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VOIDING SYMPTOMS OBTAINED BY OPEN VERSUS DIRECTED ANAMNESIS AS PREDICTORS OF URODYNAMIC VOIDING DYSFUNCTION IN WOMEN WITH PREVIOUS ANTI-INCONTINENCE SURGERY

Hypothesis / Aims of the Study

The NICE clinical guideline for the management of urinary incontinence in women gives value to the presence of “symptoms suggestive of voiding dysfunction” and recommends multichannel urodynamics before surgery in patients who present them. However, there are few studies correlating voiding symptoms with the findings of pressure-flow studies in women, which focus on the diagnosis of bladder outlet obstruction, without considering the diagnosis of detrusor underactivity [1]. The aim of the study is to evaluate whether voiding symptoms obtained by open versus directed anamnesis are predictors of urodynamic voiding dysfunction in a group of women more likely to present it: women with previous anti-incontinence surgery.

Study design, material and methods

One hundred and fourteen consecutive women with previous anti-incontinence surgery, undergoing conventional cystometry following "good urodynamic practices" by the same urologist, in a five year period, were included in a retrospective study. At the time of examination and in a standardized manner, patients were asked if they had "difficulty emptying the bladder" (question 5 of the short form of the "Urogenital Distress Inventory” questionnaire). If the answer was positive, they were asked to describe their symptoms, considering weak stream, strain to void and intermittent stream (voiding symptoms obtained by open anamnesis). If the patient responded negatively to the first question or did not present the three voiding symptoms, they were asked for the presence of each of these symptoms in a directed way (added to the above: voiding symptoms obtained by directed anamnesis). Symptoms were recorded as being either present or absent without any stratification for severity. Bladder outlet obstruction was defined as Qmax ≤ 12 mL/s + pdet Qmax ≥ 25 cm H_2O [2], Detrusor underactivity was defined as Qmax ≤ 12 mL/s + pdet Qmax ≤ 10 cm H_2O [3] and mixed voiding dysfunction as Qmax ≤ 12 mL/s + pdet Qmax between 11 and 24 cm H_2O, with a concordant free uroflowmetry in all cases. Voiding symptoms and urodynamic diagnosis were tabulated independently. We sought statistical association between any urodynamic voiding dysfunction and the presence of any voiding symptom obtained by open and directed anamnesis using chi-square or Fisher's exact test. The same was done with each individual symptom. In case of obtaining a statistically significant result ($p < 0.05$) we calculated sensitivity, specificity, positive predictive value (PPV), negative predictive value (NPV), accuracy, positive and negative likelihood ratios and strength of agreement using Cohen's kappa. The information was processed with Stata 11.2 program (Stata Corporation, 2009).

Results

Of the 114 patients 23 were excluded (6 using medication active on the lower urinary tract, 6 examinations done reducing pelvic organ prolapse, 5 with neurological diseases, 5 with urethrolysis done before the examination and 1 with bladder pain syndrome), leaving 91 patients for analysis. Table 1 shows the clinical history of the patients. Eighteen patients had urodynamic voiding dysfunction (19.8%; 13 bladder outlet obstruction, 3 detrusor underactivity and 2 mixed voiding dysfunction). Table 2 shows statistical association between voiding symptoms and urodynamic voiding disfunction. There was a statistical association between urodynamic voiding dysfunction and a) presence of any voiding symptom obtained by open anamnesis and b) strain to void obtained by open anamnesis. There was no association with voiding symptoms obtained by directed anamnesis. Table 3 shows sensitivity, specificity, PPV, NPV, accuracy, positive and negative likelihood ratios and strength of agreement of the voiding symptoms with statistical association.

Interpretation of results

In women with previous anti-incontinence surgery, there is a statistical association between urodynamic voiding dysfunction and a) presence of any voiding symptom obtained by open anamnesis and b) strain to void obtained by open anamnesis, being higher for strain to void. Nevertheless, the strength of agreement is low. There was no association with voiding symptoms obtained by directed anamnesis (that could be considered similar to those obtained by symptoms scores).

TABLE 1. MEDICAL HISTORY OF WOMEN WITH ANTI-INCONTINENCE SURGERY UNDERGOING URODYNAMICS (n = 91)

Variable	Results
Age (years)	62.7 ± 11.06) (34 – 81)
Vaginal deliveries	2.79 ± 1.91 (0 – 11)
Previous hysterectomy	31 (35%)
Type of anti-incontinence surgery	
Mid urethral sling	50 (54.9%)
Burch colposuspension	29 (31.9%)
Mid urethral sling + Burch	5 (5.5%)
Vaginal surgery without sling	7 (7.7%)
Symptoms of	
Stress urinary incontinence	11 (12.1%)
Urgency urinary incontinence	20 (22.0%)
Mixed urinary incontinence	54 (59.3%)
Other types of urinary incontinence	6 (6.6%)
Voiding symptoms by open anamnesis	22 (24.1%)
Weak stream	5
Strain to void	9
Intermittent stream	13
Voiding symptoms by directed anamnesis	52 (57.1%)
Weak stream	20
Strain to void	15
Intermittent stream	24

TABLE 2. STATISTICAL ASSOCIATION BETWEEN VOIDING SYMPTOMS AND URODYNAMIC VOIDING DYSFUNCTION IN WOMEN WITH ANTI-INCONTINENCE SURGERY

Symptom	P value
Voiding symptoms by open anamnesis	
Weak stream	0.256 *
Strain to void	**0.013** *
Intermittent stream	0.068
Any	**0.025**
Voiding symptoms by directed anamnesis	
Weak stream	0.072
Strain to void	0.179
Intermittent stream	0.368
Any	0.064 *

*: Fisher's exact test

TABLE 3. VOIDING SYMPTOMS AS PREDICTORS OF URODYNAMIC VOIDING DYSFUNCTION IN WOMEN WITH PREVIOUS ANTI-INCONTINENCE SURGERY

	Any voiding symptom by open anamnesis	Strain to void by open anamnesis
Sensitivity	44.4%	27.8%
Specificity	80.8%	94.5%
PPV	36.3%	55,6%
NPV	85.5%	84.1%
Accuracy	73.6%	81.3%
Likelihood ratio +	2.324	5.129
Likelihood ratio –	0.686	0.764
Kappa (95% CI)	0.233 (0.006–0.460)	0.275 (0.029–0.521)

PPV: Positive predictive value, NPV: Negative predictive value.

Concluding message: There is a low strength of agreement between urodynamic voiding dysfunction and voiding symptoms obtained by open anamnesis, but no association with those obtained by directed anamnesis.

References

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Disclosures

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