ECHOGRAPHY OF OVARIAN TUMOR FORMATIONS

Yangibaev Jonibek Saparbaevich
Urgench State Medical Institute, Urgench, Uzbekistan

Abstract. The most common reason for surgical intervention in women of reproductive age are functional ovarian cysts, although in most cases these formations disappear on their own within 3-6 months. The authors analyzed the frequency of this pathology, clinical features and diagnostics in girls of different age periods. Careful collection of anamnesis and correct assessment of not only the echographic characteristics of the ovarian cyst, but also the conformity of the structure and thickness of the endometrium to the phase of the menstrual cycle, in most cases helped to make the correct diagnosis and avoid unnecessary surgery. In the process of improving the methods of differential diagnosis of functional cysts and ovarian tumors, the proportion of operated patients decreased from 78 to 47%.

Keywords: anamnesis, echography, ovarian cysts.

The most common ovarian diseases include tumor-like formations - cysts, less often - purulent processes. Cysts are not capable of proliferation, are formed as a result of excess fluid retention in preformed cavities and cause a significant increase in the ovary. They can form from the follicle, corpus luteum, paraovarian (epio-oophoron), endometrioid heterotopias implanted on the surface of the ovary. In true ovarian tumors, cell proliferation is observed. Tumor-like formations of the ovaries include retention ovarian cysts: follicular (73%), corpus luteum cysts (5%), theca lutein (2%), endometrioid (10%), paraovarian (10%). Cysts are more often observed in the reproductive period, but are possible at any age, even in newborns. The frequency of cysts in postmenopause is 15%. Formation of ovarian cysts is facilitated by dyshormonal, inflammatory and other processes leading to congestive hyperemia of the pelvic organs[1,9].

A follicular ovarian cyst occurs due to fluid accumulation in a cystic-atretic follicle as a result of hormonal disorders (hyperestrogenism, chronic anovulation). They occur mainly in reproductive age, in rare cases they can occur in postmenopause, and even more rarely in fetuses and newborns. A sign of the transition of the physiological process of follicle maturation to a pathological follicular cyst is the diameter of the fluid formation of more than 30 mm. Fluid accumulates in the cyst cavity as a result of transudation from blood vessels or due to its continued secretion by granulosa epithelium[2]. Morphologically, a follicular cyst is a thin-walled fluid formation, the wall of which consists of several layers of follicular epithelium. Outside the follicular epithelium is fibrous connective tissue. As the cyst enlarges, the follicular epithelium undergoes dystrophic changes, becomes thinner, exfoliates, and atrophies. The cyst wall may consist only of connective tissue lined from the inside with flat or cubic cells; in most cases, these cysts are single-chambered. Several cysts may develop simultaneously in the ovary, which gradually enlarge and merge with each other, creating the impression of a multi-chambered formation. The diagnosis of an ovarian

ISSN 2277-3630 (online), Published by International journal of Social Sciences & Interdisciplinary Research., under Volume: 14 Issue: 05 in May-2025
https://www.gejournal.net/index.php/IJSSIR

cyst is established based on the clinical picture and dynamic ultrasound with color Doppler imaging[3].

Corpus luteum cyst of the ovary occurs due to accumulation of fluid at the site of a ruptured follicle, sometimes it may contain blood. It occurs only with a two-phase menstrual cycle. It is believed that these cysts are formed as a result of impaired lymph and blood circulation in the corpus luteum; they occur at the age of 16 to 45 years. Microscopically, lutein and thecalutein cells are detected in the wall of the corpus luteum cyst[6]. Clinically, the cyst usually does not manifest itself in any way. The menstrual cycle is rarely disrupted. In some cases, at the time of cyst occurrence, pain in the lower abdomen may be noted due to hemorrhage into the cyst cavity, more often at the stage of development of the corpus luteum. Bleeding can be intense and accompanied by the clinical picture of "acute abdomen". In most cases, corpus luteum cysts undergo regression[5,11]. The layer of lutein cells is gradually replaced by connective tissue, and the formation can turn into a cyst, the inner surface of which is devoid of epithelial lining. The diagnosis of a corpus luteum cyst is established based on anamnestic data, clinical examination results, ultrasound and color Doppler imaging. When using contrast-enhanced techniques, retention formations do not accumulate contrast agent, which is a differential diagnostic sign of a cyst.

A paraovarian cyst is located between the layers of the broad ligament of the uterus. It arises from the rudiments of the mesonephric duct, oophoron, and also from the coelomic epithelium. Paraovarian cysts make up 8 to 16.4% of all ovarian formations and are diagnosed mainly between the ages of 20 and 40, but can occur in girls. In childhood and adolescence, paraovarian cysts sometimes have papillary growths on the inner surface. Cysts can be small (5-6 cm) or giant, occupying the entire abdominal cavity. The wall consists of connective tissue and muscle bundles, the inside of the cyst is lined with cylindrical ciliated, cubic and flat single-row or multi-row epithelium, the contents are transparent fluid. Endometrioid ovarian cysts are one of the most frequently diagnosed manifestations of endometriosis. They are found in 10-14% of women operated on for various volumetric formations of the pelvic organs. According to echography, unilateral cysts are detected in 81% of patients, bilateral - in 19%. In the affected ovary, one cyst is most often detected, and much less often - two (16%), three (2.5%) and four (0.5%) cysts. In most cases, cysts are localized on the side and behind the uterus, their sizes range from 0.8 to 12 cm, but in 90% of cases the diameter of the cysts is 2.5-7 cm.

Results. For functional ovarian cysts, 42.2% of patients received treatment. The proportion of functional cysts in newborns was 9.9%, among girls in the neutral period - 3.4%, in the prepubertal period - 1.7% and in the pubertal period - 42.6%. If follicular ovarian cysts were found in girls of all age groups, then corpus luteum cysts were detected only in patients of the pubertal period. Girls with follicular cysts more often complained of a delay in menstruation from 7 to 60 days, on average, they were admitted to the hospital on the 32nd day of the menstrual cycle. Girls with corpus luteum cysts, as a rule, were admitted to the hospital in the second phase of the menstrual cycle, on average, on the 23rd day of the menstrual cycle. The endometrial thickness in follicular cysts averaged 6.8 mm (ranging

ISSN 2277-3630 (online), Published by International journal of Social Sciences & Interdisciplinary Research., under Volume: 14 Issue: 05 in May-2025
https://www.gejournal.net/index.php/IJSSIR

from 1 to 18 mm), while in corpus luteum cysts the endometrial thickness averaged 13.5 mm (ranging from 1 to 17 mm).

The echostructure of the endometrium also differed: in follicular cysts the endometrium was single-layered, had medium echogenicity and a homogeneous structure. That is, its echostructure corresponded to the late proliferation phase. We observed the clinical picture of incomplete sexual development (enlarged mammary glands, abundant mucous and then bloody discharge from the genital tract) in 7 of 8 girls with follicular cysts during childhood. In 9 of 23 newborns with follicular cysts, vivid manifestations of a hormonal crisis were noticeable during examination: desquamative vulvovaginitis, enlarged mammary glands. Bloody discharge from the genital tract was noted in 3 of them. Manifestations of hormonal crisis lasted up to 2-5 months in 3 patients. Most operations on patients with ovarian corpus luteum cysts were performed due to complications (21.3% due to torsion of the ovarian cyst stalk, 26.4% due to rupture of the cyst capsule, 23.5% due to hemorrhage into the cyst cavity). In case of follicular cysts, surgery was most often performed only because an ovarian cyst was detected during ultrasound. Complications of follicular ovarian cysts were detected in only 17.5% of cases (torsion - in 7%, rupture of the cyst capsule - in 10%, hemorrhage into the cyst cavity - in 3.5%).

Since the size of ovarian cystic formations is considered an important criterion not only for the differential diagnosis of serous cystadenomas and follicular ovarian cysts, but also the main indication for the choice of conservative and surgical treatment methods, we compared the sizes of serous cystadenomas and follicular ovarian cysts according to ultrasound data. No significant difference was found, 30% of follicular cysts had sizes from 50 to 100 mm in diameter, like most serous cystadenomas.

The International Ovarian Tumor Analysis (IOTA) Group, based on randomized studies, developed ultrasound criteria (the "B-rule" for benign tumors and the "M-rule" for tumors with malignancy), the sensitivity and specificity of which reach 95% and 91%, respectively. IOTA published data on 1,148 postmenopausal patients with pelvic lesions measuring 5 cm or less, who, according to ultrasound data, had typical signs of "benignity" of the formation: echo-negative, single-chamber tumors were present in 0.96% of ovarian cancer cases [7]. The absence of positive dynamics in the size of the ovarian cystic formation during a control ultrasound examination after 4-6 weeks of observation allows for a preliminary clinical diagnosis of "ovarian tumor" and an in-depth examination of the patient to preliminarily clarify the nature of the growth (benign/malignant) and exclude its metastatic lesion [2]. Childhood (before the onset of puberty) and postmenopausal age of the patient allows for an immediate assessment of the ovarian cystic formation as an organic (non-functional) pathology (recommendation category B).

US features of benign tumors B1 – unicameral cyst B2 – solid component size < 7 mm B3 – presence of acoustic shadows B4 – smooth-walled multicameral tumor with diameter < 100 mm B5 – no blood flow during color Doppler imaging.

ISSN 2277-3630 (online), Published by International journal of Social Sciences & Interdisciplinary Research., under Volume: 14 Issue: 05 in May-2025
https://www.gejournal.net/index.php/IJSSIR

US features of malignant tumors M1 – areas of solid component M2 – ascites M3 – at least 4 papillary structures M4 – multicameral tumor with multiple solid components with size >100 mm M5 – pronounced blood flow during color Doppler imaging.

REFERENCES

1. Shih I, Kurman RJ (2004). Ovarian tumorigenesis: a proposed model based on morphological and molecular genetic analysis. Am J Pathol 164: 1511-1518

2. Nikogonesyan S.O., Kuznetsov V.V. Ovarian cancer: diagnostic issues and modern treatment methods. Doctor. 2010;

3. Askarova, Z.Z., Saparbayeva, N.R., Kurbaniyazova, M.Z. and Aliyeva, D.A., 2021. VALUE OF HYSTEROSCOPY AND GENETIC RESEARCH OF WOMEN WITH ABNORMAL UTERINE BLEEDING IN PERIMENOPAUSE. Eur J Mol Clin Med, 8(1), pp.409-416.

4. Klimov S.S. Principles of diagnostics and surgical treatment of ovarian space-occupying lesions. Abstract of Cand. Sci. (Medicine). - M., 2005. - 18 p.

5. Maksutova D.Zh. Application of focused ultrasound under magnetic resonance imaging control (literature review) // Problems of reproduction. - 2009. - No. 15 (2). - P. 30-36.

6.Zafarjanovna, Kurbaniyazova Madina, and Bekbauliyeva Gulistan Niyetbayevna. "OPTIMIZATION OF OVULATION INDUCTION METHODS IN INFERTIL WOMEN WITH PCOS." In Euro-Asia Conferences, vol. 1, no. 1, pp. 158-162. 2021.

7. Savelyeva G.M., Breusenko V.G., Solomatina A.A. et al. Tumors and tumor-like formations of the ovaries and their clinical manifestations // Russian Bulletin of Obstetrician-Gynecologist. - 2005. - No. 5. URL: http://www.mediasphera.ru/journals/akuvest/90/892.

8.Borgfeldt C., Andolf E. Transvaginal ovarian findings in a random sample of women 25-40 years old//Ultrasound Obstet. Gynecol. 1999.V.

9. No. 5. P. 345-350. 17. Kaijser J., Bourne T., Valentin L., Sayasneh A., Van Holsbeke C., Vergote I., Testa A.C., Franchi D., Van Calster B., Timmerman D. Improving strategies for diagnosing ovarian cancer: a summary of the International Ovarian Tumor Analysis (IOTA) studies // Ultrasound Obstet. Gynecol. – 2013. – Vol. 41, No. 1. – P. 9-20.

10. Endometriosis: diagnostics, treatment and rehabilitation. Federal clinical guidelines for patient care / edited by L. V. Adamyan. – M., 2013. – 65 p.

11. Mitkov, V. V. Clinical guidelines for ultrasound diagnostics, volume 3 [electronic resource]. – M., Vidar, 2005. – 1 electronic. Opt. Disk (CD-ROM).

ISSN 2277-3630 (online), Published by International journal of Social Sciences & Interdisciplinary Research., under Volume: 14 Issue: 05 in May-2025
https://www.gejournal.net/index.php/IJSSIR