

PREDICTORS OF URGENCY IMPROVEMENT AFTER HOLMIUM LASER ENUCLEATION OF THE PROSTATE IN MEN WITH BENIGN PROSTATIC HYPERPLASIA

Hypothesis / aims of study

Overactive bladder (OAB) symptoms are common in patients with benign prostatic hyperplasia (BPH). Storage symptoms are most bothersome and have a negative impact on quality of life in BPH patients. Surgical treatment for BPH makes improvements on voiding symptoms and storage symptoms. However, higher rates of storage symptoms than voiding symptoms remain after surgical treatment.

Holmium laser enucleation of the prostate (HoLEP) has become an important treatment modality for BPH as reporting efficacy and safety of HoLEP for BPH of any prostate size. However, persistent storage symptoms were reported more frequently after HoLEP than after transurethral resection of the prostate (TURP) in some studies [1]. Also, several studies about relationship between HoLEP and OAB have been conducted recently [2, 3]. Although reduction of detrusor overactivity in urodynamic study after HoLEP was reported, OAB symptoms would not correlate with the urodynamic parameters. We investigated the change in urgency and predictors of urgency improvement after HoLEP in BPH patients with coexisting OAB.

Study design, materials and methods

We retrospectively analyzed the medical records of patients who were treated with HoLEP for BPH and had preoperative urgency measuring ≥ 3 points on the 5-point urinary sensation scale. Those with prostate cancer diagnosed previously or after HoLEP, a history of other prostatic and/or urethral surgery, moderate to severe complications after HoLEP, and neurogenic causes were excluded. We investigated the change in urgency at 3 months after HoLEP with 5-point urinary sensation scale. We divided the patients into two groups on the basis of change of urgency after HoLEP: the improvement in urgency group and the non-improvement in urgency group. Improvement in urgency was defined as a reduction of 2 or more points on the 5-point urinary sensation scale. Patients who had improved urgency with antimuscarinic medication after HoLEP were excluded. Preoperative clinical factors and urodynamic factors of each group were compared.

Results

In total, 116 patients were enrolled in this study. Of them, 60 men (51.7%) had improved urgency, while 56 men (48.3%) did not have improved urgency after HoLEP. Preoperative clinical factors including age, prostate volume, prostate specific antigen, and international prostate symptom score were not significantly different between the two groups. However, a significantly higher proportion of patients in the improvement in urgency group had a history of acute urinary retention (AUR) than those in the non-improvement in urgency group (28.3% vs. 8.9%, $P = 0.008$). Preoperative urodynamic factors including maximum flow rate, cystometry bladder capacity, and bladder contractility index were not different between the two groups. Patients in the improvement in urgency group had higher post-void residual urine volume (PVR), higher detrusor pressure on maximal flow (PdetQmax), and higher bladder outlet obstruction index (BOOI). (Table 1) Perioperative findings including used laser energy, operative time, and resected weight were not different between the two groups.

Interpretation of results

OAB symptoms in BPH patients could persist in 20-40% of patients after TURP. However, the present study showed that nearly 50% of patients persisted urgency at 3 months after HoLEP.

Preoperative history of AUR, PVR, PdetQmax, and BOOI could influence the change in urgency after HoLEP in patients with BPH.

Concluding message

The patients who are predicted to have sustained urgency after HoLEP should not be overlooked. Early treatment for urgency, such as antimuscarinic medications, should be considered for those patients.

Table 1. Comparison of clinical characteristics and urodynamic parameters between improving urgency group and non-improving urgency group

Parameters	Improving urgency group (n = 60)	Non-improving urgency group (n = 56)	P-value
Age (yrs)	68.3 ± 7.7	69.6 ± 6.8	0.309
Total prostate volume (ml)	59.6 ± 39.3	53.9 ± 28.4	0.375
PSA (ng/ml)	7.8 ± 14.4	3.9 ± 4.0	0.056
History of AUR (%)	28.3	8.9	0.008
Qmax (ml/s)	7.7 ± 3.7	8.5 ± 4.3	0.245
Residual urine volume (ml)	124.3 ± 137.2	67.1 ± 77.2	0.008
CMG bladder capacity (ml)	348.9 ± 168.6	324.2 ± 155.8	0.430
PdetQmax (cmH ₂ O)	67.8 ± 31.9	56.1 ± 24.5	0.046
BOOI	55.3 ± 37.1	42.1 ± 23.3	0.036
BCI	95.3 ± 44.6	85.8 ± 40.5	0.252
DO (%)	13.2	23.4	0.185

PSA: prostate specific antigen, AUR: acute urinary retention, Qmax: maximal flow rate, CMG: cystometrography, PdetQmax: detrusor pressure on maximal flow, BOOI: bladder outlet obstruction index, BCI: bladder contractility index, DO: detrusor overactivity

References

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Disclosures

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