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Patient-reported pelvic floor symptoms 5 years after hysterectomy with or without prolapse surgery

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ABSTRACT

Objective: The aim of this study was to evaluate the effect of hysterectomy with or without concomitant prolapse surgery on subject-reported pelvic floor disorders (PFD) with a 5-year follow-up.
Study design: This prospective longitudinal study was carried out in two Finnish central hospitals among 286 women who had undergone hysterectomy for benign reasons. The presence of urinary incontinence, urinary frequency, feeling of vaginal bulging, constipation and anal incontinence was evaluated at baseline, 1 and 5 years postoperatively. Analysis was performed on 256 (895%) patients who answered at least one of the follow-up questionnaires.
Results: Hysterectomy with concomitant native tissue prolapse surgery significantly reduced urinary incontinence, urinary frequency, constipation and the feeling of vaginal bulging, and the results were maintained over the following five years. Plain hysterectomy reduced urinary frequency and the feeling of vaginal bulging but did not relieve urinary incontinence. Hysterectomy had no effect on anal incontinence. The total subsequent prolapse and/or incontinence operation rate was 2,7%, and was higher among patients who underwent hysterectomy for pelvic organ prolapse.
Conclusions: During a 5-years follow-up a hysterectomy alone or with native tissue prolapse surgery did not worsen pelvic floor disorders.

Introduction

Hysterectomy is the most common procedure in gynecological surgery. Hysterectomy for benign diseases is performed to improve the quality of life in cases of dys-/menorrhagia, myoma or genital prolapse. When technically feasible, operating though the vaginal route is recommended instead of performing an abdominal or laparoscopic hysterectomy [1]. One-third of hysterectomies are performed due to pelvic organ prolapse (POP), meaning that a colporrhaphy procedure is done often concomitantly with the vaginal hysterectomy. Hysterectomy has been associated with increased risk for pelvic floor disorders (PFD), but the findings have been conflicting. Cohort studies have shown that hysterectomy is a risk factor for urinary incontinence surgery; however, prospective comparative studies have not confirmed this finding [2,3]. Pelvic floor symptoms may appear several years after index surgery, but without a proper preoperative evaluation it is difficult to eliminate the impact of confounding factors deriving from the hysterectomy [4,5]. Women with pelvic organ prolapse (POP) often report a variety of pelvic floor symptoms which impair their quality of life [6]. The goal of POP surgery is anatomical restoration and functional improvement without de novo symptoms. However, it seems that various factors, such as age, body mass index and doing heavy lifting influence symptom resolution [7] while the hysterectomy itself may present a risk for future POP surgery [8]. The aim of this prospective study was to evaluate the effect of hysterectomy with or without prolapse surgery on subject-reported pelvic floor disorders (PFD) over a five-year follow-up. Subsequent pelvic floor operations after primary hysterectomy were also studied.

Abbreviations: AI, anal incontinence; KA, colporrhaphy anterior; KP, colporrhaphy posterior; PFD, pelvic floor disorders; POP, pelvic organ prolapse; SD, standard deviation; TV, tension free vaginal tape; VH, vaginal hysterectomy; UI, urinary incontinence.

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Materials and methods

This prospective longitudinal observational study was carried out in two Finnish hospitals: Central Finland Central Hospital, Jyväskylä, and South Carelia Central Hospital, Lappeenranta. The hysterectomies were performed between January and December 2006 and the follow-up questionnaires were mailed five years post-surgery. Inclusion criterion was total hysterectomy for benign indication. Patients with total hysterectomy and concomitant anterior and posterior colporrhaphy were also included. Exclusion criteria were genital tract malignancy, severe endometriosis and communication difficulties.

The most common indications of hysterectomy were POP, leiomyoma, menometrorrhagia and pelvic pain. Participants gave their written informed consent before the operation. The study protocol was approved by the institutional review board in each hospital.

Prior to surgery, patients had a gynecological examination, using the Baden-Walker scale, to detect POP. POP was defined as descent of the apical, anterior or posterior compartment of the vaginal wall of grade >/ = 2. Grade 2 on the Baden-Walker scale is defined as descent of the pelvic organ at the level of the introitus. Women with a POP grade of </ = 1 formed the NonPOP group. They underwent a hysterectomy using a abdominal, vaginal or laparoscopic approach at the surgeon's discretion. Patients with a POP grade of >/ = 2 were divided in two groups: those who underwent a vaginal hysterectomy (VH) without colporraphy (VH group) and those with concomitant anterior and posterior colporraphy (VH + KA + KP group).

Patient symptoms were evaluated by a questionnaire filled in by the patients preoperatively and at 1 and 5 years postoperatively. The questionnaire was designed for this study and covered experience of urinary incontinence (UI), urinary frequency, anal incontinence (AI), constipation and feeling of vaginal bulging during the past month. Questions were answered with yes or no. In the follow-up questionnaire patients also answered how satisfied they were with the result of the operation. Alternatives were: very satisfied, quite satisfied, not satisfied and cannot say. Patient files, including those of non-responders, were checked for subsequent prolapse and incontinence operations during the five-year follow-up.

Statistics

Data are presented as means with standard deviations (SD), medians with range or as counts with percentages. Repeated measures were analyzed using generalizing estimating equations (GEE) models with an unstructured correlation structure. The total reoperation rate was estimated using the Kaplan-Meier method. All analyses were performed using STATA software (version 14.0), StataCorp, LP, Texas, USA.

Results

A total of 286 women were operated. Analyses were performed for the 256 patients (89.5%) who had answered at least one of the follow-up questionnaires. Demographic data, clinical features and concomitant surgeries are shown in Table 1. Of the women, 174 did not have POP (NonPOP), 23 had descent of the uterus (VH) and 59 underwent hysterectomy and concomitant anterior and posterior colporraphy (VH + KA + KP). The POP patients (VH and VH + KA + KP) were ten years older than the NonPOP patients (mean 58,4 SD 11,4 vrs 48,2 SD 7,4 years).

Urinary incontinence (Fig. 1), urinary frequency (Fig. 2), feeling of vaginal bulging, obstructed defecation (Fig. 3) and anal incontinence did not increase after hysterectomy in any of the groups. In the NonPOP group, the hysterectomy surgical approach showed no influence on PFD. Preoperatively, patients with POP had more PFD than patients without POP. Patients with isolated descensus uteri reported urinary incontinence before the operation more often than the other hysterectomized patients.

Urinary frequency, urinary incontinence, constipation and feeling of vaginal bulging declined after hysterectomy with concomitant prolapse surgery one year after the operation, and

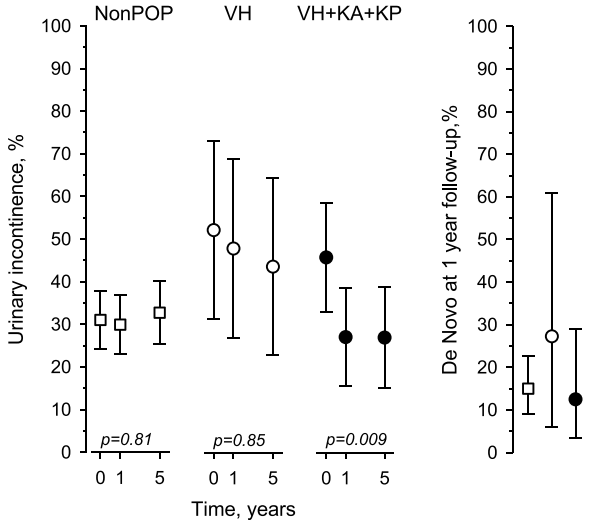

Fig. 1. Urinary incontinence before hysterectomy and at 1- and 5-year follow-up and de novo symptoms. Hysterectomy without POP (NonPOP), vaginal hysterectomy for descent of uterus (VH) and vaginal hysterectomy with concomitant anterior and posterior colporraphy due to pelvic organ prolapse in (VH + KA + KP).

Table 1
Demographic data and pelvic surgery in 256 patients in three groups.

Characteristics	NonPOP (n = 174)	VH (n = 23)	VH + KA + KP (n = 59)
Age (years), mean (SD)	48.2 (7.4)	56.4 (9.8)	60.3 (11.4)
BMI (kg/m^2), mean (SD)	25.9 (4.5)	25.5 (3.0)	27.8 (4.5)
Parity (n), median (range)	2 (0–7)	2 (0–4)	3 (0–8)
Vaginal deliveries (n), median (range)	2 (0–6)	2 (0–4)	3 (0–7)
Caesarean sections (n), median (range)	0 (0–3)	0 (0–1)	0 (0–4)
Hysterectomy			
Vaginal, n (%)	77 (44)	23 (100)	59 (100)
LAVH, n (%)	35 (20)	0 (0)	0 (0)
Abdominal, n (%)	62 (36)	0 (0)	0 (0)
Uni-or bilateral salpingo-oophorectomy, n (%)	66 (38)	5 (22)	8 (14)

SD = standard deviation, BMI = body mass index, NonPOP = no pelvic organ prolapse, VH = vaginal hysterectomy, LAVH = laparoscopically assisted vaginal hysterectomy, KA = colporrhaphy anterior, KP = colporraphy posterior.