CUTER TM 150W 2010nm THULIUM:YAG CONTINUOUS WAVE VAPORESECTION FOR BENIGN PROSTATIC HYPERPLASIA
A Single Institution Experience and Description of Technique

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OBJECTIVES
To evaluate a new technique for treatment of benign prostatic hyperplasia (BPH) by Vapopresection of the median and lateral lobes using the Cyber TM 150 W 2010 nm Thulium:YAG laser system with an 800 micron end-fire fiber.

METHODS
40 cases of BPH have been treated using the Vapopresection technique described herein, between May 2010 and June 2012, for indications including voiding symptoms (n=27) and urinary retention (n=13). Age ranged between 53-89 years, median 67 years.

The setting was a tertiary referral practice at University College Hospital, London, for patients requiring surgical treatment for voiding dysfunction due to BPH. The majority of patients had failed medical treatment, and had declined or been unsuitable for transurethral resection of prostate (TURP) on account of significant comorbidities. Evaluation included pre- and post-operative IPPS symptom score, Prostate-Specific Antigen (PSA), digital rectal examination, maximum urourflow (Qmax), post-void residual, and prostate volume assessment by transrectal ultrasound or magnetic resonance imaging. Two-tailed Student’s t-test was used for statistical analysis.

RESULTS
Pre-operative prostate volume measured 21-250 cc, median 61.4 cc (n=39). When post-operative volume was measured, mean reduction was 22 cc, from a mean of 59 cc to 37 cc (n=34). In patients without retention, preoperative PSA was 0.6 – 6.7 ng/ml, median 3.2 ng/ml. Also, see Table below.

Energy delivery ranged from 17 – 508 kJ, median 203 kJ; laser time 1.9 – 46.9 minutes, median 23 minutes; and power delivery 8.7 – 1.95 SD kJ/min, at 150 W. The technique maintains a hemostatic operative field, avoids the need for morcellation, and minimises the risk of metabolic complications by using saline irrigation.

There were no significant complications, defined as Clavin 2 or higher. Patients can be advised that the experience they will have is as if a urologist with endoscopic experience. The surgeon has excellent vision, using near clear view goggles.

CONCLUSION
The laser characteristics of Cyber TM 150 W Thulium:YAG provide efficient and hemostatic vaporisation for precise Vapopresection, Vaporetter, Vapocut and VapoExileaction, without carbonization or excessive bubble effect, and simultaneous excellent coagulation, with the option of a reusable end-fire or a single-use side-fire fiber. It avoids danger from “overshoot” or deep thermal tissue damage during high absorption in water.

Declaraiton of Interests
* Dr Feneley is a clinical advisor to Quanta System, Milan, Italy.