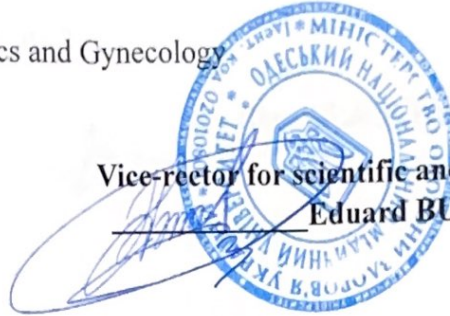


MINISTRY OF HEALTH OF UKRAINE
ODESSA NATIONAL MEDICAL UNIVERSITY

Faculty International

Department of Obstetrics and Gynecology

CONFIRMED by
Vice-rector for scientific and pedagogical work
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September 1st 2023



**METHODICAL DEVELOPMENT FOR A PRACTICAL LESSON
IN ELECTIVE DISCIPLINE**

Faculty International, 6th year

Elective discipline "**ULTRASOUND DIAGNOSTICS IN OBSTETRICS AND
GYNECOLOGY**"

Practical lesson No5. Topic: "Features of ultrasound diagnostics in patients with
infertility. »

Methodical development Practical Classes, OPP "Medicine", 6th year, medical Faculty. Custom
Discipline: «ULTRAVUKOVA diagnostics into obstetrics and Gynecology»

ONMedU, Department of Obstetrics and Gynecology. Practical Classes №5. Features of ultrasound diagnostics in patients with infertility.

Approved:

Meeting of the Department of Obstetrics and Gynecology
Odessa National Medical University

Protocol No1 of August 28, 2023

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Practical lesson No 5

Topic: "Features of ultrasound diagnostics in patients with infertility".

Objective: To improve knowledge about the structural features, the organization of ultrasound diagnostics in emergency conditions, research methods, the study of the features of sonographic manifestations in patients of varying degrees of severity, differential diagnostic signs, modern directions and diagnostic algorithms in emergency conditions, which will allow timely assistance in the event of emergencies in gynecological patients.

To educate students in awareness of the importance of the problem of infertility. Acquaintance with modern diagnostic possibilities of ultrasound diagnostics in the study of patients with infertility, the formation of the concept of the timing of the examination of infertile pa r y and the timeliness of adjustment to specialized rehabilitation centers for the reproduction of family function to select appropriate methods for the restoration and implementation of reproductive function.

Detale studiednya matherial on the problem of diagnosing the causes of infertility from the standpoint of modern reproductive technologies.

Basic concepts: The main parameters of ltrasonic diagnostics inthe omplex of a clinical study of patientswith infertility. Methods of folliculometry and assesment of the state of ovarian reserve. Features of the multifollicular echostructure of the ovaries in polycystic ovary syndrome. Ultrasound signs of adenomyosis, endometrioid ovarian cysts. Ultrasound of distal tubal occlusion (hydrosalpinx). Ultrasonic markers of ovulation. Changes in the endometrium under the control of ultrasound during the examination of infertility. An examination plan and parameters are required during ultrasound examination of the pelvic organs.

Equipment: Professional algorithms, structural and logical schemes, tables, dummies, video-photo materials of ultrasound results, results of laboratory and instrumental studies, situational tasks, patients, medical histories.

I. Organizational measures (greetings, checking those present, communicating the topic, the purpose of the lesson, the motivation of higher education students to study the topic).

The relevance of the topic lies in the fact that infertility in the name is one of the most important problems of modern obstetrics and gynecology, because 10-20% of

families in all European countries complain of a delay in the onset of pregnancy, and 3-5% of these families generally remain sterile. Ultrasound diagnostics plays a primary role in the diagnosis of the causes of infertility and the choice of further tactics for treating patients.

2. Control of the reference level of knowledge (written work, written testing, online testing, frontal survey, etc.). Requirements for knowledge:

- communication and clinical examination skills of the patient;
- the ability to determine the basic and etiological and pathogenetic and factor and infertility in women;
- knowledge of the methods of folliculometry in ultrasound examination of patients with infertility;
- determining the list of necessary clinical, laboratory and instrumental studies and assessing the interpretation of their results;
- the ability to prescribe appropriate management tactics (principles of surgical interventions, conservative treatment, rehabilitation measures) for suspicious or abnormal ultrasound results. List of didactic units: □ Folliculometry
 - Multifollicular structure
 - Distal tubular occlusion
 - Ovarian reserve

2.2. Questions (test tasks, tasks, clinical situations) to test basic knowledge on the topic of the lesson.

Question:

- Methods of folliculometry and assessment of the state of ovarian reserve.
- Features of the multifollicular echostructure of the ovaries in polycystic ovary syndrome. Ultrasound signs of adenomyosis, endometrioid ovarian cysts.
- Ultrasound of distal tubal occlusion (hydrosalpinx).
- Features of the multifollicular echostructure of the ovaries in polycystic ovary syndrome.
- Ultrasound signs of adenomyosis, endometrioid ovarian cysts.

Situational tasks:

Problem 1.

A 32-year-old woman turned to a family doctor with complaints of infertility. Conducts a regular sex life without contraception for 7 years.

History of history: chronic bilateral adnexitis for 5 years, for which she was treated in a hospital and on an outpatient basis. She has no previous pregnancies. Menstruation began at the age of 13, usually regular, but the last 2 years are irregular. When viewed in mirrors: cervical epithelium intact. In a bimanual study: limited mobility of the uterus. Male spermogram: grade II asthenospermia- and grade II oligozoospermia.

Task:

- Establish a preliminary diagnosis.
- Make a plan for further examination of the patient.

Answer:

- Primary infertility, tubal-peritoneal factor
- Ultrasound examination of the pelvic organs, MSG of the fallopian tubes, additional examination for STIs.

Problem 2.

Patient L. 27 years old. I turned to a gynecologist due to the lack of pregnancy for 2 years. Menarche from the age of 12, the cycle was established after 4 months. Menstrual cycle lasting 29–31 days. Menstruation for 4 days, moderate amount. Notes dysmenorrhea of moderate severity 2 years after the onset of menarche. For menstrual pain, uses nonsteroidal anti-inflammatory drugs with a positive effect. With hysterosalpingography about infertility revealed obliteration of the fallopian tubes in the ampoule section, and with ultrasound of the pelvic organs – the left ovary is enlarged due to the cystic formation of anhypoechoic echostructure with the presence of fine content of 41.5x37.1x41.9mm mm.

Task:

- Make a diagnosis.
- Determine the tactics of patient management.
- For surgical treatment, select the access, scope and method of surgery.

Answer:

Diagnosis: Primary infertility. Endometrioid to the right ovary. Chronic salpingitis. Tactics: surgical treatment. Access: laparoscopia. Scope of operation: separation of accretions, removal of a cyst with subsequent histological examination, fimbrioplasty

Test tasks:

- What hormones the corpus luteum produces are diagnosed using ultrasound in the second half of the menstrual cycle:
 - Estrogens
 - Progesterone
 - Oxytocin
 - FSH
 - Prolactin.
- What processes occur in the phase of desquamation by ultrasound:
 - Development of the corpus luteum
 - Ovulation
 - Follicle development
 - Detachment of the uterine mucosa
 - E.Ovation of the uterine mucosa
- During an ultrasound of the pelvic organs in a patient of 25 years old , an anechogenic formation of a long-shaped shape with an uneven contour, measuring 13.1x3.99 mm with the presence of incomplete membranes and fine contents, sharply painful during traction by the sensor, was found paraovarially in the projection of the left fallopian tube. Probable diagnosis.
 - Dermoid cyst of the left ovary
 - Left-sided hydrosalpinx
 - Follicular cyst of the left ovary
 - Endometrioid cyst of the left ovary

Correct answers: 1 – B; 2 – D; 3 – B.

1. Formation of professional skills and abilities (mastering skills, conducting curation, determining the treatment regimen, conducting laboratory research, etc.).

— **The content of the tasks (tasks, clinical situations, etc.).**

Interactive task:

Students of the group are divided into 3 subgroups in the amount of 4-5 people each. We work in ultrasound diagnostic rooms with pregnant patients, we give tasks:

And the subgroup – assessment of the patient, history taking

Ii subgroup – advising the patient according to ultrasound screenings

Subgroup III – evaluates the correctness of the answer of the I and II subgroups and makes its own adjustments.

Clinical tasks:

Problem 1.

A 25-year-old woman turned to a gynecologist with complaints of a violation of the menstrual cycle: irregular scanty menstruation, delays of 3-5 months and infertility for 3 years. With a history of menstruation began with 16 years, not regular with delays of 3-4 months. He lives with his father's life from the age of 18, regularly, the partner is alone, pregnancy is not prevented. Objectively: an overweight woman, a rash on the skin according to the type of acne, manifestations of hirsutism. By ultrasound OMT - Uterus: state of anterflexio-versio, middle position; the shape is correct, the contour is even, clear, dimensions: the body length of the uterus is 42.5 mm, width 33.9 mm, anteroposterior size is 48.9 mm. The echostructure of the myometrium is homogeneous. The right ovary is intimately adjacent to the right rib of the uterus, the contour is clear, even, the dimensions are 31.4x22.6x34, 2 mm, volume 12 ml, echostructure heterogeneous, fine-follicular, contains follicles up to 10-11, sizes 3.9; 4.2; 5.5; 6.0; 6.8; 9.6 mm. Left ovary: in the left rib, the dimensions are increased 37x22.2x36.8 mm, the volume is 15.9 ml, the echostructure is heterogeneous, small-follicular, contains follicles up to 1112, dimensions 3.6; 5.2; 5.0; 5.6; 6.1 mm.

Task: Formulate a preliminary diagnosis and determine further treatment tactics

Answer: Preliminary and diagnosis: Polycystic ovary syndrome. Ultrasound in dynamics, hormonal research (FSH, LH, prolactin, testosterone, cortisol, DEAS).

Problem 2.

A 22-year-old woman has applied with infertility kargas for 3 years. The doctor prescribed a study of basal temperature for 3 months. The study revealed that the temperature was in the range of 36.5-36.8 ° C and did not rise higher. **Challenge:** Establish a diagnosis and determine further treatment tactics

Answer: Anovulatory menstrual cycle (characterized by single-phosity of the temperature curve, when during the entire cycle the temperature does not exceed 37 ° C, the hyperthermic curve is absent). Recommended: hormonal examination, ultrasound (folliculometry).

Test tasks:

- The following types of female infertility are divided:
 - Absolute and relative

- Renal and hepatic
 - Spermicidal and impotent
 - Trichomonas and chlamydial
 - Ectopic and extragenital
- Methods that detect the presence of a two-phase cycle:
 - Smear on the degree of purity
 - Smear for oncocytological examination
 - Radiography of the Turkish saddle
 - OMT ultrasound
 - Hysterosalpingography
 - The diagnostic criterion for endometrioid ovarian cysts in ultrasound examination of the pelvis is the presence of:
 - Ovarian formation with a homogeneous homogeneous content;
 - Echopositive suspensions inside the pathological formation of the ovary;
 - Papillary growths on the inner capsule of the cyst;
 - Symptom of a "snowstorm" Correct answers: 1 – A, 2 –D, 3–D.

— **Recommendations (instructions) for the implementation of tasks (professional algorithms, orientation maps for the formation of practical skills and abilities, etc.).**

One of the priority directions of the state's activity is the preservation of gene pool of the nation. Today, the problems of protection remain relevant reproductive health, which are aimed at ensuring the emergence of healthy offspring, prevention and treatment of reproductive organs, family planning, prevention of maternal sm. Therefore, this problem does not lose its relevance.

Infertility (sterilitas) is called the inability to fertilize. A infertile married couple is one who has a desire to have a child, but with active sexual relations, without the use of contraceptives, conception does not occur within 12 months. It is believed that pregnancy occurs under the condition of regular (2 to 3 times a week) sexual relations for 1 year in 75% of married couples who do not use contraceptives.

Until recently, infertile marriage was considered as infertility, which was associated with the presence of various pathological conditions in the genital tract of a woman. From a modern point of view, infertility in most cases is caused by a

number of reasons both on the part of the woman and on the part of the man, or both together. One part of these causes is congenital disorders, the other is traumatic, infectious, hormonal, neuro-vascular, metabolic. That is, the onset of pregnancy should be preceded by numerous processes that proceed normally: ovogenesis and ovulation, penetration of the egg into the fallopian tube, its fertilization, segmentation and transport of the egg, implantation in the endometrium, spermatogenesis processes, ejection of sperm and its deposition in the vagina, penetration of sperm into the uterus and fallopian tubes.

Infertility occurs in 10-15% of all marriages. Female - in 55-60% of cases, male - in 40-45%. Infertility negatively affects fertility rates and often causes a breakdown in family relationships. **There are options for infertility:**

- Absolute - when pregnancy may not occur at all. More often it is with abnormalities in the development of the vagina and uterus (vaginal aplasia, Rokitansky-Mayer syndrome), some genetic diseases, hermaphroditism, etc.
- Relative - when pregnancy can occur after the elimination of the causes, with the use of treatment or artificial insemination.
- Primary - if there was no conception in the anamnesis, the pregnancy never occurred in a marriage that lasts more than a year.
- Secondary – in the presence of conception in the past, occurs after one or more pregnancies (there were births, miscarriages, ectopic pregnancy).

The main causes of female infertility:

- endocrine factors – 35-40%;
- tubal and peritoneal factors – 20-30%; - immunological factors - 20%; - cervical factor – 5%.

In about 10-15% of cases, the cause of infertility remains unexplained.

According to the etiological principle, infertility is divided into:

I. Endocrine, associated with impaired maturation of the egg and the process of ovulation.

Infertility always accompanies the scleropolycystic ovaries - Stein-Leventhal syndrome. An important role in this form of infertility is played by anovulatory (monophasic) cycles. With this pathology, the follicle matures, but ovulation does not occur, the corpus luteum is absent. The maturing follicle undergoes regressive changes (atresia), estrogenic activity decreases.

Infertility in diseases of the endocrine glands may be associated with inferiority of the corpus luteum (reduced production of progesterone) - NLF, or with a decrease in the duration of the folliculin phase (hypoestrogenism).

The disorder of the endocrine function of the ovaries can be both primary and secondary, due to inflammation. Cyclic processes are disturbed in the ovaries,

anovulation or slowing down the maturation of the follicle with an inferior luteal phase occurs.

Infertility affects patients with various forms of hyperprolactinemia, hyperandrogenism, post-pubertal adrenogenital syndrome and other forms of endocrine disorders. Endocrine infertility also occurs in disorders of the function of the hypothalamic-pituitary system, thyroid gland, adrenal glands. This type of infertility is accompanied by menstrual disorders in the form of amenorrhea, hypomenstrual syndrome, uterine bleeding. Anovulation can also be the result of stress, sudden weight loss, prolonged use of certain medications, brain injuries.

According to the WHO, female infertility is divided into the following groups:

Group I – Hypothalamic-pituitary insufficiency;

Group II – Hypothalamic-pituitary dysfunction, most patients in this group have signs of PCOS;

Group III – Primary ovarian failure;

Group IV – Dysfunction of the genitals;

Group V – Hyperprolactinemia in the presence of a pituitary tumor;

Group VI – Hyperprolactinemia in the absence of a pituitary tumor that cannot be detected

Group VII – Hypothalamic-pituitary insufficiency in the presence of a pituitary tumor.

For the diagnosis of endocrine infertility use:

- functional diagnostics tests: measurement of basal temperature for 2 months to assess the presence of ovulation and the duration of the luteal phase, assessment of the symptoms of "pupil" and "fern", tension of cervical mucus, taking smears for colpocytological examination ("hormonal mirror");
- determination and evaluation of hormone levels in the blood (see below);
- Ultrasound – control of follicle growth and endometrial thickness during the menstrual cycle;
- X-ray of the Turkish saddle
- laparoscopy.

II. Trumpet-peritoneal. The cause of peritoneal infertility is adhesions in the pelvis, which causes bending of the tubes while maintaining their patency.

Tubal - associated with the pathology of the fallopian tubes. Functional - with stress factors, ovarian hypofunction, hyperandrogenism, imbalance of prostaglandins. Organic pathology causes loss of tunnel patency. This is observed not only in gross anatomical disorders (sactosalpinxes), but also in the presence of signs of transferred salpingo-oophoritis (both gonorrhoeal and non-specific), which may not

be determined by bimanual examination. In addition, there are dystrophic changes in their wall and impaired peristalsis of the pipe.

The occurrence of infertility in salpingitis is associated with the formation of adhesions and scars that violate the patency of the fallopian tubes. There is a mechanical obstacle to fertilization, since the conditions necessary for connecting the egg with the sperm are violated. Infertility often occurs on the basis of inflammatory diseases that occur after abortions, pathological childbirth. The causative agents of such diseases can be gram-positive and gram-negative microorganisms, as well as pathogens of specific diseases of the genitals (chlamydia, gonococci, ureaplasma, gardnerella).

The cause of infertility after an abortion can be not only salpingo-oophoritis, but also dystrophic processes in the endometrium, which prevents implantation; dysfunction of the ovaries and other endocrine glands. Especially dangerous are the consequences after the first abortion with manifestations of infantilism. Tuberculous lesions of the uterus, as a rule, are accompanied by infertility. Given the significant increase in the manifestations of general tuberculosis, it is necessary to keep in mind this cause of infertility and it is imperative to conduct an examination for tuberculosis in women who have a history of infertility.

Inflammatory processes of the ovaries (oophorites) are less likely to lead to infertility than salpingitis. However, in chronic oophoritis, adhesions occur around the ovary and the ampoule part of the tube, leading to disruption of the flow of the fertilized egg into the tube.

Infertility in inflammatory processes is often accompanied by a violation of the endocrine function of the ovaries.

One of the factors of tubal infertility is endometriosis, which causes adhesions in the pelvis, as well as undergoing operations on the pelvic organs and abdominal cavity.

For diagnosis use:

- hysterosalpingography (HSG), hysterosalpingoscopy;
- hydrotubation, perturbation (they are now practically not used);
- contrast sonography;
- samples with dyes (Sperka and Aburela);
- laparoscopy using chromosalpingography with methylene blue.
 - Immune infertility is associated with the production of antisperm antibodies in the body of a man - AsAb, which agglutinate spermatozoa (sperm agglutinating) and cause the male form of infertility. This is due to a violation of the barrier between the male reproductive tract and the immune system. The reason for this may be vasectomy, testicular skin with orchitis,

injuries, more often - infections of the genital tract. The female form of immunological infertility is characterized by the formation of antibodies formed in cervical mucus and reducing the motor activity of spermatozoa (spermoimmobilizing).

For diagnosis use:

- postcoital test and its varieties (Shuvarsky-Huner test, Kurzrock-Miller, Mar-test);

- A couple test for latent infection.

- Infertility caused by cervical factors. Associated with changes in the cervix due to injury (ruptures during childbirth, the consequences of conization), inflammatory processes in the neck (chlamydia, gonorrhea, mycoplasmal endocervicitis, erosion), polyps. As a result, the structure of the epithelium of the cervical canal, the viscosity and acidity of cervical mucus change, which leads to disruption of the processes of capacitation, prevents the movement of sperm into the uterine cavity.

Diagnosis of this form of infertility:

- postcoital test and its varieties (Shuvarsky-Huner test, etc.);

- functional diagnostics tests.

- Infertility caused by uterine factors. Changes in the mucous membrane of the uterus due to inflammatory processes, repeated curettage of the walls of the uterus, the action of cauterizing chemicals lead to dystrophic disorders of the endometrium, intrauterine synechiae (Asherman's syndrome). This interferes with the implantation process and leads to the uterine form of amenorrhea. Other factors include polyps in the uterus, endometriosis of the uterus, uterine fibroids.

In 15% of cases, the so-called "small forms of endometriosis" - the uterus, tubes and ovaries - lead to infertility. Most often this applies to women who are long-term treated for infertility.

Tumors of the genital organs can not always be the cause of infertility, however, with uterine myoma, they occur in 30.2 - 43.7 % of cases, especially with submucous growth of nodes. The obstruction of the fallopian tubes on the basis of compression of their lumen by myomatous nodes is important.

Benign ovarian tumors (cystomas) and cysts are accompanied by infertility, although not so often.

Diagnosis of uterine infertility:

- tests of functional diagnostics (to exclude normal ovarian function in the absence of menstruation);

- hormonal tests with progesterone;
- hystero-graphy, hysteroscopy;
- Ultrasound control of endometrial thickness.

VI. Other forms of infertility.

- This group includes "mixed" infertility – with a combination of endocrine and tubal factors, or other combinations (with uterine, male factor).
- Some authors highlight "psychogenic infertility", which may be associated with stress suppression of ovulation (marital conflicts, occupational problems, pregnancy waiting syndrome). The vast majority of women with infertility have various disorders of the psycho-emotional sphere: a feeling of inferiority, loneliness, intense anticipation of the next menstruation and hysterical states on her chatter. The complex of these symptoms is the so-called "pregnancy waiting syndrome". Indicators of psychological tests characterizing the degree of instability of personal qualities, fear, self-doubt, severity of psi-hologic reactions to the environment, in families that do not have children, are significantly increased. Infertile women have a high degree of neuroticism, in the forehead of the ages — a tendency to depression, impaired behavior reactions. Often there are deviations from the normal pattern of sexual behavior, in men - erectile dysfunction and ejaculation.

A huge stress for a married couple is the need for examination, and in the future — the implementation of the doctor's recommendations on the rhythm of sexual life, in particular, determining the period of ovulation in the wife according to functional diagnostic tests and the advice to use this time for conception. Sometimes a persistent requirement on the part of the wife of intimacy at a certain period can lead to the functional insolvency of the husband, and therefore to the emergence of fear of sexual intercourse and other disorders of potency. A particularly adverse effect on the state of potency is the diagnosis of azoo-sperm or other sperm pathology. This news leads to impotence in more than half of men, and the frequency of its occurrence depends on the reaction of the wife. Such a disorder in the absence of organic changes is temporary and the potency is subsequently restored spontaneously or under the influence of psychotherapy.

For a woman, the need to submit sexual life to the results of functional diagnostics tests is also a stressful situation to which not only the psyche, but also the organs of the genital tract, in particular the fallopian tubes, react. Their spasm, antiperistalsis may occur, which even with passage pipes disrupts the transportation of gametes, so sometimes a woman's ardent desire to get pregnant becomes her enemy. Described a lot of cases when the long-awaited pregnancy came after the woman decided to stop treatment, stopped measuring basal

temperature and closely monitor the time of expected ovulation. The same thing happened when a couple, giving up hope for their own offspring, adopted a child. The causes and types of psychological disorders in persons in an infertile marriage are diverse, so you need a lot of experience of the doctor, patience, tact when collecting anamnesis to determine the nature of the personality, the characteristics of marital relationships and psychosexual reactions.

3. Quite often, infertility is caused by infantilism and hypoplasia of the internal genital organs. This is especially true of primary infertility, in which the underdevelopment of the genital organs occupies one of the leading places among other etiological factors. The frequency of infertility and its prognosis for this anomaly depend on the degree of underdevelopment of the genital organs. A significant degree of underdevelopment is accompanied by persistent infertility. With the underdevelopment of the genital organs, a number of interrelated anatomical and functional features of the reproductive system contribute to the occurrence of infertility.

- The intrasecretory function of the ovaries in infantilism is reduced. Insufficient production of the level of sex hormones is a direct cause of the delay in the anatomical and functional development of other parts of the sexual apparatus and, accordingly, the main link leading to infertility.
- The infantile state of the fallopian tubes also contributes to the occurrence of infertility. The pipes are long, winding, their lumen is narrow, peristalsis is reduced. These features violate the conditions of transport of the egg.
- Underdevelopment of the uterus (hypoplasia) of a high degree: its length is from 3.5 to 5.5 cm. Often accompanied by infertility.

Infertility is also promoted by:

- a). Inferiority of cyclic processes in the endometrium associated with a decrease in hormonal function of the ovaries.
- b). Narrowness of the cervical canal of the conical cervix, spasm of the internal uterine pharynx, impaired secretion of the cervical glands.
- c). The vagina in infantilism is narrow, short, the posterior vault is shallow. Under these conditions, sperm quickly pours out of the vagina. The cervix is in contact with sperm for a short time, and only individual spermatozoa enter the uterus.

Requirements for the results of work, including design.

- Consult the patient and determine the general anamnestic parameters necessary for the ultrasound.
- Explain the need for ultrasound examination of the pelvic organs.
- Analyze the results of ultrasound examination based on the results of scans.

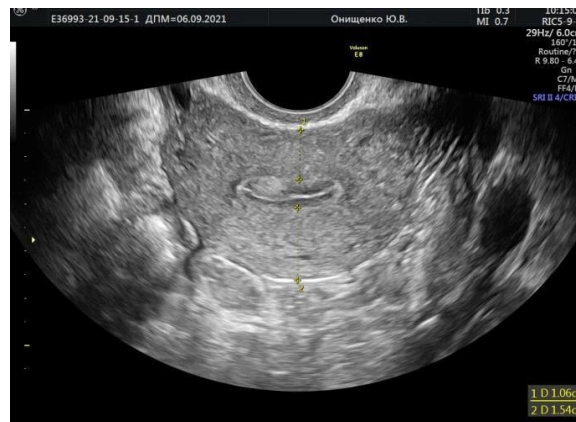
- Determine the further tactics of patient management and the need to prescribe further examination.

— **Control materials for the final stage of the lesson: tasks, tasks, tests, etc.**

Situational tasks:

Patient R. is 38 years old. Dyspareunia is disturbing, periodically 5 days before menstruation, spotting occurs. Menarche from the age of 13, the cycle was established through

6 months Menstrual cycle in 26–28 days. Menstruation is 4–5 days long, moderate, painful. At 24, the first pregnancy ended in urgent childbirth. Cherez 8 months after giving birth had 2 abortions with an interval of 6 months. In remarriage, in pregnancy, they are interested. Conducted HSG – both fallopian tubes are impassable. On ultrasound, indirect ultrasound signs of adenomyosis were found.



Task: Make a diagnosis. Determine the tactics of the patient. For surgical treatment, select the access, volume and method of surgery. Learn the tactics of managing the patient in the postoperative period, depending on the amount of surgery.

Answer: Secondary infertility. Genital endometriosis. Adenomyosis. Chronic salpingitis. Tactics: surgical treatment. Access: hysteroscopy and laparoscopy. The volume of the operation is: laparoscopy, salpingoovariolysis, bilateral tubectomy, excision of foci of endometriosis. After surgery, preparation for ART (assisted reproductive technologies)

Test tasks KROK-2 (20 19 p.):

A patient of 18 years old turned to a gynecologist with complaints about the absence of menstruation. On examination: height – 143 cm, weight – 40 kg, low hair growth on the neck, neck of the "sphinx", high palate, mammary glands are

not developed, sexual hair growth is scanty. Bone age – 12 years. What studies are needed to verify the diagnosis?"

- Thyroid scan, TSH, T3, T4, blood estradiol
- X-ray of the skull, spine, adrenal angiography
- Ultrasound picture of the condition of the ovaries and uterus, sexual chromatin, LH, FSH in the blood, karyotype*
- Adrenal gland scan, testosterone in the blood
- Ultrasound picture of the condition of the ovaries and uterus, levels of LH and FSH in the blood

4. Summing up (criteria for evaluating learning outcomes).

Current control: oral questioning, testing, evaluation of practical skills, solving situational clinical problems, evaluation of activity in the classroom, etc. *The structure of the current assessment in the practical lesson:*

- Evaluation of theoretical knowledge on the topic of the lesson:
 - methods: survey, solving a situational clinical problem;
 - The maximum score is 5, the minimum score is 3, the unsatisfactory score is 2.
- Assessment of practical skills and manipulations on the topic of the lesson:
 - methods: assessment of the correctness of practical skills;
 - The maximum score is 5, the minimum score is 3, the unsatisfactory score is 2.
- Evaluation of work with the patient on the topic of the lesson:
 - methods: assessment of: a) communication skills of communication with the patient, b) the correctness of the appointment and evaluation of laboratory and instrumental studies, c) compliance with the algorithm for conducting a differential diagnosis d) justification of the clinical diagnosis, e) drawing up a treatment plan;
 - The maximum score is 5, the minimum score is 3, the unsatisfactory score is 2.

Criteria for the current assessment in a practical lesson:

Score	Evaluation criteria
«5»	The student is fluent in the material, takes an active part in the discussion and solution of a situational clinical problem, confidently demonstrates knowledge of ultrasound screening diagnostics in obstetrics and the correct appointment of laboratory and instrumental studies, expresses his opinion on the topic of the lesson, demonstrates

	clinical thinking.
«4»	The student is well versed in the material, participates in the discussion and solution of a situational clinical problem, demonstrates knowledge of ultrasound screening diagnostics and the correct appointment of laboratory and instrumental studies with some errors, expresses his opinion on the topic of the lesson, demonstrates clinical thinking.
«3»	The student does not have enough knowledge of the material, uncertainly participates in the discussion and solution of a situational clinical problem, demonstrates knowledge of ultrasound screening diagnostics and the correct appointment of laboratory and instrumental studies with significant errors.
«2»	The student does not own the material, does not participate in the discussion and solution of a situational clinical problem, does not demonstrate knowledge of ultrasound screening diagnostics and the correct appointment of laboratory and instrumental studies.

List of recommended literature.

Main:

- Emergency medicine. Emergency (ambulance) medical care: textbook / I.S. Zozulya, A.O. Volosovets, O.G. Shekera and others. — 5th ed., K. VSV "Medicine", - 2023.- 560 p. ISBN: 978-617-505-917-3
- Obstetrics and Gynecology: in 2 books. - Book 2. Gynecology: textbook (university III-IV r.a.) / ed. V.I. Gryshchenko, M.O. Shcherbyna - 3rd ed., vypr., 2020. – 376 s
- Clinical Obstetrics and Gynecology: 4th Edition/ Brian A. Magovan, Philip Owen, Andrew Thomson. – 2021. – 454 p.
- Boyko V. V, Kharchenko K. V, Manjura O. P, Karacharova I. Y. The role of sonography in the early detection of recurrence of ovarian cancer. Bukovinian Medical Bulletin. 2016;20(3):18-22
- Oxford Textbook of Obstetrics and Gynecology / Sabaratnam Arulkumaran, Wiliam Ledger, Lynette Denny, Stergios Doumouchsis – Oxford University Press, 2020, 928 p.

Additional:

- Situational tasks in gynecology: a textbook. / I.Z.Gladchuk, A.G.Volyanska, G.B.Shcherbyna and others.; ed. prof. I.Z.Gladchuk. – Vinnytsia: LLC "Nilan-LTD", 2018.-164 p.
- Clinical tasks in obstetrics and gynecology for students of IV-VI courses (part I). Methodical development for practical classes in obstetrics and gynecology for students of IV-VI courses of the School of Medicine / O.O. Korchynska, N.Y. Bysaga / ed. prof. Malyara V.A. – Uzhhorod: "Lira", - - 2019.-119s.
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