
Low-Power Holmium Laser Urethrotomy Results on 32 Patients within a Follow-up of Two Years

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Introduction

Thirty years ago the endoscopic urethrotomy was introduced by Sachse using a technique with the cold knife. The success rates, which amount to 35 till 60 percent in a long term follow-up, are disconten-ting because of scar formation and recurrent stric-tures. Therefore different alternatives in the endo-scopic treatment of strictures of the urethra including the laser urethrotomy have been evaluated. The evi-dence of laser technology being superior due to less scar formation thanks to thermal stricture incision could not be supplied yet. Success rates for the Neo-dymium:YAG laser urethrotomy being released are between 36 and 50 percent.

In the 1990ies the Ho:YAG laser was introduced in urology. Ever since this laser has been well estab-lished as an endoscopic surgical procedure for different indications.

The survey's purpose comprised the evaluation of the results in Ho:YAG laser urethrotomy within a follow-up of at least twelve months and the influence on the patients' quality of life.

Patients and Procedures

32 male patients with symptomatic urethral stricture (bulbar n = 8, penile n = 9, combined n = 9) underwent Ho:YAG laser urethrotomy at our hospital from January 2002 until January 2004.

The aetiology of the stricture was iatrogenic with 60 % (n = 18), inflammatory with 16,6 % (n = 5), posttraumatic with 13,3 % (n = 4) and idiopathic with 7 % (n = 3).

The stricture was incised under direct vision either at twelve o'clock position or within the area of the scar formation widest spread. The setting of the laser energy was selected between 1200 and 1400 mJ with a frequency of 10 till 13 Hz.

Postoperatively the patients received for four days an indwelling catheter of silicone sized CH18. After re-mov- ing the catheter gel (Triamcinolon) was instilled. Patients were evaluated by means of questionnaires including IPSS and their quality of life.

Results

The retrograde endoscopic Ho:YAG laser urethrotomy could be smoothly performed with all 32 patients. 22 patients (68,7 %) were not in need of any re-inter-vention. 10 patients developed a recurrent stricture, which was treated in 4 patients (12,5 %) with a re-laser urethrotomy whereas 6 patients (18,7 %) needed a

reconstruction of the urethra by open surgery. In consideration of 2 patients receiving a re-laser urethrotomy, 24 patients (75 %) could be treated successfully in a follow-up of 27 months (13–38). Intraoperative complications did not occur. 5 % of the patients developed an urinary tract infection. No macrohaematuria was to be noticed.

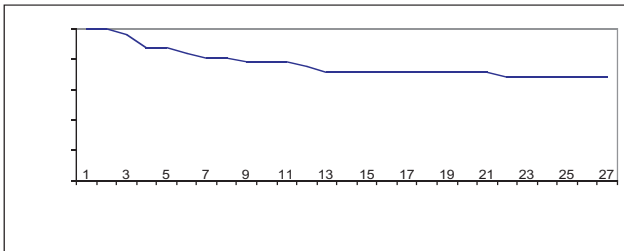


Table 1 Course of time of the recurrent development depending on time

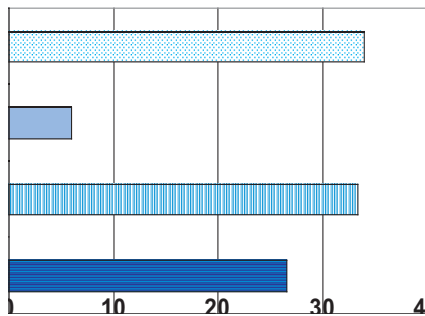


Table 2 Aetiology of the strictures

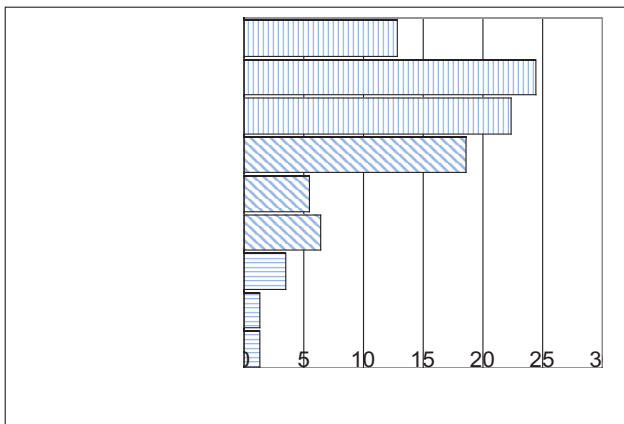


Table 3 Pre- and postoperative values of IPSS, flow max., and Quality of Life (QoL)

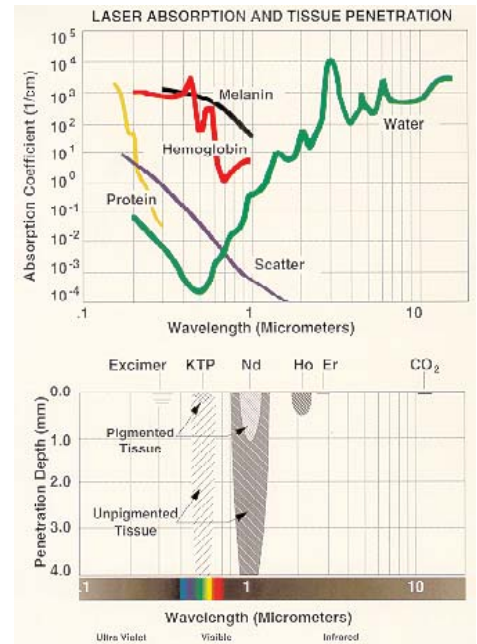


Table 4 The penetration depth of different lasers in comparison

Conclusion

The Ho:YAG laser urethrotomy is a safe and effective minimally invasive procedure for the treatment of urethral strictures with results at least comparable to the conventional urethrotomy within a short term follow-up.

Concerning the long term follow-up further data are necessary in order to complete the statement about patients' outcome after Ho-YAG laser urethrotomy and in order to compare them with results of conventional urethrotomy and urethral reconstructions.

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