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THE EFFICACY AND SAFETY OF PHOTOSELECTIVE VAPORIZATION OF THE PROSTATE(PVP) FOR THE TREATMENT OF BENIGN PROSTATE HYPERPLASIA(BPH) IN MEN WITH LARGE PROSTATES

Hypothesis / aims of study

Recent studies have shown the photoselective vaporization of the prostate(PVP) is safe and efficacious as possible to alternate with the standard surgical treatment, transurethral resection of the prostate(TURP). But there are a few reports about the large prostates. This study was conducted to evaluate the efficacy and safety of PVP for men with a prostate volume greater than 60cc.

Study design, materials and methods

The clinical data of 249 men with symptomatic benign prostatic hyperplasia underwent PVP between January 2006 and June 2008 was retrospectively analyzed. All patients were classified into two groups by their prostate volume (< 60cc; group A, ≥ 60cc; group B). The preoperative evaluation included the digital rectal exam, urinanalysis, prostate-specific antigen(PSA) levels, International Prostate Symptom Score(IPSS), the quality of life (QoL score), the maximal flow rate(Qmax), the postvoid residual urine volume(PVR) and transrectal ultrasonography(TRUS). The total operative time, used energy(kJ), the urethral Foley catheter indwelling period and the number of hospital days were recoded after wards. The IPSS, QoL, Qmax and PVR were evaluated at 1, 3, 6 and 12 months postoperatively.

Results

Of 249 men, 186 men were included in group A, remained 63 men were group B. The mean age was 67.2 (44-87) years in group A and 69.4 (57-88) years in group B. The mean prostate volume was 38.4 ± 10.8cc in group A and 78.6 ± 15.4cc in group B. PSA level was 2.06 ± 1.97ng/mL in group A and 5.93 ± 4.66ng/mL in group B (P<0.05). The mean operative time was 46.6 ± 19.1 minutes in group A and 76.0 ± 29.8 minutes in group B(P<0.05). The used energy was 122 ± 80 kJ in group A and 200 ± 89 kJ in group B. The postoperative urethral Foley catheter indwelling period was 24.4 ± 15.2 hrs in group A and 24.6 ± 10.8 hrs in group B, and almost of the patients(156 men(84%) in group A, 59 men(94%) in group B) were discharged at postoperative 1st day after urethral catheter removal. IPSS was improved from 20.1 relatively to 13.4, 10.8, 10.5 and 10.7 at 1, 3, 6 and 12 months postoperatively in group A, and improved from 19.1 preoperatively to 11.8, 8.7, 7.0, and 7.6 at 1, 3, 6 and 12 months postoperatively in group B. QoL was decreased from 4.5 preoperatively to 2.8, 2.3, 2.3 and 2.2 at 1, 3, 6 and 12 months postoperatively in group A, and decreased from 4.2 preoperatively to 2.9, 2.1, 1.6 and 1.7 at 1, 3, 6 and 12 months postoperatively in group B. Qmax was increased from 10.2mL/s preoperatively to 17.7, 17.7, 16.9 and 15.7mL/s at 1, 3, 6 and 12 months postoperatively in group A, and increased from 11.1mL/s preoperatively to 18.7, 16.7, 15.6 and 16.0mL/s at 1, 3, 6 and 12 months postoperatively in group B. PVR was decreased from 73.3cc preoperatively to 24.6, 21.3, 20.8 and 21.8cc at 1, 3, 6 and 12 months postoperatively in group A, and from 78.4cc preoperatively to 34.2, 37.3, 40.6 and 51.0cc at 1, 3, 6 and 12 months postoperatively in group B. Parameters such as IPSS, QoL, Qmax, PVR were changed significantly all groups. The postoperative complications were similar. There were retrograde ejaculation(17.8%), urethral stricture(4.8%), urinary incontinence(3.8%), urinary tract infection(2.2%), delayed gross hematuria(1.1%), and erectile dysfunction(1.1%) in group A, and retrograde ejaculation(14.3%), urethral stricture(4.7%), delayed gross hematuria(3.2%), urinary incontinence(1.6%), urinary tract infection(1.6%), and erectile dysfunction(1.6%) in group B.

Interpretation of results

In both group A and B, significant improvements of the subjective and objective voiding parameters were achieved and these were sustainable for at least 1 year with minimal complication after PVP.

Concluding message

PVP was safe and efficacious, with durable results for men with symptomatic benign prostatic hyperplasia, regardless of the prostate volume.

Table 1. Followup data of PVP patients. mean±standard deviation(p value)

		Preoperative	1mo	3mo	6mo	12mo
TRUS < 60	No. of patients	186	152	133	100	63
	IPSS	20.1 ± 7.4	13.4 ±7.7 (0.000)	10.8 ± 6.9 (0.000)	10.5 ± 7.6 (0.000)	10.7 ± 7.3 (0.000)
	OoL score	4.5 ± 1.9	2.8 ± 1.6 (0.000)	2.3 ± 1.6 (0.000)	2.3 ± 1.4 (0.000)	2.2 ± 1.4 (0.000)
	Qmax	10.2 ± 5.3	17.7 ± 9.1 (0.000)	17.7 ± 7.6 (0.000)	16.9 ± 8.1 (0.000)	15.7 ± 8.1 (0.000)
	PVR	73.3 ± 92.0	24.6 ± 41.1 (0.000)	21.3 ±30.3 (0.000)	20.8 ± 32.3 (0.000)	21.8 ± 50.8 (0.000)
TRUS ≥ 60	No. of patients	63	52	40	36	26
	IPSS	19.1 ± 8.3	11.8 ±7.8 (0.000)	8.7 ± 5.6 (0.000)	7.0 ± 5.6 (0.002)	7.6 ± 7.1 (0.000)
	QoL score	4.2 ± 1.3	2.9 ± 1.6	2.1 ± 1.5	1.6 ± 1.1	1.7 ± 1.4

		(0.000)	(0.000)	(0.000)	(0.000)
Qmax	11.1 ± 6.0	18.7 ±8.3 (0.000)	16.7 ± 7.7 (0.000)	15.6 ± 7.0 (0.004)	16.0 ± 8.7 (0.023)
PVR	78.4 ± 87.5	34.2 ± 32.4 (0.000)	37.3 ± 38.4 (0.004)	40.6 ± 38.3 (0.010)	51.0 ± 64.4 (0.079)

Table 2. Postoperative complications of PVP patients.

Post op complication	TRUS < 60 (n = 186)	TRUS ≥ 60 (n = 63)
Hematuira, gross	2(1.1%)	2(3.2%)
Transfusion	0(0%)	0(0%)
Urethral stricture	9(4.8%)	3(4.7%)
Urinary tract infection	4(2.2%)	1(1.6%)
Urinary incontinence	7(3.8%)	1(1.6%)
Retrograde ejaculation	33(17.8%)	9(14.3%)
Erectile dysfunction	2(1.1%)	1(1.6%)

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Was informed consent obtained from the patients?	**No**