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IMPROVEMENT IN THE QUALITY OF LIFE IN WOMEN WITH STRESS URINARY INCONTINENCE AFTER SURGERY FOR PELVIC ORGAN PROLAPSE

POBOLJŠANJE KVALITETA ŽIVOTA KOD ŽENA SA STRESNOM URINARNOM INKONTINENCIJOM NAKON OPERACIJE SPADA GENITALNIH ORGANA

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Summary

Introduction. Pelvic organ prolapse is commonly associated with asymptomatic stress urinary incontinence, in up to 50% of patients. The aim of our research was to examine the quality of life of women with urinary incontinence and pelvic organ prolapse after conventional surgical treatment. Material and Methods. The research included 50 patients with stress urinary incontinence and pelvic organ prolapse that underwent vaginal hysterectomy with anterior and posterior colporrhaphy. The pelvic organ prolapse-quantification system was used to determine the degree of genital prolapse. All patients completed a questionnaire to determine the “stress and urge” score preoperatively, as well as the Urinary Distress Inventory-6 and Urinary Impact Questionnaire-7 during the follow-up examination, a year after the surgery. Results. One year after surgery, 20 patients (40%) presented with a recurrence of cystocele. The average value of the Urinary Distress Inventory-6 questionnaire a year after surgery was 29.0 ± 10.8, while the average value of the Urinary Impact Questionnaire-7 questionnaire was 3.7 ± 16.3. After the surgery, 6 patients (12%) had persistent stress urinary incontinence and 4 patients (8%) had urge urinary incontinence. Among patients with persistent stress urinary incontinence, two patients reported pronounced symptoms of stress urinary incontinence and reoperation was performed. Conclusion. The classical surgical treatment of pelvic organ prolapse with anterior and posterior colporrhaphy leads to improvement in the quality of life of patients with pelvic organ prolapse and stress urinary incontinence. If the symptoms of stress urinary incontinence persist after classical surgical treatment, other anti-incontinence surgical modalities should be considered.

Key words: Quality of Life; Women; Urinary Incontinence, Stress; Pelvic Organ Prolapse; Gynecologic Surgical Procedures; Treatment Outcome

Sažetak

Uvod. Spad genitalnih organa je često kod oko 50% slučajeva udružen sa stresnom urinarnom inkontinencijom. Cilj našeg istraživanja bio je da se ispita kvalitet života žena sa stresnom urinarnom inkontinencijom nakon klasičnog operativnog lečenja genitalnog spada. Materijal i metode. Kod 50 žena sa stresnom urinarnom inkontinencijom i genitalnim spadom urađena je vaginalna hysterektomija sa prednjom i zadnjom kolporafijom. Stepen spada genitanih organa određivan je prema Pelvic organ prolapse-quantification sistemu. Sve pacijentkinje su preoperativno popunile stress and urge upitnik, dok su godinu dana nakon operacije popunile the Urinary distress inventory-6 i Urinary Impact Questionnaire-7 upitnike.

Rezultati. Godinu dana posle operacije 20 pacijentkinja (40%) imalo je rekurentni spad prednjeg zida vagine. Srednja vrednost Urinary distress inventory-6 upitnika, nakon operacije, iznosila je 29 ± 10.8, dok je srednja vrednost Urinary Impact Questionnaire-7 upitnika iznosila 3.7 ± 16.3. Nakon operacije, šest pacijentkinja (12%) imalo je persistsnu stresnu inkontinenciju dok su četiri pacijentkinje (8%) imale urgencu inkontinenciju. Dve pacijentkinje sa persistentnom stresnom inkontinencijom imale su izražene simptome i one su ponovo operisane. Zaključak. Kod pacijentkinja sa koegzistentnom stresnom urinarnom inkontinencijom i genitalnim spadom, nakon klasične vaginale histerektomije sa prednjom i zadnjom kolporafijom dolazi do poboljšanja kvaliteta života. Ukoliko tegobe stresne urinarnine inkontinencije i dalje perzistiraju potrebno je razmotriti druge operativne metode lečenja.

Ključne reči: kvalitet života; Žena; stres urinarna inkontinencija; prolaps genitalnih organa; ginekološke hirurške procedure; ishod lečenja

Introduction

According to the definition of the International Continence Society, urinary incontinence (UI) represents any complaint of involuntary loss of urine [1]. This is a very common complaint in the female population, with the prevalence varying between 8 – 45% which increases with the age [2–5]. The most common types of UI in women are stress urinary incontinence (SUI) (“complaint of in-
voluntary loss of urine on effort or physical exertion, or on sneezing or coughing”), urge urinary incontinence (UUI) (“complaint of involuntary loss of urine associated with urgency”), and mixed urinary incontinence (“complaint of involuntary loss of urine associated with urgency and also with effort or physical exertion, or on sneezing or coughing”) [1, 6].

Pelvic organ prolapse (POP), defined as “the descent of one or more: the anterior vaginal wall, the posterior vaginal wall, the uterus (cervix), or the apex of the vagina (vaginal vault or cuff scar after hysterectomy), is a condition which is frequently associated with UI, probably due to similar risk factors and causes of the occurrence [1, 3, 4, 6–11]. It is considered that up to 50% of women with POP also have symptomatic SIU [9]. Putra et al. have determined that the prevalence of urinary incontinence in women with POP is 37.32% (in I - II grade: 22%, and in III - IV grade: even 82.35%) [3].

Table 1. Determination of stress and urgency score

|                               | SS | US            |
|--------------------------------|----|---------------|
| I'm losing urine during laughing, coughing and sneezing/ Mokraću gubim pri smehu, kašljanju i kijanju. | YES/DA | NO/NE         |
| Involuntary urine leakage is not followed by a urinary urgency | YES | NO            |
| Nevoljno umokravanje nije praćeno nagonom na mokrenje. | DA | NE            |
| Starting urination is difficult/Početak mokrenja je težak. | YES/DA | NO/NE         |
| I have a chronic cough (bronchitis) or constipation | YES | NO            |
| Imam kroničan kašalj (bronhitis) ili zatvor (opstipaciju). | DA | NE            |
| My uterus and/or the walls of the vagina fall out/Ispada mi materica i/ili zidovi vagine. | YES/DA | NO/NE         |
| I do hard physical work (I used to do)/Obavljam teške fizičke poslove (obavljala sam). | YES/DA | NO/NE         |
| I had more than three abortions/Imala sam više od tri pobačaja. | YES/DA | NO/NE         |
| I lose urine bit by bit (a few drops)/Mokraću gubim po malo (nekoliko kapi). | YES/DA | NO/NE         |
| Leakage of urine is not affected by changes in the weather nor the seasons | YES | NO            |
| Na gubitak mokraće ne utiču promena vremena i godišnja doba. | DA | NE            |
| I had my kidneys, urinary bladder and urinary tract operated | NO | YES           |
| Operisala sam bubrege, mokraćnu bešiku, mokraćovode. | NE | DA            |
| I have a spinal column injury, a severe head injury or previous spine surgery or head surgery | NO | YES           |
| Imam oštećenje kičmenog stuba, težu povredu glave ili prethodne operacije na kičmi ili glavi. | NE | DA            |
| I had frequent urinary tract inflammations/Imala sam česte upale mokraćnih puteva. | NO/NE | YES/DA |
| I have diabetes, I was treated for alcoholism/Imam šećernu bolest, lečila sam se od alkoholizma. | NO/NE | YES/DA |
| I had gynecological surgeries (removal of the uterus, plastics of the vagina) | NO | YES           |
| Imala sam ginekološke operacije (vađenje materice, plastika vagine). | NE | DA            |
| I had/have urine leakage during sleep/Mokraću sam gubila ili sada gubim u snu. | NO/NE | YES/DA |
| I have urine leakage or have a strong urinary urgency when I wash my hands | NO | YES           |
| Umokrim se ili imam jak nagon na mokrenje kada perem ruke u vodi. | NE | DA            |
| I urinate more than 10 times during 24 hours/Mokrim više od 10 puta u toku 24 sata. | NO/NE | YES/DA |
| It often happens that I have urine leakage by the time I get to the toilet | NO | YES           |
| Često mi se dešava da se umokrim pre nego što stignem do toaleta. | NE | DA            |

Legend: SS - stress score, US - urgency score/Legenda: SS - stres skor, US - urgency score
It included patients who sought surgical treatment for POP grade 2 to 4 and coexisting symptomatic SUI. Patients with POP grade 1, patients with urgent or mixed incontinence, as well as patients with previous small pelvic surgeries were excluded from the research. Following a verbal explanation, detailed gynecological, obstetrical and social medical data were taken, and physical examination was performed. The Pelvic Organ Prolapse-Quantification (POP-Q) system was used to determine the degree of genital prolapse [15].

All patients completed a questionnaire to determine the “stress and urge” score, which has been used at our Clinic for many years, including 18 specific questions related to the etiology and symptoms of involuntary urinary leakage (Table 1). The first nine questions are related to stress, while the other nine are related to the urgency urinary incontinence. The questionnaire was a closed one where patients answered the questions with YES or NO. The score for stress and UUI cannot be higher than nine. If the stress score equals or is higher than 4 and the urge score is less than 4, the findings are in favor of stress incontinence. Tests for objectification of UI were performed as well. All patients underwent vaginal hysterectomy with anterior and posterior colporrhaphy.

Patients also completed the Urinary Distress Inventory-6 (UDI-6) and Urinary Impact Questionnaire-7 (UIQ-7) during the follow-up examination, a year after the surgery. The UDI-6 assesses the lower urinary tract dysfunctions. It contains six questions intended to measure the severity of symptoms of UI grade 1 (not at all) to 4 (quite a bit). The UIQ-7 contains 7 questions intended to investigate the impact of UI on all social spheres in women: household and leisure activities, physical recreation, bus or car travel lasting longer than 30 minutes, taking part in social events, emotional health and feeling of frustration. The answers also ranged from 0 (not at all) to 3 (severe). The score of both questionnaires was calculated by applying the appropriate formula. Percentage, mean value and standard deviation were used in data processing.

Results

A total of 50 patients were included in the study. The general characteristics of patients are present-

| Table 2. Characteristics of the study sample |
|---------------------------------------------|
| **Age (mean ± standard deviation - SD)/Godine (srednja vrednost ± standardna devijacija):** | 61.08 ± 7.87 |
| < 50 years (godina) | 6% |
| 50 - 70 | 80% |
| > 70 | 14% |
| **Number of childbirths/Broj porođaja:** | |
| 1 | 18% |
| 2 | 58% |
| 3 | 14% |
| > 4 | 10% |
| **Infant birth weight (grams) (mean ± SD):** | 3672.6 ± 5613.96 |
| < 2500 g | 1.92% |
| 2500 - 3499 g | 37.50% |
| 3500 - 4499 g | 58.66% |
| > 4500 g | 1.92% |
| **Body Mass Index (mean ± SD)/Indeks telesne mase (srednja vrednost ± standardna devijacija):** | 27.15 ± 2.77 |
| 18.5 - 24.9 | 22% |
| 25 - 29.9 | 52% |
| >30 | 26% |
| **Hormonal status/Hormonski status:** | |
| Premenopausal/Premenopauza | 12% |
| Postmenopausal/Postmenopauza | 88% |
| **History of chronic cough (Yes)/Hronični kašalj u anamnezi (Da):** | 28% |
| **Pelvic organ prolapse preoperatively/Stepen genitalnog spada preoperativno:** | |
| Grade 2/Stepen 2 | 38% |
| Grade 3/Stepen 3 | 40% |
| Grade 4/Stepen 4 | 22% |
| **Anatomical recurrence at 1-year (POP-Q > grade 1):** | 30% |
| **Recidiv spada godinu dana posle operacije (POP-Q> stepen 1):** | |
| **Anatomical recurrence in anterior compartment at 1 year (POP-Q > grade 1):** | 40% |
| **UDI-6 at 1 year postoperatively/UDI-6 godinu dana posle operacije:** | 29.0 ± 10.8 |
| **UIQ-7 at 1 year postoperatively/UIQ-7 godinu dana posle operacije:** | 3.7 ± 13.6 |

Legend: UDI-6 – Urinary distress inventory, UIQ-7 – Urinary Impact Questionnaire, POP-Q – Pelvic organ prolapse-quantification
ed in Table 2. The average age of the examinees was 61 years. The patients’ age of 50 – 70 years accounted for 80% of the sample. On average, they gave birth to two children, whose mean birth weight was 3.672 grams. The patients’ body weight ranged from 59 to 90 kg (mean - 71.4 kg). The average body mass index was 27.15, with 52% of overweight and 26% of obese patients. Eighty-eight percent of patients were postmenopausal; the average duration of menopause was 9.58 years.

According to the POP-Q classification, 38% of patients had POP grade 2, 40% had POP grade 3, while 22% had POP grade 4. One year after surgery, 40% of patients presented with a recurrence of the cystocele: 15 patients (30%) had cystocele stage 2, two patients (4%) had a cystoce stage 3 and one patient had cystocele stage 4.

A year after the surgery, the average value of UDI-6 questionnaire was 29.0 +/- 10.8, while the average value of UIQ-7 questionnaire was 3.7 +/- 16.3. After the surgery, 6 patients (12%) had persistent SUI and 4 patients (8%) had UUI. Among patients with persistent SUI, 4 patients reported recurrent symptoms and two patients reported pronounced symptoms of SUI and reoperation was required (Table 2).

Discussion

The treatment of SUI and POP may be conservative (behavior and lifestyle modifications, pelvic floor muscle exercises, bladder training techniques and use of pessary and medications) and surgical [16, 17]. The treatment depends on the severity of the symptoms and the grade of genital descent. If the symptoms are less pronounced, it is recommended to start with conservative methods. However, the choice of the therapeutic method depends on what the patient wants and expects from the treatment, her commitment to carrying out the prescribed therapy, accepting the risk of side effects and complications of therapy, as well as her financial situation. If a woman has followed all the conservative treatment methods, but still has symptoms of SUI and POP, in case of a higher grade of POP or if a woman does not want to apply the recommended conservative treatment methods, surgical treatment is proposed [16]. Surgical treatment of POP and SUI can be vaginal or abdominal. Vaginal operations are preferred at our Clinic.

Some authors recommend that if the SUI and POP problem is treated vaginally, fascial repair or mesh reinforcement should be combined with a midurethral sling, because the SUI persistence rate is lower than when only the prolapse operation is performed [9, 12]. If only prolapse surgery without continence surgery is performed in women with SUI and POP, the persistent urinary incontinence rate is 36 – 71%, on average 63% [9]. In his study, Borstad et al. found that 27% of women recover from SUI after just a prolapse operation [18]. Lensen found that 38% of women with symptomatic SUI are cured after just a prolapse surgery [19]. If a woman has both a prolapse surgery and continence surgery, then the percentage of postoperative SUI is up to 40%, on average 11% [9]. However, the fact which cannot be ignored is that after the combination of prolapse and incontinence surgery, negative effects such as overactive bladder symptoms, obstructive voiding and complications, are more common, can call into question the outcome of this surgical procedure [12].

Our research has shown that the quality of life improves after the surgical treatment of POP and SUI, which is in accordance with the results of other authors [12]. Anatomical recurrence at one year after vaginal hysterectomy was 30%, while anatomical recurrence in anterior compartment was 40%, which is in line with the results of other authors [20, 21]. According to Lensen’s research, anatomical recurrence in the anterior compartment protects women against SUI postoperatively [19].

In our research, 20% of women had a UI problem a year after the surgery, 12% had a persistent SUI, while 8% of patients developed urgent incontinence. However, this problem was pronounced and affecting the quality of life only in three patients. In two patients with SUI the condition required a new incontinence surgery. According to the research of Harvie et al., for women with POP, coexisting UUI and fecal incontinence have a greater impact on the quality of life than coexisting SUI [22].

Our results may be explained by the fact that our patients think of SUI problem as an integral part of life and tolerate symptoms due to the fear of reoperation, but also because of a poor financial situation. We are a poor society and, in most cases, in women with genital descent and SUI, we try to solve the problem with a classical operation. In case of SUI persistence after the surgery, we recommend corrective continence surgery.

Conclusion

This research has shown that the classical surgical treatment of genital organ descent leads to improvement in the quality of life of patients with pelvic organ prolapse and stress urinary incontinence. In societies with lower standard of living, like ours, classic vaginal hysterectomy with anterior colporrhaphy is still the treatment of choice for patients with pelvic organ prolapse and stress urinary incontinence. More expensive methods for pelvic organ prolapse and stress urinary incontinence correction are considered in patients where the desired results were not achieved by the primary operation.
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