

PELVIC PAIN IMPROVES AFTER HOLEP IN PATIENTS WITH LUTS/BPH: A PROSPECTIVE STUDY

Hypothesis / aims of study

Lower urinary tract symptom (LUTS)/ benign prostatic hyperplasia (BPH) is a common disorder in aged men. Nonspecific genitourinary discomfort or pain (GUDP) or nonspecific pelvic pain is a common complaint in this population. Our previous study [1] revealed that GUDP improved after holmium laser enucleation of prostate (HoLEP) in patients with LUTS/BPH. We aimed to investigate more details in a larger number of patients about whether this finding could be generalized.

Study design, materials and methods

A prospective study was performed in consecutive 619 patients who underwent HoLEP between May 2012 and April 2016. Inclusion criterion was men with LUTS/BPH aged 45 or more. Any patients with malignancy, infection, trauma or surgical history of the genitourinary tract, neurogenic bladder, and urethral stricture were excluded. Patients underwent careful history taking, physical examination, IPSS, serum PSA, free uroflowmetry, post-void residual (PVR) volume, transrectal ultrasonography, and standard urodynamic study. A self-administered validated questionnaire consisting of the degree of pain (10-point visual analogue scale) and site of pain were applied preoperatively and postoperatively at 3- and 6-months. The degree of GUDP was statistically analysed according to the time sequence. Also, association between the GUDP and other clinical parameters was analysed.

Results

A total of 619 LUTS/BPH males with an average age of 69.1 (± 6.9 , SD) years were enrolled. The patients with GUDP were 217 (35.1%) among them. Baseline characteristics showed that there were no significant differences between the patients with GUDP and without GUDP except the IPSS scores and the IPSS QoL score, which were higher in patients with GUDP ($p < 0.05$) (Table 1). Their main sites of pain were: distal penis in 67 patients (54.0%), suprapubic area in 47 (37.9%), perineum in 7 (5.6%), anus in 2 (1.6) and others 1 patient (0.8%). The baseline degree of pain was most commonly moderate. After HoLEP, all parameters including IPSS scores, Qmax and PVR volume improved significantly (Table 2). The number of patients having preoperative GUDP significantly decreased to 67 and 37 at the postoperative 3 and 6 months, respectively, being dramatically at postoperative 3 months. The degree of GUDP also decreased significantly ($p < 0.001$). However, there were 17 patients (2.7%) who developed *de novo* GUDP at postoperative 6 months. Univariate analysis showed that only baseline IPSS scores (HR 1.96; 95% CI 1.55-2.48 in IPSS total score) was significantly associated with baseline GUDP. BOO index was not associated with GUDP.

Interpretation of results

Pelvic pain in men is very difficult to localize and also is not easy to explain the cause of. It has been often cited as chronic prostatitis or chronic pelvic pain syndrome. We found that the pain in aged men is very commonly associated with LUTS. We believe that pelvic pain is a part of symptom presentation of LUTS/BPH since a complex integrative sensory network converge and diverge peripherally and centrally to coordinate lower urinary tract function. The limitations of our study are: 1) it is only a single center result. More studies involving multi-center are needed. 2) *De novo* GUDP might be the results of the genitourinary pain inherently following after prostatectomy. Therefore, it might require a longer follow-up period to assess it accurately. The advantage of this study is that it involved a large group of patients and the study was performed in prospective manner. Multicenter study involving more detailed questionnaire may further elucidate the nature of GUDP in the future.

Concluding message

Our results demonstrated that GUDP was closely related with LUTS in patients with LUTS/BPH. Most patients with GUDP improved after HoLEP. Our results will be useful in preoperative counseling on the vague pelvic pain in patients with LUTS/BPH.

Table 1. Baseline demographics

Parameters	Total (N=619)	GUDDP (N=217)	No GUDDP (N=402)	P-value*
Age (years)	69.1±6.9	68.5±6.9	69.4±6.8	0.140
Body mass index (kg/m²)	24.1±2.8	23.9±2.6	24.3±2.8	0.074
Diabetes (%)	121(19.6%)	31(14.3%)	90(22.4%)	0.070
Hypertension (%)	274(44.4%)	78(35.9%)	196(48.8%)	0.092
IPSS score				
Voiding symptom	10.5±5.8	11.9±5.3	10.8±5.3	0.014
Storage symptom	7.2±3.8	8.2±3.4	7.3±3.5	0.003
Total symptom	21.5±9.8	24.5±8.5	22.1±8.5	0.001
Quality of life	4.1±1.3	4.3±1.1	4.0±1.3	0.006
Uroflowmetry				
Maximum flow rate (ml/sec)	9.3±4.7	9.3±5.2	9.4±4.5	0.895
Post-void residual (ml)	64.7±79.4	58.8±75.7	65.0±72.0	0.359
PSA (ng/dl)	4.1±5.2	4.3±4.7	3.9±5.5	0.353
Prostate volume, total (ml)	71.2±38.9	72.0±39.7	70.5±38.2	0.687
TZ volume (ml)	43.6±29.7	43.5±29.2	42.7±29.2	0.764
Urodynamic parameters				
MCC (ml)	335.4±131.2	322.3±130.9	341.0±129.3	0.113
First desire (ml)	186.7±88.3	184.6±82.4	186.8±87.9	0.786
Normal desire (ml)	264.0±108.5	269.0±123.7	269.0±102.4	0.836
Strong desire (ml)	350.5±108.4	338.0±121.4	356.2±100.3	0.127
Bladder compliance (ml/cmH ₂ O)	46.3±21.5	47.5±21.3	46.1±21.1	0.463
BOO index	51.1±26.4	51.9±27.1	50.4±25.8	0.517
PdetQmax (cmH ₂ O)	66.4±25.2	67.2±26.0	65.8±24.7	0.566
Involuntary Detrusor Contraction (n, %)	326(54.3%)	93(53.1%)	210(54.1%)	0.983

Results were shown as mean ± SD. GUDDP, genitourinary discomfort or pain; IPSS, International Prostate symptom Score; TZ, transitional zone; MCC maximal cystometric capacity.

Table 2. Change of IPSS and nonspecific genitourinary pain after HoLEP

Parameters	Preoperative (N=619)	Postop. 3 months (N=567)	Postop. 6 months (N=534)	P-value
IPSS				
Voiding symptom score	10.5±5.8	2.1±3.3	1.5±2.8	p<0.001
Storage symptom score	7.2±3.8	4.1±3.2	2.6±2.7	p<0.001
Total score	21.5±9.8	7.6±7.8	5.1±6.5	p<0.001
Quality of life score	4.1±1.3	1.5±1.4	1.0±1.1	p<0.001
Uroflowmetry				
Maximum flow rate (ml/sec)	9.3±4.6	23.2±13.4	22.5±10.4	p<0.001
Post-void residual (ml)	65.9±82.9	16.9±30.3	14.9±33.2	p<0.001
VAS score (Mean ± SD)	3.4±1.4	2.4±1.5	2.3±1.4	p<0.001
Mild pain (1-3) (n, %)	73(40.6)	48(71.8)	27(73.0)	
Moderate pain (4-6) (n, %)	103(57.2)	19(28.4)	10(27.0)	
Severe pain (7-10) (n, %)	4(2.2)	0(0.0)	0(0.0)	
Total pain sites* (n, %)				
Suprapubic area	47(37.9)	15(32.6)	14(53.8)	
Back pain	0(0.0)	0(0.0)	0(0.0)	
Perineum	7(5.6)	3(6.5)	2(7.7)	
Distal penis	67(54.0)	27(58.7)	9(34.6)	
Anus	2(1.6)	2(2.2)	0(0.0)	
Others	1(0.8)	0(0.0)	1(3.8)	

Results were shown as mean ± SD. IPSS, International Prostatic Symptom Score; *multiple sites included (repeated measures ANOVA).

References

- Kim SH, Oh SJ. Nonspecific genitourinary pain improves after prostatectomy using holmium laser enucleation of prostate in patients with benign prostatic hyperplasia: a prospective study. PLoS One. 2014 Jun 5;9(6):e98979.

Disclosures

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