

IMPROVEMENT OF DIAGNOSTIC METHODS FOR UTERINE TUMORS

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Abstract

Currently, bulky formations of the uterus and uterine appendages are a chastopathology found in women of late reproductive, premenopausal and postmenopausal age. In patients with tumors of the uterus and uterine appendages, it is very difficult to differentiate the nature of the tumor process by clinical signs, since the symptoms (pelvic pain, menstrual dysfunction, infertility) are characteristic of inflammatory ovarian formations, endometrioid or dermoid ovarian cysts.

Bimanual and rectovaginal examination do not always reveal the true localization of the formation (ovary, retroperitoneal tumor, intestine), its size, boundaries, and relationships with adjacent organs. In this regard, additional research methods are used for the differential diagnosis of tumors of the pelvic organs: echography, computed tomography, magnetic resonance imaging, multispiral computer tomography and others, which allow changing the approach to the study of diseases of the female genital area and abandoning such techniques as artificial pneumoperitoneum, bicontral gynecology, reducing the number of radionuclide studies, angiography and diagnostic surgical procedures.

Keywords: color Doppler mapping, energy Doppler, blood flow velocity curves, resistance index, pulsation index, minimum resistance index, average resistance index.

Introduction

In patients with tumors of the uterus and uterine appendages, it is very difficult to differentiate the nature of the tumor process by clinical signs, since the symptoms (pelvic pain, menstrual dysfunction, infertility) are characteristic of inflammatory ovarian formations, endometrioid or dermoid ovarian cysts (Sidorova I.S. 2002. Demidov V.N. 2001, Doronin G.L.2001). Bimanual and rectovaginal examination do not always reveal the true localization. formations (ovary, retroperitoneal tumor, intestine), ero dimensions. the borders. relations with related bodies. In this regard, additional research methods are used for the differential diagnosis of tumors of the pelvic organs: echography, computed tomography, magnetic resonance imaging, multispiral computer tomography and others, which allow changing the approach to the study of diseases of the female genital area and abandoning such techniques as artificial pneumoperitoneum. bicontral



ginsography, to reduce the number of radionuclide studies, angiography and diagnostic surgical interventions (Strizhakov A.N., Davydov A.I. 2001, Adamyan L.V. 2001.. Solonova A.G. 2004). One of the first places among the methods of diagnosing nodular formations of the uterus (uterine fibroids) is ultrasound sonography (Demidov V.N. et al., 1990). This method is simple, accessible, highly informative, allowing for differential diagnosis of tumors of the uterus and uterine appendages. However, it is not always possible to determine the TYPE of tumor (benign or malignant) using ultrasound in a simple mode (Torchinov A.M.2001., Zuev V.M. 2000. Baen O.A. 1995r.).

In this regard, the introduction of new ultrasound methods, such as transvaginal echography, color Doppler mapping, three-dimensional echography and three-dimensional energy Dopplerography, allowing to assess the structural features and blood supply of the myomatous node, to predict the intensity of its growth, the choice of surgical treatment tactics and evaluation of its effectiveness, seems relevant theoretically and practically.

In recent years, a number of works have been published on the study of tumor vascularization and tumor-like formations of the uterus, preoperative diagnosis using MPC. There are conflicting data on the dependence of the blood supply of a tumor formation on its localization. There are no clear echographic and Dopplerographic criteria for the dependence of vascularization on the type of morphological processes occurring in uterine nodules (Sidorova I.S. 2001, Serov V.N. 2001, Vikhlyaeva E.M. 2001).

A new stage in the development of modern methods of diagnosing uterine diseases has been transvaginal ultrasound (TVUZ). Gynecologists more often prescribe transvaginal ultrasound, because with its help you can get the clearest and most detailed structure of the uterus of the ovaries. There is no special preparation for the examination, but unlike transabdominal ultrasound, you should come to a transvaginal ultrasound with an empty bladder. The study is performed using an endovaginal sensor.

The TVUZI method is more informative, has a higher resolution, is accessible and is the most sensitive in the diagnosis of nodular uterine fibroids, even if the size of the nodes is very small.

The use of a transvaginal sensor provides information on the presence of histologically verified ultrasound signs of uterine fibroids in the stage of proliferation. Ultrasound diagnosis of submucosal or intermuscular uterine fibroids with centripetal growth is based on the detection of deformed uterine echo. Therefore, if uterine fibroids with a similar localization are suspected, special attention is paid to studying the change in the median uterine structure, which is more accurately and clearly visualized using transvaginal echography.

It should be noted that transvaginal ultrasound scanning is a mandatory stage of preoperative examination of patients with submucosal uterine fibroids who are planning a transcervical myomectomy, since transvaginal echography allows to determine with a high degree of accuracy the depth of the submucosal ula into the myometrium, determine the thickness of unchanged muscle tissue and the area of the proposed fibroid resection and, thereby, confirm or deny the possibility of endosurgical removal tumors.

The purpose of the study. To study the advantages of using transvaginal echography in the diagnosis of nodular uterine fibroids.



Materials and methods of research. Clinical and instrumental studies will be used in the examination of patients with nodular uterine fibroids. High-resolution digital echography using Doppler techniques of an endovaginal sensor will be used as methods of radiation diagnostics. In the scope of the clinical examination, patients will be consulted by doctors of different specialties: oncologist and gynecologist. In all cases, patients will undergo cytological and histological examinations.

Ultrasound examination will be performed on all patients upon admission and at the time of hospitalization. The examination of the uterus will be performed on a modern ultrasound machine using a transvaginal (convex) sensor with a frequency of 1.5 and 7 MHz.

The results of our own research and their discussion. The main complaint in patients with uterine fibroids turned out to be pain in the lower abdomen -81% of the pain, as a rule, was of a constant aching nature, intensified after physical exertion, could radiate into the sacrum, lumbar region, perineum. Violation of menstrual function by the type of hyperpolymenorrhea was observed in 65% of patients. Patients noted an elongation of menstruation by an average of 2-3 days and an increase in the amount of menstrual blood, which led to a decrease in working capacity and overall body tone in 33% of patients. In some patients, there was a violation of the function of adjacent organs. Rapid and involuntary urination bothered 22% of patients. In 17% of patients, the disease was asymptomatic. Bulky formations of the pelvis were found during a preventive examination by a gynecologist or examination for other diseases. Indication of surgery for uterine fibroids in blood relatives on the female line was found in 38% of patients. Early menarche before the age of 13 was noted in 35% of cases. 74% of patients had a history of 4 to 23 pregnancies that ended in 3 or more abortions.

According to the physical examination, uterine fibroids were, as a rule, an irregularly shaped formation with uneven clear contours, dense consistency, and varying degrees of soreness. Diagnostic difficulties arose in the presence of subserous nodes on the pedicle, localization of the node in the rib area or corner of the uterus, as well as secondary disorders in the myomatous node. As the first stage of instrumental diagnosis, all patients underwent ultrasound with the use of CDK. The main echographic signs that make it possible to diagnose uterine fibroids were the following: the presence of nodes with clear, even contours located on the outer surface of the uterus (88%); the identification of round-shaped foci with higher echo density in the thickness of the myometrium, which deform the uterine cavity with a displacement of M-echo; an increase in the size of the uterus and its cavity (93%); deformity of the uterine contours (84%).

Ultrasound examination revealed a number of patterns in the localization, number and size of myomatous nodes in various clinicomorphological variants of uterine fibroids. In most cases, patients with simple fibroids had small uterine sizes: 9 (30%) patients - up to 10 weeks, more than half of 18 (60%) - 11-14 weeks of pregnancy. In the presence of proliferating fibroids, the majority of patients had uterine sizes corresponding to 10-14 weeks of pregnancy (35 (58.4%), in the remaining 25 (41.6%) from 15 weeks or more. The vast majority of 24 (80%) patients with simple uterine fibroids had 1-2 small myomatous nodes, while 46 (76.6%) patients with proliferating uterine fibroids had multiple large nodes. In patients with simple uterine fibroids, nodes of predominantly peritoneal localization 20 (66.7%) and intermuscular localization 6 (20%) were found.



In patients with proliferating uterine fibroids, in the vast majority of cases, there was a multiple growth pattern: predominantly submucosal and intermuscular localization of the node 12 (20%) and 39(65%), respectively. The majority of patients with simple uterine fibroids have a predominantly asymptomatic course of the disease. 18% of patients complained of an increase in the duration and abundance of menstruation, impaired function of adjacent organs and pain syndrome, without a decrease in performance and red blood indicators. During echography of simple fibroids, the dependence of the echogenicity of the myomatous node on the degree of predominance of the connective tissue component and localization, and the duration of the disease history was noted. In most cases, the subserous nodes on the anterior wall of the uterus were visualized as rounded formations of increased echogenicity.

Hyperechoic imaging of the neoplasm with the effect of distal sound absorption and the appearance of a capsule-like peripheral seal around it was noted in 71% of patients with a disease duration of 6-10 or more than 10 years, and indicated the "age" of the myomatous node, the predominance of fibrosis and calcification processes. Myomatous nodes of intermuscular localization with a disease duration of up to 5 years were more often noted as formations of reduced echogenicity, without hyperechogenic peripheral compaction. In cases of simple uterine fibroids (n=30), CDK recorded a "poor" intracellular blood flow of the myomatous node with single color signals along the periphery, along the envelopes of the vessels, in the absence of central ones, with an average level of vascular resistance. The minimum resistance indices were: in the myometrium at the level of the arcuate arteries - 0.63 ± 0.05 , in the myomatous nodes - 0.59 ± 0.06 . The maximum systolic velocity of arterial blood flow in myomatous nodes is 18.7 cm/sec. The clinical course of proliferating uterine fibroids was accompanied by acyclic uterine bleeding, severe anemia and rapid growth of myomatous nodes.

The echographic picture of proliferating fibroids was characterized by a heterogeneous, "spotted" structure of myomatous nodes with the presence of hyperechoic formations giving a distal effect of attenuation of sound and the presence of anechoic sites of different sizes. There was a densification of the peripheral zone of myomatous nodes. With large sizes, the posterior wall of the uterus and nodes along the posterior wall were not available for examination. With multiple myomatous nodes, the uterine cavity was displaced, deformed or undefined. The appendages of the uterus, being spread out on the body of the uterus, were often not visualized during echography. In patients with proliferating uterine fibroids, neovascularization of uterine myomatous nodes was revealed. Color Doppler mapping of uterine fibroids with "true growth" recorded a loose type of blood supply along the vascular bundle of the uterus, intense, high-speed blood flow in the myometrium and myomatous nodes. The image of the intracellular blood flow was characterized by a multitude of signals from vessels along the periphery and in the center of the myomatous node, a high density of color signals (20-40) from the capillary bed and a chaotic direction of the vessels.

The pronounced brightness of the color signal and the presence of a "mosaic" form of mapping indicated a high rate and heterogeneity of intracellular blood flow, the appearance of capillaries and sinusoids, arteriovenous anastomoses devoid of smooth muscles.



Conclusions

1. The developed clinical and diagnostic criteria for tumor-like formations and tumors of the uterus and ovaries significantly increase the effectiveness of preoperative diagnosis, and in some cases avoids unnecessary surgery (identification of functional ovarian cysts).
2. The screening method for the study of volumetric formations of the pelvis, except for general clinical and gynecological, are echographic research methods. In particularly difficult diagnostic cases, the most effective applications are CDK, MSCT and MRI (97.7%).
3. Transvaginal echography in combination with CDK and Dopplerometry is an effective non-invasive additional research method that allows evaluating qualitative and quantitative indicators of blood supply and the structure of the volume formations of the uterus and appendages.

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