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### Alternative combined surgical treatment of severe pelvic organ prolapsed

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#### Abstract

**Objective:** This study aimed to evaluate the rate of satisfactory outcomes of surgery on women with severe genital prolapse using fast-track surgery including an improved method of combined surgical treatment.

**Materials and methods:** The study included 60 women with severe forms of pelvic organ prolapse. The average age of patients with POP-Q II was 56.4 (20 women from 52 to 63), those with POP-Q III-59.4 (40 patients from 54 to 68).

**Results:** A new method of combination surgery for severe forms of pelvic organ prolapse using abdominal mesh and native tissues was developed. The following parameters were evaluated as objective criteria for effectiveness of treatment: duration of surgery, amount of blood loss, postoperative complications, time until and forms of pelvic organ prolapse recurrence: their number, variety, relapse stage, time of relapse. The average duration of surgery was 120 min. The average blood loss was 200 ml. There were 6 cases of early postoperative complications. The rate of relapses was 2%. An analysis of outcomes indicates high effectiveness of treatment and recovery of pelvic organ function. Thus, this method can be recommended for surgical treatment of combined forms of severe genital prolapse.

**Keywords:** Pelvic organ prolapse; Surgical treatment; Meshes

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#### Introduction

Nowadays, pelvic organ prolapse is one of the most pressing gynecologic issues. Over the next 30 years, the prevalence of POP is predicted to increase more than twice. There is quite contradictory information about the prevalence of POP in modern Russian and foreign literature. POP is observed in 15-30% of

women of childbearing age, and the rate increases to 40% in women over 50 [1,2], but only 10-20% of women seek medical care [3,4]. Recent studies have shown that the risk of at least one surgery for genital prolapse in women under the age of 80 is between 6.3% and 19% [5]. Currently, there are no approaches to surgical management that could repair genital prolapse and reduce the incidence of recurrence. About 30% of the operated women

will need one more surgery due to prolapse recurrence [6].

Laparoscopic sacrocolpopexy is considered to be the "gold standard" in repairing apical prolapse. But it is a technically difficult and lengthy operation, which requires the high qualification of an endoscopist surgeon. At the same time, this type of surgical management restores only isolated apical prolapse [7]. This technique is not so effective for repairing cystocele or rectocele. Traditional reconstructive surgery with native tissues (anterior, posterior colpoperineorrhaphy, recovery of levatores) cannot be used in severe forms of genital prolapse (POP-Q II-IV stages) [8,9]. The incidence of pelvic dysfunction recurrence declined due to introduction of new minimally invasive technologies. But new severe specific intra- and postoperative complications have appeared. Vaginal mesh implants can cause severe mesh-associated complications. This problem is becoming more and more pressing. [10-12]. All this dictates the need to develop new methods of surgical treatment and evaluate their effectiveness.

The aim of the study is to evaluate the rate of satisfactory outcomes after surgical management in women with severe genital prolapse using fast-track surgery, which includes an improved method of combined surgical treatment.

## Materials and Methods

The study included 60 women with severe forms of pelvic organ prolapsed who were treated in the gynecological department of Volgograd Clinic Regional Hospital N1 over the period from 2014 to 2017. The objective status of pelvic organs before the operation was evaluated according to the International POP-Q Classification (Pelvic Organ Prolapsed Quantification). Inclusion criteria were prolapse of the uterus combined with cystocele and rectocele according to POP-Q II and POP-Q-III stages. Excluding criteria were light

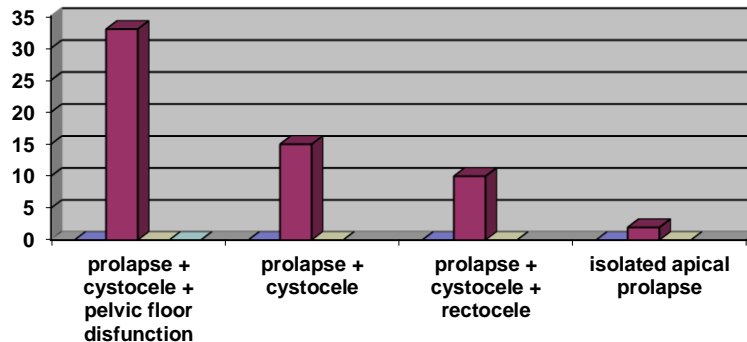
prolapse according to POP-Q-I and complete prolapse according to POP-Q-IV. Satisfaction of women with the quality of life before and after surgical treatment was evaluated with two questionnaires: pelvic organ prolapse-related quality of life and detection urinary disorders. A new method of combined surgical treatment of severe pelvic organ prolapse by using abdominal mesh and native tissues was developed. The surgery is performed in two stages. At the first vaginal stage we performed anterior colporrhaphy with imposition of a purse-string suture on the muscle wall of the bladder using their own tissues. The bladder was fastened with pubocervical fascia. Then posterior colpoperineorrhaphy and repair of levatores was performed. During the second abdominal stage two meshes (Vypro-2 multifilament mesh) were fixed with sutures to the posterior surface of the cervix. We passed the mesh through the sheets of the broad ligament extraperitoneally and fixed it to the aponeurosis. The ligature fixation zone was peritonized since the peritoneum prevents development of complications associated with a foreign body. The following parameters were evaluated as objective criteria of treatment effectiveness: early postoperative complications like hematoma, dehiscence of perineal sutures, skin; voiding problems, relapses of pelvic organ prolapse: their number and variety, relapse stage; time of relapse; the number of points scored by the questionnaires. We followed up women in the postoperative period for 3 months, 1 year and 2 years.

## Results and Discussion

The average age of patients with POP-Q II was 56.4 (20 women from 52 to 63), those with POP-Q III - 59.4 (40 patients from 54 to 68). At the same time, in 33 cases there was a combination of incomplete prolapse of the uterus with formation of cystocele and pelvic floor failure (58%). A combination of apical prolapse and cystocele was the second most common condition (15 cases). The combination of cystocele, rectocele and apical prolapse was

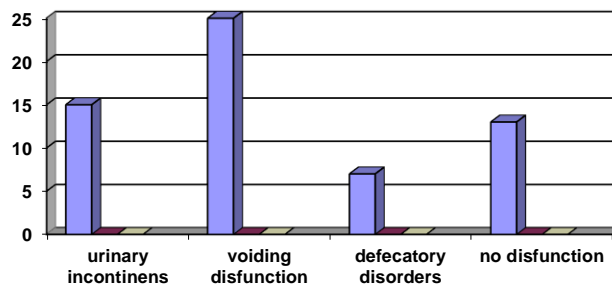
noted in 10 cases (16%) while isolated apical prolapse was observed in only two cases (1%). (Figure1).

**Figure 1:** The types of prolapses.



Only 15 women complained of frequent urination, stress urinary incontinence, "sluggish" urine flow. According to the results of questionnaires, 25 cases experienced voiding dysfunction. In 7 cases there were defecatory disorders. In 13 cases no dysfunction of adjacent organs was noted (Figure 2).

**Figure 2:** Frequency the symptoms in patients.



The duration of surgery ranged from 105 to 140 minutes (in two stages). An additional factor, which increased the time of surgery, was subtotal hysterectomy (if indicated). The average amount of blood loss at the first stage was 50 ml, at the second stage-150 ml. No

intraoperative complications were noted. A satisfactory outcome after surgical management in 3 months time was noted in 96%, in 24 months-in 93%. We had 6 cases of early postoperative complications: 2 of them were hematoma of the cervical stump, and 4 cases-dysfunction of urination (Table 1).

**Table 1:** Early postoperative complications (n=60).

Hematoma of cervical stump	2
Dysfunction of urination	1
	3
Wound dehiscence	0

As for recurrence of prolapse after surgery in 3 cases, there was a reduction of the anterior vaginal wall at the level of the lower third, with retention of bladder and cervix fixation. There were 5 cases of deficient perineum without rectocele development. After 24 months we observed the following results: -three cases of relapse constituting 5%. In 2 cases there was a recurrence of posterior prolapse with formation of rectocele (Table 2). In one case, we noted

recurrence of apical prolapse (POP-Q I). Both cases were caused by behavior disorders in the late postoperative period: defecatory disorder due to uncontrolled constipation, a steep increase in intra-abdominal pressure associated with a weight gain of more than 15 kg (grid separation). In the second case, repeated surgical treatment with fixation of the mesh implant to the cervix was performed.

**Table 2:** Long-term outcomes of surgical treatment (n=60).

	Prolapse of anterior vaginal wall	Cystocele	Rectocele	Prolapse of cervix (POP-Q I)	Deficient perineum
3 months	-	-	2	1	-
12 months	2	-	-	-	2
24 months	1	-	-	-	3
Total	3 (5%)	0	2 (3,3%)	1 (1.6%)	5 (8.3%)

There were no cases of *de novo* dyspareunia.

## Conclusion

The proposed method of surgical management can be applied in various categories of patients, including recurrent genital prolapse, in previously operated patients, patients with various gynecologic morbidities. The proposed method reduces the risk of infectious and hemorrhagic complications. The improved method of surgical treatment of severe genital prolapse is an effective, technically feasible and safe alternative to Sacro colpopexy.

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