

CHANGE IN STORAGE SYMPTOMS FOLLOWING LASER PROSTATECTOMY: COMPARISON BETWEEN POTASSIUM-TITANYL-PHOSPHATE PHOTOSELECTIVE VAPORIZATION OF THE PROSTATE (PVP) AND HOLMIUM LASER ENUCLEATION OF THE PROSTATE (HoLEP)

Hypothesis / aims of study

Storage symptoms that define overactive bladder (OAB) syndrome are more common than voiding symptoms, with frequent coexistence of storage and voiding symptoms in men. Storage symptoms are considered to be more bothersome to men than voiding symptoms [1]. Photoselective vaporization of the prostate (PVP) currently represents one of the promising technologies for surgical treatment of BPH and holmium laser enucleation of the prostate (HoLEP) have achieved recognition as a size-independent surgical treatment modality for BPH. Almost all literature focused on postoperative urgency or dysuria immediately after PVP or HoLEP. Thus, there has been a scarcity of data on serial changes of storage symptoms in the postoperative period after PVP or HoLEP and data on predicting factors that influence improvement in storage symptoms postoperatively. The aim of this study was to compare serial changes of postoperative storage symptoms between PVP and HoLEP, and to identify the predictors influencing postoperative improvement of storage symptoms.

Study design, materials and methods

Between March 2005 and May 2011, a total of 995 men underwent PVP (n = 482) or HoLEP (n = 513) for LUTS/BPH refractory to medical treatment. Among these, a total of 486 men (PVP group: 213 cases; HoLEP group: 273 cases), in whom 12-months follow-up data were available, were included in this retrospective study. We retrospectively reviewed our prospectively collected database. All patients were evaluated at baseline with history, physical examination including digital rectal examination, International Prostate Symptom Score (IPSS), urinalysis, serum creatinine (Cr), serum prostate-specific antigen (PSA), transrectal ultrasonography (TRUS) and multichannel video urodynamic study. Surgical outcomes were evaluated at 1-, 3-, 6-, and 12-months postoperatively using the IPSS, uroflowmetry with post-void residual urine volume (PVR) and serum PSA levels. Improvement of storage symptoms was defined as a reduction by $\geq 50\%$ of the subtotal storage symptom score postoperatively compared to baseline.

Results

Mean preoperative total prostate volumes in PVP and HoLEP groups were 50.6 (ranged 22.0 to 122.5) g and 55.1 (ranged 22.0 to 123.5) g, respectively. The percentage of patients with DO in the HoLEP group was significantly higher than in the PVP group. The amount of energy utilized during PVP was larger than with HoLEP. In both PVP and HoLEP groups, total IPSS, quality-of-life (QOL) index, frequency score, nocturia score, maximum flow rate and PVR were significantly decreased compared to the baseline starting from 1-month after the surgery. Whereas the urgency score was numerically increased compared to the baseline at 1-month after PVP, it was reduced compared to the baseline at 1-month after HoLEP. While the subtotal storage symptom score was significantly decreased compared to the baseline starting from 3-months after PVP, it was significantly reduced starting from 1-month after HoLEP. The percentages of patients with improvement of storage symptoms at 1-, 3-, 6- and 12-months after surgery in the HoLEP groups (24.5%, 36.6%, 52.4% and 52.7%, respectively) were a little higher than those in the PVP group (17.4%, 27.7%, 43.7% and 38.5%). Mean reduction of serum PSA at 3- and 6-months after HoLEP (70.8% and 70.0%) was significantly greater than after PVP (51.5% and 53.4%). As for postoperative complications, the incidence of transient dysuria in the early postoperative period after PVP was higher than after HoLEP. On multivariate logistic regression analysis, a higher baseline subtotal storage symptom score was the only independent predictor of improvement in storage symptoms after PVP or HoLEP. Also, the higher the baseline subtotal storage symptom scores were, the more reduction was observed in the subtotal storage symptom scores 12-months after PVP or HoLEP.

Interpretation of results

The outcomes for storage symptoms after surgical treatment of BPH carry significant implications, because the goal of any treatment for BPH is the improvement of bothersome LUTS. However, recent literature raised the possibility that applied laser energy might be beneficial with respect to hemostasis but some patients could pay the price of postoperative urgency or dysuria [2,3]. The major findings of this study can be summarized as follows: 1) there is a difference in the timing of postoperative improvement of storage symptoms between PVP and HoLEP, with improvements beginning one month after HoLEP and 3 months after PVP. This could be partly due to the difference in the incidence of postoperative dysuria or urgency between PVP and HoLEP. Furthermore, this difference in the incidence of postoperative dysuria or urgency may be attributed to the difference in surgical technology between PVP and HoLEP. 2) The more severe the baseline storage symptoms, the more improved the symptoms become after PVP or HoLEP. In essence, the severe symptoms the patients with BPH have, the greater the scope for improvement after surgery can be. Also, patients with less severe baseline symptoms who underwent PVP or HoLEP for LUTS/BPH refractory to medications may have raised expectations about the benefits from the surgery, despite lesser scope for postoperative improvement due to less severe baseline symptoms.

Concluding message

Our data suggest that improvement in storage symptoms after HoLEP begins earlier than that after PVP. Also, this study indicates that patients with more severe baseline storage symptoms have a higher likelihood of improvement after PVP or HoLEP compared to those with less severe symptoms.

References

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Disclosures

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