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FREE UROFLOWMETRY PATTERN MAY PREDICT FEMALE BLADDER OUTLET OBSTRUCTION.

Aims of study

Although the prevalence of female bladder outlet obstruction (BOO) is still unknown, it is important for diagnosis or treatment to detect the BOO in women with lower urinary tract symptoms (LUTS). Recently Blaivas and Groutz proposed a BOO nomogram in women with LUTS and showed a positive correlation between subjective severity of the symptoms and the four nomogram categories[1]. The aim of this study was to investigate relation between the free uroflowmetry patterns of female BOO and the Blaivas-Groutz nomogram results, and to analyze the clinical usefulness of free uroflowmetry patterns in women for an initial diagnosis.

Study design, materials and methods

We reviewed urodynamic database of female patients with complaints of LUTS, and a total of 58 female patients, mean age of 57.6 years, were enrolled in this study. All patients had comprehensive history-taking, physical examination, urinalysis, and they underwent free uroflowmetry (non-invasive uroflowmetry) and conventional urodynamic study. All patients underwent free uroflowmetry (non-invasive uroflowmetry) with a normal desire to void, and the post-residual urine volume was measured by urtrasonography. Subjects underwent conventional urodynamic studies including filling cystometry and pressure-flow study. The bladder was emptied, thereafter a 6Fr dual lumen transurethral catheter was inserted through the urethra to perform filling cystometries and pressure-flow studies. Abdominal pressure was also measured through an 8 Fr Fluid-filled balloon catheter introduced in the rectum. Urethral sphincter electromyography was recorded during urodynamic studies with surface patch electrodes on the perineal area.

We grouped the free uroflowmetry patterns into four different types (group A: bell-shaped flow curve, group B: undulating flow curve, group C: voided in x-times, group D: long and low Qmax)[2]. According to the Blaivas-Groutz nomogram, all patients were classified into the four categories of severe, moderate, mild, or no obstruction. When patients were diagnosed with the BOO based on the nomogram results, cystourethroscopy with 17F fiberscope or voiding cystourethrography were performed to identify any urethral or bladder pathology.

Results

In this study, 4 patients were excluded because of detrusor hyperactivity with impaired contractile function. Of the 54 patients, 21 39% were classified as group A, 11 20% as group B, 10 19% as group C and 12 22% as group D. Free maximum flow rate (ml/s) / maximum detrusor pressure (cmH2O) of each group were 30.3/ 24.7, 22.2/19.5, 15.8/28.8 and 7.8/41.8, respectively. As a result of application for the Blaivas-Groutz nomogram, 24 (75%) of 32 patients in the group A and B were classified as no obstructed category, and 11 (92%) patients in the group D were classified as obstructed category (4 patients were classified into moderate obstruction, and 7 patients were classified into mild obstruction). In the group C, 5 (50%) were classified as mild obstructed category and others as no obstructed category.

Interpretation of results

Although free uroflowmetry is a simple and non-invasive method, its flow pattern may be able to predict whether female patients with LUTS have the BOO or not. However, it is thought to be difficult without urodynamic study to predict the BOO in patients with voided in x-times flow pattern.

Concluding message

The free uroflowmetry patterns may help to predict the BOO in women with LUTS for an initial diagnosis and treatment.

References

1. Neurourol Urodynam 19: 553-564, 2000
2. Int Urogynecol J 16: 104-108, 2005

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