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DOES URODYNAMIC INVESTIGATION IMPROVE OUTCOME IN PATIENTS UNDERGOING PROLAPSE SURGERY?

Hypothesis / aims of study
Without solid evidence, it has been advocated to perform urodynamic investigation in all patients undergoing prolapse surgery. If urodynamic investigations were to be valuable in the diagnostic work-up, patients with normal and abnormal findings would have different treatment results. The policy in our hospital to never combine prolapse surgery and stress-incontinence surgery allowed us to study whether the presence of stress- or urge-incontinence after surgery will be influenced by basing treatment decisions on urodynamic investigation results.
Study design, materials and methods
A retro-spective study was performed in all consecutive patients undergoing prolapse surgery between 2002 and 2004 who underwent urodynamic investigation tests before surgery. These tests included filling cystometry, urethral pressure profile measurement and free flow cystometry. Data were collected from the medical files about medical history, findings at pelvic examination, findings at urodynamic investigation and presence of stress- and/or urge-incontinence after surgery.
Results
The median follow up was 23 months (range 9 – 40 months). More than half of the patients reported urinary incontinence before surgery. Prolapse surgery included side specific repair combined with vaginal hysterectomy in 68 (89%) patients en only side specific repair in the remaining patients. Complications occurred during surgery in 4% of the patients.

Table 1. Prognostic variables for the presence of stress incontinence after surgery.

	Stress incontinence after surgery		No stress incontinence after surgery		P value	Missing
Medical History	**(n=5)**		**(n=71)**			
Urinary incontinence before surgery						
None	2	(40)	31	(44)		
Stress incontinence	3	(60)	19	(27)	0.35 [1]	
Urge incontinence	0	(0)	5	(7)		
Mixed incontinence	0	(0)	16	(23)		
Urodynamic Investigation						
Findings during bladder filling phase						
Detrusor instability	0	(0)	10	(14)	0.36 [1]	2
Evident stress incontinence	0	(0)	4	(6)	0.57 [1]	2
Bladder capacity (mL)	482	(85)	482	(174)	0.99 [2]	
Urethral pressure profile						
Maximal urethral pressure (cm H_2O)	1	(20)	23	(33)	0.55 [2]	
Urethral length < 25 mm	119	(76)	92	(46)	0.29 [1]	1
Negative transmission during coughing	4	(80)	37	(54)	0.25 [1]	2

Values are means (standard deviation) or numbers (percentage).
[1] Calculated by unpaired T-Test , [2] Calculated by Chi-square Test

Stress incontinence following surgery was reported by 5 (7%) of the 76 patients. As can be seen from Table 1, neither presence of incontinence at baseline or abnormalities of the urodynamic investigation were related to the presence of stress-incontinence after surgery. Urge incontinence was after surgery, like stress incontinence, reported by 5 (7%) patients. Medical history was a significant prognostic factor for the presence of urge incontinence post-operative as is shown by the observation that all patients with urge incontinence after surgery reported urge or mixed incontinence before surgery (see Table 2). Abnormalities of the urodynamic investigation were not related to the presence of urge-incontinence after surgery.

Table 2. Prognostic variables for the presence of urge incontinence after surgery.

	Urge incontinence after surgery		No urge incontinence after surgery		P value	Missing
Medical History	**(n=5)**		**(n=71)**			
Urinary incontinence before surgery						
None	0	(0)	33	(47)		
Stress incontinence	0	(0)	22	(31)	<0.01 [1]	
Urge incontinence	3	(60)	2	(3)		
Mixed incontinence	2	(40)	14	(20)		
Urodynamic Investigation						
Findings during bladder filling phase						
Detrusor instability	1	(20)	9	(13)	0.66 [1]	2
Evident stress incontinence	0	(0)	4	(6)	0.58 [1]	2
Bladder capacity (mL)	456	(210)	485	(168)	0.73 [2]	

Urethral pressure profile						
Maximal urethral pressure (cm H_2O)	78	(40)	95	(48)	0.55 [2]	
Urethral length < 25 mm	0	(0)	24	(34)	0.11 [1]	1
Negative transmission during coughing	2	(40)	39	(57)	0.47 [1]	2

Values are means (standard deviation) or numbers (percentage).

[1] Calculated by unpaired T-Test

[2] Calculated by Chi-square Test

Interpretation of results

Our study supports the opinion that adding urodynamic investigation to the diagnostic work-up of patients undergoing prolapse surgery does not improve treatment outcome. None of the investigated parameters was associated with the presence of stress- or urge-incontinence after surgery, whereas these parameters were not included in the selection of the treatment.

Concluding message

Before evidence supporting the diagnostic value of urodynamic investigation has been provided we suggest to discuss with the patient that urodynamic investigation may be informative but not mandatory.

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