

URODYNAMIC ANALYSIS OF VOIDING SYMPTOMS IN FEMALE PATIENTS

Hypothesis / aims of study

Compared with male patients, causes of voiding symptoms in female patients are more complicated. Traditionally, the diagnosis mainly bases on medical history, clinical manifestation and routine examinations. But these usually don't help to make the right diagnosis and result in the failure of treatment. Our study intends to analyze the voiding symptoms in female patients from the aspect of urodynamics. We explored the diagnostic types of female voiding symptoms and compare the differences between age groups, and these also provide evidences for clinical therapy.

Study design, materials and methods

We retrospectively analyze the urodynamic data of 81 cases of female patients with voiding symptoms from 2005 to 2009 in our department. The age ranges from 20 to 86, and the mean age is 55.7. Among these cases, 40 cases just have difficult voiding, and 41 cases are complicated with storage symptoms such as increased daytime frequency and urgency. There are 22 cases complicated with chronic retention of urine and 10 cases with upper urinary tract dilatation and impaired renal function. 9 cases are complicated with neurologic disorders and 8 cases with diabetes. There are also 3 cases which have undergone pelvic and rectal surgery. We practiced the pressure-flow and free flow studies and divided into two groups- young and middle-aged group (≤ 60 years old) and old-aged group (> 60 years old) to analyze the diagnostic types.

Results

There were 38 cases in young and middle-aged group and 43 cases in old-aged group. The Pdet at Qmax ranges from 0 to 150 cmH₂O. The Qmax ranges from 0 to 25ml/s.

Based on P-Q nomogram and other urodynamic data, we divided these cases into five diagnostic types: bladder outlet obstruction (BOO), detrusor underactivity and acontractile detrusor, neurogenic bladder, normal and detrusor overactivity. The data is seen in the table.

Groups (Ages)	Bladder outlet obstruction	Detrusor underactivity and acontractile detrusor	Neurogenic bladder	Normal and detrusor overactivity	Total
≤ 60	12 (31.6%)	13 (34.2%)	9 (23.7%)	4 (10.5%)	38
> 60	10 (23.3%)	24 (55.8%)	6 (14.0%)	3 (7.0%)	43
	22 (27.2%)	37 (45.7%)	15 (18.5%)	7 (8.6%)	81

Interpretation of results

Voiding symptoms are common in female urologic patients. The patients may represent slow stream, intermittent stream, hesitancy and straining. In our study, detrusor underactivity and acontractile detrusor are the major cause of female voiding symptoms, which accounts for 45.7%. The incidence of this type is higher in the old-aged group than in the young and middle-aged group. Although the difference is not significant statistically, which may be due to the small sample size, the data can reflect this tendency. The reason may be that the female hypovaria occurs with age, and the collagen fiber content of detrusor muscle cell will increase. That leads to degeneration of detrusor function and poor contractility (1). Moreover, bladder outlet obstruction is another important reason for female voiding symptoms, which accounts for 27.2%. But videourodynamic method is not adopted in our study, and we could not ascertain the anatomic site of obstruction. Usually the obstruction site is situated in vesical neck or urethra, ascertaining the obstruction site is important for treatment. It is clear that neurogenic bladder could lead to voiding symptoms. However, it is not high proportion in our study. This is because that some patients with detrusor underactivity and acontractile detrusor have not been diagnosed neurogenic bladder without definite neurogenic disorders. Traditionally, voiding symptoms are attributed to bladder outlet obstruction and detrusor contractility, but in our study we find that patients who are normal in urodynamic studies and detrusor overactivity account for 8.6%. That may result from psychological factors.

Concluding message

Urodynamic studies can help us to evaluate the function of detrusor and clarify the existence or not of bladder outlet obstruction in female patients with voiding symptoms. The female patients can be divided into different diagnostic type. For patients with neurogenic bladder and detrusor underactivity, urethral catheterization or cystostomy may be needed. And for patients with bladder outlet obstruction, surgery or medicine may be considered. In addition, psychotherapy and behavior therapy is more suitable for patients with urodynamically normal and detrusor overactivity. In conclusion, urodynamic studies could provide clinical evidence for choosing correct therapy to female patients with voiding symptoms and improve clinical effects.

References

1. Pagala M K, Tetsoti L, Nagpal D, et al. Aging effects on contractility of longitudinal and circular detrusor and trigone of rat bladder. J Urol, 2001, 166:721-727

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