

## VESICO-SPHINCTER FUNCTION MODIFICATIONS AFTER SURGERY FOR PELVIC ORGAN PROLAPSE

### Hypothesis / aims of study

Despite an increased interest to identify the risk associated with pelvic organ prolapse (POP) surgery, there have been few studies investigating the effects on lower urinary tract (LUT) function using urodynamics with pressure-flow studies. We evaluated preoperative and postoperative voiding function in women undergoing POP surgery; clinical and anatomical outcomes were also investigated.

### Study design, materials and methods

Women affected by POP requiring surgery have been prospectively included in the study. Inclusion criteria were: POP  $\geq$  III with or without LUT symptoms, or POP = II with LUTS, according to POP Quantification system (POP-Q)<sup>(1)</sup>. Excluded were patients unfit to surgery, with recurrent urinary tract infections and with neurogenic bladder. Patients underwent detailed history, physical examination and urodynamics<sup>(2)(3)</sup> before and 6 months after surgery. On urodynamics, bladder outlet obstruction (BOO) and detrusor contractility strength were evaluated with the BOO nomogram by Blaivas and Groutz and the projected isovolumetric detrusor pressure (PIP1), respectively. Primary end-points were: changes in urodynamics parameters; secondary end-points were changes in clinical and anatomical parameters.

### Results

Thirty-three consecutive patients have been studied. At baseline, POP III and II were detected in 22 (66.7%) and in 13 (33.3%) patients, respectively. A vaginal bulge was reported by 22 (73.3%) patients and voiding LUTS by 23 (69.7%). Six (18.2%) patients suffered from stress urinary incontinence (UI) and 11 (33.3%) from mixed UI. BOO and PIP1 results are shown in the table. Anterior and posterior colpoplasty were performed in 10 and 2 patients, respectively. Abdominal hysterocolposacropexy was performed in 21 patients: with an open approach in 9, and laparoscopic or robot-assisted in 12. Six-month after surgery, pDetmax significantly decreased and Qmax significantly increased ( $p=0.024$  and  $p=0.041$ ). The number of unobstructed women increased and PIP1 values showed a trend to a normal detrusor strength restoration. There was an excellent restitutum ad integrum, especially for cystocele and urethrocele ( $p=0,000$ ), and a statistically significant reduction of vaginal bulge ( $p=0,000$ ), voiding LUTS ( $p=0.001$ ) and UI ( $p=0.039$ ). LUTS de novo occurred in 6% (2 pts) of cases, urgency in 15% (5 pts) and urinary incontinence in 3% (1 pts). When comparing abdominal vs vaginal approach, the first modality gave better results in terms of Qmax and detrusor contractility improvements as well as voiding LUTS reduction.

Detrusor strength (PIP1)	Baseline No. of pts (%)	6 mos follow up No. of pts (%)
Reduced (< 30 cmH <sub>2</sub> O)	25 (75.8)	17 (51.5)
Normal (30-75 cm H <sub>2</sub> O)	8 (24.2)	16 (48.5)
BOO (Blaivas-Groutz nomogram)		
No obstruction	11 (33.3)	20 (62.5)
Mild obstruction	18 (54.6)	11 (34.4)
Moderate obstruction	3 (9.1)	1 (3.1)
Severe obstruction	1 (3)	0 (0)

### Interpretation of results

The effects of POP surgery on bladder function, including stress urinary incontinence, overactive bladder and voiding dysfunction have been poorly investigated. In order to optimally evaluate pre- and postoperative bladder function, only studies with standardised or validated pre- and postoperative outcome measures, particularly evaluating urodynamic parameters, should be conducted. The results of the present study show that detrusor contractility and maximum flow rate drastically improve 6 months after surgery for POP, and the amelioration is particularly evident when an abdominal correction is performed. The urodynamic improvement correlates with the clinical benefit and with the restitutum ad integrum in the operated patients.

### Concluding message

Little is known about the changes in vesico-sphincter function after surgery for POP. This study shows that voiding conditions greatly change in patients who underwent POP surgery, with a trend to BOO resolution and restoration of a normal detrusor strength 6 months after surgery.

### References

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### Disclosures

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