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A MODERN APPROACH TO THE TREATMENT OF BENIGN OVARIAN TUMORS IN ADOLESCENTS

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ABSTRACT

Ovarian tumors in adolescents are bulky formations originating from epithelial, non—epithelial ovarian tissue and paraovarial elements detected in childhood or adolescence. They are often accompanied by pain in the lower abdomen, disorders of the monthly cycle, an increase in the circumference of the abdomen, in some patients — early sexual development or masculinization. In 20% of cases, they are asymptomatic. It is diagnosed by rectoabdominal examination, ultrasound of the pelvic organs, laboratory determination of cancer markers, laparoscopy. We will look at modern treatment approaches such as hormone therapy, organ-preserving and radical interventions, supplemented by radiation and chemotherapy if necessary.

Ovarian tumors account for 1.0 to 4.6% of gynecological diseases detected in adolescence. The incidence gradually increases from infancy to the age of 11, up to 56% of all ovarian neoplasms are diagnosed between the ages of 12 and 15 years. In the neonatal and childhood periods, mainly germinogenic and follicular tumors are found, in the adolescent period up to 33% are cysts and germinogenic neoplasia, epithelial formations are observed three times less often. In most cases, the process is localized in the right ovary. The main features of pediatric ovarian tumors in comparison with the pathology of reproductive age are faster growth, absence of inflammatory changes, and frequent complication in the form of twisting of the cyst leg.

The factors leading to the occurrence of voluminous ovarian neoplasia in adolescents are diverse. According to most experts in the field of pediatric and adolescent gynecology, disorders of hypothalamic-pituitary-ovarian regulation, cellular immunosuppression, and private acute respiratory infections play a leading role in the development of tumors and tumor-like formations of the ovaries. Most likely, such tumor processes have a polyethological basis. Possible prerequisites for neogenesis are:

1. Gonadotropic ovarian stimulation. The hormonal theory of the origin of ovarian tumors is supported by a sharp increase in their number in adolescence with a peak incidence at the age of 12-15.

2. Intrauterine teratogenic effects. The role of dysontogenesis is confirmed by the combination of some neoplasms (gonadoblastomas, tumors of the genital stroma) with abnormalities of ovarian development.

3. High infection index (AI). According to some observations, tumors and tumorous formations of the ovaries are associated with frequent acute respiratory infections carried by the girl.

The influence of the maternal factor on the development of ovarian tumors of childhood is not excluded. Up to 5% of ovarian cancer, some types of cysts are hereditary. It has also been found that volumetric neoplasms originating from ovarian and paraovarial tissue are more often diagnosed in girls who have been carried out in pathological pregnancies.

The leading links of pathogenesis may be different, and in some patients they are combined with each other. Hyperplasia of the integumentary germinal epithelium leads to the formation of true benign tumors (mucinous and serous cystadenomas), proliferation of stroma elements leads to the appearance of stromal cell neoplasms. With increased secretory activity of cellular elements, fluid accumulates in the organ cavity, cysts (follicular, luteal, paraovarial) form. The development of endometrioid ovarian cysts in adolescence is probably based on coelomic cell metaplasia. With violations of migration, proliferation, and differentiation of pluripotent germ cells, germinogenic tumors are formed, occupying up to 80-84% of the structure of malignant neoplasms. One of the links of carcinogenesis in children is the insufficient elimination of mutated cells with impaired apoptosis by T-lymphocytes.

According to the classification, there are:

- Retention tumor-like formations (cysts). The most common volumetric neoplasms are caused by the accumulation of fluid in the ovarian tissue. They occur in adolescence against the background of the formation of hormonal regulation of the endocrine function of the ovaries. Usually cysts are follicular, less often paraovarial, luteal. Most adolescent gynecologists include endometrioid cysts in this category, although metaplastic processes that can provoke malignancy play a role in their pathogenesis.
- True ovarian tumors. They develop as a result of hyperplasia of normal or degenerated ovarian tissue. They can be benign (up to 80-85%) and malignant (15-20%). Most of these neoplasms are of germinogenic origin. Gonadoblastomas and mesenchymal formations are less common, which are often combined with ovarian malformations. In some cases, true neoplasms show hormonal activity, lead to early puberty or virilization. Usually, a girl with an ovarian tumor is shown surgical treatment of an appropriate volume.

The asymptomatic course of the tumor process in children is much more common than in adulthood. About 20% of neoplasms become findings during preventive examination or diagnosis of another disease. Up to 37% of patients complain of pain or discomfort in the lower abdomen, the intensity of painful sensations, as a rule, is not directly related to the size of neoplasia. 35% of menstruating adolescent girls have ovarian cycle disorders — amenorrhea (with gonadoblastomas and dysgerminomas), irregular menstruation (with retention cysts), dysmenorrhea (with endometrioid ovarian lesion). In 3% of cases, the only symptom that prompted the patient to consult a doctor is an increase in abdominal volume. With large neoplasms, pelvic organ dysfunction is possible — flatulence, constipation, urinary retention or frequent urge to urinate. Isosexual estrogen-producing tumors (folliculoma,

tecoma) often cause premature puberty. With masculinizing formations (androblastomas, interstitial cell tumors) detected in 1-1.5% of cases, girls complain of a lack of menarche, clitoral hypertrophy, voice coarsening, hirsutism. Ovarian tumors of childhood and adolescence are most often complicated by partial or complete twisting of the leg, up to 15% of cases of acute abdominal pain in girls are caused by this cause. In most patients, this complication develops with teratoid neoplasia and large cysts. Other acute disorders requiring immediate surgical treatment are tears and ruptures of the cyst capsule, intra-abdominal bleeding from a tumor formation, suppuration of the cyst, wall or tissue of neoplasia due to hematogenous or lymphogenic infection with a breakthrough into the bladder, ureter, and the development of peritonitis. Timely detection of ovarian tumors in children and adolescents is difficult due to the lack of pathognomonic symptoms, polymorphism of the clinical picture, and frequent asymptomatic course. Ultrasound of the pelvic organs. In more complex cases, tomography (MRI, CT) is performed. Determination of tumor markers. Glycoprotein CA 125 is detected in most ovarian carcinomas. Diagnostic laparoscopy. It is used as a final study. To determine the hormonal activity of the tumor, the levels of estradiol, total testosterone, and androstenedione are evaluated.

Treatment of ovarian tumors. The choice of medical tactics is determined by the type of neoplasia, the dynamics of its development, and the likelihood of complications. Conservative therapy is possible in girls with retention cysts. Dynamic ultrasound monitoring is recommended for the detection of an asymptomatic cyst up to 80 mm in size. Hormone therapy is used in the presence of a teenager with a long-existing or recurrent functional ovarian cyst, a persistent follicle larger than 20 mm. Menstruating patients are usually prescribed progestins in the second half of the cycle. Since a functional cyst can develop on an inflammatory background, trial anti-inflammatory therapy is allowed. The effectiveness of drug treatment is evaluated 3-4 months after its start, in the absence of results, laparoscopic cystectomy is performed, less often, wedge—shaped ovarian resection. The detection of a true ovarian tumor in a girl is a direct indication for the immediate conduct of a planned operation. The amount of intervention depends on the characteristics of the tumor process. In the presence of benign neoplasia, surgical treatment should be as gentle as possible, in the presence of malignancy, it is important to ensure maximum removal of tissues involved in oncogenesis. The following types of operations are performed for children and adolescents with ovarian neoplasms:

Organ-preserving interventions. Laparoscopic peeling is performed with smooth-walled serous cysts, dermoid cysts. Wedge-shaped resection is indicated for ovarian endometriosis and some confirmed benign tumors of epithelial origin. The operation is recommended to be performed in specialized hospitals with the provision of histological rapid diagnosis and the transition to radical intervention when signs of malignancy are detected.

Radical operations. Unilateral laparotomic oophorectomy is recommended for Brenner tumors, mucinous cysts, papillary cystic seromas. With unilateral dysgerminomas, tecomas, granulocellular tumors, mucinous cystadenocarcinomas, the volume of surgery is increased to unilateral adnexectomy with resection of the large omentum. Girls with malignant neoplasia undergo supravaginal amputation of the uterus and appendages with extirpation of the large omentum.

The volume of emergency interventions for leg twisting, bleeding and other complications is determined individually. Most often, the affected ovary is completely removed. After surgery for benign neoplasms, patients are recommended dynamic follow-up with ultrasound control once every 3-6 months. In the case of a malignant process in the postoperative period, polychemotherapy is performed, with common dysgerminomas, radiotherapy with irradiation of the pelvic organs and abdominal cavity.

Some retention neoplasms undergo involution on their own. The effectiveness of conservative therapy of functional cysts is 19-20%, complete clinical recovery after surgical treatment occurs in 77-78% of girls. The prognosis is most unfavorable for malignant neoplasms detected at late stages, especially immature teratomas. Due to the insufficient knowledge of etiopathogenesis, primary prevention has not been developed. Secondary prevention involves monitoring the formation of reproductive function in the presence of aggravating factors (early menarche, anamnestic information about hereditary burden, complicated course of pregnancy and childbirth in the mother).

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