

PREDICTIVE VALUE OF PREOPERATIVE URODYNAMIC FINDINGS IN THE CLINICAL OUTCOME OF PATIENTS WITH SUCCESSFUL REPAIR OF MODERATE-TO-LARGE CYSTOCELE

Hypothesis / aims of study

The relevance of preoperative UDS findings in predicting outcome after anterior vaginal wall compartment prolapse remains controversial. We investigated whether UDS findings with and without pack to reduce the cystocele will predict the clinical outcome of a radiographically-confirmed cystocele repair.

Study design, materials and methods

A database review of consecutive, non-neurogenic women with clinical evidence of grade 2-3 cystocele (Baden-Walker classification) who underwent "pack-no pack" (PNP) UDS was performed [1]. All studies used the same protocol (fill-and-void study with vaginal pack, then repeat study without the pack) and equipment (Laborie Aquarius; Laborie Medical Technologies, Toronto, Canada). All patients underwent the same urethral support and cystocele repair procedure (anterior vaginal wall suspension [AVWS] [2]) regardless of the UDS findings, which were categorized based on filling cystometrogram (normal, stress urinary incontinence [SUI], or detrusor overactivity [DO]). Inclusion criteria included AVWS procedure with successful cystocele repair, defined as \leq grade 1 (<2 cm height of cystocele below symphysis pubis) on standing, lateral voiding cystourethrogram (VCUG) with straining. Patients were excluded if their UDS were incomplete or a clinically-indicated protocol deviation occurred, if they did not undergo an AVWS procedure, or the VCUG study was not retrievable. Outcome measures included history, questionnaire (Urogenital Distress Inventory [UDI-6] and visual analogue Quality of Life [QoL] score), physical exam, and 6 months postoperative VCUG. Mean preop and ≥ 2 year follow-up questionnaire scores were compared using Student's t-test and Chi-square analysis with SPSS® version 12.0, using a $P < 0.05$ as statistically significant with a 95% confidence interval.

Results

Following IRB approval, 188 PNP UDS between November 1996 and December 2004 were reviewed, with complete, interpretable PNP UDS available in 150 women. Of the 150, 106 underwent AVWS procedure. Postoperative standing VCUG was available in 76 at a median of 6 months. Of these, 11 patients had evidence of objective, radiographic failure – 10 have had or are planning to undergo reoperation, and 1 patient is being observed – leaving 65 (86%) with successful repair documenting proper support of the urethra, bladder neck, and bladder base, and this constituted the study group. Five patients subsequently underwent an anti-incontinence procedure for intrinsic sphincter deficiency (pubovaginal sling [PVS] or collagen injection), with an additional 2 currently awaiting PVS. Of these 7, 3 had SUI on preoperative UDS, all of whom leaked after pack removal. Patients with DO had a higher incidence of large (C) (74%) than those with SUI or normal UDS findings (56% each). Subjective (UDI and QoL questionnaires) and reoperation data relative to preoperative UDS CMG findings (normal, SUI, and DO) are summarized in Table 1.

Interpretation of results

The incidence of unmasked SUI in our series was low, presumably due to the pack supporting the whole anterior vaginal wall, and its presence on PNP UDS did not predict who will ultimately require a secondary anti-incontinence procedure. QoL and UDI scores were slightly higher in the group with preoperative UDS findings of SUI and DO at > 2 year follow-up compared to those with normal UDS findings. Preoperative baseline scores for those with SUI and DO were also higher than those with a normal UDS, but this was statistically significant only in the DO group. There was improvement in both short (< 2 years) and mid-term (≥ 2 years) subjective QoL outcome regardless of UDS findings (normal, SUI, DO) in this cohort.

Concluding message

UDS findings with pack-no pack in the preoperative evaluation of cystocele do not appear to be a significant independent predictor of outcome after radiographically-confirmed cystocele repair. However, the presence of DO or SUI on UDS may suggest pre-existing baseline urologic dysfunction which appears to portend a slightly worse outcome than patients with normal UDS findings. Thus, we recommend repairing the prolapse, as documentation of radiographic correction in this study is associated with satisfactory intermediate (> 2 years) success.

Table 1. Short- and mid-term UDI questionnaire outcome following cystocele repair, classified by preop "pack-no pack" (PNP) UDS findings (values expressed as mean + S.D.).

PREOP PNP UDS (CMG) FINDING	NORMAL (36) Large (C) 20 Moderate (C) 16			DO (19) Large (C) 14 Moderate (C) 5			SUI (15) Large (C) 8 Moderate (C) 7		
	Baseline	6-23 Mos	≥ 24 Mos	Baseline	6-23 Mos	≥ 24 Mos	Baseline	6-23 Mos	≥ 24 Mos
Time from Surgery									
N	31	31	23	16	14	8	14	14	7
Months Follow-Up	---	9.6 +4.4	43.3 +19.1	---	7.9 +2.3	28.5 +8.3	---	9.3 +5.3	38.6 +13.5
UDI-1 (0-3)	1.8 +1.1	1.1 +0.9	1.1 +1.1**	2.2 +1.0	1.3 +0.9	1.5 +1.0	2.0 +0.8	1.2 +1.1	0.9 +1.0**
UDI-2 (0-3)	1.5 +1.3	0.8 +1.0	1.1 +1.1	1.8 +0.9	1.0 +0.9	1.1 +1.6	2.0 +0.8	0.8 +0.9	0.7 +0.7**
UDI-3 (0-3)	1.1 +1.1	0.8 +0.9	0.7 +0.8	1.5 +1.2	1.0 +1.0	1.6 +1.0	2.1 +1.1*	1.2 +1.2	1.2 +1.0
QoL (0-10)	6.0 +2.7	2.1 +2.4**	2.5 +3.0**	8.1 +2.0*	2.8 +2.6**	3.5 +3.0**	7.6 +2.4	2.7 +3.2**	3.8 +4.0
QoL ≤ 3	6	22**	19**	0	10**	5**	1	10**	5**
Reoperation	PVS (2), Collagen (1) Recurrent Cystocele (2)			PVS (1) [1 awaiting PVS] Recurrent Cystocele (4)			PVS (1) [2 awaiting PVS] Recurrent Cystocele (1)		

UDI: "Do you experience, and if so, how much are you bothered by..." 1: "frequent urination?", 2: "urine leakage related to the feeling of urgency (sudden desire to urinate)?", 3: 'urine leakage related to physical activity, coughing, or sneezing?' (0 = Never, 1 = Slightly, 2 = Moderately, 3 = Greatly)

QoL: "If you had to spend the rest of your life with your urinary condition just the way it is now, how would you feel about that?" (0 = Pleased, 10 = Terrible). QoL ≤ 3 suggests overall satisfaction.

* $P < 0.05$ relative to those with normal UDS findings. ** $P < 0.05$ relative to baseline (preop) score.

ⁱ Clin Obstet Gynecol, 1972. 15: 1048-1054.

ⁱⁱ Female Urology, Urogynecology, and Voiding Dysfunction, Marcel Dekker, 2005. Chapter 17. pp 279-286.