European Journal of Obstetrics & Gynecology and Reproductive Biology 224 (2018) 170–174

Contents lists available at ScienceDirect

European Journal of Obstetrics & Gynecology and Reproductive Biology

journal homepage: www.elsevier.com/locate/ejogrb

Full length article

Bladder function after sacrospinous hysteropexy and vaginal wall repair in women with uterovaginal prolapse

Waleed A. Sayed Ahmed*, Omima T. Taha, Mostafa A. Hamdy, Zakia M. Ibrahim, Amal M. Elshahat

Department of Obstetrics and Gynecology, Faculty of Medicine, Suez Canal University, Ismailia, Egypt

ARTICLE INFO

Article history:
Received 15 May 2017
Received in revised form 24 February 2018
Accepted 22 March 2018
Available online xxx

Keywords:
Uterovaginal prolapse
Sacrospinous hysteropexy
Urodynamic study
Urodynamic distress inventory-6

ABSTRACT

Objective: To evaluate the impact of repair of uterovaginal prolapse using sacrospinous hysteropexy and vaginal wall repair on the bladder function.
Study design: The study was conducted at the urogynecology clinic of Suez Canal University Hospitals, Ismailia from January 2014 to March 2016. This study included women with a diagnosis of uterovaginal prolapse and wishing to preserve their uteri. Bladder function was evaluated through assessment of urological symptoms using a standardized questionnaire – the urogenital distress inventory (UDI-6) – in addition to urodynamic studies just before and six-months after the sacrospinous hysteropexy ± associated vaginal wall repair operation.
Results: Twenty-seven patients completed the study with a mean age of 36.5 ± 4 years. Only 3 women had sacrospinous hysteropexy with no additional procedures. Other procedures included anterior colporrhaphy (12), posterior colporrhaphy (9) and perineorrhaphy (15). Based on UDI-6, there was no significant difference between the pre- and post-operative symptoms of stress urinary incontinence (SUI) [8/27 (29.6%) vs. 9/27 (33.3%) respectively; p value = 0.7]. The pre- and post-operative symptoms of urge urinary incontinence were also insignificantly different [13/27 (48.1%) vs. 15/27 (55.5%); p value = 0.5]. The total score of UDI-6 increased from 24.5 ± (14.2) to 32.8 ± (29.4) which was not statistically significant (p value = 0.12). Urodynamically, voiding dysfunction was found less frequently after the operation, however the difference was statistically insignificant [9/27 (33.3%) vs. 8/27 (29.6%); p value = 0.7].
Conclusion: Sacrospinous hysteropexy and associated vaginal wall repair do not affect the bladder function either subjectively or objectively.

Introduction

In pelvic organ prolapse (POP), the bladder, uterus, and bowel can bulge into the vagina. Although this is not a life-threatening condition, it may cause urinary incontinence, pelvic pain/discomfort, trophic ulcers which could negatively affect the woman's quality of life [1].

The prevalence of symptomatic POP is reported to be 5%–10%. Among the most severe and disabling pelvic prolapse conditions are those in which the loss of pelvic support is so great that the uterus prolapses through the introitus which occurs in about 14% of patients with POP [2].

Uterine prolapse can negatively affect voiding function, although one study noted that the majority of women with severe prolapse still void effectively [3]. Fitzgerald found that preoperative voiding studies with the uterine prolapse reduced by a pessary were the best predictors of normalization of residuals post-operatively [4].

Surgical treatment is one of the options for the correction of POP. The goals of surgery are to restore the anatomy and functional status and improve the quality of life. Physicians must consider potential complications, de novo symptoms that may arise after anatomy is restored, and ultimately choose a procedure that is most appropriate for an individual patient [5]. This makes the assessment of de novo stress/urge incontinence and development of voiding dysfunction after surgical treatment mandatory [6].

There is paucity of studies assessing the bladder function after repair of uterine prolapse. So, the aim of this study is to assess the impact of sacrospinous hysteropexy and associated vaginal wall repair in treating the uterovaginal prolapse on the function of the urinary bladder.

* Corresponding author.
E-mail address: waleed.sayedahmed@med.suez.edu.eg (W.A. Sayed Ahmed).

https://doi.org/10.1016/j.ejogrb.2018.03.041
0301-2115/

Methods

The study was conducted at the Urogynecology Clinic of the Suez Canal University Hospitals, Ismailia from January 2014 to March 2016. After approval of the hospital's ethics committee, all participants gave oral and written informed consents prior to enrolling.

This prospective cohort study included 27 women with clinical evidence of uterovaginal prolapse more than grade (I) Pelvic Organ Prolapse/Quantification (POP/Q) system and wishing to preserve their uteri. The following were the exclusion criteria: abnormal vaginal bleeding, abnormal pap smear, abnormal pelvic ultrasound study such as ovarian or uterine wall lesions.

Based on an expected difference between the means of pre- and post-operative scores of the urinary impact questionnaire and is valued as 23.8 [7], the sample size was estimated as 24.6. Adding an expected drop out of 10%, the number of women included in the study was 27.

At the enrolment visit, women eligible for the study underwent the following: personal and medical history, physical examination including body mass index (calculated as weight in kilograms divided by square of the height in meters). Upon local assessment, the maximal extent of prolapse was measured during a Valsalva maneuver or coughing and was confirmed by the patient as being the most marked protrusion [8] (Table 1).

Urological symptoms were assessed using a standardized questionnaire; the validated Arabic version of the urogenital distress inventory (UDI-6) [9,10] just before and six months after the operation. The questionnaire was filled in by the patients themselves with one of the researchers available for any enquires. Cystometry as a urodynamic study was done just before and six months after the operation preceded by a normal urinalysis. The cystometry was carried out with the prolapse reduced to normal position. Patients were then scheduled for the operation after undergoing the necessary laboratory investigations and anesthetic assessment.

The filling cystometry was used for recording the pressure-volume curve of the urinary bladder. The investigation was carried out in the supine position. A manometer or sensitive transducer was coupled to the inside of the bladder through a catheter. The pressure transducer was attached externally to a water-filled infusion catheter and mounted onto a stand near the patient's body at the level of the symphysis pubis. A rectal catheter was used to measure the intra-abdominal pressure. We used H2O pump to fill the bladder with normal saline at a flow rate of 20 ml/min. As the bladder filled the following was recorded: the first desire to void defined as the patient first feel of the bladder being filled. Normally it occurs at volume 50–200 ml; the normal desire to void defined as the feeling that leads the patient to pass at the next convenient moment, but voiding could be delayed if necessary; strong desire to void defined as a strong desire to void without fear of leakage; urgency defined as a strong desire to void accompanied by fear of leakage; maximum cystometric capacity defined as the volume which the patient feels that she can no longer delay the micturition. It normally occurs at volume 500–1000 ml. The recommendations of the International Continence Society (ICS) in evaluating the urinary incontinent patient using the urodynamic studies were followed including the interpretation and the terminology used.

Sacrospinous hysteropexy was carried out by the group involved in the study using the following technique: general or spinal anesthesia was used. The patient was placed in the dorsal lithotomy position. A midline incision in the posterior vaginal wall mucosa was done about 5 cm long. Dissection was made gently into the right rectovaginal space. The right ischial spine and sacrospinous ligament were identified and a zero-absorbable braided suture previously loaded on the Capio® needle was placed in the sacrospinous ligament approximately 1 cm medial to the ischial spine. Two sutures were taken into the sacrospinous ligament. The other end of the suture was stitched through the substance of the cervix. Pulley sutures were performed by the other end of the sutures on either side of the vaginal incision. The vaginal mucosa was closed with absorbable suture. As the sacrospinous ligament fixation suture was tied, the prolapsed uterus came close to the sacrospinous ligament level. Suture position was secured by tying six to eight knots. Any additional procedure was done during the same sitting.

Documentation of the operative procedures and intra-operative complications -if any- were done. The immediate post-operative care: intravenous antibiotics were given and proper analgesia was prescribed. A vaginal pack was inserted if needed especially if vaginal wall repair was performed as an additional procedure and was removed after 24 h. The urinary catheter was removed after removal of the vaginal pack and patients were discharged 2–3 days post-operatively. Immediate post-operative complications such as buttock pain, bleeding or urinary problems were documented if present. All patients were instructed to come to the Urogynecology unit for follow up after 6 months. Patients were encouraged to contact the clinic earlier if needed.

At the six-month post-operative visit, evaluation of the anatomical position of the uterus was carried out. Satisfactory result was defined objectively as the absence of symptoms, with the cervix remaining well supported >6 cm above the plane of the hymen while the patient performing Valsalva's maneuver and the vagina admitting 2 fingers without discomfort [11]. Urogenital distress inventory-6 was filled and the cystometric study was performed after a normal urine analysis. Evaluation of patient satisfaction using visual analogue scale was carried out together with answering 2 questions; would you choose to undergo this surgery again and would you recommend this surgery to a friend or a relative?

The primary outcome measure was the evaluation of bladder function before and after the operation using the UDI-6 and cystometry.

Gathered data were processed using SPSS version 22 (SPSS Inc., Chicago, IL, USA). Quantitative data were expressed as means ± SD while qualitative data were expressed as numbers and percentages (%). Student *t*-test was used to test the significance of difference for quantitative variables and Chi-Square was used as a test of significance of difference for qualitative variables. A probability value (p-value) < 0.05 was considered statistically significant.

Table 1
Pelvic Organ Prolapse quantification system (Persu et al.) [8].

Stage 0	No prolapse is demonstrated
Stage 1	The most distal portion of the prolapse is more than 1 cm above the level of the hymen
Stage 2	The most distal portion of the prolapse is 1 cm or less proximal or distal to the hymen plane
Stage3	The most distal portion of the prolapse protrudes more than 1 cm below the hymen but protrudes no further than 2 cm less than the total vaginal length (i.e. not all of the vagina has prolapsed)
Stage 4	Vaginal eversion is essentially complete