

Introduction and Objectives

Pelvic organ prolapse (POP) and lower urinary tract symptoms often coexists as they may have a similar underlying pathophysiology. The prevalence of bladder outlet obstruction (BOO) versus detrusor hypocontractility as the cause of voiding difficulty in this group of patients is not well established. The aim of this study was to identify the prevalence of urethral and bladder dysfunctions in women with advanced pelvic organ prolapse.

Patients and Methods

This study comprised 105 consecutive women planning surgical treatment for POP stage III or IV, according to the Pelvic Organ Prolapse Quantification (POP-Q) system, evaluated prospectively between January and December 2015. A standard history, an incontinence questionnaire and physical examination were completed before urodynamic investigation. Multichannel urodynamics were performed in the supine and standing positions and the prolapse was reduced using gauze and Cheron dressing forceps. BOO was defined as Maximum Flow (Qmax) rate \leq 12 ml/s and Detrusor Pressure at Maximum Flow (Pdet@Qmax) >20 cmH₂O.

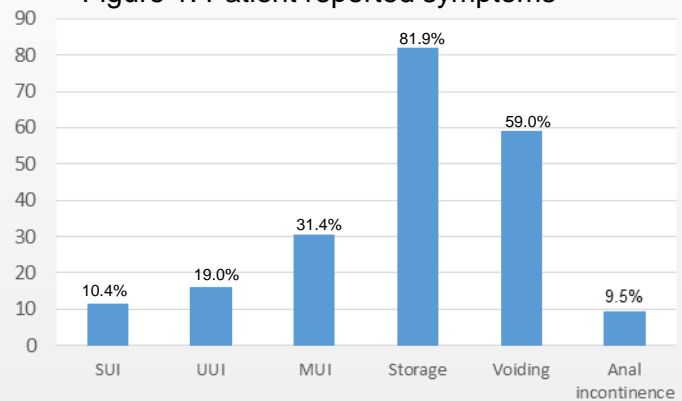
Results

From the 105 women included, 70 (66.7%) were POP-Q stage III and 35 (33.3%) stage IV. Table 1 shows subjects baseline characteristics, figure 1 the reported symptoms and table 2 the urodynamic findings.

Table 1: Patient baseline characteristics

	Mean(sd)	N (%)
Age (years)	65.7 (9.2)	
BMI	27.4 (4.0)	
Parity	5.1 (3.4)	
Menopause		96 (91.4)
Comorbidities		37 (35.2)
Previous surgery for UI or POP		20 (19.0)

Figure 1: Patient reported symptoms



SUI: Stress Incontinence; UUI: Urgency Incontinence; MUI: Mixed Incontinence

Table 2: Urodynamic findings

	N (%)
Continent	36 (34.3)
Stress Urinary Incontinent	11 (10.5)
Occult Stress Incontinent	58 (55.2)
Detrusor Overactivity	8 (7.6)
Bladder Outlet Obstruction	19 (18.1)

Bladder Contractility Index (BCI) was less than 100 in 33 (31.4%) patients. 18/19 (94.7%) BOO patients had weak bladder contractility, whereas only 15/86 (17.4%) non BOO patients presented hypocontractility. Patient with stage IV prolapse had increased postvoid residual and increased detrusor pressure at maximum flow (Table 3). These patients also had higher prevalence of weak detrusor, 15/35 (42.8%) versus 18/70 (25.7%). The prevalence of urethral dysfunction was 74.3% and vesical dysfunction 39.0% Only 17 patients (16.2%) had normal urodynamics.

Table 3: Urodynamic data comparing POP Stage III and IV

	Mean (sd) or N (%)		P
	Stage III	Stage IV	
DO	7 (10.0%)	1 (2.9%)	.193
Qmax (ml/s)	19 (8.3)	17.9 (9.9)	.537
Pdet@Qmax (cmH ₂ O)	24.2 (13.5)	32.1 (15.6)	.010
PVR (ml)	64.9 (123.4)	68.7 (68.6)	.021
BOO	11 (16.4%)	8 (22.9%)	.428

DO: Detrusor Overactivity; PVR: Postvoid Residual;

There was no correlation between voiding symptoms ($p = 0.171$) and storage symptoms ($p = 0.340$) with BOO.

Conclusions

The prevalence of urethral and bladder dysfunctions in women with advanced pelvic organ prolapse are high and may be masked by mechanical obstruction.