

LOWER URINARY TRACT FUNCTION IMPROVE AFTER LAPAROSCOPIC SACROCOLPOPEXY IN ELDERLY PATIENTS WITH PELVIC ORGAN PROLAPSE

Hypothesis / aims of study

The number of people aged 65 and over has increased rapidly from epidemiological data. The prevalence of pelvic organ prolapse (POP) increases in the elderly (ref.1). Since the U.S. Food and Drug Administration warning about mesh-related complications following transvaginal mesh surgery for pelvic organ prolapse (POP), an abdominal approach such as sacrocolpopexy has become popular for the treatment of POP. Several studies have shown that laparoscopic sacrocolpopexy (LSC) is an effective procedure with the benefit of being less invasive (ref.2). However, these reports were mainly focused on the vaginal functional results, postoperative complications or surgical failure. The aim of the present study is to assess lower urinary tract function before and after LSC for POP patients regardless of age.

Study design, materials and methods

This was a retrospective study of women with POP who underwent LSC from October 2013 to July 2016 in our hospital. Urodynamic studies were performed using a Laborie Delphis KT urodynamic system pre- and postoperatively in 50 patients. The characteristics of all patients are shown in Table 1. These patients were divided into 2 groups, who aged less than 65 years old and over 65 years old.

Table 1: Characteristics of all patients

Variable	<65 years age group	≥65 years age group
No. of patients	12	38
Age (years), median (range)	61.5 (50–64)	68.5 (65–88)
BMI (kg/m ²), mean±SD	23.6±3.7	24.5±2.9
Parity (n)		
1	2	3
2	7	25
3	1	9
4	1	1
unknown	1	-
Stage of POP (n)		
1	-	-
2	3	10
3	9	26
4	-	2

(BMI : Body Mass Index)

The urodynamic studies included a urethral pressure profile, a filling and voiding phase, and cystometry. All patients underwent urodynamic study pre and 6 months after the LSC. At urethral sphincter function, functional profile length (FPL) and maximum urethral closure pressure (MUCP) were evaluated. At filling cystometry, the parameters evaluated were normal desire to void (NDV), strong desire to void (SDV), and bladder capacity. At voiding cystometry, maximum flow rate (Q_{max}), detrusor pressure at maximum flow (P_{det} at Q_{max}), voided volume (VV), and post-void residual volume (PVR) were evaluated. These results were statistically compared pre- and postoperatively with each of the groups. The urodynamic data were compared by t-test, with P < 0.05 taken to show statistical significance.

Results

The mean operation time of group aged less than 65 years old was 234.5 (149-298) min and aged over 65 years old was 234.0 (150-307) min. There were no significant difference in the operation time between the 2 groups. The mean preoperative and 6 months postoperative parameters of urodynamic studies are shown in Table 2. We compared 2 groups' pre-operative parameters, no significant difference were observed.

No significant changes in urethral sphincter function were observed pre- and post LSC procedure (both groups). At filling cystometry parameters, NDV and capacity are increase significantly only over 65 years old group. At voiding cystometry parameters, the mean postoperative Q_{max} and VV were increased significantly and P_{det} at Q_{max} and PVR decreased significantly after the operation compared with the preoperative values only over 65 years old group (P < 0.05). The number of detrusor overactivity was not analyzed statistically because of the small number of cases.

Table 2: Urodynamic studies parameters

	<65 years age group			≥65 years age group		
	pre LSC	post LSC	p value	pre LSC	post LSC	p value
Urethral function						
FPL (mm)	26.4±3.8	25.9±3.5	0.563	27.9±4.6	28.0±4.4	0.896
MUCP (cmH ₂ O)	56.8±22.0	57.8±28.0	0.789	43.8±15.3	42.4±12.2	0.427
Bladder function						
NDV (ml)	175.3±98.8	215.0±117.9	0.573	156.0±77.5	194.4±95.3 *	0.008
SDV (ml)	267.6±142.0	318.1±102.1	0.684	249.6±122.2	287.1±115.2	0.118
capacity (ml)	348.2±145.6	405.0±109.7	0.267	324.2±128.4	364.5±115.8 *	0.041
Qmax (ml/s)	16.9±7.0	22.1±6.7	0.058	13.7±8.9	20.8±9.7 *	0.0002
Pdet at Qmax (cmH ₂ O)	31.4±14.7	23.9±9.8	0.055	30.5±14.4	23.9±12.4 *	0.029
VV (ml)	319.5±163.5	431.5±119.0	0.173	290.7±143.7	398.1±123.2 *	0.003
PVR (ml)	42.7±44.1	23.1±26.9	0.202	44.5±41.7	20.0±22.8 *	0.003

Values are mean ± SD of data. * $p < 0.05$ compared pre- and post LSC.

Interpretation of results

In the present study, the key finding was that bladder function was significantly improved only elderly patients. Preoperative parameters are not difference both 2 groups. Although the mechanism by which bladder function improvement only in elderly patients has remained unclear, we hypothesize that this could be due to some factors, such as the number of complicated disease, or disease duration of POP. However, several other mechanisms might be considered.

Concluding message

Our findings suggest that laparoscopic sacrocolpopexy is a valid option in elderly patients with pelvic organ prolapse from the perspective of lower urinary tract function.

References

1. 2001.184.1496
2. 2014.65.1128

Disclosures

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