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Intra-, peri- and postoperative complications in pelvic organ prolapse surgery in geriatric women



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ABSTRACT

Objective: Pelvic organ prolapse is a common problem among geriatric women. Advanced age is associated with a high prevalence of comorbidities that can lead to restrictive use of surgical treatment. With rising life expectancy it is predicted that surgical treatment in these women will be seen more frequently. Inconsistently there is a lack of clinical trials giving attention to elderly women suffering from pelvic organ prolapse. The aim of this study was to quantify the rate of complications in elderly women undergoing surgery for pelvic organ prolapse.

Study design: 72 women aged ≥ 75 years who underwent surgical correction for pelvic organ prolapse were included in this study. Demographics, comorbidities, intra-, peri- and postoperative severe and non-severe complications were recorded. Additionally we compared the pre- and postoperative presence of symptoms linked to pelvic organ prolapse. Follow-up for the review of pelvic floor symptoms was six months.

Results: The mean age was 81.4 years. Four (5.6%) of the patients had a severe intra-, peri- or postoperative complication (two bowel injuries, one bleeding requiring blood transfusion, one resuscitation). All women with severe complications showed no persistent problem at the time of discharge or during the follow-up period. There was a significant postoperative decrease in pelvic organ prolapse connected symptoms, such as stress urinary incontinence ($p = .013$), voiding dysfunction ($p < .001$), recurrent urinary tract infection ($p = .001$) and rectal outlet obstruction ($p = .006$).

Conclusion: Elderly women undergoing an operation for pelvic organ prolapse have a low risk of complication and benefit from surgery. Age alone should not be a contraindication to surgery.

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Introduction

Pelvic organ prolapse (POP) is a common problem among elderly women. About 40% of women aged 45–85 suffer from at least Pelvic Organ Prolapse Quantification System (POP-Q) stage II [1]. The estimated life time risk of undergoing an operation by the age of 80–85 years is 12–19% with the highest risk of operation in the age of 65–69 years [2,3]. In Switzerland, likewise as in other parts of the western world, the life expectancy is rising with geriatric women outnumbering men. In 2014 an eighty-year-old Swiss woman had in average still 10.3 years to live [4]. With increasing age and elderly women being the fastest growing group of the population, it is predicted that surgeries will be performed more frequently in this cohort. However, with a view to the

existing studies, there is a lack of clinical trials focusing on elderly women suffering from POP. In fact, Gerten et al. [5] found that in many cases these women have been excluded from studies.

Advanced age is associated with a higher prevalence of comorbidities that can lead to restrictive use of surgical treatment due to fear of complication. However, symptoms associated with POP can have a multidimensional impact on patients' quality of life affecting activity, physical and mental status or sexuality [6,7].

Conservative or mechanical management as a treatment can be an alternative to surgery but may be limited to mild forms of POP [8]. Studies, which focus on elderly women who underwent surgery for POP, show heterogeneous complication rates varying from 15.5% to 33% with mortality rates between 0.0% to 4.1% [5].

These studies include different definitions of "elderly patients" and define age as inclusion criteria with a wide range between 60 and 80 years, which can lead to problems concerning the comparison of the results.

The aim of this study was to quantify the rate of complication in elderly women aged ≥ 75 years undergoing surgery for POP.

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Secondary aim was to analyze the pre- and postoperative prevalence of POP related symptoms in order to assess how elderly women may benefit from surgery.

Materials and methods

This was a retrospective study of women aged ≥ 75 years, who underwent urogynecological surgical procedures for POP at our tertiary referral hospital at the Department of Urogynecology, Cantonal Hospital of Lucerne, Switzerland.

All women who underwent any urogynecological surgery for POP between January 2013 and December 2015 were opted to participate. Inclusion criteria were age ≥ 75 years and surgeries for POP with or without concomitant incontinence procedures. Exclusion criteria were surgery indication other than POP and missing data of the preoperative examination.

All women underwent a standardized urogynecological examination pre- and postoperatively. The first postoperative follow-up was six weeks after surgery. Follow-up for the review of pelvic floor symptoms was six months. Data recorded included demographic characteristics, comorbidities, medical and gynecological history, previous urogynecological procedures, type of current operation, complications and presence of POP and connected symptoms. Based on the comorbidities the Charlson Comorbidity Index (CCI) [9] was calculated. The CCI score serves as a tool to compare patients' comorbidities and to predict mortality. The higher the score, the higher will be the predicted mortality. To objectify symptoms taking POP-stage, cough stress test at 300 ml bladder filling to stress urinary incontinence, uroflow and post void residual volume (PVR) was performed. To assess symptoms of POP women were asked whether "they feel a bulge in the vagina" pre- and postoperatively. Women were specifically asked for the history of symptoms of stress urinary incontinence, voiding dysfunction, recurrent urinary tract infection, stool outlet obstruction and bowel incontinence. These symptoms were defined according to the standardized terminology of the International Urogynecological Association and International Continence Society [10]. Moreover in order to assess the subjective symptoms, all women completed the validated German Female Pelvic Floor Questionnaire (GFPPQ), which contains bladder, bowel, prolapse and sexual function domains [11].

Complications were identified by reviewing all of the records and were categorized as severe and non-severe. Severe complications included death, resuscitation, sepsis, peritonitis, intra- or postoperative bleeding requiring transfusion, injury to ureter, bladder, bowel or nerves, cardiac arrest, arrhythmia, myocardial infarction, heart failure, coagulopathy, pulmonary or cerebral embolism, pulmonary edema, respiratory failure, pneumonia, ileus, severe renal failure and postoperative mental change/delirium. Non-severe complications included urinary tract infection, moderate renal failure, hematoma, fever and prolonged postoperative pain. Moreover complications were classified based on the Clavien-Dindo classification [12]. This classification categorizes complications according to the type of intervention that was performed due to the complication.

During POP surgery all women received perioperative antibiotics. For deep venous thrombosis prophylaxis all patients wore compression stockings and received prophylactic sub-cutaneous low molecular heparin.

Specific type of various vaginal prolapse, laparoscopic repair and anti-incontinence surgery were separately recorded.

Parametric continuous data are presented as mean \pm standard deviation (SD), non-parametric data are presented as median (range) and categorical data are presented as the number and in percentages. Categorical data were compared by using Fisher's exact test and Welch's *t*-test was used for continuous variables. A

p-value less than 0.05 was considered as statistically significant. Pearson's correlation coefficient was used to correlate the number of hospital days with the number of complications that occurred before discharge. Data analysis was performed using a statistical Software SPSS, version 22 (Chicago, IL, USA, 2013).

The study was approved by the Ethics Committee Northwest/Central Switzerland (EKNZ: BASEC 2016-00241, Date of approval March 8, 2016).

Results

A total of 72 women (mean age 81.4 years, ± 4.8 , range 75–93) underwent surgical correction for POP during the study period and met our inclusion/exclusion criteria. Table 1 summarizes patients' characteristics and presents patients' comorbidities. Conservative treatment with vaginal pessaries to reduce POP was used by 26 (36.1%) of the women prior to surgical intervention. At least one defined comorbidity was present in 66 (91.7%) of the women. The most common comorbidities were hypertension 50 (69.4%), diabetes mellitus 13 (18.1%) and neurological diseases 12 (16.7%). 15 (20.8%) women had a case of malignancy in their medical history. The median CCI score was 1 (range 0–7).

Table 2 describes the preoperative prolapse-stage and surgeries performed to correct the POP with most commonly seen anterior (88.9%) and middle (90.3) compartment prolapse. Vaginal prolapse repair was most commonly performed followed by laparoscopic procedures. None of the patients underwent an abdominal repair. In 12 cases a concomitant Tension Free Vaginal Tape Obturator (TVT-O) was performed. The median operating time was 75 min (range 11–260) and the mean length of the hospital stay 5.1 days (± 2.34).

Table 1
Patients' characteristics and comorbidities.

	mean / n	SD / %
Patients' characteristics		
Mean age (years)	81.4	± 4.83
BMI (kg/m ²)	25.9	± 3.96
Mean vaginal deliveries	2.86	± 1.17
Prior pessary therapy	26	36.1
Prior hysterectomy	33	45.8
Prior anterior/posterior colporrhaphy	12	16.7
Prior sacrospinous fixation	7	9.7
Prior laparoscopic sacrocolpopexy	3	4.2
Prior colpocleisis	1	1.4
Comorbidity		
Hypertension	50	69.4
Prior myocardial infarction	1	1.4
Coronary heart disease	11	15.3
Arrhythmia	5	6.9
Anticoagulation	11	15.3
Pacemaker	3	4.2
Diabetes mellitus	13	18.1
Pulmonary disease	4	5.6
Neurological disease	12	16.7
Psychiatric disorder	4	5.6
Dementia	2	2.8
Infectious disease	0	0
Liver disease	2	2.8
Renal disease	8	11.1
Hematological disease	10	13.9
Prior malignancy	15	20.8
Nicotine abuse	8	11.1
Presence of at least 1 comorbidity	66	91.7
	Median	Range
CCI Score	1	0–7

Values are given as mean (SD), n (%) or median (range). BMI = Body mass index. CCI = Charlson Comorbidity Index.

More than one comorbidity per patient possible.

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