#292 Transurethral prostate enucleation in benign prostatic hyperplasia with bipolar energy (Vaporcut®): a single-center expericence one-day surgery, is it safe?

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Abstract

We evaluated transurethral enucleation of the prostate using bipolar energy (Storz Bipolar 26Fr Resectoscope Vaporcut® system) for benign prostatic hyperplasia treatment in our institution in a one-day surgery regime. We particulary examined safety, outcomes and the re-treatment rate.

A total of 35 patients were treated at our university hospital. All parameters were collected retrospectively.

All the operations were completed successfully, mean operation time was 73 minutes and mean hospital stay was 13h. Mean bladder catetherization time was 1,6 days. There were no imediate hospital re-admissions. I-PSS, quality of life score and maximum urinary flow rate were significantly improved compared to baseline.

Transurethral enucleation of the prostate using bipolar energy (Storz Bipolar 26Fr Resectoscope Vaporcut® system) is safe and efficacious in a one-day surgery regime, providing durable improvement in functional outcomes without increasing the rate of complications.

Introduction

According to several international guidelines, transurethral resection of the prostate (TURP) has so far still been considered as the gold standard for surgical treatment for patients with obstructing clinical benign prostate hyperplasia (BPH). Also, due to it´s relatively high rate of immediate complications, namely severe hematuria, it has not been recommended to use this technique in outpatient surgery regimens. Transurethral resection of the prostate has, in general, a relatively high rate of complications and postoperative recurrence. TURP needs further modification and innovation on the surgery technique. In the past 2 decades, with the development of many new types of surgical applications, new endoscopic enucleation procedures for the prostate have been rapidly developed and optimized. These procedures have comparable outcomes to traditional transurethral resection of the prostate (TURP) and open prostatectomy (OP). We evaluated transurethral enucleation of the prostate using bipolar energy (Storz Bipolar 26Fr Resectoscope Vaporcut® system) for benign prostatic hyperplasia treatment in our institution in a one-day surgery regime. We particulary examined safety, outcomes and the re-treatment rate.

Methods and Materials

We prospectively evaluated a cohort of patients with symptomatic benign prostatic hyperplasia (BPH) who underwent bipolar enucleation of the prostate between August 2018 and February 2019. A total of 35 patients were treated at our university hospital. All parameters were collected retrospectively, including complications, I-PSS, maximum urinary flow rate, prostate volume, prostate specific antigen, operating time, duration of hospital stay, duration of bladder catetherization and the endoscopic re-intervention rate.

Fig 2. Endoscopic view

Results

Mean age of patients was 73 years. Mean pre-op I-PSS, pre-op maximum urinary flow rate, pre-op prostate volume were, respectively, 25 points, 10 mL/s and 84 mL. All the operations were completed successfully, mean operation time was 73 minutes and mean hospital stay was 13h. Mean bladder catetherization time was 1,6 days. There were no imediate hospital re-admissions. I-PSS, quality of life score and maximum urinary flow rate were significantly improved compared to baseline. Mean follow-up was 6 months.

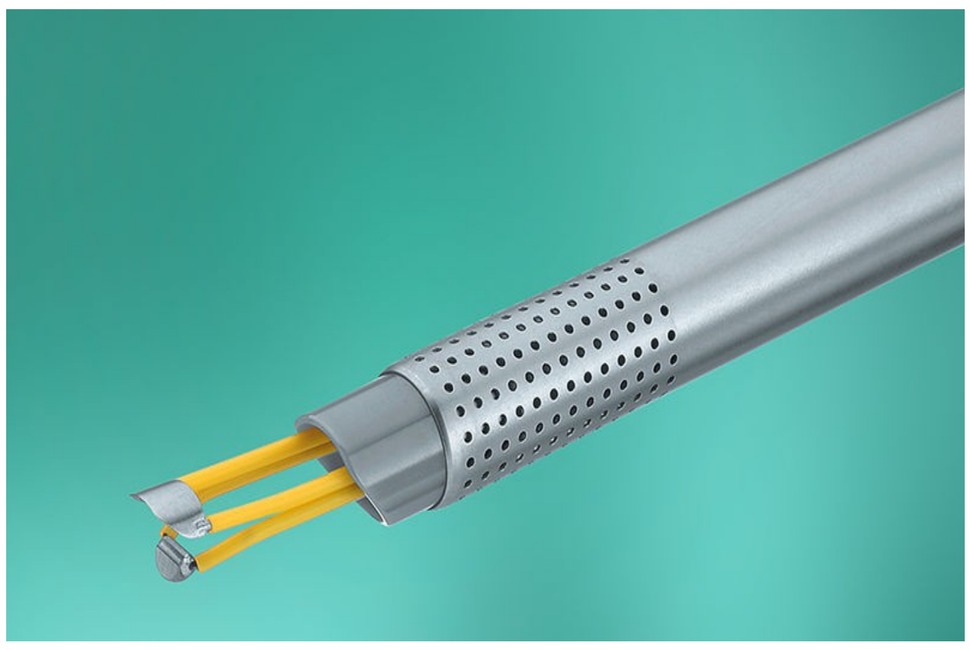

Fig 1. Storz Bipolar 26Fr Resectoscope Vaporcut® system

Discussion

The procedure was performed using bipolar energy (Storz Bipolar 26Fr Resectoscope Vaporcut® system) 160 W for the cutting and 80 W for coagulating. The enucleation procedure usually started from the prostatic apex, the boundary between the adenoma and external sphincter, rather than the verumontanum. Blunt dissection was conducted clockwise and counterclockwise to separate the surgical capsule from the gland via the beak of the resectoscope sheath, and the detachment area was extended laterally and forward to completely peel the adenomatous tissues off the surgical capsule. In larger prostates (120-140cc), the procedure was performed in three phases. In the first phase, the enucleation of the middle lobe was performed and then each lateral lobes separately were fulfilled. After the enucleated tissue was deposited in the bladder, it was morcelated. In some cases, in which there was only one middle lobe and no lateral lobes, the middle lobe was enucleated with the Vaporcut® loop and the tissue was resected with bipolar loop. Conclusions: Transurethral enucleation of the prostate using bipolar energy (Storz Bipolar 26Fr Resectoscope Vaporcut® system) is safe and efficacious in a one-day surgery regime, providing durable improvement in functional outcomes without increasing the rate of complications. Bipolar enucleation has also an advantage in that the equipment is easily accessible and highly cost-efficient. The learning curve is not excessively long since both the equipment is the same as that used in TURP and the movements for prostatic enucleation are intuitive and simulate classical open surgery.

Conclusions

Based on these findings, we believe that the substitution of transurethral resection of the prostate by transurethral enucleation of the prostate as the gold standard for prostate endoscopic procedure can be expected in the future.