

## MORPHOMETRIC INDICATORS OF OVARIAL ENDOMETRIOSIS IN YOUNG GIRLS

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**Abstract.** This article analyzes the morphometric parameters of ovarian endometriosis in young girls using 18 patients as examples. Ultrasonography (USI) was used to study endometrial volume, capsule thickness, internal structural features, and blood flow parameters. The research results demonstrated that morphometric parameters are of significant importance in the early diagnosis of endometriosis.

**Keywords:** ovarian endometriosis, endometrium, morphometry, ultrasound, young girls, diagnostics.

## МОРФОМЕТРИЧЕСКИЕ ПОКАЗАТЕЛИ ЭНДОМЕТРИОЗА ЯИЧНИКОВ У ДЕВОЧЕК МОЛОДОГО ВОЗРАСТА

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**Аннотация.** В данной статье проанализированы морфометрические показатели эндометриоза яичников у девочек на примере 18 пациенток. На основе ультразвукографии (УЗИ) изучали объем эндометрия, толщину капсулы, особенности внутренней структуры и показатели кровотока. Результаты исследования показали, что морфометрические параметры имеют важное значение в ранней диагностике эндометриоза.

**Ключевые слова:** эндометриоз яичников, эндометрия, морфометрия, УЗИ, девочки, диагностика.

## YOSH QIZLARDA TUXUMDON ENDOMETRIOZINING MORFOMETRIK KO'RSATKICHLARI

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**Annotatsiya.** Mazkur maqolada yosh qizlarda tuxumdon endometrioziining morfometrik ko'rsatkichlari 18 nafar bemor misolida tahlil qilindi. Ultrasonografiya (UZI) asosida endometrioma hajmi, kapsula qalinligi, ichki struktura xususiyatlari va qon oqimi

ko'rsatkichlari o'rganildi. Tadqiqot natijalari endometriomaning erta tashxisida morfometrik parametrlarning muhim ahamiyatga ega ekanligini ko'rsatdi.

**Kalit so'zlar:** tuxumdon endometriozi, endometrioma, morfometriya, UZI, yosh qizlar, diagnostika.

Numerous scientific studies have been conducted on the etiopathogenesis and diagnosis of ovarian endometriosis (endometriosis), most of which confirm the complex and multifactorial nature of the disease. According to modern views, the theory of retrograde menstruation, immune system dysfunction, and genetic and epigenetic factors play an important role in the development of endometriosis.

In studies by Linda C. Giudice and Serdar E. Bulun, endometriosis is described as an estrogen-dependent chronic inflammatory disease. According to them, local hormonal imbalance and cytokine imbalance are of great importance in the pathogenesis of ovarian endometriosis.

The issue of detecting endometriosis using ultrasonography has been studied by many researchers. In the scientific works of Stefano Guerriero et al., transvaginal ultrasound is recognized as a diagnostic method with high sensitivity and specificity. According to their data, a characteristic feature of endometriosis is the "ground glass" (fine-dispersed) echostructure.

In Claudio Exacoustos's studies, the morphometric parameters of endometriosis - the thickness of the capsule, the presence of internal septa, and the level of blood flow - were identified as important parameters in determining the stage of the disease. In particular, the results of Doppler studies are of great importance in differential diagnostics.

Furthermore, studies conducted by Charles Chapron established a close correlation between deep infiltrative forms of endometriosis and ovarian endometriosis. This indicates the need for a comprehensive assessment of the disease.

In recent years, the problem of early detection of endometriosis in young girls has become particularly relevant. Researchers emphasize that due to the ambiguity of clinical symptoms, instrumental diagnostics, specifically ultrasonographic morphometry, are considered the primary diagnostic tool.

Thus, the literature analysis shows that morphometric parameters (volume, capsule thickness, internal structure, and blood flow) are of high diagnostic importance in the diagnosis of ovarian endometriosis, allowing for the early detection of the disease, especially in young patients.

**Materials and Methods.** The main objective of this study was to determine the morphometric parameters of ovarian endometriosis (endometriosis) in young girls and to evaluate their diagnostic significance.

A total of 18 patients aged 16-25 years participated in the study. All patients underwent a comprehensive examination. Specifically, the general condition and complaints were assessed through a clinical and gynecological examination, and instrumental diagnostic methods were applied. Ultrasonography was performed via transabdominal and transvaginal methods to determine the localization and morphological characteristics of pathological changes in the ovaries. Additionally, the characteristics of blood flow in pathological foci were studied using Doppler ultrasound.

During the study, the main morphometric parameters of endometriosis were evaluated. In particular, the diameter of the focus (in mm), the thickness of the capsule, the uniformity or irregularity of the internal echostructure, the presence of septa, and the level of blood flow were analyzed based on Doppler indicators.

The obtained results were processed using modern statistical methods, and their reliability and diagnostic significance were evaluated.

**Results.** The results obtained indicate that endometriosis in young girls is often of medium size and has a distinct capsule. Hypochondriac homogeneous internal structure is a typical feature of endometriosis.

Table 1. Morphometric parameters of ovarian endometrioma (n=18)

No.	Parameters	Results
1	Mean endometrioma diameter (mm)	42.3 ± 6.8
2	Capsule thickness (mm)	3.1 ± 0.7
3	Homogeneous hypoechoic structure	14 (77.8%)
4	Heterogeneous structure with septations	4 (22.2%)
5	Low blood flow (Doppler)	12 (66.7%)

Table 2. Localization of endometrioma (n=18)

No.	Localization	Number of patients	Percentage (%)
1	Left ovary	10	55.6
2	Right ovary	6	33.3
3	Bilateral	2	11.1

The presence of septa and irregular structure may indicate complex forms of the disease. Low Doppler blood flow is an important criterion in the differential diagnosis of endometriosis. Compared with the data presented in the literature, our results are consistent, and it was confirmed that morphometric indicators have high diagnostic value in early diagnosis.

**Conclusion.** Ovarian endometriosis in young girls is characterized by specific and distinct morphometric features. The research results demonstrated that the diameter and capsule thickness of the endometrium are essential diagnostic criteria for identifying this disease. Hypogenous and homogeneous internal structure is also a typical feature of endometriosis. Based on the identified morphometric indicators, it is possible to diagnose the disease in its early stages, which plays an important role in determining timely treatment measures.

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