

Application of the Pop-Q Classification for Neovaginal Prolapse

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Abstract:

Prolapse of the neovagina after sigmoid colpopoiesis created in patients with congenital aplasia of the vagina is rare. When correcting this condition, the primary concern should be in preserving sexual function and restoring the vaginal axis. The POP-Q classification was used to determine neovaginal prolapse. The use of the POP-Q system before and after surgical treatment has proven to be an objective method for assessing neovaginal prolapse

Keywords: neovaginal prolapse, surgical destructive, pop-q,

At the Necker-Enfants Hospital in Paris (France), the authors followed 26 patients with MRKH syndrome from 1990 to 2005. The diagnosis was made based on clinical examination, normal ovarian hormone values, pelvic ultrasound, and magnetic resonance imaging. SB was performed on 23 patients. Both functional results and complications after surgery were assessed. The average age of the patients was 16 years (from 10.3 to 18.8). Of the 23 patients who underwent surgery, 9 (39%) patients were sexually active in the future. Prolapse of the neovaginal mucosa accounted for 2 cases [1; pp.1107-1111, 6; pp.48-52].

Faehnle-Schiegg I. (2021) conducted a literature review and described a clinical case of a 41-year-old woman with grade IV neovaginal prolapse. As this study has shown, several complex aspects need to be taken into account in neovaginal prolapse after sigmoid colpopoiesis. First of all, an interdisciplinary approach and highly qualified surgeons who are proficient in the procedure, as well as the length of the neovagina, the need to preserve the vascular pedicle [2; pp.81-86, 7; p.79].

The assessment of the general and gynecological status of girls and women was carried out by vaginal examination. The degree of prolapse was also studied using the POP-Q system, which was proposed by ISC (International Continence Society) in 1996 [3; pp.53-55.41; pp.10-17; 4; pp.41-47, 8; pp.107-109]. And in 2002, the Standardization of Terminology Committee developed a more simplified system in which the number of measurement parameters was reduced to 4 definition points, where instead of strictly measuring the dimensions of the system in centimeters, everything is estimated approximately by eye.

To complete this piece of work, we performed retrospective study of 35 case reports. Selection criteria for

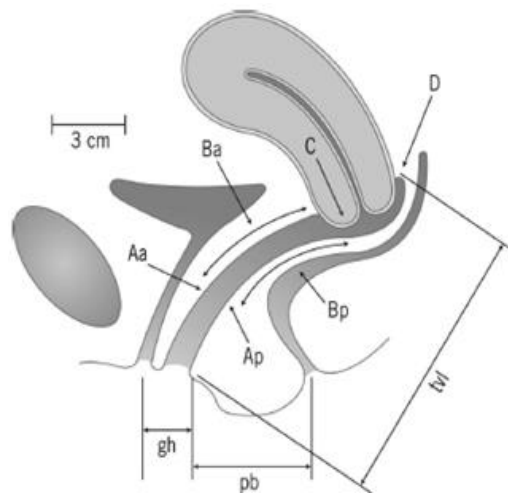
inclusion in the study was neovaginal prolapse after sigmoid colpopoiesis.

Classification of genital prolapse according to the POP-Q system. The degree of prolapse of the neovagina after colpopoiesis from the sigma is detected using the POP-Q system [5; p.10-17]. The POP-Q technique involves establishing the localization of 5 points on the walls of the neovagina up to the upper area of the hymen ring (cm) (Fig. 1, 2; Table 1). A patient with neovagina prolapse is examined with an artificial increase in intra-abdominal pressure, i.e. straining. The name of the points depends on their location in relation to the plane of the hymen (if the point is higher – “-”, if lower – “+”, if the point is parallel to the hymen – “0”). In this case, to classify the required points, expressions such as:

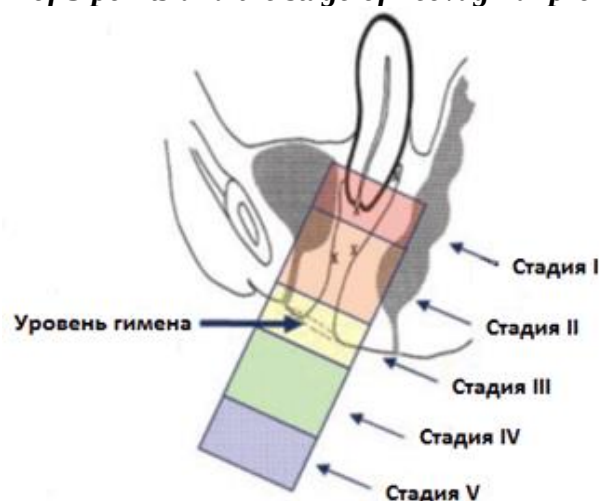
1. Aa is a point on the frontal wall of the official vagina, localized 3 cm from the hymen ring; may be approximately at the level of the urethra or bladder, characterized by the presence of a visible protrusion. Aa-3 cm - in the absence of prolapse, Aa + 3 cm - complete genital prolapse;
2. Ba is the lowest point on the frontal wall of the vagina between the above-mentioned point Aa and the dome of the artificial vagina (C). Ba -3 cm - indicates the absence of prolapse, Ba + x, where x is the length of the vagina observed with complete prolapse of the neovagina;
3. Ap - a point in the central part of the posterior wall of the neovagina, located 3 cm deep from the entrance to it. This point can have values in the range -3 - +3 depending on the distance to the genital slit;
4. Bp is the farthest point from the entrance part of the neovagina, localized on its posterior wall, between the previous point and point D. A Bp value of -3 is set when there are no signs of prolapse, and a positive Bp equal to the length of the vagina is set when the neovagina is completely prolapsed;
5. C - dome of neovagina;

Also other options:

1. tvl (length of the artificial vagina) - the segment between the edge of the hymen and point c;
2. gh (inlet of the vagina) - the segment between the external opening of the urethra and the posterior edge of the hymen;
3. pb (tendon center of the perineum) - a segment from the posterior edge of the hymen to the anus.



Rice. 1. Localization of 5 points and the stage of neovaginal prolapse using POP-Q.



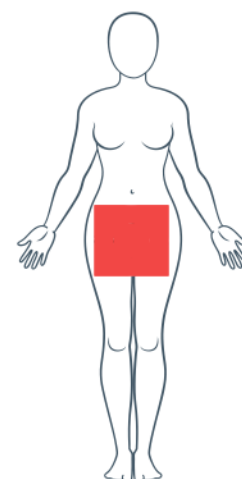
Rice. 2. Stages of prolapse according to the POP-Q system

Table 1

Классификация пролапса тазовых органов по системе POP-Q

1

Стадия	Признаки
0	Пролапса нет. Точки Aa, Ap, Ba, Br — все —3 см, C и D — имеют значение со знаком минус
I	Наиболее выпадающая часть стенки влагалища не доходит до гимена на 1 см
II	Наиболее выпадающая часть стенки влагалища расположена на 1 см проксимальнее или дистальнее гимена (≥ -1 см, но $\leq +1$ см)
III	Наиболее выпадающая точка более чем на 1 см дистальнее гимена, при этом общая длина влагалища tvl уменьшается не более чем на 2 см ($> +1$ см, но $< +[tvl - 2]$ см)
IV	Полное выпадение. Наиболее дистальная часть пролапса выступает более чем на 1 см от гимена, а общая длина влагалища, уменьшается более чем на 2 см ($\geq +[tvl - 2]$ см)



In this case, the measurement was made in centimeters from the stump of the neovagina to the plane of the hymenal ring, during which patients in this category performed straining. The location of the points allowed us to detect prolapse of the walls of the artificial vagina, which was marked by signs (+) and (-), where (+) indicated the location of the neovagina wall above the hymen, and (-) - below. Our data obtained as a result of the examination included 22 (62.86%) patients with degree II prolapse; III degree – 6 (17.14%) observations and IV degree – 7 (20.00%) observations. And according to the type of prolapse - prolapse of the artificial vaginal mucosa occurred in 28 (80%) patients and apical prolapse - in 7 (20%) women (Figure 2.2). One of the main methods for determining the degree of neovaginal prolapse before surgical correction was the POP-Q system (Table 2).

table 2
POP-Q value before surgery

Показатель POP-Q, см	Me [Q25%–Q75%]	Q25%	Q75%
Aa	1,6±0,12	1,2	2,0
Ba	2,0	1,5	2,5
Ap	-0,8	-1,1	-0,4
Bp	-0,4	-0,6	-0,2
C	-1,2	-1,7	-0,6
Tvl	7,8	6,5	9,0
Gh	3,8	3,1	4,5
Pb	2,4	2,1	2,8

It follows from the table that the degree of neovaginal prolapse upon admission varied from II to IV degrees (Table 3).

Table 3

Degrees of prolapse of the artificial vagina according to the POP-Q system (n=35).

Пролапс артифициального влагалища	abs	M (%)	m	P
II степень	22	62,86	8,17	χ^2 = 13,771; p = 0,001
III степень	6	17,14	6,37	
IV степень	7	20,00	6,76	
Всего	35	100,00	0,00	

In accordance with the studies, 2 types of prolapse were established: prolapse of the neovaginal mucosa in 28 (80%) patients and apical prolapse of the neovagina in 7 (20%) patients.

The average age of the patients studied was 30 years $\pm$ 1.68, and the age range ranged from 17 to 40 years and pathology was often detected in the age group from 21 to 30 years (Fig. 3).

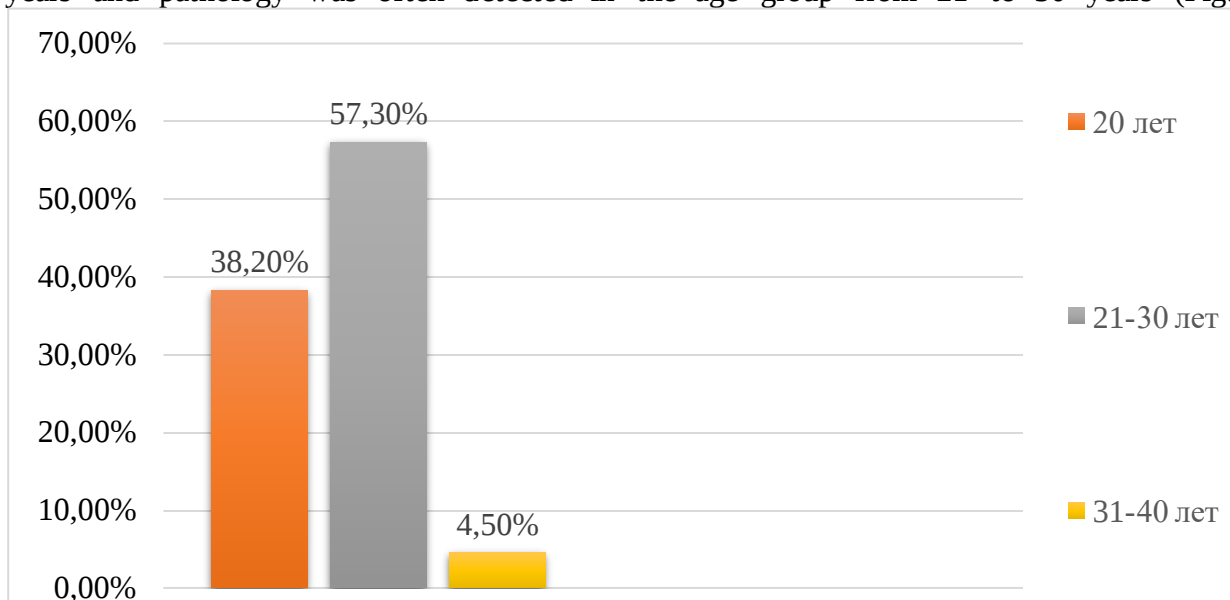


Рис. 3. Возрастной диапазон исследованных больных, %.

It has been established that surgery for aplasia of the vagina and uterus is most often performed at the age of about 30 years due to late presentation. This indicates the low medical culture of our population and the insufficient work of primary health care, when neither parents nor the girls themselves go to the doctor about the absence of menstruation, and in most cases they go only after marriage due to the impossibility of sexual relations.

Upon admission with neovaginal prolapse, 35 patients noted a feeling of a foreign body and a feeling of discomfort. For both mucosal prolapse and apical prolapse, most patients had the same complaints. Dyspareunia occurred in 10 (28.57%); copious mucous discharge in 6 (17.1%); foreign body sensation in 28 (80%) and in 11 (31.43%) cases there were complaints of heaviness in the lower abdomen. Pain during sexual intercourse was noted mainly by patients with apical prolapse than by patients with mucosal prolapse. This condition has been associated with the fact that patients are less sexually active.

Etiologically significant causes of artificial vaginal prolapse among the examined patients: idiopathic prolapse in 12 (34%), heavy physical activity currently or in the past in 10 (29%), chronic constipation in 9 (26%) and chronic cough in 5 (11).)%

When assessing neovaginal prolapse using the POP-Q system, we found positive dynamics already 1 month after surgical treatment. All indicators returned to normal and had a positive result, which indicated the correct tactics of surgical treatment. Further re-examination after 6, 12 or more months

showed that the POP-Q system data did not change statistically (Fig. 4).

Признак	До операции n=35	Через 1 мес.	p	Через 6 мес. n=35	p	Через 12 мес. n=35	p	Более чем 12 мес. n=35	p
Аа, см	1,4	-2,5	< 0,05	-2,4	> 0,05	-2,4	> 0,05	-2,3	> 0,05
Ва, см	1,8	-2,8	< 0,05	-2,7	> 0,05	-2,7	> 0,05	-2,6	> 0,05
Ар, см	-0,6	-2,6	< 0,05	-2,6	> 0,05	-2,6	> 0,05	-2,5	> 0,05
Вр, см	-0,2	-2,8	< 0,05	-2,7	> 0,05	-2,6	> 0,05	-2,6	> 0,05
С, см	-1,1	-4,6	< 0,05	-4,5	> 0,05	-4,4	> 0,05	-4,3	> 0,05
Д, см	7,3	7,1	< 0,05	7,1	> 0,05	7,1	> 0,05	-4,6	> 0,05
tvL, см	3,8	3,2	< 0,05	3,2	> 0,05	3,2	> 0,05	7,1	> 0,05
gh, см	2,4	2,5	< 0,05	2,6	> 0,05	2,4	> 0,05	3,1	> 0,05
pb, см	1,4	-2,5	< 0,05	-2,4	> 0,05	-2,4	> 0,05	2,4	> 0,05

Rice. 4. Change in the manifestation of the disease according to the POP-Q system before and after surgery

It follows from this that the use of the POP-Q system before and after surgical treatment has proven to be an evaluative objective method for neovaginal prolapse in patients after sigmoid colpopoiesis. In addition to being satisfied with their condition after surgery, the patients felt well, had no complaints and noted an improvement in their quality of life

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