## CONCLUSION

Combined laser treatment effectively improved the periodontal clinical parameters and might serve as an alternative to conventional flap surgery in single-rooted teeth.

## REFERENCES

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