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URETHRAL FUNCTION OF WOMEN WITH DETRUSOR OVERACTIVITY IS INTERMEDIATE THAT OF CONTINENT AND STRESS INCONTINENT WOMEN

Hypothesis / aims of study

There is increasing evidence that urethral function is increasingly thought to play a role in overactive bladder (OAB) as well as stress urinary incontinence (SUI). Nearly half of women with stress incontinence (SUI) also report OAB symptoms, and a third of women with urodynamic stress incontinence (USI) have coexistent detrusor overactivity (DOI). Similarly, DOI improves after SUI surgery in some women. Chaliha[1] found that urethral pressure increased during filling cystometry in women with USI, but not those with DO, suggesting that impaired urethral function may be associated with OAB. Our aim was to describe the relationships between urodynamic measures of urethral sphincter function in well-characterized continent women and incontinent women.

Study design, materials and methods

We recruited continent women from the community and incontinent women with symptoms of SUI or OAB presenting for urogynecologic care to undergo standardized urodynamic testing (UDS). UDS were done using a 6 channel Laborie Dorado (Laborie Medical Technologies, Williston, VT) and microtip catheters with participants reclined at 45º. Urethral sphincter function was assessed using urethral profilometry. Two serial urethral pressure profile (UPP) measurements were done using an 8 French dual microtip catheter with the transducer oriented laterally facing 9 o'clock, The two measures were averaged. Urodynamic methods, definitions, and units will conform to the International Continence Society standards. All participants also completed demographic information as well as validated measures, including the Medical, Epidemiologic, and Social Aspects of Aging (MESA) questionnaire with stress and urge subscales.

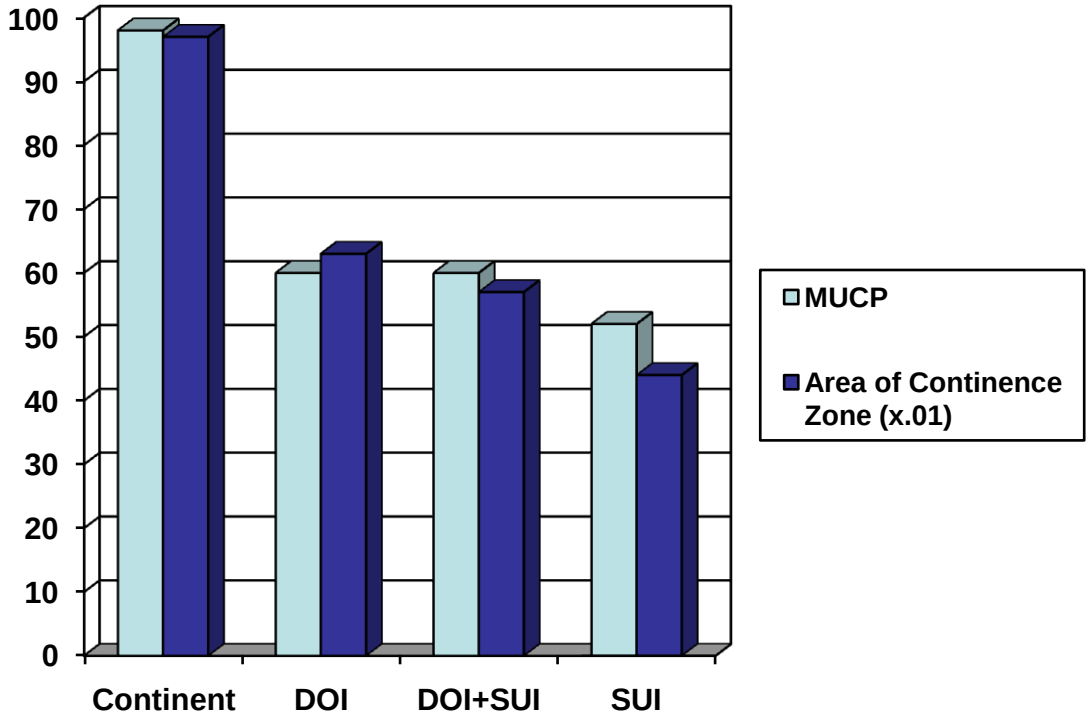
SPSS Version 16 (Chicago, IL) was used for data management and analysis. One way analysis of variance was used to compare means between independent groups.

Results

The 86 participants included 30 continent, 31 with USI, 8 with mixed urinary incontinence (MUI [USI + DOI]), and 17 with DOI. Table 1 shows demographic, MESA, and urethral function parameters for the 4 groups. Continent women were significantly younger than incontinent women regardless of incontinence subtype. MESA urge scores were higher in women with DOI, while MESA stress scores were higher in women with USI. Maximum urethral closure pressures and the area of the continence zone (area under the UPP) were significantly higher in continent than SUI women, while women with DOI and mixed urinary incontinence had MUCP and continence zones which tended to be between those of continent and SUI women.

Table 1:

	USI N=31 Mean (SD)	**USI + DOI N=8 Mean (SD)**	**DOI N=17 Mean (SD)**	**Continent N=30 Mean (SD)**	**P Value**
Age	48 (9)	51 (12)	63 (14)	39 (15)	<.0005
Body Mass Index	28 (7)	32 (10.4)	35 (8.3)	30 (8.8)	.05
UPP Length (mm)	25.3 (5.7)	25.6 (9.4)	36.5 (15.6)	34.5 (7.4)	<.0005
MUCP	52 (24)	60 (22)	60 (30)	98 (38)	<.0005
Area of Continence Zone	443 (282)	573 (512)	627 (407)	969 (524)	<.0005
MESA Urge Score	39.9 (22.7)	45.6 (31.4)	61.5 (26)	4.4 (9.7)	<.0005
MESA Stress Score	73.3 (16.9)	54.1 (17)	45 (23.9)	8.3 (17.)	<.0005



Interpretation of results

Not surprisingly, common urodynamic measures of urethral function are significantly higher in continent women when compared to SUI women. However, urethral function measures of continent women are also higher than women with DOI; although, urethral function measures in women with DOI are still higher than those with SUI or MUI.

Concluding message

Urethral sphincter function in women with DOI and MUI tends to be intermediate between those of continent and stress incontinent women. These data suggest that DOI in some women may be a failure of urethral sphincteric function. It also suggests that DOI and SUI may represent a continuum of urinary incontinence.

References

1. CHALIHA C, DIGESU GA, HUTCHINGS A, KHULLAR V. Changes in urethral function with bladder filling in the presence of urodynamic stress incontinence and detrusor overactivity. Am J Obstet Gynecol 2005;192:60-5

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Was this study approved by an ethics committee?	**Yes**
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Was the Declaration of Helsinki followed?	**Yes**
Was informed consent obtained from the patients?	**Yes**