

·Letters to the Editor·

Two micron continuous wave laser vaporesction for the treatment of benign prostatic hyperplasia

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Dear Editor,

I'm Wei-Jun Fu, from Department of Urology, Chinese People's Liberation Army General Hospital, Military Postgraduate Medical College, Beijing, China. We write to you to present an observation on the safety and clinical effects of RevoLix 70 W 2 micron continuous wave laser vaporesction for the treatment of obstructive benign prostatic hyperplasia (BPH). Because of the combination of the advantages of vaporization and resection, in our experience, 2 micron wave laser vaporesction for treatment of BPH provides safe and effective relief from obstructive BPH with minimal morbidity and rare bleeding.

A number of laser-based procedures have been developed to treat BPH. In the past the pulsed holmium laser has been used for enucleation of the prostate, but the holmium laser is not the best form of energy when it comes to cutting and vaporization of soft tissue [1]. More recently, photovaporization of the prostate using potassium-titanyl-phosphate lasers has become more popular. But the lack of absorption in coagulated tissue impairs the vaporization effect of the next tissue layer [2]. The continuous wave laser at 2 micron wavelength allows simultaneous vaporization and resection of the prostate. Therefore, this technology is called "vaporesction of the prostate" and should offer significant advantages over

holmium laser and photovaporization.

We report our initial experience with the 2 micron continuous wave laser in treatment of the prostate for BPH. We treated 56 patients with obstructive BPH between March 2006 and March 2007. The age of the patients ranged from 55 to 86 years, with a mean of 67 years. The mean prostate volume was 64.6 ± 12.2 mL, the preoperative total prostate specific antigen (PSA) was 3.9 ± 1.4 ng/mL, and the mean Q_{\max} value was 5.2 ± 1.6 mL/s. In addition, the mean International Prostate Symptom Score (IPSS) and quality of life (QoL) questionnaire score was 23.8 ± 3.6 and 4.2 ± 0.2 , respectively. The RevoLix 2 micron continuous wave laser (LISA Laser Products, Katlenburg, Germany) was used at a power level of 70 W and in normal saline. A 550 micron RigiFib bare-ended fiber (RigiFib™, LISA laser products, Katlenburg, Germany) was used in combination with a 26 French continuous flow laser resectoscope. All cases were followed up at average 6 months.

We found that the 2 micron laser provides immediate reduction of prostatic tissue and consistent transurethral prostatectomy (TURP)-like capacity. Average resection time was (62.0 ± 14.6) min. Tissue samples are available for histological analysis. No patient had intraoperative bleeding, and no blood transfusion was necessary. Foley catheters were inserted immediately

post operation and were removed on average 44.6 ± 21.6 h later. The IPSS and QoL score decreased to 8.5 ± 2.3 and 1.9 ± 1.2 , respectively. The Q_{\max} was 16.8 ± 2.3 mL/s after treatment at average 6 months follow-up, which was significantly higher than that before treatment ($P < 0.05$). Apart from transient dysuria in two cases, all patients were satisfied with voiding outcome, none had incontinence.

The 2 micron wavelength is delivered as a continuous wave rather than pulsed, allowing for similar vaporesection due to water absorption but without damage or disturbance to adjacent tissue [3]. Another important feature is that this laser wavelength allows the use of clear safety glasses that do not produce any color distortion and provide a clear view of the surgical site. Therefore, the advantages of vaporesection are that it is a safe, bloodless, efficient, and promising surgical procedure for the treatment of BPH.

In our experience, patients have less blood loss and shorter hospital stay in comparison to those underwent electroresection. Follow-up data showed a significant improvement in voiding symptoms and QoL. In many respects, 2 micron laser vaporesection is similar to TURP procedure but without any of the side-effects. In fact, it

is expected that the 2 micron laser might challenge TURP and could be a new gold standard for minimally invasive treatment of BPH [4]. However, its drawbacks are the longer operation time in comparison to electroresection and the high acquisition costs of the laser. Our results are short term and longer follow-up is needed before RevoLix vaporesection can be considered a new gold standard.

References

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