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Quality of life and pelvic floor dysfunction symptoms after hysterectomy with or without pelvic organ prolapse

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ABSTRACT

Objective: To assess the effect of hysterectomy with or without pelvic organ prolapse (POP) on health-related quality of life (HRQoL) and pelvic floor disorders.
Study design: Prospective clinical study at two central hospitals in Finland. During one year 322 women underwent elective hysterectomy for benign conditions with or without vaginal wall repair. The study population was divided in two groups, patients with and without POP. The HRQoL questionnaires RAND-36 and 15D, and questionnaires assessing urinary and bowel dysfunction symptoms were obtained preoperatively and 12 months postoperatively. POP was defined as the descent of apical, anterior or posterior compartment of vaginal wall grade ≥ 2 in the Baden–Walker classification at any site. Main outcome measures were HRQoL, improvement of symptoms and de novo symptoms.
Results: At baseline the mean 15D score of all patients was lower than that of the age-standardized population sample ($p < 0.001$). At one year postoperatively, the mean 15D score of the patients had improved ($p = 0.001$), this resulting mainly on dimensions of excretion (voiding and defecation), usual activities, discomfort and symptom, distress, vitality and sexual activity. HRQoL improved especially in patients with POP. They reported improvement of symptoms in urinary incontinence, urinary frequency, constipation and sense of bulging but surgery had no effect on anal incontinence. Patients without POP reported improvement in pain dimension, urinary frequency and feeling of bulging. Urinary incontinence was the most common (15.4% and 13.8%) de novo symptom in both groups.
Conclusions: Hysterectomy with or without concomitant pelvic organ prolapse surgery improves health-related quality of life and reduces pelvic floor symptoms in one-year follow-up.

Introduction

Hysterectomy is very common gynecological operation. It is mostly performed for benign indications such as symptomatic leiomyoma, menometrorrhagia, pelvic pain, postmenopausal bleeding and pelvic organ prolapse (POP). Symptomatic prolapse of the uterus is often accompanied by relaxation of the anterior and posterior vaginal wall requiring hysterectomy and concomitant repair of any pelvic support defects. The uterus can be removed by abdominal, vaginal or laparoscopic operation. Adnexal surgery and colpoperineoplasty are the most common concomitant procedures related to hysterectomy [1]. The total removal of the uterus may disrupt the local nerve supply and anatomical relationships and thus adversely affect overall pelvic organ prolapse [2]. It is estimated that 50% of parous women have POP and that it causes symptoms in 10–20% of them [3]. A woman's risk of eventual prolapse surgery is 11%, and 30% of them require re-operation [4].

Hysterectomy has been associated with an increased risk of pelvic floor dysfunction, but results have been inconclusive [5,6]. Especially long-term outcomes associated with hysterectomy for benign indications are unclear. Pelvic floor symptoms might appear for several years postoperatively [3]. Hysterectomy is often

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performed with concomitant vaginal wall repair but the effect of prolapse surgery on pelvic floor disorders is less studied.

Pelvic floor disorders include urination and defecation problems, pelvic pain and sexual difficulties. It is estimated that about one third of adult women are affected [7]. These disorders involve serious implications for daily function, social interactions, sexuality and psychological wellbeing [8]. The efficacy of a surgical procedure should be measured primarily by its influence on quality of life. The effectiveness of vaginal wall repair and its influence in quality of life is unclear.

The aim of the present study was to assess health-related quality of life (HRQoL) and pelvic floor disorders pre- and postoperative in women who underwent hysterectomy with or without pelvic organ prolapse.

Materials and methods

The prospective observational study was carried out in the Central Finland Central Hospital, Jyväskylä, and in the South Carelia Central Hospital, Lappeenranta, Finland. Inclusion criterion was hysterectomy for benign indication. Exclusion criterion was genital tract malignancy. Also severe endometriosis was considered as exclusion criterion because these patients usually need large operations and are not comparable with other patients undergoing hysterectomy. Women with cognitional impairment were also excluded in view of difficulties in answering multiple questionnaires.

All women undergoing hysterectomy for benign indications between January and December 2006 were invited to participate. A total of 332 patients underwent elective hysterectomies for benign conditions during this period. Of these, 322 (97.0%) agreed to participate; 10 did not wish to participate or did not meet the inclusion criteria. The most common indications of hysterectomy were pelvic organ prolapse, leiomyoma, menometrorrhagia and pelvic pain. Participants gave written informed consent before the operation. The study protocol was approved by the institutional review board in each hospital.

Before surgery a gynecologic examination was made by the surgeon. Patients were divided into POP and no-POP groups. POP was classified on the Baden–Walker scale [9]. POP was defined as descent of apical, anterior or posterior compartment of vaginal wall grade $\geq$2 at any site. These women formed the POP group. Patients in no-POP group had POP grade $\leq$1. Grade 2 in Baden–Walker scale is defined as decent of pelvic organ at the level of introitus. POP grade 1 is usually insignificant finding and therefore classified in no-POP group.

All women underwent total hysterectomy. Hysterectomy was undertaken by abdominal, vaginal or laparoscopic approach at the discretion of the surgeon. Concomitant vaginal repair of anterior or posterior wall and salpingo-oophorectomy were performed when appropriate and based on the surgeon's decision. Operations were performed by generally approved methods. The data of operations is missing in six patients.

Patients' symptoms were evaluated by a questionnaire filled in by the patients pre- and postoperatively. The questionnaire was designed for this study and covered experience of urinary incontinence (UI), urinary frequency, anal incontinence (AI), constipation and sense of bulging during the last month. The questions were answered yes or no. Health-related quality of life (HRQoL) was measured by the 15D and RAND-36 questionnaires. The baseline measurement took place before the operation. Approximately 12 months thereafter follow-up questionnaires were mailed to all women. 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.

The 15D is a 15-dimensional, standardized self-administered instrument which can be used both as a profile and a single index utility score measure [10]. It comprises 15 dimensions: moving, seeing, hearing, breathing, sleeping, eating, speech, excretion/elimination (voiding and defecation), usual activities, mental function, discomfort and symptoms, depression, distress, vitality and sexual activity. For each dimension, the respondent must choose one of the five levels best describing her current state of health (best level = 1; worst level = 5). The valuation system in the 15D is based on an application of the multi-attribute utility theory. A set of utility or preference weights, elicited from the general public through a 3-stage valuation procedure, is used to generate a value on a 0–1 scale for each dimension and in an additive aggregation formula the overall utility score, i.e. the 15D score (single index number) over all dimensions. The maximum 15D score is 1 (no problems on any dimension), and minimum 0 (equal to being dead). In most of the significant properties the 15D compares favorably with other preference-based generic HRQoL instruments. A change of about $\pm$0.03 in the score is clinically relevant for people in the sense that they feel the differences or practically important.

The HRQoL of patients at baseline and at follow-up was compared with that of the general female population. The 15D data for the general population came from the National Health 2000 Health Examination Survey, which covered a representative sample of the Finnish population aged 30 years and over [11]. The sample of the general female population (n = 3196) was weighted to reflect the age distribution of patients.

A validated Finnish version of the RAND 36-item Health Survey (RAND-36) was also used for measurement of the HRQoL. The RAND-36 comprises 36 items assessing eight dimensions of health from the patient's viewpoint [12]. These dimensions measure physical functioning, role limitations due to physical and emotional problems, social functioning, mental health, energy and vitality, body pain, and general health perception. There is a range from 0 to 100 in each subscale, with higher scores indicating better HRQoL. The RAND-36 items are identical to those in the Medical Outcomes Study Short Form 36 (SF-36) questionnaire. The scoring in the RAND and SF versions differs slightly in two dimensions (body pain and general health perceptions), but the correlation of the two systems is excellent (r = 0.99). Both instruments are well-validated general health questionnaires.

Statistical analysis

Data were analyzed using the SPSS for Windows statistical software version 15.0.

The McNemar test was used to assess the difference in change in pelvic floor disorders from preoperative to one-year follow-up. Paired samples t-test was used to compare patients' HRQoL before and after the operation, and independent samples t-test to compare the HRQoL between patients and the general population. A p-value of $\leq$0.05 was considered statistically significant.

Results

Table 1 shows demographic data, clinical features and concomitant surgeries. There were 122 women in POP group and 200 women in no-POP group. Women with POP were older than those without POP ($p < 0.001$). Sixty-nine (56.6%) out of 122 women with POP had apical prolapse, 92 (75.4%) anterior, 32 (26.2%) posterior and prolapse of all three compartments was found in 11 cases (9.0%). Vaginal hysterectomy was the most common approach in both groups. In POP group 93/120 (77.5%) women had a colporrhaphy: 20 women anterior, 11 women posterior and 62 women both anterior and posterior colporrhaphy.