IMPROVEMENTS IN LASER TREATMENT OUTCOME BY THE INTRODUCTION OF NEW PRECISION LASER FIBERS FOR UROLOGY AND UROGYNAECOLOGY

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Introduction & Objectives: Many factors influence patient outcome during surgical interventions. With laser technology, the two most important ones are the characteristics of the laser light and the applicators. Our aim was to analyse a set of three different fiber probes and their specific advantages at tissue.

Material & Methods: After laboratory research, we scheduled 40 patients (n=12 with Benign Prostatic Hyperplasia, n=8 with kidney tumors; n=6 with condylomata, n=7 with stones, n=7 with bladder neck stenosis). High-power LFD laser DIOLAS LFD 3000 was used at various power levels with the operating mode LFD. The fibers included bare fibers at various diameters, a sidefire fiber and the newly-developed hook fiber. In particular we tested the effect of both laser light and fibers on coagulation, carbonisation, handling and precision.

Results: All three types of fiber are useful assets in the OT. The bare fiber with its focused frontal energy emission has proven ideal for precise cuts and shockwave emission on stones with limitations on frontal tissue access or ablation of tissue. The sidefire fiber was optimal for the ablation of soft tissue. Most interest was given to the new hook fiber which combines an angled energy emission with a focused, more cutting oriented behaviour. We assessed it as optimal for the frontal access to kidney tumors or the transurethral incision of the prostate at men (TUIP).

Conclusions: Advances seen with the applicators of laser energy are very satisfying and allow a more fine-tuned treatment at higher precision, preserving surrounding organs and related structures such as muscle tissue.