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Original Article

Comparison of outcomes after vaginal reconstruction surgery between elderly and younger women

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ABSTRACT

Objective: The objective of this study was to estimate the association of vaginal sacrospinous ligament fixation with anterior-transobturator mesh repair surgery for advanced pelvic organ prolapse in patients of two different age groups.

Materials and methods: Vaginal sacrospinous ligament fixation with anterior mesh repair as primary prolapse surgery was performed on 225 patients with advanced pelvic organ prolapse (POP-Q ≥ stage III). POP-Q < stage II was objective cure and subjective cure was determined according to feedback of POPDI-6 (Questions 2 and 3). Patients provided responses to UDI-6, IIQ-7, POPDI-6, and PISQ-12 pre- and postsurgery. Outcome measures were observed in cohorts of two age groups (<75 years and ≥75 years).

Results: Postoperative data of 217 patients were available. The cumulative objective cure rates were 93.0% and 92.5% for patients aged ≥75 years and <75 years, respectively, with mean follow-up of 33.93 ± 18.52 months and 36.44 ± 19.34 months respectively. The UDI-6, IIQ-7, POPDI-6, and PISQ-12 scores within each of the two age groups improved significantly after surgery. Comparatively, the POPDI-6 score was better whereas the PISQ-12 score was poorer among patients aged ≥75 years. Older women had significantly more preoperative comorbidities. The operative time, perioperative complications, and length of hospital stay showed no difference between the two groups. The intraoperative blood loss was significantly less in the older group and neither group had mortality.

Conclusion: This study showed that adequately optimized older patients undergoing pelvic organ prolapse surgery experienced the same anatomical outcomes, comparable improved quality of life, morbidity, and mortality as their counterparts of younger age.

Introduction

Since 1950, the proportion of older persons (approximately 60 years old) has been rising steadily from 8% in 1950 to 11% in 2009 and it is expected to reach 22% (44 million) of the projected two billion world population in 2050 [1]. Women usually live longer than men and thus constitute the majority of the aged population [1]. With better health care systems, more elderly women presenting with at least one pelvic floor disorder would be found among the increasing aging population. The proportion of women reporting symptoms of pelvic floor disorder also increases with age, from about 10% between the ages of 20 years and 39 years to almost 50% in those who are ≥80 years [2].

The changing demographic is likely to increase the demand for pelvic floor surgery, an effective treatment option for pelvic organ prolapse (POP). Furthermore, the reported lifetime risk of undergoing a single operation for prolapse or incontinence by age 80 years

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was 11.1% [3]. Surgery can be associated with substantial complications especially with older persons. Available information on the mortality and morbidity following urogynecologic surgery in elderly women is limited but known risks are higher regardless of comorbidity status [4]. The need to balance the risks and benefits would depend upon available information on the association between age and surgical outcomes. Published data on the outcomes of surgery in older patients are scarce and one study reported that a third of original research papers excluded elderly people without justification [5]. The increase in life expectancy could have led to several studies using age 75 years as the cut-off for reporting outcomes [6–8]. Using such a similar cut-off age may allow for comparison.

Conventional surgical treatment for advance pelvic organ prolapse has been performed via the abdominal or vaginal route. Favorable long-term objective and subjective outcomes with improved quality of life with vaginal sacrospinous ligament fixation (SSF) surgery have been shown [9]. Moreover, concomitant use of mesh for anterior vaginal wall repair may reduce risk of recurrent cytocoele [10]. The objective of this study was to estimate the association of age with outcomes of vaginal SSF and anterior–transobturator mesh repair surgery for advanced pelvic organ prolapse.

Materials and methods

The Institutional Review Board of Chang-Gung Memorial Hospital, Taoyuan, Taiwan had approved the chart evaluation of this study. As an arm of an initial pilot study [11], patients who were referred to the urogynecology division of the outpatient center from August 2006 to September 2011 for treatment of symptomatic stages III and IV pelvic organ prolapse according to the International Continence Society (ICS) grading system [12] were consecutively enrolled. Patients included in the study were those with symptomatic advanced pelvic organ prolapse and who had provided informed consent for surgery. Patients deemed not medically fit after assessment by a medical physician for surgery would be excluded from the study. The methods are briefly described here. All included patients had initial preoperative assessment that comprised a medical history, urine analysis, physical examination, and pelvic examination. All patients were asked to complete a 72-hour voiding diary and subjective evaluation using the Urogenital Distress Inventory (UDI-6) [13], Incontinence Impact Questionnaire (IIQ-7) [14], Pelvic Organ Prolapse Distress Inventory 6 (POPDI-6) [15], and Pelvic Organ Prolapse/Urinary Incontinence Sexual Questionnaire (PISQ-12) [16,17]. Objectively, this study evaluated the Pelvic Organ Prolapse Quantification (POP-Q) staging [12] and performed a multichannel urodynamic and a 1-hour pad test.

Patients with comorbidities such as diabetes mellitus, hypertension, and constipation were treated and medical conditions were addressed to the full extent prior to surgery in conjunction with medical physicians and anesthetists. All patients were counseled on the surgical procedure and informed of the potential benefits and complications following mesh surgery. The senior author T.S.L operated on all the included patients, who were subdivided into two age groups: ≥75 years and <75 years.

Pelvic examinations were performed with the patients in semi-supine lithotomy position and a split speculum technique was used for evaluation. Examination findings were documented using the nine-point description as suggested by the ICS [12]. Classifications of prolapse followed the ICS ordinal stages of pelvic organ prolapse (POP-Q) from 0 to IV and were defined according to standards [12,18] Multichannel urodynamic study included both filling and voiding cystometry with surface electrode electromyography, urethral pressure profile measurement, and free uroflowmetry using an 8F double-lumen urethral catheter. Prolapses were reduced with ring pessaries when urodynamic evaluations were performed. A diagnosis of urodynamic stress incontinence (USI) was made on demonstrable involuntary leakage of urine during increased abdominal pressure, in the absence of detrusor contraction observed at filling cystometry. Occult USI was defined in patients who only leaked when the prolapse had been repositioned. Bladder outlet obstruction was diagnosed according to the bladder outlet obstruction normogram for women suggested by Blaivas and Groutz [19]. All data were recorded and analyzed using the Dantec Menuet (Dantec Medical A/S, Skovlunde, Denmark) and MMS Solar Gold (Medical Measurement System, Dover, NH, USA) multichannel urodynamic machines.

The choice of anesthesia was made according to patient and surgeon preference. The surgeries performed in sequence, if indicated, would be vaginal total hysterectomy, anterior vaginal mesh procedure (Perigee procedure), SSF, posterior colporrhapy, and mid-urethral tension-free sling. All patients had an advanced plan

Table 1
Preoperative demographics of patients undergoing combined anterior transobturator mesh repair and vaginal sacrospinous ligament fixation according to age.

	Age ≥75 y	(*n* = 45)	Age < 75 y	(*n* = 180)	*p*
Age (y)	77.67 ± 3.01	(76.75–78.60) (range, 75–88)	58.82 ± 9.09	(57.46–60.18) (range, 38–74)	<0.001[a]
Parity	5.51 ± 2.45	(4.76–6.27) (range, 1–12)	3.59 ± 1.36	(3.39–3.80) (range, 1– 9)	<0.001[a]
Body mass index	24.96 ± 3.41	(23.91–26.01) (range, 17.3–32.7)	24.87 ± 2.99	(24.42–25.32) (range, 18.0–35.2)	0.863[a]
Postmenopausal status	45	(100)	115	(63.9)	<0.001[b]
Hormone therapy	36	(80)	95	(52.8)	0.001[b]
Systemic	0	(0)	3	(3.2)	0.561[c]
Topical	36	(100)	92	(96.8)	0.281[b]
Cardiovascular diseases	5	(11.1)	6	(3.3)	0.046[c]
Coronary heart disease	1	(20)	1	(16.7)	0.727[c]
Stroke	1	(20)	2	(33.3)	0.576[c]
Cardiac dysrhythmias	3	(60)	3	(50)	0.608[c]
Hypertension	29	(64.4)	65	(36.1)	0.001[b]
Diabetes	9	(20)	24	(13.3)	0.258[b]
Constipation	0		0		
Smoking	0		0		

Data are presented as *n* or mean ± standard deviation with 95% CI or 100th percentile within parentheses.
[a] Unpaired *t* test.
[b] Chi-squared test.
[c] Fisher's exact test.