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DIAGNOSTICS OF COMPLICATIONS OF PREVALENT APPENDICULAR PERITONITIS IN GIRLS

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Abstract: ***After the operation for gangrenous - perforated appendicitis, miscarriage occurs in 11%, infertility in 62% of cases. 154 girls aged 3 to 15 years were examined. For the purpose of diagnosis, a complex of examinations was carried out: collection of anamnesis data, analysis of menstrual and generative functions, bimanual examination, colposcopy, microbiological examination of the contents of the cervical canal and vagina, polymerase chain reaction to reveal sexually transmitted diseases, assessment of the functional state of the ovaries, examination of the sexual partner , hormonal examination, ultrasonic examination of small pelvis organs and thyroid gland, examination of the mammary glands. The developed algorithm makes it possible to carry out timely diagnosis and treatment of complications of reproductive function in girls after suffering from prevalent appendicular peritonitis.***

Keywords: girls, prevalent appendicular peritonitis, reproductive function

Relevance. It is known that genital and extragenital diseases undergone in childhood are a favourable factor for the development of many gynecological diseases in an adult women. Acute and chronic inflammations of the genitals, especially of the tallopian tubes(20%) are of essential significance among female infertility causes. In about 40-85% of cases, the cause of this is the so-called tubal-peritoneal factor developed after the acute and chronic inflammatory process of uterine appendages, prior operations in the area of the small pelvis and adjacent abdominal organs. The tubal-peritoneal factor is primarily associated with inflammatory changes, the formation of adhesions in the small pelvis cavity, accompanied by impaired patency and functional viability of the fallopian tubes. And even after the surgical

removal of the adhesive process in the peritubular space and the restoration of permeability of the fallopian tubes, pregnancy occurs only in 30% of cases. It is caused by recurrence of adhesive formation making 80-90% [1,3,5,7,9] according to the data of various authors.

Acute peritonitis is one of the most serious complications caused by the diseases of the abdominal organs. Acute destructive appendicitis takes the first place among the causes of acute peritonitis. In this case, the girls' organs of small pelvis, the uterus and its appendages are also involved in the pathological process. An increase in incidence of appendicitis, statistically coincides with the second phase of puberty, in which all sections of the reproductive system are highly susceptible to pathological effects, that complicates the problem furthermore. Inflammation of the internal genital organs also leads to the disruption of menstrual activity. In this case, the central section, which regulates menstruation, is rarely involved in the pathological process. Menstrual irregularitie during puberty (irregular menstruation, hypomenstrual syndrome, secondary amenorrhea) more often occur after catarrhal appendicitis (83%), and less often in gangrenous and gangrenous-perforated appendicitis (70%). The results of the analysis of gynecological diseases of women who underwent appendectomy in childhood, revealed chronic adnexitis (17%) menstrual irregularities (39%), primary infertility (25,4%), complicated course of pregnancy (33,7%), and childbirth (30,6%) that indicated a high rate compared to this group of the population. After surgery for gangrenous - perforated appendicitis, miscarriage occurs in 11%, infertility in 62% of cases [2, 4, 6, 9, 10].

The purpose of the study: the aim of the research is to develop and put into practice an algorithm for monitoring the activity of the reproductive system in girls and young women who underwent prevalent appendicular (PAP) peritonitis in childhood.

Materials and research methods: 154 women, who had undergone widespread appendicullar peritonitis at the age of 3 to 15 years and had been operated in the 2nd Clinic of Samarkand State Medical Institute, were examined. During the operation, phlegmonous appendicitis was diagnosed in 3 (1,9%) patients, gangrenous appendicitis in 19 (12,4%) and gangrenous perforated appendicitis in 74 (85,7%). Their distribution according to prevalence of peritonitis was the following: diffuse peritonitis was identified in 82 (53,2%) prevalent peritonitis in 72 (46,8%) patients.

Patients were discharged in satisfactory condition and were followed up in a dispensary.

All of those patients who had undergone PAP in their childhood were performed a complex of clinical-laboratory-instrumental examination for diagnostic aim which included: Careful collection of anamnestic data, analysis of menstrual and generative function, bimanual examination, colposcopy, microbiological examination of contents from the cervical canal and vagina, polymerase-chain reaction to reveal sexually transmitted diseases, assessment of the functional condition of the ovaries, hormonal examination, ultrasonic examination (US) of small pelvis organs and thyroid gland, examination of mammary glands.

Of particular importance in the evaluation of reproductive function was the condition of the menstrual cycle in the patients examined. We have determined the degree of sexual development of patients in both groups. According to the period of sexual development, the examined patients were divided into 2 age categories - 12-15 years, as well as 16 years and older.

The assessment of sexual development included the degree of development of the mammary glands (Ma), the hair-covering on the pubic (P) and axillary (Ax) areas, the terms of the first menstruation (Me) and was calculated by the formula: Max + Px + Axx + Mex.
The results of the study were statistically processed using a software package MicrosoftOffice Excel-2012 based on built-in functions.

Results and discussion: in the acute period before the operation menarche was observed in 26 (16,9%) girls, and the operation could no longer affect the terms of appearance of the first menstruation in these patients, therefore their data were not taken into account in the analysis of the effect of undergone peritonitis on the formation of the menstrual cycle.

In patients most often (63,0%) menarche occurred at the age of 13-14 years, but in case of disturbance of reproductive function menstruation is delated. By the age of 12, the first menstruation was noted in 11,1% of cases in the group, by the age of 15 in 17,8%.

The nature of the post-operative course of PAP has a statistically significant effect on menstruation tenderness and on the frequency of pregnancy, as well as on the nature of its course. Thus, 38,7% of patients more often complained of painful menstruation. In addition, in 48,4% of cases, ectopic pregnancies, miscarriages and premature births were observed, and in 30,5% infertility development was noted.

In 24,4% of cases with pathology resulting in problems of reproductive function in women who had undergone peritonitis surgery in childhood, cystic ovarian changes and the adhesive process prevailed.

The adhesive process was observed in 26,7%. During the examination, the adhesive process was often accompanied by retroflexion of the uterus, which is also one of the causes of infertility. Adhesions often accompany inflammatory diseases of pelvic organs. Thus, among the cases of inflammatory diseases of the genitals without signs of endometriosis, 85,3% of the patients had adhesions and only 14,7% had no adhesions.

In 23 (92,0%) women with infertility, of 25 after PAP in childhood, hysterosalpingography was performed to exclude or confirm tubal-peritonial infertility. In 2 other patients, the absence of ovulation (1) and uterine hypoplasia (1) were diagnosed. In our observations, the frequency of development of occlusal lesions of the fallopian tubes in women after the previous PAP was 11 (47,8%) cases, while almost all patients - 10 (90,9%) - had a lesion of the right fallopian tube, including 2 with bilateral lesion, 4 with full occlusion on the right and 4 more with partial occlusion on the right.
An isolated lesion of the left fallopian tube was diagnosed in only 1 case in the form of partial occlusion. It is interesting to note that in infertile women with intact permeability of both fallopian tubes, we often found polycystic ovary disease (3), and in 1 case, uterine hypoplasia was revealed.
We analyzed the level of pituitary hormones (FSH and LH), as well as progesterone and estradiol in phases I and II of the menstrual cycle. The data in Table 1 show that in patients who had undergone PAP in childhood, hormone levels were slightly higher relative to the reference values. High or on the contrary moderately low levels of pituitary hormones compared to the norm are permissible in different phases of the menstrual cycle.

Table 1

The parameters of the sex hormones of the pituitary gland in the blood of the examined patients.

	FSH IU/L		LH IU/L	
	the 1st phase (3,7-5,8)	the 2nd phase (5,2-18,6)	the 1st phase (3,7-5,8)	the 2nd phase (5,2-18,6)
Main group	6,2±1,67	9,38±2,71	9,18±2,66*	19,28±5,52

Note: * - reliability of differences compared to the norm ($p < 0.05$)

When comparing ovarian hormone levels, estradiol and progesterone were found to be within the normal limits in patients suffering from PAP (Table 2).

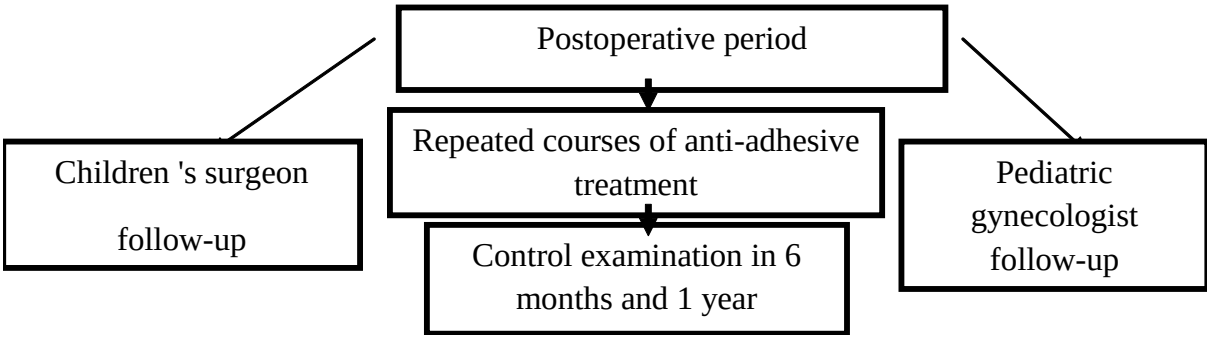
Table 2

Indicators of blood ovarian hormones in the examined patients.

	Progesterone g/mol/l		Oestradiol g/mol/l	
	the 1st phase (0,1-6,4)	the 2nd phase (10-40)	the 1st phase (0,5)	the 2nd phase (0,2-0,8)
Main group	4,51±0,55	28,19±2,58	0,39±0,03*	0,7±0,03

Note: * - reliability of differences compared with the norm ($p <0.05$).

PAP treatment, as you know, involves the use of large doses of powerful broad-spectrum antibiotics, often using their combination with antifungal agents. Their use in itself contributes to the development of intra-abdominal adhesions. Ozone therapy proposed in our work makes it possible to fight effectively against pathogenic intra-abdominal microflora, and this fact permits to significantly terms reduce the and doses of antibiotics, and to optimize their use.



The prediction of pregnancy depends on the complex effect of many factors:

- Pre-operative training in the form of adequate rehabilitation of all infection foci.

- The volume of performed intervention, preservation of fimbrial sections of uterine tubes and their epiteal covering, necessity to carry out combined reconstructive and plastic operations.

- The course of postoperative period. Step-by-step rehabilitation promotes spontaneous pregnancy in 10-20% of patients.

- Hysterosalpingography - diagnosis of the presence of periturbary adhesions and the nature of their distribution.

- Ultrasonic examination of small pelvis organs - diagnostics of changes in uterine tubes.

In the follow-up postoperative period, colpocytology, hysterosalpingography and hysterosalpingoscopy are recommended for the diagnosis of reproductive disorders, allowing to differentiate the tube-peritoneal form of infertility from the other forms.

Conclusion: thus, prevalent appendicular peritonitis is a severe surgical disease of the abdominal cavity. Patients who have had undergone prevalent appendicular peritonitis in their childhood should be followed-up by pediatric surgeon and a pediatric gynecologist. He proposed algorithm of diagnosis and treatment of PAP complications makes it possible to carry out timely diagnostics and treatment of the revealed reproductive system pathology. In spite of the fact that information concerning the methods of examination of gynecological patients have been presented in a number of manuals [13,14,15], we consider it to be reasonable to apply the proposed algorithm in the management tactics in patients, who underwent prevalent appendicullar peritonitis, by supplementing new information and practical recommendations.

Reference:

[1] Agzamova M.N. The ways of improvement the results of treatment of peritonitis, taking into account the phase of the disease, the degree of contamination of the microflora of the abdominal cavity and immunity: dis. abstract. ... cand. medical. sciences.-Tashkent. 2001.-.p22.
[2] Bashar X.Sh. Preventive therapy and intraoperative prophylaxis of the complicated course of acute appendicitis in children (clinical and experimental study) .: Dis. abstract. ... cand. medical. sciences.-M.2002.-p.19.
[3] Polyakova O.V. Surgical treatment of tubal-peritoneal infertility, prevention of the formation of adhesions. Dis. abstract. ...cand. medical. sciences.-Ryazan. 2004.-p.18 .
[4] Sleptsov A.A., Savvina V.A., Varfolomeev A.R., Nikolaev V.N., Petukhov E.I., Zuev A.L., Erdineev T.E. To the treatment of appendicular peritonitis in children // Pediatric Surgery. 2017. Vol. 21. No. 6. pp. 316-320.
[5] Surgical diseases of childhood / Ed. Yu. F. Isakova. - M .: Publishing house "Geotar-Med", 2004. – Vol. 1. – p.630 (233).
[6] Shmyreva E.S., Shapkin V.V., Shapkina A.N. Complex treatment of children with appendicular peritonitis using laparototic ultrasound // Pacific Medical Journal. 2012. No. 3. pp. 80-82.
[7] Alloo J., Gerstle T. Appendicitis in children less than 3 years of age: a 28-year review //Pediatr Surg Int. - 2004. - Vol.19, №12. – P. 777-779. (276)
[8] Beck D. E., Cohen Z. A prospective, randomized, multicenter, con-trolled study of the safety of Seprafilm adhesion barrier in abdominopelvic surgery of the intestine // Dis Cokon Rectum. – 2003 – Vol.46, №10. - P. 1309-1310. (285)
[9] Müller G., Boman J., Shrier I., Gordon P. Naturial history of patients with adhesive small bowel obstruction // Br J Surg. – 2000. – Vol.87, №9 P. 1240-1247.
[10] Sookram J, Naidoo N, Cheddie S. Perforated caecal duplication cyst presenting as an appendicular abscess //S Afr J Surg. 2016 Sep;54(3):42.