



中華民國口腔雷射醫學會 第四屆第二次會員大會

Dental Implant and **2009**
Dental Laser

大會手冊

渡辺孝夫

2009 9/6

開會地點：

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國外講師簡歷及演講摘要

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Topic: Possibility of Fiber-less Er:YAG Laser to Prepare Implant Bed

Abstract:

Nowadays, laser treatment in dental field is usual method. For soft tissue, many type of laser; CO₂, diode, Nd:YAG are well known. Er:YAG and YSGG YAG laser are not only effective for soft tissue, but also for hard tissue like dental caries. However they are not usual in a field of oral surgery, because of high cost fee and weakness of fiber. Recently an Er:YAG laser was developed from Israel. It has unique mechanism that the laser chamber is harbored in the applicator, the tube leading to the handpiece. This fiber-less design prevents energy loss and increases the system's resilience, eliminating the need to replace costly cables. This system allows for the possibility to use for oral surgeries including implant surgery.

Handpiece stabilization during implant bed drilling is often challenging due to the need to apply pressure when using a conventional mechanical drill. In addition, fragmentation of the fragile bones may occur and complicate the reconstruction. The pulsed Er:YAG laser offers an attractive alternative drilling modality because it does not require physical contact with the bone in order to drill holes, cuts bone with minimal thermal damage, and allows precise control of bone cutting.

The aim of this presentation is to discuss about the possibilities of a fiber-less Er:YAG laser comparing the laser exposure time with the depth achieved at implant bed where was prepared in the blocks of a beagle dog mandible animal experiment using Er:YAG laser (LiteTouch, Syneron, Israel) showed that the speed to prepare implant bed was 0.5 mm in depth for second in the cortical bone and 1.8 mm in the cancellous bone. In a situation where the tip point was applied to the bone surface of the cortical bone, the depth was slow and limited. However, it was faster in the cancellous bone. The implant bed preparation was satisfactory with almost no constraint on the positioning of the laser tip. The implant bed went in a straight line and the position did not miss the point. It was thought that different implant bed preparations using an engine drill to apply high pressure was possible. In addition, I will show several cases using the laser for preparing the implant bed.

專題演講