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Anatomic and Functional Outcomes with the Prolift Procedure in Elderly Women with Advanced Pelvic Organ Prolapse Who Desire Uterine Preservation

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ABSTRACT **Study Objective:** To assess the clinical outcomes of total mesh repair with the Prolift technique as treatment of advanced pelvic organ prolapse in elderly patients who desire uterine preservation.
Design: Case control series study (Canadian Task Force classification II-2).
Setting: Medical school–affiliated hospital.
Patients: Sixty-eight patients over the age of 70 years with advanced pelvic organ prolapse, Pelvic Organ Prolapse Quantification stage III (n = 59) or IV (n = 9), underwent a total Prolift procedure and were followed up for a minimum of 2 years.
Interventions: Transvaginal pelvic floor repairs were performed with a total Prolift system. The concurrent pelvic surgery included midurethral sling operation with a TVT-O, if indicated. The assessment included intraoperative and postoperative complications, Urogenital Distress Inventory scores, and Incontinence Impact Questionnaire scores.
Measurements and Main Results: Objective and subjective data were available for 68 patients. The anatomic success rate was 97.1% after 2 years. Complications included bladder perforation in 1 patient (1.5%), de novo stress urinary incontinence in 20 patients (29.4%), dyspareunia in 4 patients (22.2%), and vaginal erosion in 1 patient (1.5%). The Pelvic Organ Prolapse Quantification stages, Urogenital Distress Inventory scores, and Incontinence Impact Questionnaire scores all improved significantly after surgery.
Conclusions: The total Prolift procedure is an alternative surgical option that uses a minimally invasive transvaginal approach to surgically treat elderly patients with advanced pelvic organ prolapse. Journal of Minimally Invasive Gynecology (2012) 19, 307–312 © 2012 AAGL. All rights reserved.

Keywords: Elderly women; Outcomes; Pelvic organ prolapse; Prolift; Uterine preservation

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As life expectancy increases, disorders associated with aging, including female pelvic organ prolapse (POP), are becoming more prevalent. Because POP is age related, its prevalence is likely to further increase as the population ages. More than 75% of women undergoing POP repair are postmenopausal [1]. Furthermore, women who reach the age of 80 have a greater than 10% risk of undergoing surgery to treat POP [2].

For severe, symptomatic POP, surgery is the preferred treatment to restore normal anatomy, preserve sexual function, and maintain lower urinary tract and bowel function. However, the treatment of POP in elderly women is challenging. Surgical therapy may be hampered by the increased anesthesiologic risk caused by frequent comorbidities. More conservative therapies, such as a pessary or colpocleisis, can be effective alternatives. However, these therapies have limitations and defects in sexually active women.

The authors declare that they have no conflict of interest.

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Traditional anterior and posterior colporrhaphy with vaginal hysterectomy has been the established treatment for POP over the last century but carries a relatively high rate of recurrence [3]. These treatment failures may be due to the use of weak native tissue. The scarring and sclerosis caused by classic pelvic reconstructive surgery can restore only 50% of the preoperative tissue strength [4]. Moreover, there is no clear evidence supporting the role of hysterectomies in improving surgical outcomes. Hysterectomy did not provide any advantage for the surgical cure of POP [5,6]. Many women who are scheduled for pelvic reconstructive surgery want to preserve the uterus, because the uterus has been shown to contribute positively to self-esteem, body image, confidence, and sexuality. Those women express emotional relief after learning about uterine preservation, because most assume that hysterectomy is an unavoidable option of pelvic reconstructive surgery.

Over the last decade, surgery with mesh or graft material implantation has become increasingly popular because of its excellent short-term cure rate [1,7]. The Prolift system offers a new mesh option for treating genital prolapse [8]. Prolift is a wide mesh with an anchor system that is applied with a minimally invasive technique. This nonabsorbable mesh provides complete support by reinforcing the pubocervical and rectovaginal fascia. This procedure can be performed with or without vaginal hysterectomy. A study showed that mesh erosion after POP repair with Prolift is more likely to occur with concomitant hysterectomy [9]. There is only limited literature describing the use of surgical therapy in elderly women, particularly with regard to the use of meshes. Thus the aim of this study is to evaluate the feasibility, complications, and midterm results of total mesh repair with the Prolift technique used as an alternative to treating advanced pelvic organ prolapse in elderly patients who desire uterine preservation.

Materials and Methods

In this study, we reviewed the outcomes of women more than 70 years of age with advanced POP who underwent transvaginal pelvic floor repair with a total Prolift (Ethicon, Inc., Somerville, NJ) procedure at the Chonnam National University Hospital, Gwangju, South Korea. Sixty-eight women with a minimum of 2 years of follow-up were included. This is a single-center case series with data, including age, body mass index, personal history, POP staging, and perioperative surgical complications, collected retrospectively from the patients' medical records.

All of the patients desired uterine preservation. All of the patients had a complete preoperative evaluation that included history, a physical examination, and urinalysis. All of the patients were examined vaginally in the supine position with a Sims speculum during a Valsalva maneuver, and the prolapse severity was measured with the Pelvic Organ Prolapse Quantification system (POP-Q, International Continence Society) [10]. A stage III or greater POP was defined as advanced POP. Gynecologic transvaginal ultrasonography was performed to rule out uterine and adnexal diseases in all of the patients. A complete multichannel urodynamic study (UDS) was also performed after uterine reduction using ring forceps. The UDS included free uroflowmetry, filling cystometry with a stress test, voiding cystometry, and urethral pressure profilometry. The diagnosis of occult urodynamic stress incontinence was made if urinary leakage occurred during the POP reduction.

All of the patients received vaginal estrogen therapy for at least 1 month before surgery. The total Prolift system was used in all of the patients. This surgical technique has previously been described in detail [11,12]. A concomitant midurethral sling operation, tension free vaginal tape–obturator (TVT-O; Gynecare, TVT-Obturator System, Ethicon, Inc.), was performed in women with known or occult urodynamic stress incontinence. All of the surgeries were performed by a single surgeon (C.H.K.). All of the patients were intravenously administered first-generation cephalosporin 1 hour before surgery and underwent a prophylactic antiseptic vaginal wash with iodine-containing soap before the surgery. The mode of anesthesia depended on the patient's condition and preferences. After surgery, potadine-soaked gauze was packed into the vagina for 1 day, and a urethral catheter was inserted. Once the vaginal packing was removed, spontaneous voiding was attempted. If the woman was able to void comfortably, and the postvoid residual urine volume was less than 100 mL, the catheter was removed.

Postoperative follow-up was scheduled at 1, 3, and 6 months and every 6 months thereafter. At each visit, all of the POP-Q points were measured by the same individual (C.H.K.). Recurrence was defined as POP-Q stage greater than II, on the basis of the most dependent point and whether it occurred at the primary site or at a new location. The functional outcome was evaluated before surgery and 6 months after surgery with the short form of the Urogenital Distress Inventory (UDI-6) and the Incontinence Impact Questionnaire (IIQ-7).

Normal data analysis was performed with SPSS 14.0 for Windows (SPSS, Inc., Chicago, IL). The results are presented as mean ± standard deviation (SD). The Wilcoxon signed rank test was used for within-group comparisons of variables. A p value $<.05$ was considered to be statistically significant.

Results

The preoperative patient characteristics are presented in Table 1. The mean age was 74.9 ± 3.10 (95% CI, 73.91–75.89), and the mean parity was 4.2 ± 1.60 (95% CI, 3.69–4.71). Sixty-three women (92.6%) had no previous hormonal treatment. The preoperative POP-Q stage was III in 59 (86.8%) and IV in 9 (13.2%). The length of follow-up ranged from 24 to 34 months. All of the patients underwent a total Prolift procedure. The mean operative time was 74.8 ± 14.94 (95% CI, 70.02–79.58) minutes. General anesthesia