Pelvic organ prolapse (POP) is a bulge or protrusion into or through the vagina of pelvic organs and associated vaginal segments [1]. With the aging population, POP is an increasingly common condition seen in women with a lifetime prevalence of 30% to 50% [1,2]. Symptomatic urogenital prolapse has been shown to have significant negative impacts such as those relating to the lower urinary tract, fecal incontinence, back pain, pelvic pain, defecatory problems, and dyspareunia. Management options for women with symptomatic POP include observation, pelvic floor muscle training, mechanical support (pessaries), and surgery. A patient’s perception of discomfort from POP and subsequent treatment will vary in relation to the stage of the POP and her ethnicity. Currently, many surgical approaches have been introduced to correct POP. The life time risk of undergoing surgery was estimated to be between 11% and 19%. However, none of these techniques is without risks for complications [2-4]. The prevalence of reopera-
tion reported in some studies is high (43% to 56%) but probably overestimated as these studies included genital prolapse after Burch colposuspension [5,6]. Prevalence of reoperation for POP or urinary incontinence was 29.2% in a community-based population [2]. However data are lacking that compare perioperative, long-term complications and recurrence rates of other stage prolapse, and very little is known about the factors associated with surgical failure. The aim of this study was to report subjective and objective outcomes and to compare complication rates in patients undergoing surgery for International Continence Society (ICS) stage 4 prolapse compared to ICS stage 2, or 3 prolapse.

Materials and Methods

We retrospectively reviewed, using a computerized medical record database, all women (n = 399) who underwent surgical treatment for the for ICS Pelvic Organ Prolapse Quantification (POP-Q) stage 2-4 prolapse in the Department of Obstetrics and Gynecology, Division of Female Pelvic Medicine and Reconstructive Surgery, Yonsei University Health System (Seoul, Korea) between January 2007 and December 2010. All patients provided a detailed urogynecologic and medical history, and underwent a comprehensive physical examination including the grading of prolapse utilizing the ICS POP-Q staging system by the same examiner and multichannel urodynamic testing when indicated. The surgical technique and combination of procedures were chosen after informed consent from each patient, with the objective of correcting anatomic support of all prolapsed compartments. All procedures were performed by one senior surgeon. Patients with ICS POP-Q stage 2-4 prolapse undergoing obliterated procedures or anti-incontinence surgery only were excluded. The study group was classified into 3 categories according to ICS POP-Q staging, 23 women with stage 2; 239 women with stage 3; and 137 women with stage 4 prolapse. The date and indication for POP surgery were collected, as well as the route of POP surgery (abdominal, vaginal or laparoscopic) and the use of prosthetic material. The surgical techniques used in our institution for abdominal and vaginal or laparoscopic) and the use of prosthetic material. The surgical techniques used in our institution for abdominal and vaginal repair or hysterectomy were also identified. The patients who had had prolapse above stage 2 of the apical compartment were performed hysterectomy. Complications were subdivided into perioperative (within 2 month of the operation) and long-term (at least 2 month after the operation) complications. Perioperative and long-term complications, including estimated blood loss (EBL), blood transfusion, bladder injury, ureter injury, bowel injury, ureter obstruction, bowel obstruction, wound healing problem, urinary tract infection, urinary retention, urinary incontinence, voiding difficulty, mesh erosion, pelvic abscess, incisional hernia, and need to alter surgical procedure were evaluated. A blood loss ≥500 mL was considered excessive. Patients were followed-up 1, 3, 6, and 12 months after surgery, and every year thereafter during the study period. At each visit, urinary/bowel symptoms and other problems were assessed. Changes in POP-Q stage and vaginal vault healing status were also examined. Data were reviewed on length of hospital stay, operation time, and difference between hemoglobin levels preoperatively and on the third postoperative day. Functional outcomes regarding urinary/bowel symptoms and anatomical recurrences were also assessed. Anatomical recurrence was defined as any prolapse equal to or greater than stage 2 of the POP-Q classification.

1. Statistical analysis

Data analyses were performed by another professional who was blinded to the group allocation and had no knowledge of the interpretation of the results. The SPSS ver. 18.0 (IBM Co., Armonk, New York, NY, USA) was used for the statistical analyses. Baseline categorical variables were analyzed using chi square or Fisher’s exact test. Continuous variables were analyzed using the Wilcoxon rank sum test or the Krukal-Wallis test. A nominal two-sided P-value <0.05 was considered to indicate statistical significance.

Results

Three hundred ninety-nine patients met inclusion criteria, including 23 (5.8%) with stage 2, 239 (70.5%) with stage 3, and 137 (34.3%) with stage 4 prolapse. The median postoperative follow-up time was 31.6 months, ranging from 3 to 47 months. Patients with prolapse stage 4 group were older than those in the stage 2, 3 groups but there was no statistical significance (mean age ± standard deviation [SD]: II, 62.6 ± 8.3 years; III, 63.4 ± 9.9 years; IV, 66.5 ± 9.5 years; P=0.62). Patients of stage 4 group who had given vaginal birth had more prolapse than early stage groups, but also there was no significant differences. There was no significant difference in body mass index (BMI) (mean BMI±SD, 24.5 ± 3.2 kg/m²), parity (mean parity, 3.3 ± 1.4), use of hormones