

PUBOVAGINAL SLING PROCEDURE AND BLADDER OUTLET OBSTRUCTION IN WOMEN WITH ANTERIOR COMPARTMENT PELVIC ORGAN PROLAPSE

Hypothesis / aims of study

Occurrence of long-term bladder outlet obstruction (BOO) after urinary incontinence surgery is a concern among clinicians. However, it may not be associated with voiding symptoms. Nomograms have been constructed to assess the occurrence of bladder outlet obstruction. The aim of this study was to evaluate the long-term effect of pubovaginal sling procedures on urethral resistance (UR), as a parameter of BOO, in women with anterior compartment pelvic organ prolapse (POP).

Study design, materials and methods

We performed a retrospective observational study of women with anterior compartment POP (at least grade 3 according to POPQ classification), submitted to a pubovaginal sling procedure for urinary incontinence, between January of 2004 and November of 2008. We excluded women who didn't have both a preoperative and postoperative urodynamic study (UDS) available, who voided with abdominal straining greater than 10 cm H₂O, who were unable to void for the pressure-flow study (PFS) or had catheter loss during the exam.

We compared UR and detrusor contractility (DC), using the detrusor-flow plot according to Schäfer, in two distinct moments: before surgery and 1 year after surgery. We graded UR as 0 when there was no obstruction, as 1-2 with mild obstruction, as 3-4 with moderate obstruction and 5-6 with severe obstruction. DC was divided into 6 grades: VW (very weak), W- (weak minus), W+ (weak plus), N- (normal minus), N+ (normal plus) and ST (strong). Student's *t*-test and Wilcoxon test were used according to the variable type. *P* values <0.05 were considered statistically significant. Statistical analysis was performed with PASW Statistics 18.

Results

Of the 179 patients submitted to a sling procedure we excluded 104 patients who didn't have both preoperative and postoperative UDS available, 26 because of abdominal straining greater than 10 cm H₂O, 4 who were unable to void for the PFS and 4 because of catheter loss during the exam. A total of 41 cases were analysed. The postoperative UDS was done at a mean time of 13 months (Std deviation 6.5) after surgery. Thirty-three women had been submitted to a transobturator vaginal tape (TVT-O), 4 to a tension-free vaginal tape (TVT) and 4 to a TVT-Secur (TVT-S). Of the 41 women, 38 were simultaneously submitted to anterior compartment prolapse correction with Prolift® (30), Avaulta® (2), Pelvicol® (4) or Colposacropexy with a synthetic mesh (2).

Table 1 – Demographic characteristics

Caucasian	n (%)	41 (100)
BMI (kg/m ²)	median [min-max]	27 [23-37]
Age (years)	median [min- max]	64.0 [46-80]
Patients with vaginal births	n (%)	40 (97.6)
Postmenopausal	n (%)	36 (87.8)

Table 2 and 3 – Urethral resistance before and after surgery (n=41)

		UR after surgery			
		0	1	2	Total
UR before surgery	0	21	9	0	30
	1	7	3	1	11
	Total	28	12	1	41

Urethral resistance	Before surgery	After surgery
	N (%)	N (%)
0	30 (73.2)	28 (68.3)
1	11 (26.8)	12 (29.3)

Table 4 and 5 – Detrusor contractility before and after surgery (n=41)

		DC after surgery						Total
		V W	W -	W +	N -	N +	ST	
DC before surgery	V W	1	1	0	0	0	2	1
	W -	0	2	1	2	1	6	0
	W +	2	2	6	0	1	11	2
	N -	0	2	3	5	1	11	0
	N +	1	1	4	1	2	9	1
	ST	0	0	1	0	1	2	0
	Total	4	8	15	8	6	41	4

Detrusor contractility	Before surgery	After surgery
	N (%)	N (%)
V W	2 (4.9)	4 (9,8)
W -	6 (14.6)	8 (19,5)
W +	11 (26.8)	15 (36,6)
N -	11 (26.8)	8 (19,5)
N +	9 (22.0)	6 (14,6)

Interpretation of results:

There was no statistically significant difference in UR before and after surgery, even when analysing this parameter in two classes – non-obstructed (UR=0) and obstructed (UR=1 – 4). Our analysis also showed a significant decrease of DC after sling surgery. The main shortcoming of this study is the exclusion of women who could not urinate or exhibited valsalva voiding, which may be indicative of bladder outlet obstruction (BOO).

Concluding message:

Schäfer nomogram applied in this population of incontinent women, with anterior compartment pelvic organ prolapse, showed that pubovaginal sling procedures may worsen detrusor contractility but have no effect on urethral resistance. Anterior compartment pelvic organ prolapse may have some effect in the occurrence of BOO in incontinent women. Its correction may justify the absence of an increase in urethral resistance after simultaneous sling procedure.

Specify source of funding or grant	None
Is this a clinical trial?	No
What were the subjects in the study?	HUMAN
Was this study approved by an ethics committee?	No
This study did not require ethics committee approval because	It was a retrospective study
Was the Declaration of Helsinki followed?	Yes
Was informed consent obtained from the patients?	No