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Title: BLADDER OUTLET OBSTRUCTION IN TAIWANESE WOMEN

Aims of Study:

Lower urinary tract symptoms (LUTS) are common in female patients. In the diagnosis of female LUTS, bladder outlet obstruction (BOO) is often overlooked. Detailed videourodynamic studies have found BOO in 2.7% to 8% of women with LUTS. There are no universally accepted urodynamic criteria for the diagnosis of BOO in women. This study was constructed to investigate the criteria for female BOO in Taiwanese women.

Methods:

580 women undergoing videourodynamic study for their LUTS were assessed retrospectively. The data of the patients that were not interpreted or frank neuropathy and detrusor underactivity were excluded already. BOO was diagnosed in 76 women according to the combination of: (1) persistent obstructive and/or irritative symptoms, (2) a sustained detrusor contraction with Pdet.Qmax of at least 30 cmH_2O and (3) a radiologic evidence of a narrow bladder neck or distal urethra. In addition, the sphincteric EMG activity was used to differentiate between true urethral stricture and spastic urethral sphincter. Six patients with neurogenic detrusor external sphincter dyssynergia and 6 with severe cystocele, large residual urine, and dysuria were included in BOO group. For comparison, 269 women with stress urinary incontinence (SUI) and 235 patients with frequency urgency and/or urge incontinence syndrome (FUS) served as control groups.

Results:

The urodynamic parameters in different groups are listed in Table. According to the pressure and flow plots in these obstructed and non-obstructive patients, the BOO nomogram in Taiwanese women was constructed (Figure). Based on the Pdet.Qmax and Qmax, the sensitivity and specificity of BOO of these urodynamic parameters were calculated. A Pdet.Qmax of $\geq$ 35cmH_2O had a sensitivity of 96.1% and specificity of 89.0%. Use of Pdet.Qmax of > 35cmH_2O and Qmax < 15ml/s as an indicator for BOO had a sensitivity of 81.6% and specificity of 93.9%. Presence of Detrusor instability did not influence Pdet or Qmax. Based on these results, it seems rationale to use cut-off values of Pdet.Qmax of $\geq$ 35 cmH_2O and Qmax < 15 ml/s as the reference values for BOO in women.

Conclusions:

In the patients with LUTS and videourodynamic results showing Pdet.Qmax of $\geq$ 35 cmH_2O and Qmax < 15 ml/s, together with radiologic evidence of urethral narrowing, BOO should be highly suspected. A BOO nomogram was constructed for interpretation of LUTS in Taiwanese women.

Table. Urodynamic Parameters in Female BOO

N=		Pdet (cmH_2O)	Qmax(ml/s)	Voided volume(ml)	Residuum (ml)	DI
SUI	269	17.0 ± 7.0	19.6 ± 8.1	340.5 ±11.5.3	20.2 ± 26.9	36 (13.4%)
FUS	235	19.9 ± 7.1	17.1 ± 7.7	303.0 ± 122.1	22.0 ± 32.3	60 (25.5%)
US	30	59.2 ± 22.3	10.6 ± 5.4	187.9 ± 98.0	41.7 ± 65.1	22 (73.3)
SSS	40	47.3 ± 16.4	10.7 ± 5.1	196.2 ± 108.4	48.0 ± 49.3	22 (55%)
Cystocele	6	45.5 ± 7.9	9.7 ± 3.2	215.0 ± 83.4	98.3 ± 71.4	2 (33%)
ANOVA		P< 0.0001	P< 0.0001	P< 0.0001	P< 0.0001	P< 0.0001

SUI = stress urinary incontinence, FUS = frequency urgency syndrome, US= urethral stricture, SSS= spastic sphincter syndrome, Pdet.Qmax = detrusor pressure at maximal flow, Qmax: maximal flow rate , DI = detrusor instability

Figure. The BOO nomogram in Taiwanese women constructed by Pdet.Qmax and Qmax