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CAN PRESSURE FLOW STUDY PREDICT THE CLINICAL OUTCOME AFTER PHOTOSELECTIVE VAPORIZATION PROSTATECTOMY?

Hypothesis / aims of study

To determine a formula for predicting the outcome of photoselective vaporization prostatectomy using pressure flow study (PFS) and compare the predictive value of the maximum flow rate (Qmax) and ultrasound determination of residual urine volume.

Study design, materials and methods

The clinical records of 55 men with lower urinary tract symptoms that underwent a photoselective vaporization prostatectomy (PVP) between September 2007 and April 2008 were retrospectively analysed. The mean age of 64 years (range 49 to 78) were retrospectively analysed. Preoperative urodynamic studies were performed with indwelling 8 Fr suprapubic catheters. The results of the pressure-flow study (PFS) were divided into two groups: obstructed and unobstructed, using an ICS nomogram, pQ slope or the minimal urethral opening pressure. Other preoperative studies were done like uroflowmetry for Qmax, sonographic measurement of post void residual urine volume and prostate volume. The results of PFSs were not considered to decide operation. The success was defined as Qmax above 15 ml/s or a 50% reduction in IPSS.

Results

43 cases (78.2%) were obstructed and 12 (21.8%) were unobstructed. The success rates of the PVP for the obstructed and unobstructed were 88.3% and 58.3% (over all success rates 81.8%) respectively. The success rate of obertructed group was significantly high. The sensitivity and specificity of the PFS were 84.4 and 50.0%, respectively. Obstructed patients significantly lower IPSS and postvoid residual urine volume at the same point compared with unobstructed patients. We constructed receiver operating characteristics (ROC) curves using various threshold values for Qmax, residual urine and prostate volume. We selected a cut-off value for Qmax 10 or less ml/s residual urine volume less than 50ml and prostate volume of 30 gm. or greater for predictor of success. The sensitivity of the maximal flow rate (< or =10ml/sec) was 81.3%, and the specificity of the prostate volume (> or =30gm) was 47.1%.

Interpretation of results

The obstructed cases demonstrated marked improvement compared to the unobstructed cases (88.3% vs. 58.3%, p = 0.009). The unobstructed subjects were shown that almost all patients (91.6%) had bladder co morbidities like impaired detrusor contractility (IDO) and detrusor overactivity (DO). Six men (50%) had IDO, Ten men (83.3%) had DO and 4 had both abnormality. PFS provide might be predictive value of clinical improvement after PVP, and they also properly predict the poor clinical results in unobstructed patients. PFS result might be used in preoperative counselling. But it is invasive study, so cannot indicate all patients. Therefore we consider other less invasive studies. The success of PVP could not be accurately predicted with non-invasive methods alone because they were shown low sensitivity and specificity. According to our data as analysed with ROC curve, Qmax was most reliable study and residual urine volume and prostate volume were followed. IPSS did not correlate with objective treatment results. A careful combination of Qmax, prostate volume and residual urine volume would be reliable for predicting result.

Concluding message

Preoperative urodynamic study is not a mandatory preoperative technique for patient with undergoing PVP. However, it can decrease the PVP failure rate by patient selection and pre- and postoperative counselling. Other non-invasive parameters like Qmax, residual urine, prostate volume can be preoperatively useful for men who planning PVP, as long as they are applied compositely carefully.

References

1. Urology. 2006 Aug; 68(2):312-7.
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Specify source of funding or grant	**none**
Is this a clinical trial?	**Yes**
Is this study registered in a public clinical trials registry?	**No**
What were the subjects in the study?	**HUMAN**
Was this study approved by an ethics committee?	**Yes**
Specify Name of Ethics Committee	**Ethics Committee of Busan Veteran's hospital**
Was the Declaration of Helsinki followed?	**Yes**
Was informed consent obtained from the patients?	**Yes**