162

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DOES THE ORDER OF PATIENT POSITION FOR SEQUENTIAL BLADDER FILLING AT CYSTOMETRY INFLUENCE OBSERVED DETRUSOR ACTIVITY ?

Aims of Study

Women with urge incontinence frequently describe a change in posture as a trigger for their urinary symptoms. Changes in postural position during cystometry have therefore been employed to increase the pick-up rate of unstable detrusor contractions in women reporting urge incontinence (1-5). However, the influence of the order of change in patient position during cystometry remains unclear. The aim of this study was to evaluate whether the order of bladder filling at cystometry in the sit-stand or stand-sit sequence alters observed urodynamic parameters, specifically the detection of detrusor contractions.

Methods

A prospective randomized, single-blinded study of 60 consecutive patients scheduled for cystometry was performed. Subtracted voiding cystometry was performed for two fills according to a strict protocol employing an infusion rate of 100 ml/min and fixed provocative manouvers. Patients were randomly allocated by pre-sealed envelopes to – Group1 (n=30) sit–stand and Group 2 (n=30) stand-sit filling sequences. Recorded outcome measures included: detection of unihibited detrusor contractions (>15cmH_2O) and or symptomatic detrusor contractions, first desire to void (FD), strong desire to void (SD) and filling capacity (FC)(6). All data were transferred to a computerized database and appropriate statistical analyses performed.

Results

There was no significant difference in the mean age for both groups -[Group 1, 55(R 8-76yrs) vs Group 2, 51(R 7-79 yrs), (p=0.3)]. Urodynamic parameters for both groups are listed in Table 1. Of note significantly greater volumes for FD and SD were observed in the sitting compared to the standing position irrespective of the sequence of fill. In contrast, a significant increase in the number of detrusor contractions was observed for the standing position in the sit-stand sequence only. All of these contractions were associated with urgency and incontinence.

Table 1 - Cystometric parameters

Urodynamic Parameters	Group 1 Sit-stand Fill (n=30)		p-value	Group 2 Stand-sit Fill (n=30)		p-value
	Sit	Stand		Sit	Stand	
FD (ml)	219+116	166+94	0.01^	233+131	192+99	0.03^
SD (ml)	319+118	267+107	0.02^	319+130	274+115	0.02^
Capacity (ml)	426+130	389+114	0.05^	397+141	392+129	0.67^
DC	2	8	0.04*	5	3	0.5*

Values expressed as mean +/- SD, p = ^paired student t test, * McNemar test.
DC = detrusor contractions.

Conclusions

In this study sequential subtracted voiding cystometry performed using a standard protocol in the sitting compared to the standing position was associated with a significant increase in the observed volumes at FD and SD irrespective of the sequence of fill. An increase in the number of uninhibited detrusor contractions was observed for the standing position on the second but not the first fill. It therefore seems reasonable to perform consecutive bladder fills at urodynamics in the sit-stand rather than the stand-sit sequence, particularly in women reporting urge incontinence symptoms.

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