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Institution: Urology Dept.
Title: LINKING AGE, CYSTOCELE AND ABDOMINAL STRAINING

Aim of Study:

This study investigated how age, cystocele and abdominal straining (AS) are linked in female micturitional dynamics.

Materials and Methods:

406 consecutive women were investigated under a standard uro-gynaecological protocol: case history and symptom assessment by means of a questionnaire, clinical examination, and a full urodynamic test. Voiding difficulties (VD) (staccato micturition, hesitancy, need to strain to void, slow or poor stream, feeling of incomplete emptying) and irritative symptoms (IS) (pollakiuria, nocturia, urgency) were evaluated. The frequency of symptoms was analysed statistically in relation to age, cystocele grade (Halfway system classification), previous uro-gynaecological surgery (hysterectomy, prolapse repair and incontinence correction) and abdominal straining as assessed in a Pressure/Flow study. In 314 patients post-micturitional residue of > 20% bladder capacity during free flowmetry was determined. Patients were stratified for age; age groups were analysed in relation to cystocele and AS. Student's t test, the χ^2 test, Spearman's test and logistical regression analysis were used for data processing.

Results:

Table I reports the results in the 365/406 patients who completed the uro-gynaecological protocol, with significant results in bold type.

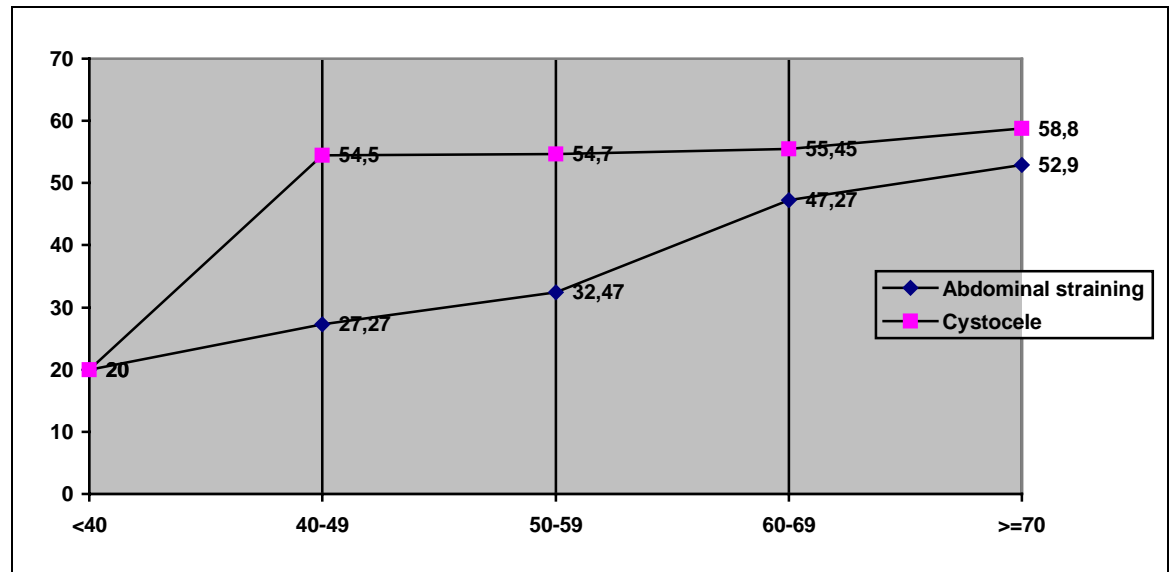
Tab. I

	AS	No AS	Residue	No residue	Surgery	No surgery
N° Pts	144	221	33	281	226	139
Mean age \pm SD	61.7\pm10.2	57\pm10.9	64.8\pm12.1	57.6\pm10.3	61\pm9.9	57.6\pm11.3
no symptoms	32	55	3	76	25	62
Irritative symptoms (IS)	50	70	4	98	46	74
Voiding difficulties (VD)	20	28	6	32	17	31
VD+IS	42	68	20	75	51	59
Cystocele \geq 2	73	125	26	143	59	138
Urethrocele \geq 2	77	114	17	236	50	141
Abdominal straining (AS)			11	109	53	91
Surgery	53	86	15	102		

Fig 1 shows abdominal straining and cystocele are age-related. Abdominal straining gradually increased

with age being observed in 20% of women < 40 years of age and 52.9% of those aged ≥ 70 ($P=0.003$). Cystocele increased significantly only in the 40-49 age group ($P=0.003$) compared to women under 40.

Fig. 1



Voiding difficulties are greater in patients with cystocele. The incidence of voiding difficulties and irritative symptoms is significantly different in the patients with post-voiding residue at free uroflowmetry ($P=0.000$). Patients with cystocele ≥ 2 most frequently have post-micturitional residue ($P=0.004$). Distribution of symptoms, prolapse grade and post-micturitional residue are not significantly different whether AS is present or not ($P>0.05$). Urethrocele was present in 236/281 (84%) patients without residue. Logistic regression analysis showed a linear correlation between voiding difficulties and irritative symptoms and cystocele grade ($r=0.210$, $p<0.001$; $r=0.143$, $p<0.0001$ respectively). Symptoms do not correlate with age. Abdominal straining correlates with age and cystocele grade. Spearman's test analysed only data from women without a history of uro-gynaecological surgery in order to eliminate altered variables in the clinical pattern and showed age correlated with cystocele grade ($r=0.186$, $p=0.005$). In the multiple logistical regression model with AS as the dependent variable and age and cystocele as predictive variables the correlation coefficient was significant only for age $r=0.174$; $p<0.001$).

Discussion and Conclusions:

Cystocele is the clinical parameter which is most frequently associated with voiding difficulties. Age correlates with AS, the post-micturitional residue and the cystocele grade. However logistical regression analysis showed AS is directly dependent upon age. Furthermore patients who use AS do not significantly complain of voiding difficulties which are instead present in women with cystocele. Abdominal straining is therefore linked to the ageing process and thus probably to detrusor hypocontractility which then interacts with obstructive factors and makes the study of micturitional dynamics in women extremely complex. Advanced urodynamic methods of analysis seem necessary for a correct diagnosis.

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