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Research Article

EFFICACY AND SAFETY OF ORGAN-PRESERVING TECHNIQUES FOR THE TREATMENT OF GENITAL PROLAPSE

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ABSTRACT

In recent years, prolapse of the pelvic organs – genital prolapse (GP) is considered one of the pressing problems of modern gynecology. The prevalence of GP among women ranges from 2 to 77% and does not tend to decrease. According to WHO, in 2030, GP may be observed in 63 million women. [1,2,3]. In world statistics, the number of cases of genital prolapse varies widely and is multifactorial.

KEYWORDS

Efficacy and Safety, Organ-Preserving.

INTRODUCTION

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In recent years, prolapse of the pelvic organs – genital prolapse (GP) is considered one of the pressing problems of modern gynecology. The prevalence of GP among women ranges from 2 to 77% and does not tend to decrease. According to WHO, in 2030, GP may be observed in 63 million women. [1,2,3]. In world statistics, the number of cases of genital prolapse varies widely and is multifactorial.

All over the world, special attention is currently paid to research in the field of obstetrics and gynecology aimed at protecting reproductive health: early detection, treatment and prevention of reproductive system diseases. Epidemiological studies show that GP occurs from 2.9% to 53% among women worldwide [4,5]. The presence of such a wide range is due to the absence of symptoms in the initial stages of the disease and late referral of patients to a doctor. Studies show that the incidence of PG among women is 32-64%, urinary incontinence - 48-72% [6,7], fecal incontinence - 0.5-28% [8,9]. GP begins at a young reproductive age, in many cases immediately after childbirth, and is often asymptomatic, which leads to untimely correction and exacerbation of GP [3,87]. It is known that GP is a slowly developing disease, and the period before strong manifestation of clinical signs can be 10-15 years or more. [10,11,12,13]. As a result, the peak incidence occurs at 50-60 years of age, with the incidence rate being 77% [14,15].

Surgical treatment is recognized worldwide as the only highly effective and long-term method for correcting severe forms of vaginal walls and miscarriage, but the economic side of this method is not sufficiently covered. When the authors of one such study calculated in 2005 1 surgical intervention performed in Germany, France and Great Britain to eliminate tap, per 1000 women, the annual costs of treating this disease in these countries were 144, 83 and 81 million euros, respectively [16,17]. Such economic costs require an assessment of surgical methods of pelvic floor reconstruction not only in terms of efficiency and safety, but also from the economic side. Another important problem is the creation of standardized surgical procedures that young specialists can master in the short term. A survey of University of Texas Southeastern Medical Center (Dallas, TX) obstetrics and gynecology residency graduates from 1997 to 2006 found a lack of knowledge and skills in the diagnosis and treatment of pelvic incontinence. In residency and independent practice, anterior/white

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colporrhaphy was the most commonly performed procedure for genital prolapse [18,11].

The search for effective and safe methods of correction of genital prolapse and urinary incontinence continues. The number of modern technical methods of elimination of taps is growing [18,19], however, pelvic floor insufficiency, especially the lack of relatively reliable criteria for choosing optimal methods of management of patients with concomitant pathologies, requires the study and development of specific algorithms. The search for new surgical methods of correction is considered promising.

The aim of our study is to improve surgical interventions to improve the quality of life of women with genital prolapse.

The study was conducted in 2020-2023 at Tashkent City Maternity Complex No. 8 and the private medical clinic CityMed. According to the objectives of the study, we divided all 349 women into 3 groups. The main group consisted of 274 women, who were divided into: Group 1 - women with genital prolapse who underwent transurethral implantation of a midurethral ligament (TVT), n=133. Group 2 - women with stress urinary incontinence who underwent a modified U-shaped suture Kelly procedure, n=141. Group 3 (control group) - conditionally healthy women of reproductive age, n = 75.

Methods

The study used general clinical, biochemical, standardized questionnaire and questionnaire, instrumental and statistical methods. All women were asked to fill out the electronic PFDI-20 questionnaire as part of the clinical trial. A prospective cross-sectional study with an analytical approach was used.

The exact number of women with urinary incontinence in Uzbekistan is unknown. The lack of this data prompted us to conduct a study in our country to determine the prevalence, types and characteristics of urinary incontinence in women, and to analyze risk factors. Although many studies have provided data from around the world, we believe that this study was the first to address the user interface issue in Uzbekistan. Differences in culture, eating habits, climate and social relationships may cause women in Uzbekistan to have different outcomes than other women in different parts of the world.

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The questionnaire is created and distributed using the domain https://prolaps-survey.uz/, http://urino-survey.uz, https://surgery-survey.uz this is a secure web platform for creating and managing surveys and online databases, distributed among respondents via Telegram channels. The questionnaires were filled out by women independently after signing a conscious voluntary consent. This domain https://prolaps-survey.uz questionnaire analysis/PFID-20 and the use of this questionnaire to study the prevalence of the problem among women in Uzbekistan.

The domain http://urino-survey.uz was used by women who sought surgical treatment with complaints about the pelvic organs. This domain https://surgery-survey.uz was used to assess the condition of women for 10 years after surgery.

An electronic survey was conducted among 517 women aged 20 to 50 years [mean age 34.8±1.3 years]. Women answered the PFID-20 survey anonymously from their mobile devices. Results were summarized and calculated according to the arithmetic mean of the questionnaire key, with specificity of 0.86, $R < 0.001$, sensitivity of 1.48, $R < 0.0001$, and standardized response of 1.09, $R < 0.0001$.

In a survey to determine the severity of genital prolapse, it was found that 343 [66.5%] respondents had a score of 70-150 points - mild prolapse, 33 [6.4%] had a score of >160-220 points - moderate prolapse, and 141 [27.1%] had a score of >220-300 points - severe prolapse [normal PFID index >70]. Therefore, every 5 women surveyed had moderate signs of organ dysfunction with active detection (table 1).

Table 1
Genital prolapse score - POPDI-6 by PFDI- 20 questionnaire, %

№	Complaints/points	0		1		2		3		4	
		abs	%	abs	%	abs	%	abs	%	abs	%
1	Is it common to have a feeling of pressure in the lower abdomen?	298	57,6	64	12,4	97	18,8	48	9,3	10	1,9
2	Do you usually feel heaviness in your pelvic area?	293	56,7	80	15,5	80	15,5	45	8,7	19	3,7
3	Does what you see come out of the vagina?	283	54,7	62	12	74	14,3	62	12	36	7

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4	Does the vagina or part of the rectum need to be inserted inside to completely empty the bowel?	396	76,6	41	7,9	48	9,3	27	5,2	5	1
5	Does the vagina or part of the rectum need to be inserted inward to completely empty the bladder?	426	82,4	38	7,4	31	6	15	2,9	7	1,4
6	Does it usually feel like the bladder is not emptied completely?	269	52%	104	20,1%	94	18,2%	31	6%	19	3,7%

The main urogynecological pathological symptoms were: stress urinary incontinence [59.2%], frequent urination [53.2%], urinary incontinence [48.7%], pain or discomfort in the lower abdomen or genital area [51.6%] and, most rarely, difficulty emptying the bladder [19.9%] [Table 2]. Before contacting us, 37 [7.2%] women had recurrent vaginal and uterine wall prolapse after surgery, and 16 [3.1%] had a history of hysterectomy. The symptom of PFD dysfunction, measured by the pfdi-20 scale, did not differ significantly in different age categories.

Table 2
Assessment of urinary tract dysfunction - UDI-6 according to the PFDI-20 questionnaire %,

№	Complaints/points	0		1		2		3		4	
		abs	%	abs	%	abs	%	abs	%	abs	%
1	Do you have frequent urges to urinate?	242	46,8	112	21,7	82	15,9	54	10,4	27	5,2
2	Do you have urinary incontinence due to strong urges to urinate?	265	51,3	101	19,5	84	16,2	30	5,8	37	7,2
3	Are you unable to hold your urine when coughing, sneezing or laughing?	211	40,8	115	22,2	110	21,3	44	8,5	37	7,2
4	Do you lose small amounts of urine (drops)?	344	66,5	65	12,6	59	11,4	23	4,4	26	5,0

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5	Do you have trouble emptying your bladder?	414	80,1	42	8,1	36	7,0	12	2,3	13	2,5
6	Do you feel pain or discomfort in your lower abdomen or genitals?	250	48,4	115	22,2	101	19,5	34	6,6	17	3,3

It should be noted that during the examination, weakness of the pelvic organs, stress urinary incontinence, accompanied by the worst condition of the pelvic floor, is noted. Pain syndrome often affects the quality of life of women and most often at a young age.

Since GP is a disease that does not threaten the life of a woman, the main topic of study for specialists is the impact of its symptoms on the quality of life. The main method for determining the quality of life is a standardized questionnaire using specialized questionnaires. The Task Floor Distress Inventory, widely used by the International Association of Urologists, consists of 20 questions (short form). The Questionnaire for Assessing the Impact of Pelvic Organ Prolapse on Quality of Life (Questionnaire-7 - PFIQ-7) reveals the impact of various pelvic floor dysfunctions on the psychological and social component of the patient's quality of life.

In the course of our study, a technique of modified Kelly surgical method with U-shaped suture for the treatment of genital prolapse was developed. Under aseptic conditions, the urinary bladder is catheterized using a Foley catheter. The anterior vaginal wall is opened, and the anterior edge of the cervical vagina is held with axial clamps. The oval tissue is removed by sharp and blunt means in anhydrous manner 0.5 cm below the external opening of the urethra. The edges of the wound are separated from the main tissue on all sides by 1-2 cm. After separating the urinary sac from the cervix, the bladder neck and urethra are separated and sutured. A loop U-shaped suture is applied to the bladder-urethral segment, and the internal sphincter and the bladder neck are brought together. As a result, the urethra is raised upward, which eliminates the main symptoms of the disease. After this, the excess vaginal wall is removed, the fascia is sutured, and the integrity of the vagina is restored using a continuous or interrupted suture (fig.1).

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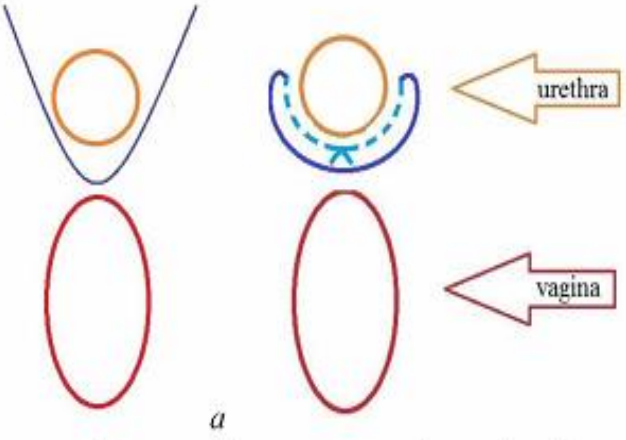

Figure 1. Kelly modified surgical technique with U-shaped sutures

The relatively low incidence of postoperative complications and significant positive dynamics of quality of life indicators in patients after the surgical method we proposed, performed due to cystocele and urinary incontinence, is explained by the fact that the effectiveness of the surgical method we proposed is 96.3% compared to 87-90% effectiveness in studies of recent years.

In conclusion, the design differences and advantages of the proposed modified U-shaped weld from the prototype are as follows:

1. No additional economic costs, unlike expensive suburethral synthetic tapes;

2. In case of urinary incontinence, when cystocele is not observed, only the application of a U-shaped suture;

3. The modified Kelly surgical method with U-shaped suture is considered a less traumatic method;

4. No additional costs are required in the postoperative period;

5. Durable method requiring little material;

6. Complications such as the body's inability to accept the synthetic foreign tape are not observed.

Thus, the proposed modified Kelly surgical method with U-shaped suture allows to increase the reliability, efficiency and quality of treatment of patients who have undergone surgery.

To evaluate the effectiveness of treatment in women, we examined 141 patients who

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underwent a modified Kelly procedure for stress urinary incontinence. The average age of the subjects was 37.8±0.33 years. A set of specialized questionnaires PFIQ-7 [Questionnaire of Task Floor Impact questionnaire-7], PFDI-20 [Task Floor distress inventory-20] proposed by the International Association of Urogynecology was used to assess the quality of life of patients. Quality of life was assessed before surgery and at 1, 6, 12, 18 months after surgery, and later - once a year. The conditions of postoperative observation of patients vary from 6 to 36 months [on average, 18 months]. In our proposed operation, after separating the oval flap without a hydropreparation, the mucous membrane of the anterior vaginal wall is retreated by 2-3 cm from the external opening of the urethra, both blunt and sharp, the edges of the wound are separated by 1-2 cm on each side of the lower fascia. After separation of the bladder in the ureterourethral segment, a U-shaped suture is applied under control, bringing the internal sphincter and bladder neck together. As a result, the urethra rises upward and the main symptoms of the disease are eliminated. After this, the fascia is sutured, excess vagina is removed and its integrity is restored using the continuous or interrupted suture technique. The patients we examined had a higher BMI level with an average value of 34.54±0.44. It was also found that 30% had high physical activity and 50% of respondents led a sedentary lifestyle, which increases the likelihood of developing pelvic floor muscle insufficiency in the future. Parity analysis showed that 72% of women had 4 or more births, of which 56% had a birth weight of 5000 g to 56%. Colitis, a common complaint of women with rectocele, was detected in 26% of women during the examination. We were interested in conducting a survey on the nutrition of this category of women. We found that 90% of women consume enough fruits and vegetables, while 80% eat fast food, which affects BMI, thereby increasing abdominal pressure, increasing the load on the pelvic floor muscles. The results of the quality of life at different periods after surgery, the above-mentioned PFDI-20 and PFIQ-7 questionnaires showed the following characteristics. By the end of the 1st month after surgery, both indicators significantly improved, reaching a more accurate value by the 6th month. Subsequently, according to both examinations, achieved by the 6th month, the values of the quality of life indicators did not undergo significant changes and remained stable at this

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level throughout the postoperative observation period (fig.2).

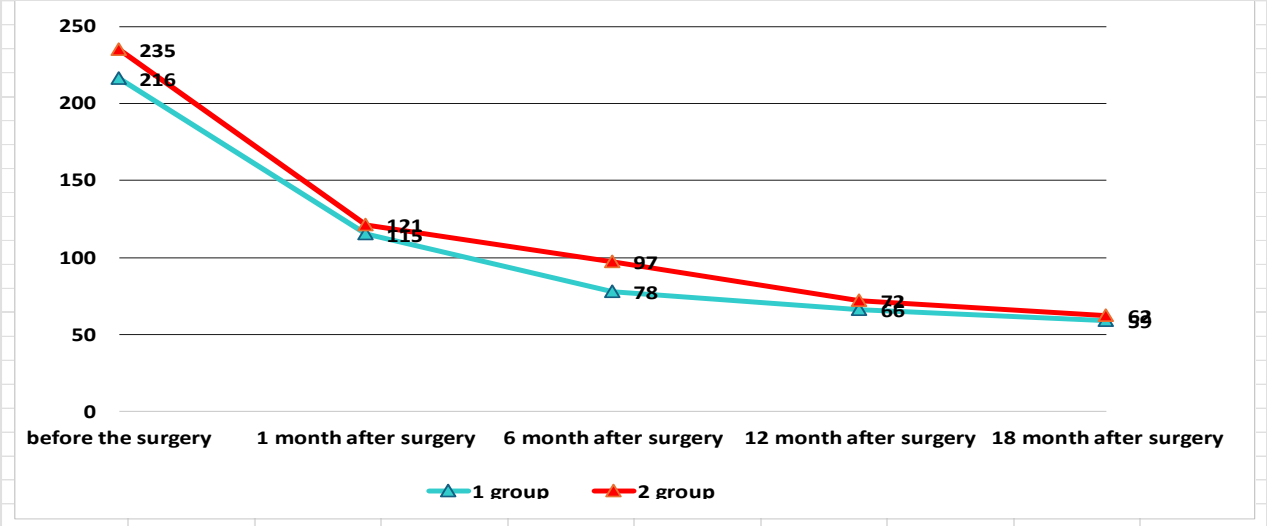

Figure 2. Dynamics of PFDI-20 questionnaire indicators, in points.

Thus, the pronounced positive dynamics of the quality of life of patients after the proposed surgical treatment of cystocele, urinary incontinence, and the relatively low incidence of postoperative complications can be explained by the high efficiency of urinary incontinence treatment in our study. Compared with the data of many studies in recent years, according to which the success of operations ranges from 87 to 95%, the efficiency of surgical treatment of urinary incontinence in our study was 96.3%.

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