中华劳动卫生职业病杂志2022年13月第40卷第13期Chin J Ind Hyg Occup Dis ， 2022 ，833 - 837

PRINCIPLES OF DIAGNOSTICS OF OVARIAN TUMORS.

Ismailova M.Kh., Tairova M.I., Khayitboeva M.R., [2]Nazarova G.U., Zulpikariev D.D., Khodzhamova G.A., Ilkhamov D.F., Usmanova Z.I., Alisherova M.A., Khusanbayeva D.D.

Tashkent Medical Academy
[2]Andijan State Medical Institute

Abstract: The Ovarian formation is a common find in everyday clinical practice and can be detected accidentally or in patients with some gynecological complaints. This article discusses the diagnosis of ovarian cancer using ultrasound.

Modern sonography is able to effectively identify and differentiate localized variants of ovarian cancer, both benign and malignant.

Keywords: Ovarian tumors, ROMA index, tumor marker Ca-125, ultrasound diagnostics.

Important for the choice of treatment for primary ovarian tumors is the accuracy of diagnosis. Patients with suspected malignant neoplasms should be referred in a timely manner to an oncogynecological dispensary for specialized care in accordance with the Association of Oncologists of Uzbekistan (AOU), as well as national and international recommendations. For benign lesions, patients may be observed and treated conservatively or undergo less radical surgical treatment, depending on the clinical and histological process. The process of making decisions about the choice of treatment method should be based on a complex of the patient's general clinical picture, anamnesis, previous medical and surgical interventions, tumor marker data, and the results of radiation diagnostics.

The purpose of this literature review is to highlight the latest data from world expert organizations on the possibilities of diagnosing and treating benign and malignant ovarian neoplasms. It is impossible to determine the true frequency of ovarian tumors, since they mostly occur without clinical signs and are not detected. In Uzbekistan, the proportion of patients registered with newly diagnosed malignant neoplasms of the ovaries in 2020 was 834, while the incidence among the female population was 4.9 per 100,000 population, and the mortality rate was 14.5% among these indicators. OC is characterized by a latent and aggressive course, while there are no methods for effective screening and early diagnosis, which explains the high mortality rates [5, 6]. According to the global database GLOBOCAN in 2018, the absolute number of new cases of OC was 295,414, and the number of deaths was 184,799 [7].

The etiological causes of ovarian cancer are still not understood. The main risk factors for development include age over 55 years old , the presence of OC in a family history (among close relatives); mutation of some genes; obesity; history of breast cancer; first childbirth older than 30 years, menarche before 12 years of age, late menopause, etc.

Ultrasound procedure

Transvaginal ultrasound is the primary diagnostic method in imaging and assessing the pathology of the organs of the reproductive system. The main disadvantage of this method is the direct proportional relationship between the early diagnosis of pathology and the experience and knowledge of the doctor of ultrasound diagnostics. Evaluation of patients with suspected ovarian cancer by ultrasound doctors from the first and highest category leads to a significant reduction in the number of surgical interventions and a reduction in hospital stay.

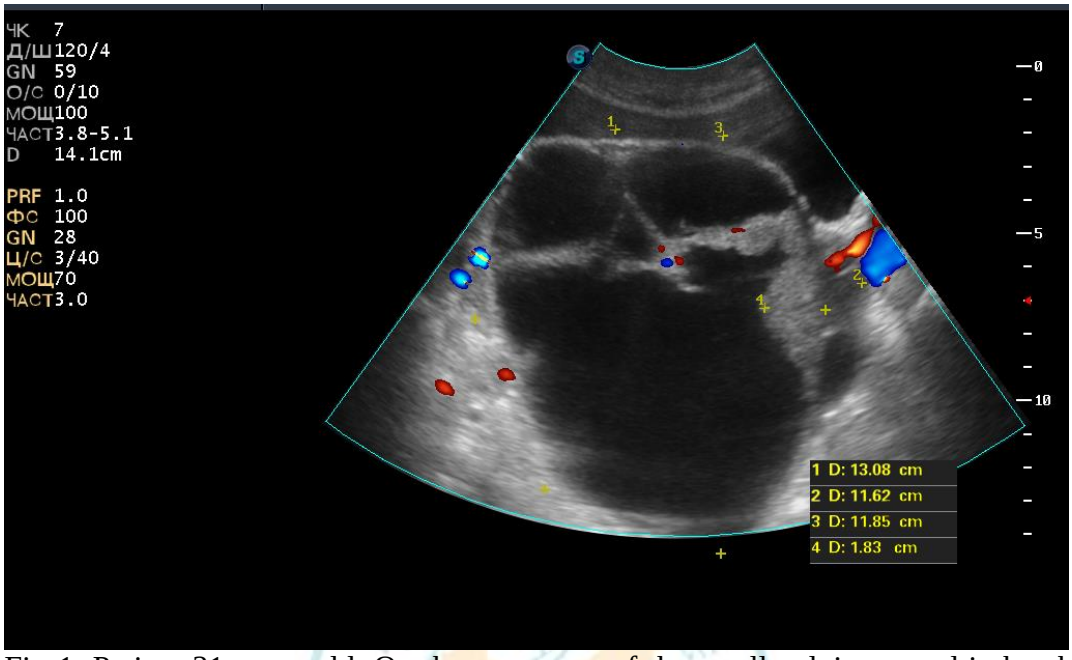

Fig 1. Patient 31 years old. On the sonogram of the small pelvis , a multi-chamber cystic-solid formation 13x11 cm in size with enhanced vascularization in the CDI mode is located.

Malignancy Risk Index (RMI) and Ovarian Malignancy Risk Algorithm (ROMA)

Malignancy risk index (Risk of Malignancy Index - RMI) is a conditional scale for assessing the risk of a possible malignant process in the ovaries (ovarian cancer), and it is determined by the formula: RMI \u003d U x M x CA125, where U - signs of ultrasound: multi-chamber cyst, solid (dense) formations, the presence of bilateral cysts, the presence of metastases, the presence of ascites, and in points - 0, if there are no these signs on ultrasound; 1 - in the presence of one sign; 3 - in the presence of 2 or more signs.

M - characterizes menopause (menopause). All menstruating (premenopausal) women are worth 1 point, and all postmenopausal (climax) women are worth 3 points.

The indicator of the CA125 tumor marker is measured in U / ml.

The derivative of these three indicators is the malignancy risk index. A low risk is said to be less than 25 (occurs in 40% of women, the risk of cancer is 3%). The average risk is from 25 to 250 (observed in 30%, the risk of cancer is 20%). High risk with an index greater than 250 (30% of women, a cancerous process in 75%).

The definition of the risk index of malignancy has gained popularity because, according to studies, the sensitivity of this method is 78%, and the specificity is 87%. The disadvantage of determining this index is its dependence on a high level of oncomarker , which can be increased not only in the cancerous process in the ovaries, but in many other diseases.

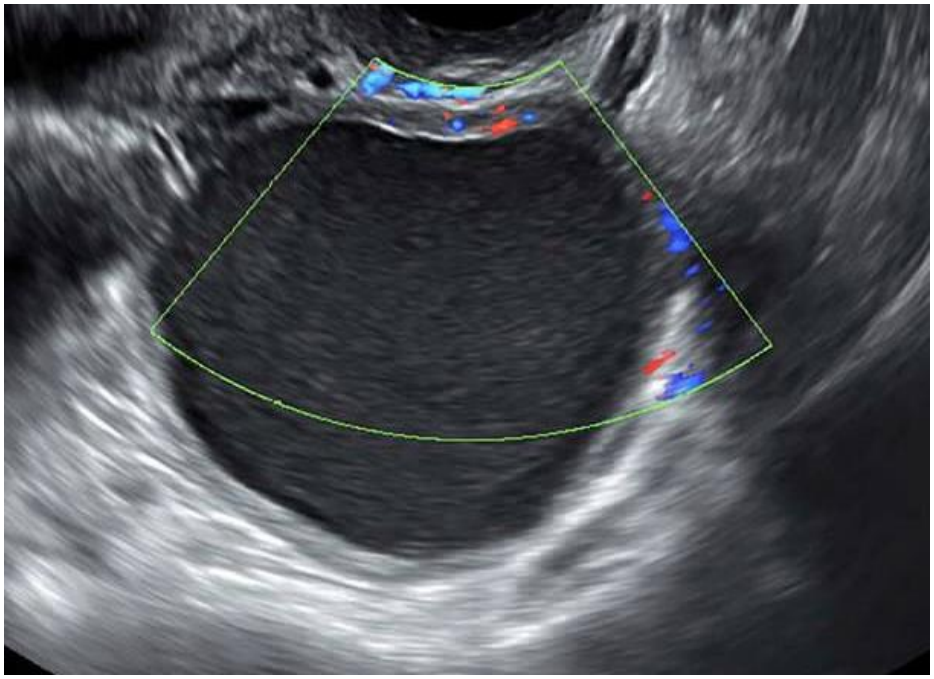

Fig 2. Patient, 21 years old. On the sonogram in the projection of the left ovary, a hypoechoic formation with even clear contours is visualized, 12x10 cm in size, with slight vascularization along the periphery in the color flow mode

The ROMA index in translation means the risk algorithm for malignant neoplasms of the ovaries (from the English Risk of Ovarian Malignancy algorithm). To calculate ROMA, cancer antigen 125 (CA125), human epididymal protein 4 (HE4), and menopausal status are determined to classify women with ovaries as high or low risk for further detection/exclusion of malignancy. The ROMA index has a higher sensitivity and specificity compared to the isolated determination of CA 125 and HE 4 and has diagnostic value even with normal values of HE4 and CA125 separately.

Based on these data, many studies have demonstrated the diagnostic efficacy of the malignancy risk index in classifying ovarian neoplasms. In premenopausal women , the malignancy risk index has a higher specificity than the ovarian cancer risk algorithm, but is low in postmenopausal women.

Based on a 2016 meta- analysis comparing the most common RMI scoring model, the 2 IOTA scales (simple rules and LR2) and the ROMA scale, the authors concluded that the combination of IOTA and the subjective assessment of the ultrasound specialist has the highest sensitivity and specificity (91 and 91%, respectively) in comparison with the RMI scale (sensitivity 75%, specificity 92%). Given the increased interest in the problem, the search for new tumor markers also continues. In a systematic review by RT Fortner et al . among the many open tumor - associated antigens, RhoGDI-AAbs and TUBA1CAAbs are distinguished with high sensitivity (89.5 and 89%, respectively), but with low specificity (80 and 75%, respectively). The authors came to the conclusion that, firstly, at the moment there are still not enough large studies that could make clarifications, and secondly, the combination of new molecules in the form of a diagnostic panel could serve as an addition to ultrasound and proven tumor markers .

Conclusion. Early diagnosis of ovarian cancer is still an unresolved problem. Unfortunately, screening programs that could improve the situation have not yet shown an increase in the incidence of OC in patients. At the same time, modern instrumental methods and survey methodology are highly sensitive and specific, which turns them into a convenient and reliable tool in the hands of a competent specialist. Summarizing the above, I would like to once again draw attention to the key points of the examination of patients: a thorough history taking, ultrasound of the abdominal cavity and small pelvis, measurement of the level of the tumor marker CA-125, which, as recent studies

have shown, have a specificity of up to 99.9 % and sensitivity up to 89.4%. Thus, the decisive factor in the diagnosis, and hence in the treatment of OC, is the observance of the necessary algorithm for the scope of the study and the correct implementation of the surgical manual.

References

1. Khodzhibekov M.Kh., Ismailova M.Kh. Differential diagnosis of ovarian tumors. Journal of Clinical and Experimental Oncology №1(15) 2021

2. Ismailova M.X., Nigmatjonov A.S., Usmanova Z.I. Role of Ultrasound Imaging in the Differential Diagnosis of Benign and Malignant Ovarian Cancer// International Journal of Psychosocial Rehabilitation, Vol. 24, Issue 08, 2020, Page 4926-4930

3. Ismailova M.X., Nigmatjonov A.S., Usmanova Z.I. Differential diagnosis of benign and malignant ovarian cancer// Annals of Clinical & Analytical Medicine. 2020-06-14. Page 306-308

4. Borisova E.A. Complex differential diagnosis of tumors of the uterine appendages: author's abstract. dis . ... cand. medical sciences: 14.01.01 / Borisova Elena Anatolevna. - Irkutsk, 2018. - 24 p. 106

5. Davydova I.Yu. Borderline ovarian tumors / I.Yu. Davydova, V.V. Kuznetsov, A.I. Karseladze [and others] // Obstetrics and gynecology: news, opinions, training. - 2019. - V. 7, No. 1.

6. Clinical guidelines. Non-epithelial tumors of the ovaries. - Moscow: All-Russian National Union "Association of Oncologists of Russia", 2017. - 25 p.

7. Ismailova M.Kh., Khayitboeva M.R., Tairova M.I., Zhuravlev I.I. Ultrasound examination of tumors and tumor-like formations of the ovaries //Modern approaches to drug therapy, radiology and surgery in oncology May 19-21, 2022 Nukus . Page 293-294

8. Van Gorp T., Cadron I., Despierre E., Daemen A., Leunen K., Amant F., Timmerman D., De Moor B., Vergote I. HE 4 and CA 125 as a diagnostic test in ovarian cancer: prospective validation of Risk of Ovarian Malignancy Algorithm. Br. J. Cancer, 2011, vol. 104, pp. 863–870.

9. Vasconcelos I., Olschewski J., Braicu I., Sehouli J. Limited efficacy of platinum-based adjuvant treatment on the outcome of borderline ovarian tumors Department of gynecology Campus Virchow, Charit Medical University of Berlin, Germany. Eur J Obstet Gynecol Reproduct , 2015, no. 186, pp. 26–33.

10. Fujiwara H., Suzuki M., Takeshima N., Takizawa K., Kimura E., Nakanishi T., Yamada K., Takano H., Sasaki H., Koyama K. et al. Evaluation of human epididymis protein 4 (HE4) and Risk of Ovarian Malignancy Algorithm (ROMA) as diagnostic tools of type I and type II epithelial ovarian cancer in Japanese women. Tumor Biology, 2015, pp. 1045–1053.

11. Campbell S. Ovarian cancer: role of ultrasound in preoperative diagnosis and population screening. Ultrasound obstet Gynecol , 2012, vol. 40, pp. 245–254

12. Ponomarev V.V. Experience in laparoscopic treatment of patients with
tumors and tumor-like formations of the ovaries / V.V. Ponomarev, A.A. Zhuiko, V.V. Artshkov [et al.] // Proceedings of the IV Congress of Obstetricians and Gynecologists of Russia. - Moscow, 2008. - S. 455.

13. Porkhanova N.V. Significance of biomarkers for the formation of groups
risk and early diagnosis of tumors (on the example of ovarian cancer and breast cancer) / N.V. Porkhanova // Practical oncology. - T. 12, No. 4. -2011.

14. Wu Y., Peng H., Zhao X. (2015) Diagnostic performance of contrastenhanced ultrasound for ovarian cancer: a meta-analysis. Ultrasound Med Biol 41(4):967–74. doi:10.1016/ j.ultrasmedbio . 2014.11.018

15. Andreeva Yu.Yu., Frank G.A., Moskvina L.V. New classification of ovarian tumors Journal: Archives of Pathology. 2015; 77(4): 40-50. DOI: 10.17116/patol201577440-50

16. I.N. Ozhiganova, E.L. Neishtadt. Tumors of the ovary. - St. Petersburg: FOLIANT Publishing House LLC, 2014. - 352 p.: ill.

17. Baklanova N.S., Kolomiets L.A., Frolova I.G., Vyatkina N.V. et al. Ultrasound semiotics in recurrent ovarian cancer after optimal cytoreductive surgery // Vopr . oncol . 2014. V. 60, No. 3. S. 323-326.

18. Vostrov A.N., Stepanov S.O., Korneeva I.A. History and current trends in the use of ultrasound in ovarian cancer // Radiodiagnosis and therapy. 2013; 3(4):22–28.

19. Gasparov A.S. Oncogynecological aspects of cystic ovarian formations / A.S. Gasparov, K.I. Jordania, Yu.G. Payanidi [and others]. -Moscow: RUDN University; RONTS im. N.N. Blokhin RAMS, 2013.

20. Imyanitov E.N. General ideas about hereditary tumor syndromes / E.N. Imyanitov - St. Petersburg: Research Institute of Oncology named after N.N. Petrova, 2014.