

## URINARY CONTINENCE AND PERINEAL BODY TONE BEFORE AND AFTER ROBOT-ASSISTED RADICAL PROSTATECTOMY: WHICH CORRELATION?

### Hypothesis / aims of study

Recent preliminary studies showed that tonic-trophic characteristics of the pelvic muscles may be related to post-operative male urinary incontinence. The aim of the current study is to test whether perineal tone is related to urinary continence recovery after radical robotic-assisted laparoscopic prostatectomy (RALP). Perineal tone was evaluated using the Beco perineometer (Perineocaliper).

### Study design, materials and methods

The study population consisted of 48 patients who underwent RALP for localized prostate cancer between January and July 2009. Patients were excluded if they reported urinary incontinence, underwent prior pelvic organ surgeries, had central or peripheral neurologic diseases and defects in walking, had metabolic diseases, or had impaired mental status. Surgical interventions were performed by a single surgeon and were evaluated by a single physiotherapist. All patients were taught pelvic floor muscle exercises (PFME). Thirty days before the surgery, all patients started the PFME course, which consisted of intensive pelvic floor muscle training guided by a single physiotherapist twice per week for 30 minutes. Then, 48 h after catheter removal, patients attended the PFME course twice per week for 1 month and continued PFME for 3 months. Perineal body tone was evaluated in each patient pre-operatively, as well as 30 days and 3 months after surgery, using the Beco perineometer. Moreover, we evaluated motor perception and anterior contraction. Additionally, patients were evaluated with a 24-hour pad-test and the International Consultation on Incontinence-questionnaire (ICI-Q). The Mann-Whitney test and the Chi-square test were used for respectively comparison of means and proportions.

### Results

Patients were aged between 46 and 63 years. Pre-operative perineometric measures were respectively 2 cm in 9 patients, 1.5 cm in 21 patients, 1 cm in 12 patients, 0.5 cm in 5 patients and 0 cm in 1 patient ( $p < 0.05$ ). One month after surgery, perineometry, pad test and ICI-Q results were as follows: 2 cm in 2 patients (both patients continent), 1.5 cm in 15 patients (1 patient incontinent, pad-test:  $< 10$  gr, mean ICI-Q: 6), 1 cm in 24 patients (20 patients incontinent, pad-test: 10-30 gr, mean ICI-Q: 8), 0.5 cm in 4 patients (all patients incontinent, pad-test: 10-30 gr, mean ICI-Q: 8), 0 cm in 3 patients (all patients incontinent, pad-test 30-100 gr, mean ICI-Q: 12) ( $p < 0.05$ ). After one month, 28 patients were still incontinent. These patients performed individual PFME for 2 months in advance. Four out of 28 were incontinent 3 months after surgery. Of these, perineometry, pad test and ICI-Q results were respectively: 0 cm in 1 patient (pad-test: 30-100 gr, ICI-Q 12), 0.5 cm in 2 patients (pad-test: 10-30 gr, mean ICI-Q: 7), 1 cm in 1 patient (pad-test: 10-30 gr, ICI-Q: 8) ( $p < 0.05$ ). The remaining 24 patients showed a significant increase in perineometric measures, ranging from 1 to 1.5 cm ( $p < 0.05$ ).

### Interpretation of results

Our results demonstrate that urinary continence recovery is related to perineal tone recovery. Preoperatively, a higher perineometric thickness of the pelvic floor muscles is related to a higher rate of postoperative continence recovery. Moreover, continence recovery is strictly related to the increase of perineometric measures.

### Concluding message

Perineometric measure may be used as a predictive tool for the risk-stratification of post-operative urinary incontinence. Additionally, perineometric measure may be adopted in the continence recovery follow-up of RALP patients.

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